

CENTRAL MURRAY REGIONAL TRANSPORT STRATEGY 2019



Central Murray Regional Transport Strategy 2019

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Prepared by:

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Prepared for:

Central Murray Regional Transport Forum

- Balranald Shire
- Buloke Shire
- Gannawarra Shire
- Mildura Rural City
- Murray River Shire
- Swan Hill Rural City
- Wentworth Shire

Acknowledgement of Country:

The Councils of the Central Murray Region acknowledge the Elders both past and present and the tribes whose traditional lands form the municipalities in which we live.

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Executive summary

The strategy has been developed by and for the Central Murray Regional Forum Councils - comprising Balranald, Buloke, Gannawarra, Mildura, Murray River, Swan Hill and Wentworth - located along the Murray River in western New South Wales (NSW) and Victoria.

The Central Murray Regional Transport Strategy updates the 2014 Draft Transport Plan¹ for the region and has drawn on existing studies from local to State level and consultation across the region. It seeks to provide an evidence-based framework for ensuring a 'fit for purpose' transport network for the region, now and into the future.

The assessment methodology utilised to compare and prioritise actions, draws on those developed for the Loddon Campaspe² and Wimmera Southern Mallee Transport Strategies³ in Victoria. This strategy is also informed by existing State, regional and local plans and strategies. It has been prepared with the assistance of NSW Roads and Maritime Services, VicRoads, the Victorian Department of Economic Development, Jobs, Transport and Resources and Transport for Victoria.

Challenges and future trends

This strategy takes a common approach to transport infrastructure planning and services for the region. Some of the key regional challenges and trends include the following:

- The region has a dynamic and expanding agriculture and horticulture sector, characterised by increasing production and food processing. It requires fit for purpose transport infrastructure to deliver product to ports and markets efficiently.
- Land use continues to change from broad acre to irrigated and more intensive farming, including major plantings of almonds, nuts, olives and grapes on both sides of the Murray River.

- The region sits at the crossroads of national transport routes such as Sydney to Adelaide and Perth as well as the north-south routes from NSW to Melbourne and southern ports.
- There is a strong interface between the economies of the adjoining South West NSW and Victorian communities in terms of bridge and road links, heavy vehicle routes and public transport connections needed to support these towns.
- The transport and logistics needs of industry for increased B-double trucks and higher productivity vehicle access from farm gate to port or market is a challenge for the current transport network (road, rail and bridges) and requires additional investment.
- While some centres, particularly Mildura and nearby Buronga and Gol Gol, are growing in population, most townships are generally experiencing population decline and ageing.
- Smaller towns continue to experience difficulty in efficiently accessing larger centres and services for education, health, employment and leisure opportunities while still residing in their communities.

Goals

The following six goals underpin the strategy:

1. Promote and facilitate the development of transport systems that support regional economic development and population growth.
2. Support efficient and sustainable transport of products between producers, markets and nodes within the region and connecting to other destinations, domestic and international.
3. Improve the capacity and function of the transport network, and integrate it with Federal and State strategies, and with land use.
4. Manage the transport system so that it is maintained to a safe and affordable level of service.
5. Improve the transport connectivity of large and small communities to enhance access to services.
6. Support improved community health and environmental outcomes.

¹ Central Murray Regional Transport Study (Victoria-New South Wales) 2014 Update Report, W. Russell 2014

² Loddon Campaspe Integrated Transport Strategy, InfraPlan and Geoff Anson Consulting, Dec 2015

³ Wimmera Southern Mallee Regional Transport Strategy, GHD (Oct 2014)

Top 15 priorities

The Top 15 priorities (listed in no particular order) were identified following a consultation process with the seven partner Councils, industry, community and relevant Victorian and NSW State departments and agencies, and an examination of relevant reports and documentation.

The priorities below draw on current regional challenges, trends and goals for the transport network. The Central Murray Regional Transport Forum will continue to advocate jointly for major transport infrastructure projects and service delivery improvements, seek funding for infrastructure projects and additional studies and will collaborate to further refine priorities (see also project assessment and prioritisation section (p 18)).

Priorities	Description
1. Murray Crossings <ul style="list-style-type: none"> ➤ Swan Hill Bridge ➤ Tooleybuc Bridge 	<p>There are currently no B-Double Higher Mass Limit (HML) crossings between Tocumwal and Euston-Robinvale to allow heavy freight vehicles to cross between NSW and Victoria. The Swan Hill and Tooleybuc Bridges have been assessed as the first two short-term priorities to be addressed under the <i>'Murray River Crossings Investment Priority Assessment', 2018</i>. Strong support for creating two lane crossings at Swan Hill and Tooleybuc that are capable of handling oversize and over mass vehicles was given by industry, Councils and community members. Such construction would permit crossing by High Performance Freight Vehicles (HPFVs) and improve safety for road users and pedestrians.</p>
2. Murray Basin Rail Project	<p>The strategy recognises the over-riding priority of completing the Murray Basin Rail Project. The Victorian Government recently announced that work on the standardisation and upgrade of the Manangatang and Kulwin lines, due to be undertaken in 2018, will be deferred until 2020. It is vital that these remaining components are completed to facilitate additional freight movement by rail.</p>
3. Freight route priorities (first/last mile roads) <ul style="list-style-type: none"> ➤ Hattah Robinvale Road upgrade 	<p>The region currently does not have a clearly defined HPFV freight road network, from farm gate to processing plant or market. A region wide priority road network for freight that links across council boundaries and with the Victorian and NSW arterial road networks is identified as a key priority. It includes first mile/last mile roads to enable investment in upgrading the road network to an appropriate standard to support safe and efficient movement of people and of freight (including HPFVs) to the Ports of Melbourne and Geelong.</p> <p>The strategy proposes a study to identify and prioritise roads (including local roads) for upgrading to cater for HPFVs. To support the HPFV network once identified, it is proposed that an ongoing, dedicated fund be created for rural and regional councils to upgrade and renew key freight routes and first mile/last mile connections.</p> <p>An immediate priority is to widen the Hattah Robinvale Road and upgrading the Collins Road intersection to meet safety and efficiency concerns resulting from horticulture industry expansion along its length and the need for HPFV access.</p>
4. Calder Highway Corridor	<p>The Calder corridor has the region's highest volume of traffic. Increased freight traffic carrying agricultural and horticultural product has resulted in more truck movements and increasing demand for larger vehicles to handle freight. This corridor requires duplication of lanes, extra passing lanes, rest stops, intersection treatments, e.g. at Marong, and upgrade of the Keilor and the Bridgewater bridges. This will allow the efficient movement of HPFVs, increase safety and better management of car/truck/caravan conflicts.</p>

Priorities	Description
<p>5. East-west highway corridors</p> <ul style="list-style-type: none"> ➤ Sturt Highway ➤ Murray Valley Highway ➤ Sunraysia Highway ➤ Mallee Highway 	<p>The Sturt, Sunraysia, Mallee and Murray Valley Highways service freight traffic in the region, connecting major cities and towns and eventually reaching the ports of Melbourne and Geelong. Those Highways also support regional tourism, with the Murray Valley Highway forming the spine of the tourist route along the Murray River from which various tourist loops and trails are linked.</p> <p>More passing lanes and rest stops and some intersection treatments are needed to reduce conflicts between freight/buses/caravans and cars and to improve safety and travel time on these corridors. Such improvements will also allow HPFVs to travel along these corridors and onto local roads. Similar upgrading of the Loddon Valley Highway, which carries significant freight and tourist traffic to and from the region, is also required</p>
<p>6. Mildura truck bypass</p>	<p>The freight industry has given high priority to redesign and upgrade the current truck bypass coming off the George Chaffey Bridge via Seventh Street onto Benetook Avenue to reduce the heavy traffic through central Mildura. Proposed improvements include: create left turning priority for trucks coming off the bridge; redesign and alterations of Benetook Avenue roundabouts; and widening of Red Cliffs Meringur Road (C254).</p>
<p>7. Tourist routes</p> <ul style="list-style-type: none"> ➤ Lake Mungo ➤ Lake Tyrell ➤ Silo Art Trail 	<p>Mungo National Park is a key destination for tourists who must travel through Wentworth or Balranald Shires on roads that are not passable in wet weather. The sealing of Arumpo Road (Wentworth Shire has detailed study) and of Marma Box Creek Road (Balranald Shire) will permit all weather access to this important site from Mildura Rural City/Wentworth and Balranald Shires.</p> <p>The recent boost in popularity of Lake Tyrell as a destination for international tourists and evolving tourist interest in an art trail of silos in or near the region has created the need to assess improvements to ensure tourist routes and loops to these destinations are improved to a safe and appropriate standard.</p>
<p>8. Supply chain study of new intensive horticulture developments in the region – intermodal opportunities</p>	<p>The predicted increase in production for the region should be facilitated by getting freight onto rail as soon as possible. To support this, a supply chain study of new horticulture developments in the region is to be undertaken. The project would provide an evidence base to assist government, business and the transport and logistics sector in determining the most efficient routes to support horticulture developments, including increased use of HPFVs from farm gate to market or intermodal facility. The scope of the study must also include access to local roads, rest stops, overtaking lanes and opportunities to transport goods via rail.</p>
<p>9. Swan Hill and Echuca passenger rail line and service</p>	<p>To meet community demands for increased passenger rail services for tourism, business, health, education and social visits to Bendigo and Melbourne, investment in capacity improvements on the northern passenger lines is needed. A study to quantify upgrades and rolling stock needed for the Swan Hill & Echuca passenger services to include five return services, five days per week is recommended.</p>
<p>10. North West Passenger Transport Study</p>	<p>Mildura is the only regional city in Victoria, and one of the largest population catchments, without a passenger rail service. A regional future passenger transport study is proposed for North West Victoria. This strategic piece of work will provide an evidence-based argument to support the future transport needs of the community, including passenger rail, and covering social and economic drivers. This work is expected to lead to government investment in a more detailed business case.</p>

Priorities	Description
11. Upgrade bridges and culverts	<p>Identify strategic local bridge and culvert structures to accommodate HPFVs in irrigated primary production areas. Define priority routes from farm gate to market including key freight routes to the Ports of Melbourne and Geelong and progressively upgrade bridges and culverts along these routes, building on a study already done by Loddon Campaspe Transport Working Group on the Goulburn Murray Irrigation District (GMID). This study included Swan Hill Rural City and Gannawarra Shires.</p>
12. Tracks and trails	<p>Tourism is a growing and important contributor to the regional economy. Active transport options including the development of tracks and trails and recreational bike networks assist in attracting tourists and improving the health and wellbeing of the local community. The regional priorities for investment based around the Murray River Adventure Trail include the Kerang-Koondrook Rail Trail, Koondrook to Cohuna Forest Trail, Koondrook to Torrumbarry Trail and the Swan Hill to Lake Boga Active Trail.</p>
13. Transport connections	<p>The region seeks to improve the frequency and timing of public transport connections to enhanced Swan-Hill and Echuca train services and of the bus connections between the larger centres such as Mildura, Swan Hill, Echuca, Ballarat, Melbourne, Adelaide and Sydney, and stops at the smaller towns along these routes.</p> <p>People living in small communities in the region have limited access to services to meet their health, education and social needs. There is a need to better connect transport planning, community planning and health. This project will examine improved coordination and awareness of public and community transport services and consider the need for additional flexible and private transport options.</p>
14. Investigate second bridge crossing at Mildura and Rail Connection from Mildura to Transcontinental Railway	<p>Growing traffic including HPFVs on the George Chaffey Bridge, delays and disruptions on the bridge, and lack of through freight routes bypassing Mildura city have prompted calls to commence planning for a second Murray River crossing near Mildura. Similarly, the concept of a standard gauge railway line from Mildura to the Transcontinental Railway (e.g. to Broken Hill or Menindee), which would allow direct access by rail to Darwin, Perth and Sydney from the region has been identified for further investigation. A first step would be a comprehensive feasibility study building on the Murray Basin Rail Project analysis.</p> <p>The strategy supports the investigation of a second bridge crossing as part of a wider study that would include any new truck bypass, additional intermodal freight terminal capacity needs and possible interstate rail connection from Mildura to ‘Transcontinental’ in the longer term.</p>
15. Implement Cross-border Commissioner for Victoria	<p>During consultations on this strategy there were strong calls for implementation of a Cross Border Commissioner for Victoria to assist councils, industry and the community with the harmonisation of areas such as heavy vehicle rules on allowable weights (eg consider equal weight carrying limits for heavy vehicles between states) and configurations of vehicles and drivers’ licenses. With the appointment of the Victorian Commissioner, the CMR Transport Forum urges early consideration and resolution of these cross-jurisdictional transport related anomalies.</p>

Why a Regional Transport Strategy?

The strategy is based on member councils working together as a region in association with their communities and industries to identify the needs and challenges of this composite region. It has been developed taking into account the relevant strategic, growth and regional plans in NSW and Victoria. Clarity regarding the region's transport infrastructure needs will better position the region for the next stages of economic growth and social development.

The objectives are to:

- Understand and map transport flows for the region.
- Identify strategies that create an integrated approach to manage the freight task across all modes of transport.
- Provide a shared view for advocacy on priorities for joint action or support in relation to transport infrastructure needs to meet the growing transport demands across all modes.
- Identify needs for improved levels of service in public and community transport available within and between townships in the region.
- Develop a consistent, structured approach to the assessment and prioritisation of transport infrastructure, maintenance and program needs within the region.
- Highlight anomalies that exist for transport operators managing the freight task across state borders.

The strategy is based on information provided by the seven municipalities, industry and other community members in relation to the transport task, including all modes of transport available in the region (road, rail and air):

- types of services (freight, passenger and recreation needs)

- transport corridor restrictions including bridges
- needs of agriculture, horticulture, mining and tourism.

State road, rail and transport agencies have also been consulted in deciding where the region's transport effort should be focused.

The strategy highlights the need for an ongoing regional governance framework to ensure that regionally significant projects are identified and supported, and that key projects eligible for Federal or State funding are 'investment ready'.

Council advocacy for projects and programs will have a key role to play, but will be strengthened by evidence-based priorities identified with the aid of a robust assessment tool.

The methodology included:

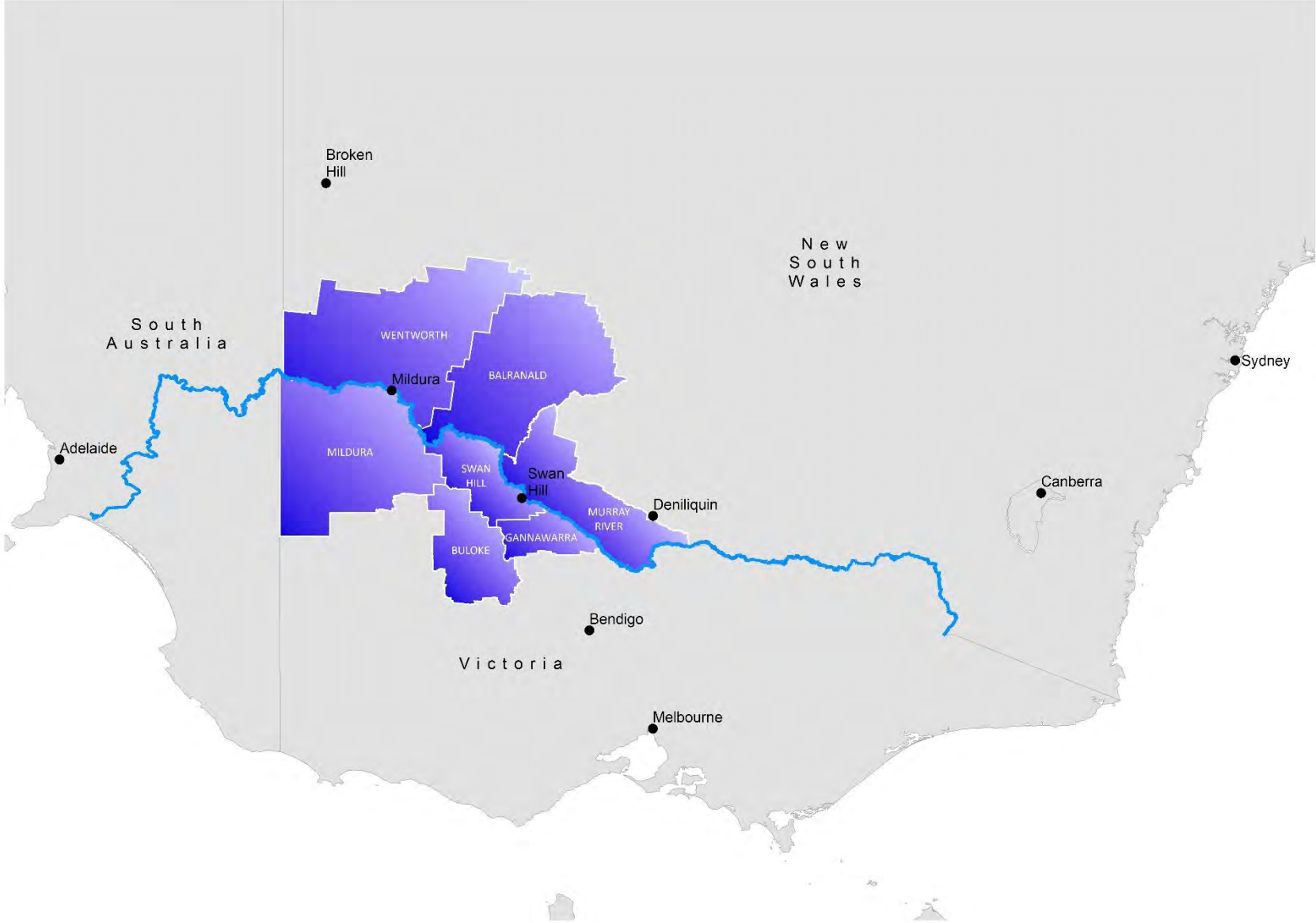
- a review of relevant State, regional and local economic development and transport strategies (see list at Appendix D)
- consultation with participating councils, industry (including transport operators) and community on issues and priorities for action
- assessment of priorities by technical committee of participating councils
- review of proposed priorities with State agencies
- preparation and circulation of draft strategy
- finalisation of strategy with Central Murray Transport Steering Committee member councils in consultation with State agencies.

This strategy identifies the top 15 transport priorities for Central Murray region. It also identifies next step action to progress the goals and objectives.

In total there are 52 actions outlined to investigate, assess against agreed criteria and implement. These actions are listed in Appendix A (Strategies and Actions) and are referenced in the main body of this strategy where analysis and further action is required.

The assessment of additional proposed projects, outside the top 15, is summarised in Appendix B (Summary of Other Priority Projects).

Figure 1: The Central Murray Region study area



Regional overview

Situated in the western corner of Victoria and NSW, the Central Murray Region straddles the Murray River and has direct economic and social links with NSW, Victoria and South Australia. It lies at the cross-roads of the east-west transport corridor from Sydney to Adelaide and Perth, and the main north-south route to Melbourne in the west of these states. The region incorporates the municipalities of Mildura, Swan Hill, Gannawarra and Buloke in Victoria and Wentworth, Balranald and Murray River in NSW (see Figure 1).

The region has a Mediterranean climate, comprises large amounts of public land and contains areas of environmental and cultural significance including Ramsar wetlands, forests, highly significant Aboriginal heritage areas and places of historical significance in terms of river trade and innovative irrigation schemes

As shown in Table 1, the largest populations are located in Mildura and Swan Hill in Victoria followed by the Murray River Council in NSW and Gannawarra Shire in Victoria.

Overall population growth in the region has been modest with increases in Mildura, Swan Hill and Murray River while other shires have experienced a decrease in population. The regional city of Mildura and the regional centre of Swan Hill provide higher level services to the surrounding catchments in Victoria and NSW, while Mildura also services parts of South Australia.

In Victoria, the Loddon Mallee North Regional Growth Plan⁴ showed that Mildura and Swan Hill have younger than average age structures and relatively high levels of people from diverse cultural backgrounds and high Aboriginal populations. Buloke and Gannawarra have an older age profile. In general terms, however, the region has diminishing youth numbers and an expanding retiree population. This report also highlights an expected increase in the Loddon Mallee North region population of 13% between 2012 and 2041 but notes that this will occur in the urban areas eg Mildura, with declining populations in the rural areas.

Table 1: Population and Employment - Central Murray Region⁵

Municipality	Population (2017)	TOTAL Regional Employed	Unemploy't Rate (%) (2017)
Balranald	2,318	761	3.2
Buloke	6,151	2,493	4.2
Gannawarra	10,563	4,051	3.9
Mildura	55,071	22,368	6.7
Murray River	11,960	4,666	3.5
Swan Hill	20,849	9,126	4.5
Wentworth	6,955	2,837	9.0
TOTAL	113,867	46,102	5.7

⁴ Loddon Mallee North Regional Growth Plan Background Report, 2014, pp46-50

⁵ REMPLAN, Central Murray Transport Plan Economic Data Report, Economic Data Report, May 2018 p4 & 6

Table 2: Central Murray Region economic indicators (2017)

Municipality	TOTAL Output (\$m)	Tourism Output (\$m)	Agriculture Regional Exports (\$m)	Manufacturing Regional Exports (\$m)	TOTAL Regional Exports (\$m)
Balranald	216.9	15	66	7	105
Buloke	624.1	18	184	20	251
Gannawarra	1,077.1	37	253	56	440
Mildura	5,981.5	307	532	612	1,817
Murray River	1,327.4	143	268	126	562
Swan Hill	2,539.8	102	379	301	873
Wentworth	993.9	48	199	184	589
CENTRAL MURRAY REGION	\$12,760.7m	\$670m			

The region's economy⁶ is substantially based on agriculture, contributing 18.4% (\$2.35 billion) of the Central Murray Region's \$12.761 billion total output. After agriculture, the main industry sectors are manufacturing (15.8%), particularly in relation to food processing, then construction (10.9%) and service provision.

As shown in Table 2⁷, Mildura Rural City contributes nearly half (46.9%) of the region's total output, followed by Swan Hill Rural City (19.9%) and Murray River Council (10.4%). While manufacturing and other industries are concentrated in Mildura and Swan Hill, other towns such as Moama, Kerang, Cohuna, Wentworth, Balranald, Mathoura and Donald also act as employment/service hubs for the nearby rural areas.

The total value of tourism output for the region is \$670 million (5.2% of total output). Again, Mildura is largest in terms of share of the tourism value, with Murray River Council second with 21.4% of the tourism value and Swan Hill (15.3%) reflecting the infrastructure and services available at these locations.

Travel to the region has increased with more domestic and international visitors coming to the region to visit the iconic Murray River and nearby lakes and forests. National parks, including Lake Mungo, attract an estimated 30,000 visitors pa. Lake Tyrell has recently become a major drawcard for visitors from China and a Silo Art Trail has opened up in and around the Buloke Shire, following the innovative decoration of grain silos no longer in use.

The sum of all **exports**⁸ from each of Central Murray LGAs is \$4.67 billion. As seen in Table 2, the region is a major exporter of agricultural commodities. This includes broadacre crops, fruit and nuts, vegetables and livestock (see more detailed information in Figure 2 below).

Extractive industries are expected to have an important role to play in future. The region is home to significant sand and stone resources, including mineral sands, salt and gypsum. Mineral sands deposits in north Balranald are extensive and once mining commences, transport of product will require access to adequate bridge, road and rail infrastructure to get product to processing plant or port.

⁶ REMPLAN, *Ibid*, p7-9

⁷ REMPLAM, *Ibid* p7-9

⁸ Regional exports data is the value (\$) of goods exported outside the defined region that have been generated by businesses inside the region. It includes a portion of exports traded between Central Murray LGAs.

The region's climate and hours of sunshine are also encouraging investment in renewable energy, particularly solar generation of electricity. Projects are underway or identified in Mildura, Swan Hill, and several locations around Kerang.

The existing transport system underpins economic and social activities. Ongoing investment in transport infrastructure is needed to further support a growing regional economy, noting that such investment needs to be affordable in terms of the ongoing maintenance costs of existing assets including roads and bridges.

This strategy is designed to contribute to the objectives of the Victorian and NSW Regional and other Plans that include:

- Improve movement of freight ⁸ (LCRSP)
- Enhance road and rail freight links (Riverina Murray Regional Plan¹⁰ (RMRP)
- Identify and protect future transport corridors¹¹ (RMRP)
- Improve public and community transport services (Far West RP¹²)
- Improve public and private transport connectivity (LCRSP)¹³
- Secure investment in regional airport and aerodrome infrastructure (LCRSP)¹⁴
- Resolve cross-border issues and promote leadership and collaboration across our region (LCRSP)¹⁵
- Create a connected and competitive environment for cross-border communities (RMRP)¹⁶
- Better use of our rail freight assets¹⁷, including improving the efficiency and reducing the cost of rail access to the Port of Melbourne

⁹ Loddon Campaspe Regional Strategic Plan 2015-18, p9

¹⁰ Riverina Murray Regional Plan (RMRP) 2036, p42

¹¹ RMRP, Ibid, p46

¹² Far West Regional Plan (FWRP) 2036, p63

¹³ LCRSP, Ibid p9

¹⁴ LCRSP, Ibid, p9

¹⁵ LCRSP, Ibid p9

¹⁶ RMRP, Ibid, p51

¹⁷ Victorian Freight Plan 2018-50, 2018, p42

The Central Murray Region continues to attract new investment linked to agriculture, mining and renewable energy and a diverse range of jobs, a diversifying economy, capitalising on competitive advantages.

The strategy will create the enabling actions and initiatives linked to transport networks and infrastructure to help maximise the benefit to the region and each state.

Distribution of population and economic growth

The Loddon Mallee North Regional Growth Plan¹⁸ describes growth across the region as uneven, with modest growth projected for areas in and around the major centres and throughout the Murray River corridor, but with decreasing population projected for the dryland areas. This pattern is mirrored in the NSW component of the region.

According to the 2016 Census Journey to Work data, agriculture, forestry and fishing are the biggest employers in the region employing 17.6% of the workforce.

Mildura Rural City contributes nearly half the total workforce (48%) followed by Swan Hill Rural City (19.8%) and Murray River Council (9.7%). This is consistent with population patterns for the region. Some parts of the population are highly mobile – particularly seasonal workers in the horticulture industry and transient workers in mining and other industries.

According to the Loddon Mallee North Regional Growth Plan¹⁹, most people in the Victorian municipalities of the region live and work within their Local Government Area boundaries (Mildura 94%, Swan Hill 93%, Gannawarra 89% and Buloke 88%). Patterns in Balranald would be similar. Murray River and Wentworth Shires would be expected to have reasonable numbers of people working in the neighbouring large city centres of Echuca and Mildura respectively.

Transport linkages and corridors influence development in the region. Areas of high value horticulture and other irrigated agricultural land, major tourist destinations, mining and opportunities for new technologies such as solar energy generation influence the economy and investment.

¹⁸ Loddon Mallee North Regional Growth Plan, May 2014, p9

¹⁹ Ibid p68

Agricultural and horticultural overview

The economy of the region is dominated by a sector defined as 'agriculture, fisheries and forestry'.

Based on the 2017 figures provided in the REMPLAN report²⁰, of the \$2.35 billion of agriculture, fisheries and forestry output of the Central Murray Region:

- The largest sub-sector is 'Other Agriculture' at a value of \$1.1 billion. This sector comprises a wide range of agricultural commodities including the growing of grapes, olives, stone fruit, citrus fruit, other fruit and nut trees, vegetables, cotton, sugar cane, kiwi, berry fruit, floriculture, nursery production and others.
 - Mildura Rural City, with \$482 million, followed by Swan Hill Rural City (\$344 million) municipalities produce the majority of 'Other Agriculture'.
- 'Sheep, grains, beef and dairy cattle' are close behind with a contribution of \$1.0 billion toward total output for the Region.
 - For this sector, the majority is produced in Gannawarra Shire (\$242 million), closely followed by Murray River Shire (\$241 million).

Looking at data for agricultural exports and imports shows

- Exports from each Central Murray LGA is \$1.9 billion. Of this, Mildura generates \$530 million, Swan Hill \$377 million followed by Murray River \$267m and Gannawarra with \$252 million.
- Imports from each Central Murray LGA total \$0.6 billion

To examine the agricultural commodities produced in the Central Murray Region, the REMPLAN Report used the *ABS Agricultural Census 2015 to 2016* and due to the unavailability of agricultural commodity data for LGA geographies, Statistical Areas 2 data was used to approximate the Central Murray Region and its LGAs.

On this basis, the region produced²¹

- 1.7m tonnes of broadacre crops with wheat making up 57% of the total and barley 31%.
- 512,000 tonnes of hay and silage.

711,000 tonnes of fruit and nuts were produced, of which

- wine grapes comprise 48%
- other grapes were 18%.
- oranges were also significant at 13%
- almonds, at only 8% in 2015-16 are expected to increase markedly in all almond producing areas over future years when massive new almond tree plantings come into production. For example, industry sources advice to Mildura Regional Development is that almond production in 2018 is estimated at 80,000 tonnes. They estimated dried fruit production at 17,000 tonnes in 2018.

122,000 tonnes of vegetables were produced including -

- potatoes (35%)
- carrots (27%)
- melons (17%)

Livestock numbers for the region include -

- 2.3 million sheep/lambs
- 243,000 cattle of which 60% is destined for meat production and the remainder are for dairy.
- Around 7.2 million dozen eggs were produced 94.3% of which were free range

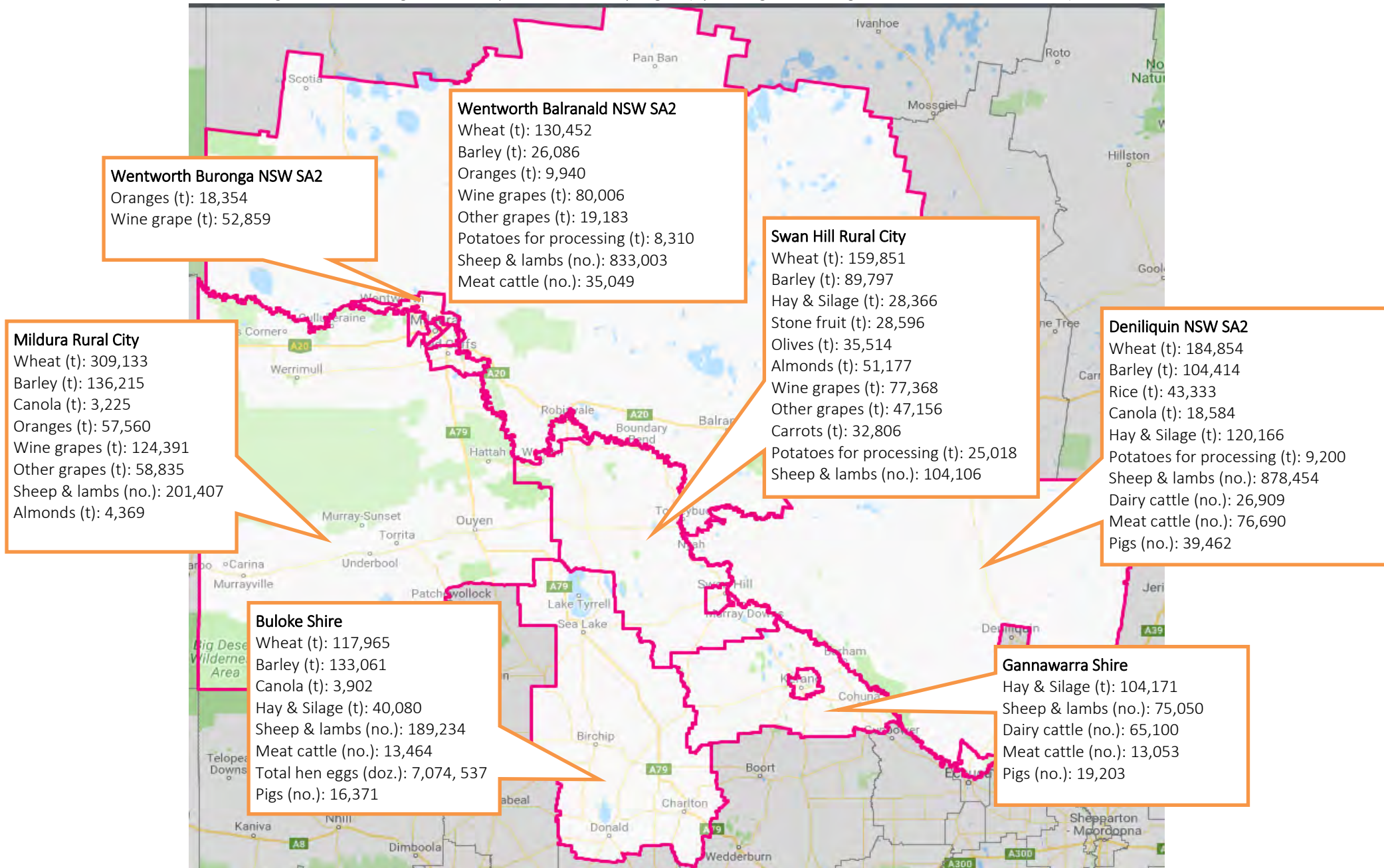
Figure 2²² shows the distribution of these products across the Central Murray Region.

²⁰ REMPLAN *Ibid*, p10-11

²¹ REMPLAN *Ibid*, p10-17

²² *Ibid*, p10-17

Figure 2: 2015-16 Agricultural output Central Murray Region (by SA2 region, showing correlation of LGA boundaries)



The Victorian Skills Commissioner²³ has described horticulture as the ‘cornerstone of the Region’s economy and is forecast to double over the next decade’. New plantings²⁴ have been approved or are underway for an estimated 15,000 ha of almonds, 3,000 ha of olives, 1,000 ha of table grapes, 1,500 ha of other commodities such as citrus, dried fruit, other nuts and stone fruit combined. Much of this activity is centred around Robinvale and Euston and along the Murray River on both sides of the border in either direction. GoFarm is also a new major investor in almond plantings in NSW and Victoria and has established its own nursery to propagate almond trees.

Between Swan Hill and Kerang, new crops are being introduced, eg Kilter Rural now grows tomatoes (trucked to Echuca for processing) and cotton. Intensive farming ventures including pigs and chickens in Gannawarra Shire, chicken in Buloke and a beef cattle feedlot in Mildura are estimated to provide an extra 60 jobs or more in the region.

The Swan Hill Regional Livestock Exchange continues to conduct cattle and sheep sales on alternate fortnights drawing on a large regional catchment that extends well into NSW. Many of the cattle are now brought from NSW in HPFVs that must cross the Murray River at Robinvale due to restrictions on the Swan Hill Bridge. Other saleyards serving the areas include Wycheproof, Ouyen, Kerang, Echuca, Bendigo and Deniliquin. Bendigo is the largest market for sheep while Echuca is the largest market for cattle.

In the dryland areas, wheat and barley continue to be produced in significant quantities along with oilseeds and legumes.

The deregulation of the wheat industry and the Murray Basin rail upgrade has provided the impetus for upgrade of some of the grain receival points from which product is railed to port in bulk and the rationalisation of others. Graincorp has announced plans to upgrade sites at Quambatook, Donald, Manangatang and Yelta. It has also led to the practice of storing of grain on farm in ‘sausages’ whereby the grain is held and marketed at a more favourable time and transported by truck (often a Higher Mass Load B-Double) to a receival point or direct to port.

Heavy vehicles are playing an increasing role in the wheat supply chain. Rice continues to be grown only in the Murray River Council.

Hay production is also significant, with much of it sold to third parties. New facilities for storage and transport of hay by container have also been

established, most recently at Ultima on the Manangatang rail line where Mallee Hay has located its facility ready for the shift to standard gauge in 2018. New manufacturing activities in the region related to food processing underway or planned include: expansion of abattoirs at Swan Hill and Mildura, application for a new \$40m almond cracking plant at Wemen, further expansion at the Lamattina Carrots, an \$80m investment in a Mildura Winery (Weilong Wines) and the construction of an almond processing and co-generation power plant by Select Harvest at Carina West.

Mining

Iluka Resources Limited (Iluka) has proposed to develop a mineral sands mine in south-western NSW, known as the Balranald Mineral Sands Project. In its January 2016 Environmental Impact Statement, Iluka stated that the heavy mineral concentrate (HMC) would be transported by road to Victoria for processing at Hamilton and ilmenite would be transported by road to a proposed rail loading facility in Manangatang, and then railed to Victorian ports. This would require a large number of heavy truck movements. The project is still under consideration and has not proceeded as quickly as previously envisaged.

The Cristal mine 80km north of Balranald is also under development and consists of six million tonnes of heavy material to be concentrated and processed. Cristal has a mineral separation plant at Broken Hill, so truck movements of product are in a northerly direction. However, anecdotally many of the workers live in Mildura and travel to the mine each week, over roads that are not all weather proof.

Cristal also operates three mineral sands mines in Wentworth Shire, and Relentless Mines are also examining possible mineral sands operations near Wentworth.

Quarries are also located across the Central Murray Region including Arumpo Bentonite, Morello Gypsum and Organic Manures at Buronga, Hanson Quarries at Mildura, Lipps Fertilisers at Kerang, Mawsons quarries at Lake Boga, Lake Cooper, Mildura, Broken Hill, Berrigan and Buronga (sand). There is also a gypsum mine operating 12 km north of Balranald.

Solar power generation

The region’s climate and many hours of sunshine make it well suited to solar energy generation. In terms of large scale projects, new solar farm developments are under construction near Kerang, at Swan Hill, Bannerton and Merbein. There is also a proposal for the Sunraysia Solar Farm at Kyalite.

²³ Victorian Skills Commissioner 2017 Report, p31

²⁴ VSC Contact, Glenn Stewart, private communication

Freight transport and emerging trends

The main freight routes for the Central Murray Region are shown below in Figure 3.

The emerging transport issues from the consultation and research undertaken can be summarised as follows:

- Increasing pressure for Higher Productivity Freight Vehicles from farm gate to processing facility/market/port with consequences for local and State roads.
- A-triple road train vehicles have been introduced in southern NSW and in northern Victoria (currently restricted to north of Ouyen) to cater for industry demands (eg carrots, tomatoes, livestock etc). Extension of this to the ports of Melbourne and Geelong should be examined.
- The \$440m Murray Basin Rail project, currently underway to convert freight lines in Western Victoria to standard gauge, is designed to increase delivery of grain and other products to port by rail, therefore reducing heavy truck numbers on the roads. The completion of this project in full is a high priority.
- Increasing number of freight movements as agricultural land use changes and productivity increases, with associated increased transport demand.
- Pinch points on the main north-south road corridor, the Calder Highway, which carries freight originating from southern NSW and northern Victoria through the region to Melbourne, affect supply chain costs.
- Lack of suitable bridge crossings between Robinvale and Tocumwal to meet Higher Mass Load (HML) freight transport needs.
- East-west road network needs to support more efficient freight movements to processing facilities as well as a safe route for increasing tourist and passenger traffic.

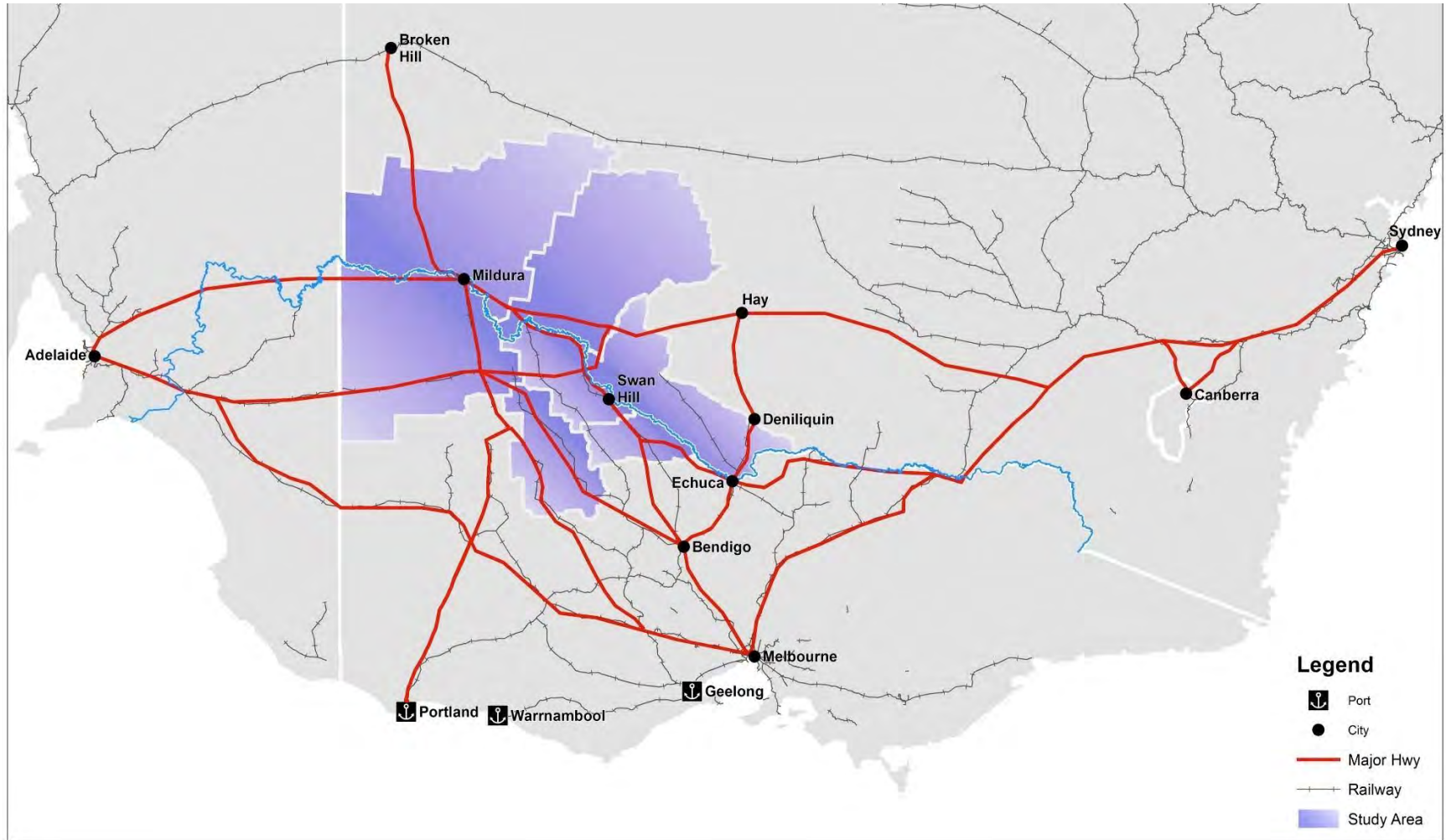
- Maintenance funding and road design standards need to cater to higher productivity freight vehicles and increased traffic on key freight routes.
- Improved supply chain costs will allow local producers to remain internationally competitive.
- Ongoing government and industry investment in rail and in freight hubs and opportunities for more efficient access to the ports.
- Increased complexity and demand for transport infrastructure network improvements in and around Mildura have highlighted the need for an Integrated Transport and Land Use Strategy for Mildura.
- Commence planning for possible connection to the Transcontinental Rail to provide access for freight to Darwin, Sydney and Adelaide ports.

Agriculture and horticulture industries continue to diversify and shift across the region and processing plants, abattoirs and storage facilities have been and continue to be built in close proximity to the respective industry centres to maximise efficiency in freight and logistics.

Internal movements between farms and storage or processing facilities tend to be over shorter distances but may occur in more compressed time frames to coincide with harvest periods, leading to significant numbers of heavy vehicles accessing a small area over a short period, such as grain trucks accessing silos. Increasingly, farmers are storing grains on farm and transporting by HPFV truck to port or silo when market prices are favourable, with adverse consequences to local roads, particularly in wet conditions.

In the longer term, there was support by industry and Councils for an investigation of the feasibility of a rail link from Mildura to the Intercontinental Rail line, combined with an additional bridge crossing, intermodal facility and truck bypass, to connect to port opportunities in the north, east and west.

Figure 3: Major road and rail transport routes in the Central Murray Region.



Importance of Calder and Sturt Corridors and regional highways

The two key freight routes for the region identified nationally are the Calder and the Sturt Highways with the Mallee and Silver City Highways recognised as secondary cross border road connections. The Murray Valley Highway in the north of Victoria is also important in enabling efficient freight movement and is the key tourism spine for the region. The Sunraysia Highway running north-south in the west of Victoria and the Cobb Highway from Hay to Echuca/Moama are also significant.

The Calder Highway is the region's most important single transport link between Mildura and Melbourne, carrying produce from NSW and north western Victoria to domestic markets in Melbourne and to Ports of Melbourne, Portland and Geelong. Identified improvements needed along this corridor include: duplication and additional passing lanes at northern end; intersection improvements at the turn onto the Calder Alternative at Marong and at 'Y' intersections (dangerous for larger freight vehicles); and an upgrade of the bridges at Keilor and at Bridgewater to handle Higher Mass Limit (HML) vehicles of at least 72 tonnes. The Calder Alternative between Ravenswood and Marong also requires improvement to cater safely for growing HPFV demands.

Similarly, the Sturt Highway is the major east-west corridor for traffic from Sydney to Adelaide and regions such as the Barossa and Riverland. The route is used extensively by freight transporters and tourists. Issues identified during consultation include need for passing lanes in NSW (eg between Euston and Gol Gol) and in Victoria, the need for more rest stops, and difficult heavy vehicle movements at the Euston roundabout and at the 90 degree turn from the Sturt Highway northward through Ivanhoe in middle of Balranald Township.

Upgrade of the rail freight network

The Central Murray Region is fortunate that freight can be transported to processing and market via rail as well as road. The \$440m Murray Basin Rail project is currently under construction, converting freight lines in western Victoria from broad to standard gauge and upgrading the axle loadings from 19 to 21 tonnes, for all except the Murrayville line. Also planned is the re-opening and upgrade of the existing unused standard gauge connection between Maryborough and Ararat, which will allow connection by rail from the north to the port of Portland.

The improvements are expected to allow increased train speeds thus reducing cycle times and increasing rail exports to the three Victorian ports of Melbourne, Geelong and Portland. 20,000 fewer truck trips to these ports was an identified benefit of this project.

These rail improvements were a major focus of the Central Murray Regional Transport Forum and were included in the top priorities for the 2014 Draft Transport Plan for the region.

Future work on the rail lines, as identified by the freight industry, focused on additional upgrades to the lines including more passing loops to allow for longer trains (moving from 48 to at least 60 unit trains) and improved signalling and scheduling to allow more services per day.

Improved Murray River crossings

At this time there are no crossings over the Murray River between Euston-Robinvale and Tocumwal rated to take HML freight vehicles. A second bridge is under construction at Echuca/Moama that will have this capability when completed in 2021-22. Trends for increasing use of HML vehicles for efficient freight transport is being constrained at the crossings in the centre of the region because of the need to break down loads at these crossings or to travel much greater distances to cross elsewhere. The extra time required impacts on supply chain costs for the region. The width restriction on the Swan Hill Bridge has also created barriers to the movement of oversize agricultural equipment.

The next bridges for renewal on the Murray are the Swan Hill Bridge (almost 120 years' old, single lane, current width restriction of 3.1m and in rapidly deteriorating condition) and the Tooleybuc Bridge. These bridges have been identified as the top short term priorities under the *Murray River Crossings Investment Priority Assessment, 2018* and by the Murray River Group of Councils as well as by each municipality – Swan Hill, Balranald and Murray River Councils. Some studies have been completed on both sites to examine suitable locations for a new or enhanced bridge. While the Tooleybuc proposed alignment has been generally supported, there is still debate on the proposed location for Swan Hill.

The Barham Koondrook Bridge is also undergoing a major refurbishment in 2018 but will not be Higher Mass Limit rated. While local freight transporters have sought an increase in the rating of the Nyah Bridge to HML status, NSW Roads and Maritime Services has indicated the bridge design does not cater for this higher level of loading.

Freight transporters operating around Mildura and Wentworth, supported by their local councils, have emphasised the need to plan for a second Murray crossing at or near Mildura to cope with the growing population and conflict between urban passenger traffic and large-scale freight traffic movement on the Sturt Highway. Further investigation is required to assess this need and to look at suitable locations including a possible crossing at Karadoc to the east or at Coomealla to the west.

Mildura – Integrated Transport and Land Use Strategy

Mildura is by far the region's largest centre with a population of around 55,000 when including Irymple, Red Cliffs and Merbein) which has been projected by the Department of Transport, Planning and Local Infrastructure to increase to 60,000 by 2030. It also has an expanding agricultural sector and manufacturing growth to support it as well as an extensive service sector. It is a major freight hub for the region. Mildura is the only regional city without a passenger rail service which this strategy has identified this as a high priority to be addressed. Mildura's airport and aerodrome have recently been upgraded substantially, creating the possibility of international passenger and freight flights in the future, if appropriate volumes are available in both directions.

To plan for Mildura's expanded needs, it is proposed that an Integrated Transport and Land Use Strategy be developed for Mildura that will address current needs including strengthening transport routes and links within Mildura and to other centres, identifying locations for future needs such as a second crossing of the Murray and links to truck bypass, rail and intermodal facilities. Once identified, consideration should be given to reserving these sites for future investment. There has also been interest shown in the longer term of a rail link from Mildura to the Intercontinental Rail Line at Broken Hill or Menindee.

Potential for enhanced intermodal facilities

Completion of the Murray Basin Rail project together with the ongoing expansion of agricultural and horticultural products in the region, would provide the opportunity for increased rail transport of freight and enhanced services from existing and/or new intermodal terminals. The enhanced use of an improved and efficient rail freight system is strongly supported.

Currently, the Merbein Intermodal Terminal, operated by Wakefields, runs a train to Melbourne three days a week and is the main service provider in

the region. A small intermodal also operates at Donald which adds a number of wagons to the Mildura train.

While works on the Mildura rail line were being undertaken, an intermodal facility was set up in Manangatang by Wakefields. This facility will continue to be available for five years to anyone wanting to access it. Mallee Hay/Entegra in association with Qube has also established a hay processing site at Ultima and plans to rail hay and other product by container on the new standard gauge line.

A previous study in Victoria of possible intermodal locations²⁵ identified possible locations at Ouyen on the Mildura line, Sea Lake and Dumosa on the Kulwin line and Manangatang, Ultima and Quambatook on the Manangatang line. The freight industry in Mildura has also spoken of other possible sites on the Mildura line.

Improved rail freight lines and more intermodal sites will also assist in downsizing loads from road trains to continue the journey to ports. It is recognised that any decision on a new or expanded intermodal service will be driven by private sector investors who see a good business case. To assist in planning and informing potential investors, it is proposed that a supply chain study be undertaken of intensive horticulture in the region that includes all the new almond, olive, carrot, etc. plantations, planned increase in processing facilities.

Identifying strategic HPFV routes from farm gate to processing or market (first mile/last mile upgrades)

There is an increasing trend for farmers to use more efficient freight vehicles to reduce supply chain costs. This means using higher productivity or higher mass limit vehicles – often via a contracted transporter. There are differences across municipalities in the way each has identified and issued permits for HPFV routes, particularly on minor local roads where HPFV trucks are increasingly been used to transport grain from on farm storage to either ports or receival points. Changes to legislation, placing responsibility on the farmer for the actions of the transporter, has placed this issue high on the agenda, particularly in the Swan Hill municipality.

The region currently does not have a clearly defined high productivity freight vehicle network, from farm gate to processing plant, port or market that encompasses the whole of the region. Developing a network for HPFV vehicles that links across council boundaries and with the Victorian and NSW arterial road networks is identified as a key priority for this strategy. The creation of a dedicated fund to upgrade these roads, once identified, is strongly supported.

²⁵ *Central Murray Region: Intermodal Opportunities Draft Report, 2014*, Opus in ass'n with SGS.

A high-level freight network has been developed as part of this strategy. However, further work is required to refine this network. The CMR Transport Forum and Technical Committee will continue working with industry to identify the physical, regulatory and other barriers to improved freight operations and opportunities to improve regional freight efficiency. Efforts will be made to harmonise standards for freight routes, mindful of the cross-border nature of the region and the challenges that brings.

Heavy vehicle access to irrigated farms over culverts and bridges

The bridge structures/culverts in the irrigated parts of the region provide a significant challenge for freight planning, route selection and 'freight from farm gate'. There is a lack of data in some areas on the ability of irrigation channel bridges and culverts to carry HPFVs. This restricts the ability of councils to open up additional B-double routes. Already identified as a priority under the Loddon Campaspe Integrated Transport Strategy, a study of this has been undertaken for the Goulburn Murray Irrigation District (GMID) in Victoria, including the municipalities of Swan Hill Rural City and Gannawarra. The opportunity exists to extend this work to Mildura and the three NSW Shires of Wentworth, Balranald and Murray Bridge to gain similar information for their Shires.

Maintenance

The gaps in maintenance or replacement of aging infrastructure pose a challenge to the region for State and local government roads. Councils, particularly the smaller shires, are struggling to fund the maintenance required to maintain all of their roads at an appropriate standard. Assessment of ongoing and shifting need is being undertaken.

Similarly, this study has highlighted problems on a number of State roads that need to be addressed and prioritised in terms of utilising the resources available. Stressed pavements across the network are rapidly losing strength and more investment in rebuilding existing pavements is needed. Increased funding for C-class Victorian roads has been identified as a key gap.

The further identification and prioritisation of key freight routes and problem areas on these routes will assist with in allocating resources to best possible use.

Air services

There is a well developed commercial **passenger air service** operating from Mildura only. A recent \$50m investment in capital improvements to the runway and terminal have made Mildura suitable to land larger planes, including 737s and A320s. Further suggestions raised included scoping the possible introduction of international flights, eg from New Zealand, although the requirement to ensure payload certainty (140 passengers each way) was regarded as limiting at this time. The need for improvements or upgrades to small aerodromes in Swan Hill, Gannawarra, Buloke, Balranald, Wentworth and Murray River Shires was also identified as priorities by the respective Councils.

There is currently very limited movement of freight by air from the region, with a few flights making special deliveries of early season perishable products mainly from Mildura. The planes used for current passenger services to the Mildura are not configured to take large loads of freight so dedicated freight services would be the most likely feasible option.

To develop and maintain a viable **air freight service**- – whether to domestic or international destination(s) - the region would need to be able to provide sufficient volumes of high value product on a regular basis to make air freighting out of the region economic and a payload for travel into the region would also be required. Mildura airport would be the most suitable for the air freight task.

Ongoing monitoring of demand and future investigation of options is recommended at this stage.



Possible link to Transcontinental

The standardisation of the Mildura line provides the opportunity for an eventual interstate connection from Mildura to the 'Transcontinental' Rail Line. The Murray Basin Project (Aug 2015) Study explored such a possible link in the context of minerals deposits in south western NSW and also as a possible alternative through route between Melbourne and Perth. As envisaged at that time, construction of the line could have involved a deviation from Red Cliffs, south of the town of Mildura, which would eliminate many level crossings. The concept was not further investigated due to long-term nature of perceived future needs and uncertainty around the volumes of freight.

Further consideration of this long term project, should demand growth increase to required levels, would require agreements between NSW and Victoria, further detailed alignment planning, and the development of a concept design.

Other freight issues

In NSW a number of the towns such as Wentworth and Balranald have issues with freight traffic travelling through towns. At Balranald, a poorly executed 90 degree turn in the centre of town could be relocated to the edge of town to improve safety and reduce truck traffic. Similarly the roundabout at Euston needs to be improved for freight traffic.

Population movements across the region

Mildura, and to a lesser extent, Swan Hill, are experiencing population growth. However, many of the region's rural communities and those more remote to transport choices are experiencing declining populations.

The reasons for population decline are not unique to the region and revolve around increased scale of farming equipment, fewer workers needed on farm, rationalisation of services into larger centres, increased personal mobility allowing people to access goods and services further away, and increased preference for an urban lifestyle including improved access to education and health facilities.

Consequently, population is leaking from the smaller rural centres to the large centres and to the cities. Additional support is needed to ensure those people in smaller communities have access to the services they require to have a sustainable economy and lifestyle in the region.

While ultimately market forces will determine where growth and investment occurs, policy interventions that promote equity and prosperity across the region (e.g. with regard to transport), play an important role in ensuring ongoing access to employment, education and services from dispersed settlements. 'Improving public transport services for smaller communities through flexible and responsive non private travel options' (this is proposed to be further developed and is identified in strategy 5.1, Appendix A) and providing a highly efficient road system between communities will be important.



Transport Network Overview

The road transport network is underpinned by the two National transport corridors – the Calder and the Sturt highways.

The Calder road and rail corridor runs north south from Mildura to Melbourne and is the main transport corridor for the region. Upgrades to the Calder Freeway in the south and current work on the Mildura rail line, which runs close to the Calder, help support growth in the movement of freight and people along this important transport corridor. Further enhancements are underway and more are needed in the north of the corridor in particular.

The Sturt Highway provides a similar key role as the east-west spine across the top of the region from NSW into Victoria and then into South Australia.

Other key road links include the Murray Valley Highway, the main tourist corridor for the region and the Sunraysia Highway, which links to as Ballarat. To the north, the Silver City Highway links to the region Broken Hill and the Cobb Highway links the region to Deniliquin, Hay and connects to Sydney.

The Mallee Highway provides an alternate route to Adelaide and links to the Tooleybuc Bridge, which this strategy has identified as a priority for replacement, along with the Swan Hill Bridge.

Freight volumes on the network more than double during harvest seasons and mixing large numbers of trucks with commuter and tourist traffic is a safety concern, particularly on narrow country roads.

In the east of the region, improvements to the Bendigo passenger rail line have resulted in strong growth in patronage to and from Melbourne. Much needed upgrades of the Echuca and Swan Hill lines to Bendigo hub would support business, education, health, tourist and social needs for resident and visiting passengers.

This strategy seeks to help ensure that the transport network supports positive changes to the regional economy and encourages population growth or at least maintenance in the smaller centres.

Trends in transport network management

Regional transport groups are looking at developing whole-of-network supply chain mapping and functional classifications of networks for the main user groups: freight, commuter and tourist. This strategy proposes the region commence by looking at the functional classification of freight routes.

This process defines the priority network routes and operating standards for those routes and then enables identification of gaps in the network for prioritised investment to meet the agreed operating standard. This work supports business case and funding proposals for targeted investment on the transport network.

Once extended to tourism and community network functional classification, this whole-of-network classification would include road, rail, public and active transport networks. For example the journey from home to work could include cycling on a defined bike path to the train station, having good bike storage facilities at the station, taking the train to town and then walking on accessible and legible footpaths to get to work.

Functional classification and mapping

Development of the strategy has identified that the region progress development of a functional network classification and mapping for freight routes. The CMR Transport Forum Technical Committee would need to work with VicRoads and Roads and Maritime Services to progress this vital piece of work.

As a starting point and based on consultations with industry, tourist and community stakeholders and input from local council and the transport portfolios, draft Access Maps have been developed for freight and tourist access (see Figures 4 and 5)

These maps are a starting point to further refine and progress operating standards, gaps in the network and prioritised investment and supporting land use actions.

Opportunities to increase mode shift, (such as freight from road to rail, commuting by public and active transport rather than private car) are important should be explored as part of this project.

Figure 4: Freight Network

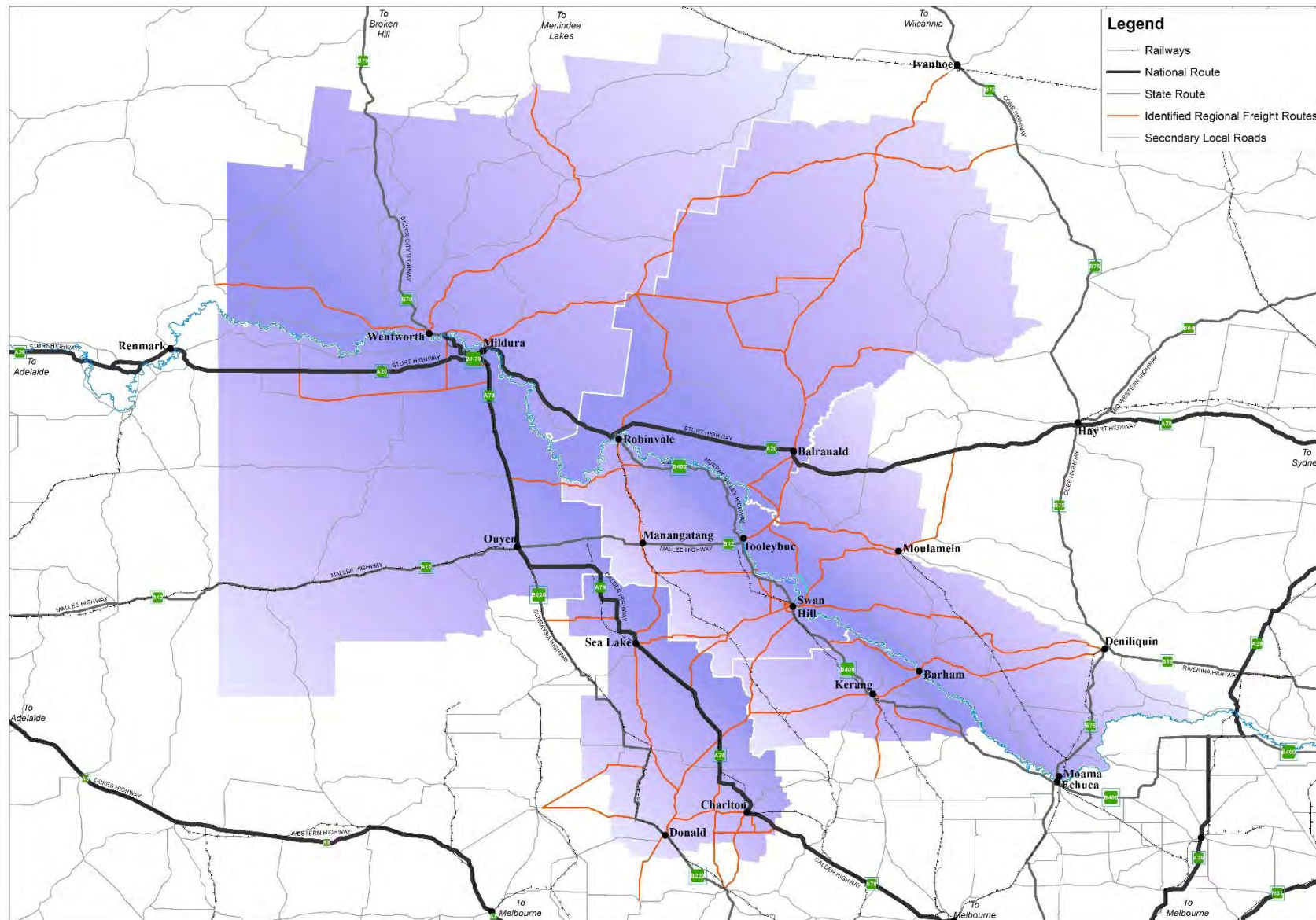
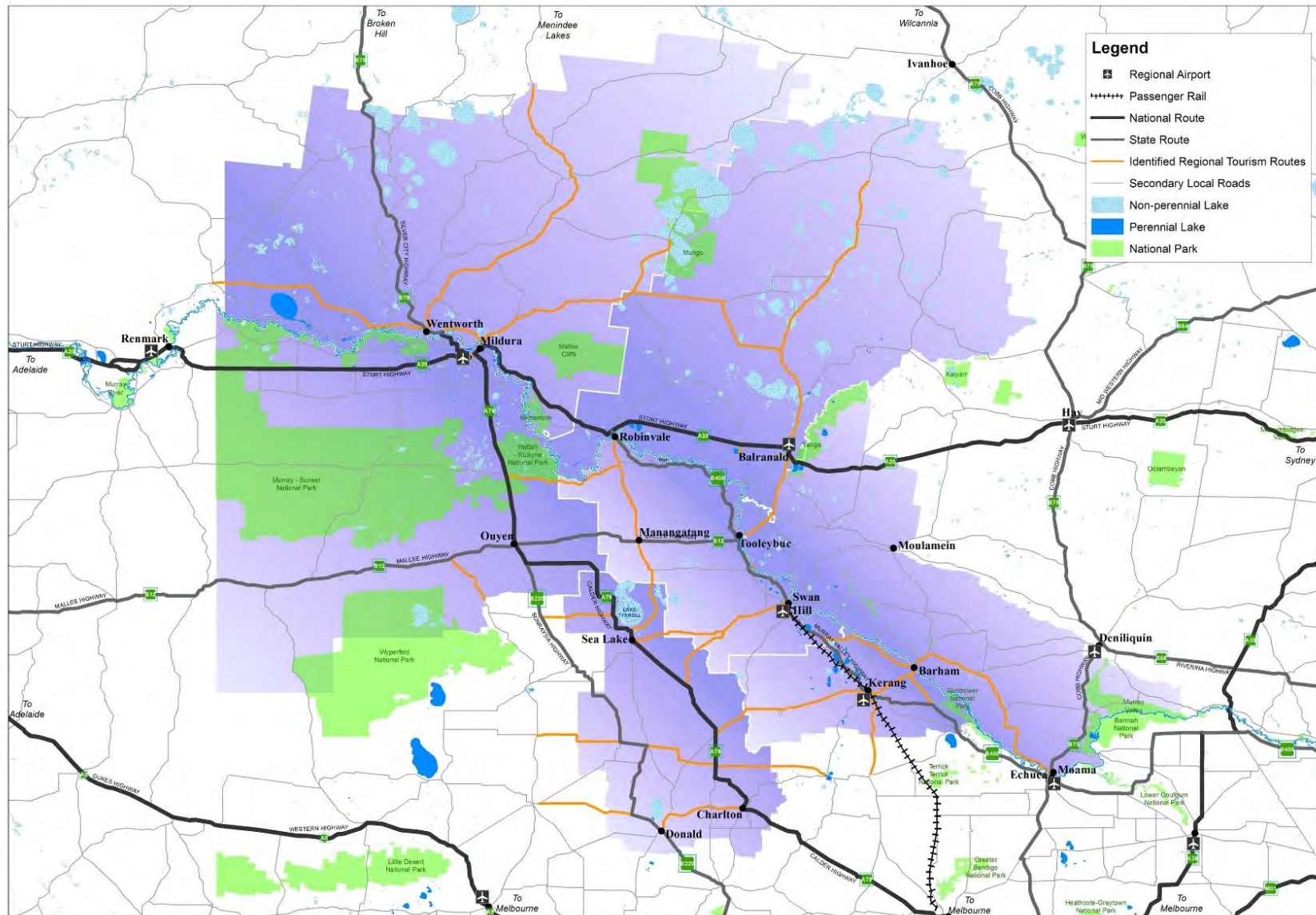


Figure 5: Tourist/Touring Network.



Project assessment and prioritisation

The development of this strategy has identified a range of potential projects, investigations and initiatives for consideration and further investigation.

A methodology has been established to assess and prioritise potential projects. The approach developed is an amalgam of two models – the Wimmera Mallee model and the Loddon-Campaspe ‘Infraplan’ model. The Central Murray Region Assessment Tool is to be used by the CMR Transport Forum and its Technical Committee to regularly review and progress this strategy and issues and opportunities that arise.

The CMR Assessment Tool contains criteria for scoring the following features:

- **Economic benefits** such as safety; freight industry aid; tourism enhancement; asset condition improvement; last mile access; cost benefit ratio; impact on travel etc.
- **Social benefits** such as access/connectivity; mobility; safety; active transport; improving life experiences.
- **Environmental benefits** such as noise impacts; air and water quality; solution builds in environmental protection; heritage impacts; indigenous site protection; protection of flora and fauna etc.
- **Other benefits** including links to regional and higher level strategies and plans; level of support; project readiness; strategy goals met and corridor benefit etc.

A matrix has been developed to assist in consistency of scoring. The remaining projects for prioritisation are being divided into:

- Bridges
 - Roads
 - Tourism
 - Public or local transport
 - Tracks, trails, air
-
- Rail

- Investigations.

The tool will be used to apply an evidence-based approach to strengthen the competitiveness and ability of projects and initiatives to be investment ready. Projects can be put forward by councils, individually or collectively, for funding via State and Federal government programs.

The CMR Assessment Tool has been used at a high level to determine the Top 15 Priorities for the region and at a more detailed level to assess other projects across the region. Some of the Top 15 Priorities have already undergone some level of investigation and prioritisation (such as the Swan Hill and Tooleybuc Bridges) and others are still at concept stage and require feasibility studies; while a few are close to shovel ready.

The CMR Assessment Tool (see Appendix B) will help ensure that funding proposals, whether for construction projects or studies, are highly competitive. Councils are encouraged to use the Assessment Tool at a council level to assist with prioritisation of local projects.



Governance

In 2010 the Central Murray Regional Transport Forum Steering Committee was established comprising high level representatives of the seven member Councils, assisted by Victorian and NSW State transport organisations, to identify and advocate for the transport needs of the region, such as the freight rail needs covered in the Murray Basin Rail project. The forum has recently strengthened its capacity by creating a Technical Committee of senior officers to undertake more detailed analysis and to commission and oversight reports to identify, articulate and provide supporting evidence on the regional transport priorities.

It is proposed that the existing governance structure (see Figure 6) be retained and regularly reviewed to ensure it remains fit for purpose. Opportunities exist, however, for improved collaboration and possibly joint projects with neighbouring regional transport bodies, particularly where common issues have been identified.

The ongoing successful implementation of the 2018 Central Murray Regional Transport Strategy will depend largely on leadership by the Transport Forum and the Technical Committee it has established.

The governance structure needs to ensure:

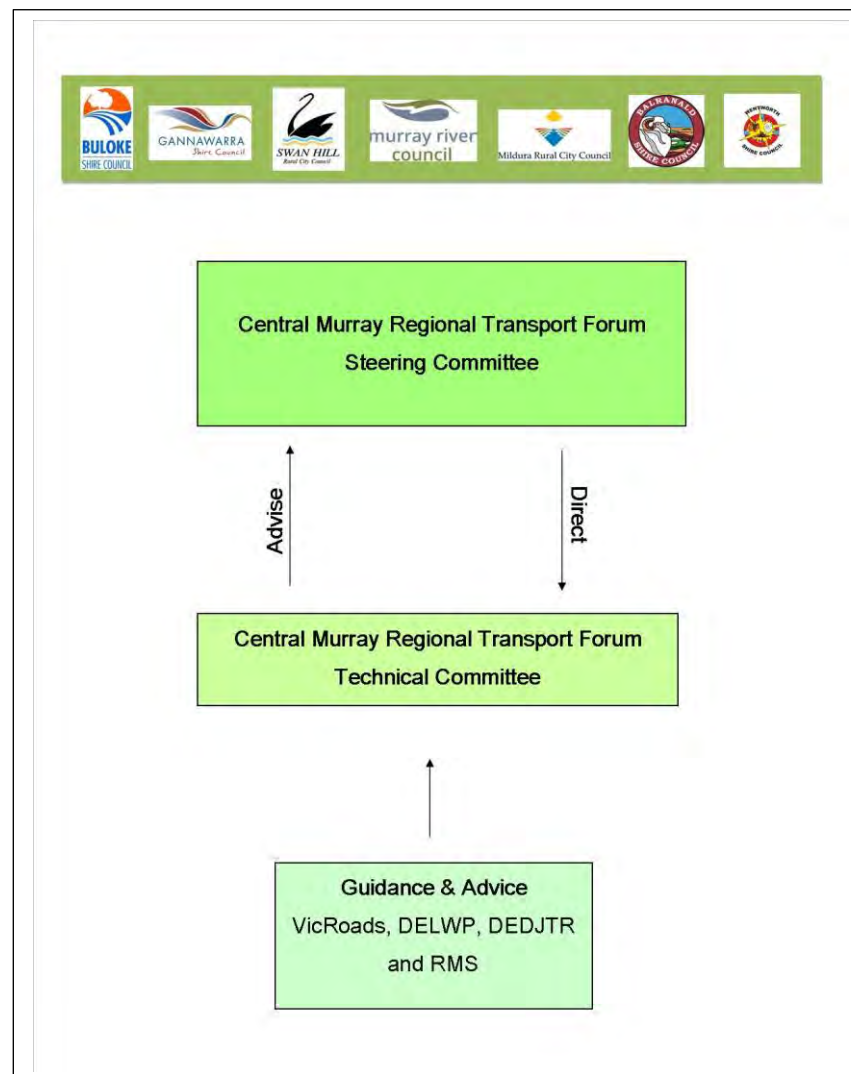
- commitment to a regional perspective and priorities continues
- regional decision-makers understand the objectives and priorities of the strategy, and collectively advocate these as a single region
- there is close alignment between this strategy and regional plans, with each influencing the other
- Strategy is reviewed and updated regularly so that it remains relevant to regional needs and to ensure ongoing commitment.

It is recommended that the forum:

- Annually review and update the strategy
- Meet annually with at least two key stakeholder groups (freight /business/community) to identify issues from a user perspective.
- Identify any new or additional regional priority projects and actions based on above process

- Assess regional and other priority projects using the CMR assessment tool using the methodology at Appendix B

Figure 6: Governance of Central Murray Region Transport Forum



Top 15 priorities

On the basis of consultation, assessment and links with existing regional and state priorities and strategies, the top 15 priorities (in no particular order) for the Central Murray Regional Transport Strategy have been developed and are listed below.

1. Murray Crossings - Swan Hill and Tooleybuc

Upgrading the current level of service provided by single lane bridges in poor and deteriorating condition at Swan Hill and Tooleybuc with 2 lane bridges capable of carrying higher mass load freight vehicles and oversize machinery between the two states is a high regional priority. Many freight vehicles are currently forced to use a longer route, or to drop a trailer and make multiple crossings or switch to a less efficient older-style truck to transfer product across these bridges.

The Swan Hill Bridge is almost 120 years old, it carries increasing levels of freight, as well as tourist and local traffic and has no pedestrian access. The Tooleybuc Bridge is 93 years old, is a strategic freight route from Sydney to Adelaide, connecting to the Mallee Highway in Victoria.

Construction of bridges providing the required level of service at Swan Hill Bridge and Tooleybuc Bridge will deliver improved efficiency and reliability for freight transport, including modern freight vehicles, and will improve safety, convenience and connectivity for all road users and pedestrians.

This Committee endorses the identification, in the *2018 Murray River Crossings Investment Priority Assessment* (by RMS and VicRoads), of the Swan Hill and Tooleybuc Bridges as the first two short-term priorities for investment in Murray River Crossings, particularly now that the new Echuca-Moama Bridge is under construction and the Barham/Koondrook Bridge is under repair.

2. Murray Basin Rail Project Completion

Underpinning this Transport Strategy and a key priority is the full completion of the Murray Basin Rail project to standardise and upgrade the entire Murray Basin freight rail network.

According to the business case, the increase in axle loading will allow higher volumes of product to be freighted by rail. This will allow trains to carry up to 500,000 more tonnes of grain each year and will capture approximately 20,000 journeys currently undertaken by trucks.

This strategy emphasises the importance of completing the Mildura and Murrayville lines to the standards specified and of undertaking the outstanding components of the project – the standardisation and upgrade of the Managatang and Kulwin lines to 21 tonnes axle loading - scheduled for 2018 but now deferred by the Victorian Government until 2020.

3. Freight route priorities (first/last mile)

Identify freight networks and priority routes, including last mile/first mile roads that require upgrading to Higher Productivity Freight Vehicle (HPFV) standard and provide a funding stream to upgrade these roads to the required standard.

For example, the growth of almond farms and other horticulture developments in the Robinvale area require a fit-for-purpose collector road to be constructed at Hattah Robinvale Road, which sits across both Mildura and Swan Hill municipalities.

Improved access and design for HPFVs including an increase in width and intersection treatment at Collins Road will allow safe and efficient freight movement between large developments and Highway connections. This project is a specific example of a first mile/last mile freight route priority.

4. Calder Highway corridor

The Calder Highway is the key transport corridor in the region and carries the highest traffic load from the north-west to Melbourne, including an increasing freight load to port and processing sites. Increased freight traffic carrying agricultural and horticultural product has resulted in more truck movements and increasing demand for larger vehicles to handle movement of inputs and products.

Consultations with the freight industry, councils and community members across the region highlighted that the Calder corridor requires duplication of lanes, more passing lanes, additional rest stops, intersection treatments (e.g. turning on to the Calder Alternative at Marong and 'Y' intersections), and an upgrade of the Keilor bridge to take higher mass vehicles. Prioritisation of the individual improvements may require a detailed analysis. Addressing the priorities on this critical corridor would allow the efficient movement of higher mass freight vehicles, thereby improving freight productivity and cycle times as well as increased safety and better management of car/truck/caravan conflicts on this route.

5. East West Highway connections

The Sturt Highway runs from the Hume Highway east of Wagga Wagga to the NSW/Victorian Border at Buronga. It is the major east-west link for all traffic travelling to/from Adelaide, providing a key port link for fruit growers in Sunraysia and the Riverland area of South Australia. It is also an alternate road route for export grain and livestock from western NSW and north west Victoria to Port Adelaide. Consultation and existing reports (eg RAMROC Regional Freight Transport Plan) identified priorities for upgrading including more passing lanes and the provision of rest stops (in NSW and Victoria) as well as road alignments at Euston roundabout and the 90 degree intersection in centre of Balranald.

The Murray Valley Highway (MVH) provides the road transport corridor along the river connecting towns in the east such as Wodonga, Yarrawonga and Echuca with the regional towns along the Victorian side of the Murray as far as Robinvale and then to Mildura via the Sturt Highway. It also closely links to the NSW riverside towns of Moama and Euston. It is used to freight viticulture and horticulture products, across and through the region to warehouses and distribution points in State capitals or across to Wodonga.

The MVH is also the main tourism spine for the Central Murray Region and the connecting point for a range of tourism loops for the region offering recreational, nature-based, cultural, eco and agri-tourism and heritage attractions which are receiving increasing levels of visitation including international visitors. The key improvements identified include pavement widening and shoulder sealing, more passing lanes (particularly north of Nyah), improved intersections and additional rest stops to allow truck and tourist traffic to pull off the road. These priorities would help reduce conflicts between freight/buses/caravans and cars to improve safety and travel time.

6. Mildura truck bypass

To allow the efficient movement of freight including higher mass freight vehicles in and around Mildura, the region, strongly supported by the freight industry, gives high priority to redesign and upgrade of the Mildura truck bypass.

Proposed improvements include to create left turning priority for trucks coming off the bridge; redesign Benetook Avenue roundabouts; and widening of Red Cliffs Meringur Rd (C254).

7. Tourist route development

Tourism is a growing contributor to the regional economy with a changing visitor market including an upsurge of young families coming to the region. Cars with boats, trailers caravans are now on the road year around. Almost 98% of visitors are travelling by private vehicle. The increased level of interest in the region is also being reflected in extra investment in caravan park facilities along the Murray River, including special facilities for children.

There is a keen interest from regional tourism bodies in making the 'Murray River Road' (i.e. the MVH) into an iconic route equal to the Great Ocean Road or Route 66 in the USA. Improvements needed to the Murray Valley Highway are listed above.

The tourism routes for the region are shown in Figure 7. Further refinement of the changing tourist needs and prioritisation of tourist routes for upgrading needs to be investigated. Priorities already identified include Mungo National Park, a key destination for tourists who must travel on roads that are not passable in wet weather. The sealing of Arumpo Road (detailed study already undertaken by Wentworth Shire) and of Marma Box Creek Road (Balranald Shire) will permit all weather access to this important site from both Mildura/Wentworth and Balranald Shires.

Emerging priorities for further consideration, as part of a regional assessment of priority tourist roads include the route to Lake Tyrell, now a favourite destination for international visitors from China, and the silo art trail in and around Buloke Shire. Sealing of the touring loop from Moama to Barham (Pericoota Road) has also been raised in consultations with tourists.

8. Supply chain study of horticulture developments

Consultations have identified the potential for more intermodal freight hubs to be developed to enable efficient freight movements utilising the upgraded rail lines to be developed under the Murray Basin Rail Project. To ascertain the details of the land use changes such as the new horticultural developments in the region and their transport needs, a supply chain study is proposed.

Such a study is estimated at around \$100,000 for a whole of transport supply chain including roads fit for purpose during peak harvest.

9. Swan Hill and Echuca passenger rail services

To meet economic, tourist and community demands, investment in capacity improvements on the Swan Hill and Echuca rail lines is needed in addition to upgrades on the Bendigo/Melbourne line.

Increased return passenger services daily (preferably five return services five days per week and weekend services) are necessary to support regional communities to access health education and legal services and employment opportunities. As a first step, an investigation to scope the works and costs required for the capacity improvements on the Swan Hill and Echuca lines is proposed. Actions include: upgrade signalling, upgrade level and pedestrian crossings, upgrade track works, additional crossing loops and increased number of services.

10. North West Passenger Transport Study

The lack of a passenger rail service to Mildura has been identified as a major gap in services to the regional city of Mildura and the wider catchment including the towns of St Arnaud, Donald and Ouyen. The only rail services to Mildura are currently provided via a V/Line service to Swan Hill with a connecting coach service to Robinvale and Mildura. The other option is a via a bus service from Mildura to Ballarat and then connecting with a V/Line service to Melbourne.

The north-west part of the region seeks access to transport options for small communities and disadvantaged community members to access health, education, employment, business and recreation opportunities at reasonable cost and convenience.

A regional future Passenger Transport Study will be undertaken for North West Victoria to provide an evidence-based argument to support the future transport needs of the community, including passenger rail, and covering social and economic drivers. This work is expected to lead to government investment in a more detailed business case.

11. Upgrade bridges and culverts, higher mass limit access study

This project is to review bridge and culvert load limits in the irrigation districts in the region (outside the Goulburn Murray Irrigation District (GMID)) with a view to prioritising those structures needed for primary producers to access processing facilities. Information on the carrying capacity of some irrigation

channel bridges and culverts to carry higher productivity vehicles is needed to support councils' ability to open up additional higher productivity vehicle routes. This project would build on a similar study by the Loddon Campaspe Transport Group of the bridges and culvert in the GMID (which included Swan Hill and Gannawarra) by the Loddon Campaspe Transport Group.

12. Tracks and trails – Murray River Adventure Trail

With tourism an important contributor to the regional economy, there is a need to develop and implement a strategic tracks and trails program across the region and link with other facilities or activities and public transport nodes to create an integrated, safe and accessible system for all road users. This priority includes aligning local council and transport portfolio activities to support access to transport hubs, e.g. through improved walking and cycling paths. The program includes improving pedestrian, bike and bus access networks, improved way-finding, lighting and amenity to improve the health of the community by encouraging active transport.

Priority walking and recreational bike networks for investment include Murray River Adventure Trail with priority projects such as Kerang Koondrook Rail Trail, Koondrook to Cohuna Forest Trail, Koondrook to Torrumbarry Trail and the Swan Hill to Lake Boga Active Trail.

13. Transport connections

The objective here is to ensure that people living in the region continue to have access to transport services and opportunities that meet their health and social needs whilst enabling living in place. The region seeks to investigate an increase in the frequency and scheduling of coach services connecting across the region to larger destinations such as Adelaide, Mildura, Sydney and Melbourne and stops at the smaller regional towns along these routes.

The strategy also identified the need to develop small towns' connectivity plans that improve coordination between transport planning, community planning and health. This includes improved access to and coordination of public and community transport and considers flexible and private transport options. The project also includes encouraging the use of active and accessible transport within small towns and builds on the Mallee Local Transport Options Paper (2017) which identified a baseline of current transport services.

14. Second bridge crossing for Mildura and Rail connection from Mildura to Transcontinental railway.

This strategy supports an investigation of a second bridge crossing near Mildura, possibly at Karadoc, to better connect agriculture, horticulture and mining in New South with southern markets and processing plants, to cater for growing urban populations in Buronga and Gol Gol, and to address increasing demand for transporting product using High Performance Freight Vehicles.

Interest was also expressed in the possibility of an interstate connection from Mildura to the 'Intercontinental' rail line at Menindee or Broken Hill. Another suggestion was Sayers Lake. Such a link would provide opportunities for freight connections to Darwin, an additional route to Adelaide from the region and connection to Sydney-Perth corridor. Future investment in such a project may be contingent on mining and other development opportunities in the region.

Ongoing monitoring and consideration of a second bridge and a new rail link to the 'Intercontinental' in the longer term is proposed as part of the strategic transport planning for this region.

Initially, this matter would take the form of an investigation into the feasibility and location of a second bridge in or around Mildura and related truck routes, intermodal facilities and new rail connections to the north.

15. Cross border advocacy

The strategy discussions highlighted frustrations by industry, councils and community members regarding inconsistencies in cross-border requirements. In a region where movement of heavy vehicles and machinery across the Murray River is a daily necessity, the differences in the heavy vehicle regulations particularly in relation to different truck weight allowances and configurations of high performance freight vehicles on each side of the border is impacting on the ease and efficiency of freight movement. Differences in driver's license fees and conditions (e.g. age of driver) were also highlighted by the freight industry.

With the appointment of the Victorian Cross-Boarder Commissioner, the CMR Transport Forum urges early consideration and resolution of these cross-jurisdictional transport related anomalies.



- End of Document -

Appendix A: Strategies and Actions

The goals, strategies and actions for this document were developed from priorities identified in consultation with the Central Murray Region Transport Forum, and through consultations across the region and desktop research, and also drawing from those identified in the Loddon Campaspe Integrated Transport Strategy.

The following goals were determined to underpin the strategy:

1. Promote and facilitate a transport network that supports regional economic development and population growth.
2. Support efficient and sustainable transport of products between producers, markets and nodes within the region and connecting to other destinations, domestic and international.
3. Improve the capacity and function of the transport network, and integrate it with Federal and State strategies, and with land use.
4. Manage the transport system so that it is maintained to a safe and affordable level of service.
5. Improve the transport connectivity of large and small communities to enhance access to services.
6. Support improved community health and environmental outcomes.

The strategy process has led to the above six goals, 18 strategies and 52 actions; 15 of which have been identified as high priority projects. Related council projects are being assessed against the CMR assessment tool described in Appendix B.

A priority list of projects, including investigations, will be developed by the Technical Committee using this methodology. This work was partially completed at the time of writing.

The roles of the seven councils, relevant NSW and Victorian State agencies and other bodies across the region in implementing or advocating for the various initiatives have been identified in an effort to assist in future resourcing and coordination.

Goal 1: Promote and facilitate a transport network that supports regional economic development and population growth.

The transport network is an enabler of regional growth and of sustaining the smaller communities. Transport constraints and opportunities must be considered if the region is to grow over time. Predictions of future population growth are centred mainly on Mildura with potential for modest growth in Swan Hill. An important objective of this strategy is to extend that future growth to some of the smaller towns and settlements.

The eastern parts of the region are more closely connected to the neighbouring regional city of Bendigo and to Moama's twin town, Echuca.

Improvements to the key highway corridors – the Calder, Sturt and Murray Valley highways – will help encourage investment and growth in locations with ease of access to these corridors.

Good transport connections of all forms together with an efficient freight network are critical to support growth across the region. In areas away from and connecting to these corridors, it is essential that transport systems are tailored to local needs to maintain the viability of rural businesses and small towns.

What are the strategic transport challenges in the region?

- A continuing expansion and changing of horticultural and agricultural production and processing businesses is occurring in irrigated areas along both sides of the Murray, e.g. at Robinvale and Euston and surrounds. Improving access from farms to processing areas and to key road and rail transport corridors and ports will improve business efficiency, reducing the cost of freight operations.
- The expansion and planned expansion of mineral sands mining in southern NSW with a need to access processing facilities in Victoria and South Australia and possibly elsewhere.

- The Murray crossings at Swan Hill and Tooleybuc are acting as pinch points obstructing free flowing HPFV freight and oversize farm equipment transport across the centre of the region. Replacement of these bridges to a standard able to accommodate Higher Mass Loads has been identified as a priority for the region.
- Other bridge structures/culverts in irrigated parts of the region provide a challenge for freight planning, route selection and 'freight from farm gate'. This restricts councils' ability to open up additional HML B-double routes.
- NSW and Victorian municipalities have issues, to varying degrees, with movement of freight traffic through towns.
- Many bridges in the region are in urgent need of repair and require State Governments' support to cover or supplement a generous portion of the cost.
- Passenger rail services to the region are not adequate. The Swan Hill rail service is popular but does not meet the needs of the catchment population who wish to utilise a more frequent, faster service. There is no passenger rail service to Mildura, the only regional city in Victoria to lack this service and one of the largest populated areas without a passenger rail service in Australia.
- Funds for sufficient investment in maintenance and management of existing road pavements.

What are the strategic regional opportunities developed through this strategy?

- The improvement of regional strategic transport links, particularly key road and rail corridors, will encourage and stimulate economic growth and encourage further investment by the transport sector in new automotive technology. Similarly, agriculture, food processing, tourism, mining and evolving new developments will have the support network they need to confidently invest in the region.
- Agreed prioritisation of strategic freight routes, mindful of changing agricultural and manufacturing investment patterns that will allow appropriate direction of scarce public funds to projects addressing the highest priority needs.
- The Murray Basin Rail project is currently converting rail lines in north-western Victoria to standard gauge and upgrading the lines to higher axle loadings for freight which will improve connectivity across the State and allow access to other competitors operating standard-gauge rolling stock.

- Mildura is the region's largest and most important centre and requires an overall strategic transport plan to articulate its transport infrastructure needs in detail such as truck bypasses, intermodal freight terminal expansion, future bridge crossings, public transport needs, passenger rail service, etc. There could also be opportunities to be realised from Mildura's upgraded air services in terms of additional freight and (possibly international) passenger services.
- The standardisation of the Mildura line also provides the opportunity for an eventual interstate freight connection from Mildura to the 'Transcontinental' Rail Line. While not pursued as part of the current Murray Basin Rail project due to cost and lack of identified demand, this possible long-term project could provide freight rail connections to Sydney, Darwin and an additional link to Perth if sufficient demand for movement of mining and or agricultural product occurred. Such a project, were it to proceed, would require agreements between NSW and Victoria, further detailed alignment planning, and the development of a concept design.
- Links to Bendigo, both road and rail, will continue to be important for the eastern part of the region given the massive infrastructure investment in Bendigo recently (in health, education and arts facilities). The Calder, Murray Valley and Loddon Valley highways and the Swan Hill and Echuca train services provide important strategic links to this key regional centre.

Goal 1	Desired strategy (10 year horizon)	Actions (5 year)	Priority	Major contributors	Council's role
S1.1	Develop and maintain an efficient freight network that meets regional business needs through identifying and removing barriers, addressing last mile needs and protecting networks in the longer term.	1. Partner with industry to identify physical, regulatory and other barriers to improved freight operations across all modes and opportunities to improve regional freight efficiency.	Medium	Councils VicRoads VicTrack	Facilitate Advocate
		2. Identify, prioritise and implement region-wide and multi-jurisdictional B-double and HPFV routes to support regional businesses, including connecting 'first mile/last mile' roads.	High	Councils VicRoads RMS	Lead
		3. Investigate development and use of an agreed functional classification for freight and other types of roads to apply consistent standards across Council boundaries.	High	Councils VicRoads RMS	Lead
		4. Undertake a supply chain analysis of new horticulture, mining and other major developments across the region to provide evidence for potential future road and rail freight hubs and access networks	Medium	Councils, Industry, DEDTJR, NSW Depts.	Facilitate
		5. Undertake a systematic review of bridge and culvert load limits in the non-GMID irrigation areas to identify bridge and culvert upgrade priorities that will improve freight access between farms and processing plants or markets.	High	Councils	Facilitate Advocate
		6. Develop and implement a priority program of bridge upgrades on local roads across the region based on high productivity, community safety and access considerations, inclusive of first and last mile needs, eg upgrade of Gee Gee Bridge, Noorong Road	Medium	VicRoads, RMS, Councils	Advocate
		7. Advocate for continuation of the Mode Shift Incentive Scheme to remove extra mode transfer costs at Melbourne port	High	Victorian Government	Advocate

Goal 1	Desired strategy (10 year horizon)	Actions (5 year)	Priority	Major contributors	Council's role
S1.2	Upgrade the rail network to meet increasing freight and passenger demand across the region and reduce load on the road network.	8. Support the full implementation of the Murray Basin Plan to standardise the rail freight network in western Victoria – including the standardisation and upgrade of Managatang and Kulwin lines - and advocate for further enhancements to improve safety and cycle times including additional crossing loops, improved signalling, etc.	High	PTV, DEDJTR and VLine	Advocate facilitate
		9. Investigate and implement capacity improvements on the Swan Hill and Echuca passenger rail lines and increase the number of services to meet regional needs.	High	PTV, DEDTJR and VLine	Advocate, facilitate
S1.3	Maintain transport assets at a fit for purpose standard by tailoring maintenance actions to cost effectively meet user needs.	9. Identify and implement upgrades and maintenance of council roads of regional or wide significance, based on use of the CMR assessment tool developed for regional application.	High	Councils	Lead
		10. Advocate that rail maintenance be adequate to operate freight and passenger trains at appropriate speeds and safety at all times of the year.	Low-Medium	VicTrack	Advocate
S1.4	Develop and maintain major inter-regional links to link the region with markets and social networks.	11. Implement improvements to the Calder corridor as the key transport corridor in the region, including duplication, passing lanes, rest stops, bridge and intersection treatments.	High	VicRoads	Advocate
		12. Improve the Sturt, Sunraysia, and Murray Valley highways as key transport corridors carrying freight, tourism and general traffic across the region.	High	VicRoads, RMS Councils	Advocate
		13. Improve the capacity and safety of remaining highways and inter-regional roads that link the region's major centres and joins the region to the rest of Australia.	High	VicRoads, RMS Councils	Advocate Lead
		14. North West Passenger Transport Study.	High	PTV, DEDTJR, VLine	Advocate

Goal 2: Support efficient and sustainable transport of products between producers, markets and nodes within the region and connecting to other destinations, domestic and international.

The horticulture industry has become the region's largest growth sectors and is expected to continue to grow significantly over the next decade, with the Victorian Skills Commissioner predicting that it will double over that period in the four Victorian municipalities in the Central Murray Region.

Mining of mineral sands, although not proceeding at its predicted rate, is still a strong prospect for the regional economy with potential to impact on the transport network – on bridges, road and rail.

Maintaining a current understanding of transport supply chains for new and emerging developments and transport node needs are important to assist both business and government to plan ahead in moving product to processing and market destinations, domestic and international.

Barriers to smooth and efficient freight movements need to be addressed, including river crossings across the region. Key transport corridors within the region – such as the Calder, Sturt and Murray Valley highways – need to be upgraded to ensure the region has good connections not only with Melbourne, but also with other parts of the two states and with interstate needs.

What are the strategic transport challenges in the region?

- Growth in regional production is increasing load on the freight network and corridors.
- There is increasing shift to the use of high productivity freight vehicles (HPFVs), e.g. A-Triples, AB-Triples to improve productivity of operations.
- Changing agricultural practices, for example, rise in 'on farm' storage of grain and consolidation of activities on farm has led to a tension between aspirations of producers to have higher mass limit vehicles pick up product on farm and the asset of local and state roads.
- B-doubles are using narrow sealed and unsealed roads with insufficient shoulders and sharing with commuter and tourist traffic.
- Lack of continuity of freight vehicle permit classifications across council and State borders.
- Bridge capacity limits HPFV access at major crossings on the Murray and on bridges and culverts within the region. Many low capacity bridges are on local roads and impact on 'last mile' efficiency, councils have limited funds for upgrading.
- Local amenity of town centres can be compromised by freight and other movements through the centres of towns (e.g. Balranald).
- Interstate freight travel is made inefficient as different states have different rules/costs. Currently there is a requirement to break up loads on State borders due to different rules re truck configurations, weights or load restrictions on bridges.
- Impact of national shortage of truck drivers, increasing regulatory requirements and possible future changes to basis for truck registrations are likely to increase cost of road transport putting additional pressure on the shift to more efficient higher mass vehicles.

What are the strategic regional opportunities developed through this strategy?

- The potential of rail freight improvements, currently being implemented under the Murray Basin Rail project to be a viable alternative to road freight, needs to be harnessed through further rail upgrades, improved intermodal facilities and improved access roads to intermodal sites.
- Provision of access for higher productivity vehicles to farms and industry at a local road level will improve operational productivity across the region. This could be through a combination of timely asset renewal, upgrades of unsealed roads, intersection improvements and bridge/culvert widening/strengthening, overtaking opportunities and rest areas.
- Facilitation of new vehicle technologies in the region by council actions can improve the efficiency of supply chain logistics, and support development of a transport network that is responsive to industry needs.
- Changes in agriculture, horticulture and manufacturing practices have seen greater concentration of activities in particular parts of the region, such as almond production and processing on both sides of the Murray, and wine grapes around Robinvale and Euston. An examination of the logistics chains of the new developments will assist in identifying opportunities for more use of rail for freight delivery via possible enhanced or additional intermodal facilities to complement road transport options.

Goal 2	Desired strategy (10 year)	Actions (5 year)	Priority	Major contributors	Council's role
S2.1	Ensure the region has effective and efficient regional freight links within the region and to external markets.	15. Replace Swan Hill Bridge to improve freight efficiency and access.	High	RMS, VicRoads Councils	Advocate Facilitate
		16. Replace Tooleybuc Bridge to improve freight efficiency and access.	High	RMS, VicRoads Councils	Advocate Facilitate
		17. Investigate adopting a consistent regional wide freight network and hierarchy.	High	Councils	Lead
		18. Upgrade Mildura Truck bypass to reduce volume of higher mass and general freight from city centre by improving bypass route from bridge and along Benetook Avenue and on to Meridian Road.	High	VicRoads, Council	Facilitate
		19. Advocate for a Cross Border Commissioner for Victoria to facilitate harmonisation of those regulations that cause inefficiencies in freight movement between the States.	High	Councils, freight operators	Advocacy
		20. Identify the impact of changing vehicle and fleet characteristics and regulations on rural roads (to determine if local roads are fit for purpose for increasingly larger vehicles).	Medium	VicRoads, RMS, DEDTJR, Industry, Councils, freight operators	Advocate, Facilitate
		S2.2	Encourage and develop integrated logistics chains that serve regional business needs.	21. Based on a supply chain study of major new developments, identify high potential future rail/road intermodal sites and consider need to protect these sites.	High
22. Use opportunities offered by heavy vehicle regulatory reform initiatives to better position the region to facilitate the efficient movement of freight.	Low			VicRoads, Council, freight operators	Advocate, Facilitate
23. Share knowledge between Councils, DEDJTR, VicRoads and Industry to improve freight transport decision making.	High			Councils, freight, business operators, VicRoads	Facilitate

Goal 3: Improve the capacity and function of the transport network, and integrate it with Federal and State strategies, and land use.

To support sustainable growth, land use planning must be undertaken alongside transport planning to increase opportunities for choice in transport modes. There are a number of options to improve the capacity and functioning of the transport network as development occurs in key areas. It is important to ensure the operation of major state and regional infrastructure, including highways, railways, airports, communication networks, is not adversely affected by development.

What are the strategic transport challenges in the region?

- Bus services do not necessarily align with current needs in terms of availability, frequency and timing.
- Limited train passenger services from Swan Hill to Bendigo and Melbourne, and no passenger rail service from Mildura to Melbourne. There are no NSW passenger rail services available in the region.
- Land use planning decisions can build in future land use/transport conflicts that will cost the community economically and socially, and build in unnecessary challenges.
- There is likely to be increasing conflict between increasing and larger scale freight traffic volumes passing through towns, parking and pedestrian movements that will lead to safety and amenity concerns.

What are the strategic regional opportunities developed through this strategy?

- Development of land use plans alongside transport plans will support sustainable growth, improve the quality of life in the region and increase choice in transport modes. There are options to improve the capacity and functioning of the transport network as development occurs in key areas including the regional city of Mildura and along the Murray corridor.
- The operation of major state and regional infrastructure, including highways, railways, airports, communication networks, will not be adversely affected by urban development. In planning for the future, land use and planning opportunities would account for transport needs such as additional bridge crossings, rail lines, truck bypasses and road widening.
- Build in network resilience and risk management in areas that are subject to major risks, such as flooding.
- Public transport services will better match travel needs.
- The amenity, safety and attractiveness of smaller towns can be improved through sensitive management of through routes, selective use of town bypasses and urban design. This can benefit both residents and tourists visiting the area.
- Transport services responding to emerging needs:
 - To support the potential for higher rail line speeds between Swan Hill and Bendigo, land that may be required for future track realignments or passing loops would need to be protected.
 - In the longer term, identify and reserve land in NSW that may be required for the interstate connection from Mildura to the 'Intercontinental' rail line.

Goal 3	Desired strategy (10 year)	Actions (5 year)	Priority	Major contributors	Council's role
S3.1	Manage the interface between land use and transport so that both systems operate effectively	24. Identify opportunities for improving the amenity and safety of main streets of towns with major through traffic routes or significant tourism parking.	High	Councils, VicRoads RMS	Lead
		25. Develop access management strategies or bypass strategies for town access routes linked to road function and land use.	High	Councils, VicRoads, RMS	Lead
		26. Design industrial areas and their transport networks so that they are integrated within other land uses and transport activities.	Medium	Councils.	Lead
		27. Develop principles and designs for the improved management of through traffic in small towns.	Medium	Councils	Lead
S3.2	Improve public transport services to better meet market needs by improving service standards and supporting sustainable transport alternatives.	28. Implement the Railway Station Access Improvement Program to meet DDA compliance.	High	PTV Councils.	Advocate
		29. Review rural bus routes to ensure that they match current and emerging passenger needs and connections	Medium	PTV Councils	Advocate
		30. Improve physical and timetabling integration between rail stations and bus hubs to improve to the efficiency and comfort of interchanges.	Medium	PTV Councils	Advocate
		31. In urban areas, develop station precincts to maximise activity and integrate with other forms of travel such as bikes.	Medium	Councils PTV	Facilitate
		32. Call for Victorian Cross Border Commissioner to help address cross-border inconsistencies that create inefficiencies for the region, particularly in the areas of heavy vehicle rules (weights and configurations of freight vehicles) and driver's licenses.			

Goal 4: Manage the transport system so that it is maintained to a safe and affordable level of service.

The Central Murray transport network provides an essential link for communities to operate their businesses, access services, and engage in recreation and tourism activities as well as providing a path for through freight and tourism traffic. Given the distances involved and the volumes of freight traffic which use it, the network must be well constructed and maintained in a safe and useable condition.

It is now critical to ensure that funds are spent where they will do the most good. This can be facilitated by putting greater focus on the identification of priority routes that should be improved and matching road standards with the role of each road. This will allow resources to be focused on areas where the best returns will occur.

What are the strategic transport challenges in the region?

- Completing the Murray Basin Rail project and realising the benefits that were identified in the business case, such as increased speed to 80kmph and 20,000 fewer truck movements per annum. The standard gauge Mildura line has been constructed but trains remain restricted in number and speed, until the new rail line work settles in. The Manangatang and Kulwin rail lines are due to be upgraded in 2018.
- Councils do not have the authority to police load limits but they carry the cost of damage from overloaded vehicles.
- Chain of responsibility laws will come into effect on 1 July 2018 that will put the onus on farmers to ensure that freight movements from their farm comply with regulations.
- Safety is a concern on highways and on local roads, particularly where there is a mix of users – pavement width, pavement strength and rideability, speed limits, the quality of shoulders, overtaking opportunities and rest facilities all impact on driver safety.

- Speed limits do not necessarily consider the conditions of gravel roads adequately, and many routes have higher speed limits that can be excessive for gravel roads.
- Council budgets in Victoria are now subject to rate capping, similar to the practice in NSW where councils have been rate pegged for many years. This creates more pressure on optimum use of limited funds. Cost pressures may mean that some councils look at converting some low volume sealed roads back to gravel, and low volume gravel roads to formations only. However, most farmers and freight operators are looking for an upgrade in these local road conditions.

What are the strategic regional opportunities developed through this strategy?

- The strategy includes actions that will ensure that the road network is maintained to a safe, affordable and appropriate standard for its use. The network needs to support a growing regional agricultural economy and to allow access to tourism products and opportunities.
- Putting greater focus on the identification of priority routes will allow resources to be focused on areas where the best returns will occur.
- Improving the freight rail lines further, e.g. by the introduction of additional crossing loops and improved signalling, will help industries stay competitive by making rail freight more cost-effective, supporting primary producers and businesses across northern Victoria.
- Transport implementation actions can deliver safer, more reliable and resilient networks. Actions include maintenance of rail and road networks, contingency plans for major disruptions (such as those due to flood or bushfire), increased track capacity to improve reliability and reduce delays and identify and promote safety improvements.

Goal 4	Desired strategy (10 year)	Actions (5 year)	Priority	Major contributors	Council's role
S4.1	Develop and maintain a regional road network that is fit for purpose and affordable, now and in the future.	33. Identify and implement a Functional Road Classification System for freight and tourist routes.	High	Councils VicRoads	Lead
		34. Audit roads to test appropriate and sustainable level of service/standards.	High	Councils	Lead
		35. Prepare an Integrated Transport and Land Use Strategy for Mildura	High	Transport for Victoria VicRoads Council	Facilitate or Lead
S4.2	Advocate for additional improvements to the freight rail network	36. Improve the safety and efficiency of travel on freight rail lines as part of or on completion of the Murray Basin Rail project by introducing more crossing loops and better signalling.	Low-Medium	Vline	Advocate
S4.3	Improve safety for all road users on regional roads.	37. Review the location and standard of truck rest areas and overtaking lanes on major inter-regional routes.	Medium	VicRoads	Advocate
		38. Consider incorporating design for bicycle lanes into road projects where a route could become part of a bicycle network, e.g. in town centres, to tourist destinations, between twin towns over the Murray (such as Robinvale/Euston).	Low-Medium	Councils	Lead
		39. Identify and develop a prioritised list of local roads to improve the safety of unsealed roads, including the setting of speed limits.	Medium	Council and/or VicRoads	Facilitate or lead

Goal 5: Provide equitable community access and connectivity for large and small communities.

Services, such as health, education and legal services, are increasingly being focused on larger centres, so access to these centres is essential for rural and semi-rural communities. In addition, the ageing population across the region requires increasing levels of public, informal and community transport to ensure access to these services and social networks.

What are the strategic transport challenges in the region?

- Growth is likely to be patchy, with increases occurring mainly in the larger centres of Mildura and Swan Hill with some towns and areas continuing to face population decline.
- Services such as health, education and legal, are increasingly provided from larger centres such as Swan Hill, Echuca, Mildura, Bendigo and even Melbourne, so adequate access to these centres is important for communities.
- Ageing population requires increasing levels of public, informal and community transport to ensure access to services and social networks. Small towns can have high percentages of elderly people who require access to services that are located in the major centres.
- Access to coach services in east-west direction through the region is limited and not well timed to meet passenger needs. Changeover points are poorly scheduled, leaving patrons waiting for hours for their connecting service, e.g. two-hour wait at Manangatang.
- NSW communities in the region are constrained by very limited public transport, except in the settlements near Mildura. Therefore accessing the train route Swan Hill/Bendigo/Melbourne requires travel by private vehicle to a suitable pick up point for train or connecting bus service from Mildura.

- Regional linkages across the region have different city centre focus. For example around Mildura, Wentworth, Robinvale, parts of Buloke and Balranald, there is a strong Mildura focus, while Swan Hill, Gannawarra and Murray River councils have stronger ties with Echuca and Bendigo.
- Lower income families are being drawn away from the cities and large centres into towns with fewer transport options and further from services, such as Quambatook.

What are the strategic regional opportunities developed through this strategy?

- A fast efficient, reliable and frequent public transport system would benefit the diverse employment patterns and tourism opportunities. Connecting public transport services, including better funding for community services to assist in facilitating local access, and more capacity for park and ride at stations will improve social accessibility. Cycling networks and the taxi industry can meet the needs of particular groups and help fill the gaps.
- As route based public transport services will not be viable for many small communities, alternative means of non-private car travel will become increasingly important (community/volunteer based). Local businesses have demonstrated intermittent as well as regular support for travel. Funding subsidies by government for such services should be considered.
- For those at the western part of the region, Mildura has an excellent airport and passenger service following completion of upgrades to the terminal and runway. In the absence of a passenger rail service, consideration could be given to subsidised air travel to Melbourne for low socio-economic people who need to attend, e.g. medical appointments.
- Bendigo also provides a concentration of higher order services and facilities to the eastern part of the region. For example, recent upgrades to Bendigo Hospital may result in more people travelling to Bendigo instead of Melbourne to access healthcare services. Therefore, accessible and appropriate transport throughout the region and beyond will allow people from across the region to access these services.

Goal-5	Desired strategy (10 year)	Actions (5 year)	Priority	Major contributors	Council's role
S5.1	Improve public transport services for smaller communities through flexible and responsive non-private travel options.	40. Improve timetabling for public transport by collating all current timetables, investigating gaps and identifying and introducing new services required.	High	Council, PTV service providers	Lead, Facilitate
		41. Review needs and demand for community transport and taxi services in towns, and develop programs to improve access to community services.	High	Council	Lead, Facilitate
S5.2	Improve non-motorised networks and facilities within small towns to support active travel.	42. Develop and implement infrastructure plans to facilitate active transport opportunities for small towns.	Medium	Council	Lead
		43. Develop bicycle, mobility scooter and walking plans for small towns to provide an alternative to private car travel.	Medium	Council	Lead
S5.3	Better align public transport services with user needs, including increasing the role of community transport where public transport services are not available.	44. Review regional and local bus operations to ensure they match current and emerging needs and travel patterns.	High	Council PTV	Advocate
		45. Improve commuter facilities at railway stations as patronage grows	Medium	Council PTV	Facilitate
		46. Share knowledge between councils, communities and PTV to improve accessibility decision making that will assist communities	Medium	Councils, service providers, PTV	Lead

Goal 6: Support improved community health and environmental outcomes.

Providing community members with access to good tracks and trails allows them to benefit from enjoying active transport options such as walking and cycling as part of their daily lives or while on holiday. Access to these opportunities is now considered as indicators of a community's liveability, a factor that has a strong impact on attracting businesses and workers, as well as tourists keen to enjoy the environment. In towns where people can regularly be seen out walking and cycling, there is a palpable sense that these are safe and friendly places to live and visit.

Infrastructure is an important aspect of encouraging people to consider walking and cycling as a viable and legitimate transport option, as are travel behaviour change programs. Active transport can also play an important role in connecting people to the places they need to access such as shops, residential areas, public transport and other services.

What are the strategic transport challenges in the region?

- The region has high levels of obesity and poor health outcomes. There are low levels of physical activity and of time spent outdoors. Transport and lifestyle decisions often correlate to produce health related problems.
- Increasing conflict between large scale freight traffic passing through towns, parking and pedestrian movements will lead to safety and amenity concerns.
- Health services becoming more centralised. Efficient transport pathways are vital to access services and maintain good health outcomes.
- There is strong competition between regions for recreational travel (by car, cycling and public transport).
- The region has excellent natural and cultural attractions but limited integrated tourism networks that should be expanded to offer a greater range of experiences to visitors.

What are the strategic regional opportunities developed through this strategy?

- Increased uptake of active transport will lead to improved health and wellbeing outcomes across the region. This is needed in both the large centres and the smaller towns.
- The region has access to a wide range of attractive natural assets – rivers, lakes, forests as well as historical and cultural opportunities that are attracting increasing numbers of domestic and international travellers.
- Greater provision of non-motorised options, along with public transport services. This will increase the range of travel alternatives for people with limited access to motor vehicles, and in turn increase their opportunities for employment, education and recreation.
- Interest in rail trails and cycling tourism is growing and townscape designs increasingly include traffic calming and attractive features that reflect shifting community lifestyle choices. This should link with public transport nodes to create an integrated, safe and accessible system for all road users.
- Walking and cycling holidays are becoming increasingly popular and have spin off benefits to local communities. Tourism trails provide great opportunities for walking, cycling and paddling tourism, particularly along the Murray River. These opportunities can be used by local residents and tourists alike.
- Integrate bicycle touring with public transport to increase the range of options for visitors.

Goal 6	Desired strategy (10 year)	Actions (5 years)	Priority	Major contributors	Council's role
S6.1	Progress a plan to link the region's active transport opportunities, along the major River systems.	47. Investigate and implement the Murray River Adventure Trail to incorporate a wide range of active transport options – walking, cycling and kayaking/canoeing along the Murray River and looks at similar opportunities on the Murrumbidgee River.	High	State Government, Councils	Lead
S6.2	Encourage bicycle and walking travel to improve health and reduce environmental impacts.	48. Develop maps or plans for small towns that encourage active transport and improve accessibility to services. 49. Councils and businesses to take a leadership role in the use of more sustainable modes for work activities by developing plans and providing facilities to encourage staff to engage in active transport in travelling to work.	High	Councils	Lead
			Medium	Councils, service providers, businesses and industry	Lead
S6.3	Promote emergency access information and mitigating plan.	50. Clearly identify to the community (through several information providing techniques) the emergency access/egress to better equip residents of the region in event of an emergency. 51. Maintain and manage routes that offer the best safety, access and egress.	Medium	Councils, State Government	Lead
S6.4	Develop the region as a recreational cycling hub to support tourism and local travel.	52. Link the region's key rail trails and other recreational/tourism bicycle networks to form a network of routes and access to centres and public transport services.	High	Councils	Lead

Appendix B: CMR Assessment Tool for other priority projects

The following CMR Assessment Tool Matrix was developed by the Technical Committee with the assistance of Engineering Management Styles, drawing on the Assessment Tools used for the Loddon Campaspe and Wimmera Regional Transport Strategies. It is being used to consider other projects identified for assessment by the Technical Committee, on the basis of suggestions made through the consultation process. This work was still in progress at the time of writing.

The remaining projects for prioritisation are being divided into the following categories: Bridges; Roads; Tourism, Public or Local transport; Tracks, trails, air; Rail; and Investigations.

Criteria & sub-weighting		Score							Overall Weight
		Criterion	0	1	2	3	4	5	
Economic	20%	Cost & benefits (e.g. smoother roads, maintain speed, increase tourist numbers by x%, etc.)	Reduction	No benefit	Minor localised benefit (i.e. section of road only)	Major localised benefit (i.e. effecting a township) or minor reduction of maintenance costs (less than 25%)	Minor regional benefit or significant reduction of maintenance costs (less than 50%)	Major regional benefit or major reduction of maintenance costs (greater than 50%)	40%
	15%	Travel time (where applicable)	Reduction	No benefit	Minor decrease of travel time for some road users (i.e. HML)	Minor decrease of travel time for all road users	Reduction of travel time on detour routes (i.e. when a crash occurs there is detour on local roads)	Major decrease of travel time for some road users (i.e. HML)	
	20%	Safety (e.g. crashes, reduction of travel risks, serious injury/fatality, etc.)	Reduction	No benefit	Removal/change of conditions that could cause accidents/incidents	Removal/change of conditions that have caused near misses	Removal/change of conditions that have caused minor incidents/injuries	Removal or change of conditions that have caused major incidents/injuries	
	20%	Freight industry aid (where applicable) (e.g. access to/from farms, agribusiness, industry)	Reduction	No benefit	Improved access for single farm or business	Improved access for multiple farms or businesses	Improvement of local freight facilities/roads	Improvement of regional freight facilities/roads	
	10%	Tourism Enhancement (where applicable)	Reduction	No benefit	Practically no benefit	Minor localised benefit (i.e. section of road only)	Major localised benefit (i.e. effecting a township)	Minor regional benefit (i.e. a corridor)	
	10%	Asset Condition Improvement/re-use/life/burden on Authority/maintenance reduction/increase	Reduction	No benefit	Practically no benefit	Minor localised benefit (i.e. section of road only)	Major localised benefit (i.e. effecting a township)	Minor regional benefit (i.e. a corridor)	
	5%	Last Mile access to key economic businesses (e.g. farms, wineries, etc.)	Reduction	No benefit	Improved access for single farm or business	Improved access for multiple farms or businesses	Improved links to local roads	Improved links to local freight facilities	
Social:	30%	Access/Connectivity (e.g. private transport enhancement, public transport enhancement, commuter needs enhancement)	Reduction	No benefit	Very little benefit		Major localised benefit (e.g. affecting a township)	Minor regional benefit	20%

Criteria & sub-weighting		Score							Overall Weight
		Criterion	0	1	2	3	4	5	
	20%	Mobility	Reduction	No benefit	Very little benefit	Minor localised benefit (i.e. section of road only)	Major localised benefit (e.g. affecting a township)	Minor regional benefit	
	20%	Safety	Reduction	No benefit	Removal/change of conditions that public perceives could cause accidents/incidents	Removal/change of conditions that public perceives could cause near misses	Removal/change of conditions that public perceives could cause minor incidents/injuries	Removal/change of conditions that public perceives could cause major incidents/injuries	
	20%	Active Transport (where applicable) (e.g. cycling/walking by commuters, e.g. cycling, walking for recreation, etc.)	Reduction	No Benefit	Very little benefit	Minor localised benefit (i.e. section of road only)	Major localised benefit (e.g. affecting a township)	Minor regional benefit	
	10%	Improving life experiences (where applicable)	Reduction	No benefit	Very little benefit	Minor localised benefit (i.e. section of road only)	Major localised benefit (e.g. affecting a township)	Minor regional benefit	
Environmental:	20%	Noise attenuation/reduction/increase	Significant increase	Major increase	Minor increase	No benefit	Minor decrease	Major decrease	15%
	20%	Air, water quality (e.g. protection, improvement or loss)	Significant decrease	Major decrease	Minor decrease	No benefit	Minor increase	Major increase	
	20%	Solution builds in environmental protection	Significant damage	Major damage	Minor damage	No benefit	Minor protection	Major protection	
	20%	Historical sites /structures protected (where applicable)	Significant damage	Major damage	Minor damage	No benefit	Minor protection	Major protection	
	20%	Sites of indigenous significance protected (where applicable)	Significant damage	Major damage	Minor damage	No benefit	Minor protection	Major protection	
	20%	Protecting flora, fauna at sites (where applicable)	Significant damage	Major damage	Minor damage	No benefit	Minor protection	Major protection	
Other Criteria:	25%	Specific link benefit of proposal to Regional and/or Council Strategic Plans (nominate specific strategic documents and briefly outline degree of support)	Significantly against strategies	Against strategies	No link	Minor link to council or regional strategies	Major link to council strategies	Major link to Council and regional strategies	25%

Criteria & sub-weighting		Score							Overall Weight
		Criterion	0	1	2	3	4	5	
15%	Level of support, commitment, funds made available or likely	No support	Very little support	Project a component of longer term strategy or MasterPlan	Indication from funding source about possible funding opportunities	Submissions for funding have been lodged	Partial or full funding of project		
	Project Readiness (e.g. designs, surveys, specifications complete, permits obtained, services have been relocated, etc.) (e.g. ready within 1-2 years, or <5 years, or > 5 years)	No stage of the project has been started	Investigation timeframes set	Construction projects: Investigation stage Investigation projects: Formation of working group to kick start project	Construction projects: Design stage Investigation projects: Key investigation criteria selected	Construction projects: Planning stage Investigation projects: Brief created	Construction projects: Contract stage Investigation projects: Brief tendered out		
	Goals set for Strategy met (link the project with specific goals 1-6 – refer to page 1 for list of goals)	0 goals met	1 goal met	2 goals met	3 goals met	4 goals met	5 goals met		
	Transport Corridor benefit	Significant reduction	Reduction	No benefit	Minor localised benefit (i.e. section of road only)	Major localised benefit (e.g. affecting a township)	Minor or Major regional benefit		

Appendix C: List of organisations consulted

Balranald Discovery Centre	Murray River Council
Balranald Shire Council	Murray River Organics, Buronga
Buloke Shire Council	Murray River Shire Council
BusLink Mildura	Murray-Goulburn Water
Caravan Park Association, Mildura	Olams
Entergra (Mallee Hay)	Ouyen Inc
Freight Ports & Intermodal Network Planning	Pearsons Grain, Swan Hill
Gannawarra Shire Council	Phillips Transport
Glenn Stewart, Office of Victorian Skills Commissioner	Pickering Transport, Mildura
Go Farm	Pickerings Transport, Swan Hill
GrainCorp	Rail Freight Alliance, Victoria
GTS Freight	Road and Maritime Services, Wagga Wagga, NSW
Iron Horse Intermodal/ Wakefields Transport, Mildura	Sunraysia Bicycle Users Group
Kilter Rural	Sunrise Ag, Swan Hill
Landmark, Swan Hill	Swan Hill Livestock Exchange
Lipps Transport and Bulk Super Supplier	Swan Hill Rural City Council
Mallee Regional Partnerships	Transport for Victoria, DETJR
Mathers & Sons Transport, Kerang	Victorian Farmers Federation
Mawsons Concrete and Quarries	VicRoads – Head Office and Regional Office staff
Mildura Airport Corporation	Wentworth Shire Council
Mildura Houseboats	
Mildura Regional Development Board	
Mildura Rural City Council	
Murray House Aged Care, Wentworth	
Murray Regional Tourism Board	

Appendix D: List of documents reviewed

Australian Rail Track Corporation Ltd. (November 2014)	<i>"National Competition Policy Review (NCP) ARTC Submission"</i> (Internal document)
Aecom Australia (May 2011)	<i>"Central Highlands Regional Transport Strategy"</i> AECOM, Level 9, 8 Exhibition St. Melbourne 3000 Vic
AURECON Australasia Pty Ltd, prepared for Wentworth Shire Council (March 2015)	<i>"Arumpo Road Preliminary Engineering Study"</i> AURECON Australasia Pty Ltd, 97 Pine Avenue, Mildura 3502, March 2015
Australian Government (November 2016)	<i>"The Australian Government's response to Infrastructure Australia's Australian Infrastructure Plan"</i> Department of Infrastructure and Regional Development GPO Box 594 Canberra ACT 2601. publishing@infrastructure.gov.au ISBN 978-1-925531-06-0 November 2016/INFRA3097
Buloke Shire Council (Undated -possibly 2017)	<i>"Council Plan 2017-2021"</i> Buloke Shire Council' Wycheproof, Victoria
Buloke Shire Council (Undated -possibly 2016)	<i>"Strategic Resource Plan 2016-2020"</i> Buloke Shire Council' Wycheproof, Victoria
Connect Insights for Business (2015)	<i>"Road Freight Transport Industry Report"</i> http://creativecommons.org/licenses/by/2.5/au/
Connell Wagner Pty Ltd (August 1995)	<i>"Mildura Freight Operations Relocation and Redevelopment Study Final Report"</i> Connell Wagner Pty Ltd in association with Chris Dane Land Design Pty Ltd prepared for the Rural City of Mildura
Driscoll Engineering Services P/L (Nov 2013)	<i>"Sunraysia Highway – B220 Improvement Strategy Ballarat to south of Ouyen"</i> Revised by Driscoll Engineering Services P/L on behalf of the Sunraysia Highway Improvement Committee
Engineers Australia (Dec 2003)	<i>"Australian Historic Engineering Plaquing Program Nomination of the Swan Hill- Murray River Road Bridge for an Award of an Historic Engineering Markers"</i> Prepared by Engineering Heritage Australia (Canberra for the Engineering Heritage Committee, Sydney Dec 2003
EMM on behalf of Iluka Resources Ltd (Jan 2016)	<i>"Balranald Mineral Sands Project Draft Commonwealth Environmental Impact Statement"</i>

GHD Pty Ltd (2014)	<i>"Wimmera Southern Mallee Regional Transport Strategy"</i> GHD, 2014
GHD Pty Ltd (June 2017)	<i>"Gee Gee Bridge replacement Review of environmental factors"</i> Suite 3 Level 1, 161-189 Baylis St Wagga Wagga NSW 2650 RMS publication 17.316 ISBN: 978-1-925659-41-2
GHD Pty Ltd on behalf of Department of Transport Planning and Local Infrastructure	<i>"Murray Basin Region Freight Demand & Infrastructure Study Project Report,"</i> GHD on behalf of Department of Transport Planning and Local Infrastructure, July 2014
GHD Pty Ltd for Hume Regional Development Australia Committee (2013)	<i>"Freight Direction in the Hume Region Detailed Report"</i> Prepared by GHD (180 Lonsdale Street, Melbourne, Victoria 3000) for Hume Regional Development Australia Committee, 2013
Government of South Australia Department of Planning and Local Government (January 2011)	<i>"Murray and Mallee Region Plan. A volume of the South Australian Planning Strategy"</i> Department of Planning and Local Government Adelaide South Australia
Hume Regional Management Forum (July 2010)	<i>"The Hume Strategy for sustainable communities 2010-2020"</i> Internal document
Infraplan and Geoff Anson Consulting (December 2015)	<i>"Loddon Campaspe Integrated Transport Strategy for Department of Economic Development, Jobs, Transport and Resources"</i> Infraplan: Suite 606, St Kilda Road Towers, 1 Queens Road, Melbourne Vic 3004
Infrastructure Australia (2017)	<i>"Transport Reform: The National Opportunity in Front of Us"</i> Roads Australia Summit 2017
John Hearsch Consulting Pty Ltd (Mar 2017)	<i>"Grampians and Barwon West Region Passenger Services Cost and Feasibility Study Final Report"</i>
Lower Murray Water (May 2014)	<i>"Mallee Region Investment Guide 2015/16"</i> Lower Murray Water, 741-759 Fourteenth Street, Mildura 3500
Murray Regional Tourism (2016)	<i>"Travel to the Murray Region"</i> Year ended June 2016. Quarterly tracking of selected measures. Internal document

Murray Regional Tourism (Undated -possibly 2015)	<i>"Strategic Plan 2015-2020"</i> Internal document.
National Heavy Vehicle Regulator (September 2014)	<i>"Classes of Heavy Vehicles in the Heavy Vehicle National Law"</i> www.nhvr.gov.au
North West Rail Alliance (undated, possibly 2016)	<i>"The Case for the Reinstatement of Passenger Train Service to Mildura in Response to Infrastructure Victoria's 2016 30 year draft strategy"</i>
NSW Act 22 November 2012	<i>"Road Transport (General) Act 2005"</i> <i>"Ministerial Direction (Livestock Loading Scheme) Order 2012"</i>
NSW Department of Premier and Cabinet (Nov 2018)	<i>"Western Murray Regional Economic Development Strategy 2018-2022"</i>
NSW Planning and Environment (August 2017)	<i>"Far West Regional Plan 2036"</i> GPO Box 58, Dubbo NSW 2836
NSW Planning and Environment (2017)	<i>"Riverina Murray Regional Plan 2036"</i> GPO Box 58, Dubbo NSW 2836
NSW Transport Roads and Maritime Services (June 2013)	<i>"Replacement Murray River Bridge Crossing at Swan Hill"</i> Environmental Investigations Submission Report RTA/Pub. 13.327 ISBN 978-1-92245-55-7 Prepared by Manidis Roberts Level 9, 7 York St. Sydney NSW 2000
NSW Transport Roads and Maritime Services(May 2016)	<i>"Barham Koondrook Bridge – Truss and Victorian Approach Span Restoration Submissions Report"</i> Prepared by NGH Environmental for NSW Transport Road and Maritime Services.
NSW Transport Roads and Maritime Services and VicRoads(January 2018)	<i>"Murray River Crossings Investment Priority Assessment"</i> NSW RMS and VicRoads
NSW Transport NSW Trains (undated – possibly 2017)	<i>"Corporate Plan 2017-18"</i> Internal document
OPUS in Association with SGS (March 2014)	<i>"Central Murray Region: Intermodal Opportunities – A discussion of issues to help inform decision making process – Draft Report, OPUS in Association with SGS, March 2014"</i>

Pitt and Sherry (April 2018)	<i>"Structure and Higher Mass Limits Access with the Goulburn-Murray Irrigation District"</i> Pitt & Sherry for Campaspe Shire Council, April 2018
Rail Freight Alliance (2018)	<i>"Rail Freight Alliance Policy Statement 2018"</i>
RAMROC (undated – possibly 2014)	<i>"RAMROC Regional Freight Transport Plan"</i> Riverina and Murray Regional Organisation of Councils (RAMROC)
Regional Development Australia Loddon Mallee, and Regional Development Victoria (2015)	<i>Loddon Mallee Regional Strategic Plan 2015-2018"</i> Department of Economic Development, Jobs, Transport and Resources 1 Spring Street Melbourne Vic 3000
Regional Development Australia and Regional Development Victoria (2013)	<i>"Hume Regional Development Australia Committee Freight Directions in the Hume region Detailed Report"</i> GHD, 180 Lonsdale Street, Melbourne Vic 3000
Regional Management Group, June 2015	<i>"VicRoads – Northern Region Rest Area Strategy"</i>
REMPLAN, prepared for Swan Hill Rural City Council	<i>Central Murray Transport Plan Economic Data Report, REMPLAN, 67 Willis Street Bendigo, VIC 3550, May 2018</i>
Roads and Maritime Services (July 2017)	<i>"Barham-Koondrook Bridge"</i> (Internal document)
Roads and Maritime Services (2017)	<i>"Replacement of Gee Gee Bridge"</i> (Internal document?)
Roads and Maritime Services (May 2016)	<i>"Tooleybuc Bridge Update"</i> (Internal document)
Russell, E.W. and Associates (2014)	<i>"Central Murray Regional Transport Study (Victoria-New South Wales) 2014 Update Report"</i> E.W. Russell & Associates Pty Ltd P.O. Box 1257 Carlton Vic. 3053
Safe System Solutions Pty Ltd Sept 2015)	<i>"VicRoads Murray Valley Highway Route Safety Strategy – Towards a Safe System"</i> Safe System Solutions Pty Ltd for VicRoads Northern and North Eastern Regions, Sept 2015
SKM and Meyrick & Associates (February 2006) Steve Manders	<i>"Twice the Task A review of Australia's freight transport tasks"</i> C/- Jacobs Australia 11/452 Flinders Street Melbourne Vic 3000

State Government of Victoria (May 2016)	<i>"Connecting Regional Victoria"</i> Department of Economic Development, Jobs, Transport and Resources 1 Spring street Melbourne Vic 3000
State Government of Victoria (July 2014)	<i>"Loddon Mallee North Regional Growth Plan"</i> Government of Victoria 1 Treasury Place Melbourne Vic 3000 www.dtpli.vic.gov.au/regionalgrowthplans
State Government of Victoria (March 2014)	<i>"Loddon Mallee North Regional Growth Plan – Background Report"</i> Government of Victoria 1 Treasury Place Melbourne Vic 3000 www.dtpli.vic.gov.au/regionalgrowthplans
State Government of Victoria (August 2013)	<i>"Victoria – The Freight State"</i> Government of Victoria 1 Treasury Place Melbourne Vic 3000
State Government of Victoria (2012)	<i>"Transport and the Triple Bottom Line"</i> Government of Victoria 121 Exhibition Street Melbourne Vic 3000
State Government of Victoria (2008)	<i>"Your Say. Community feedback on Victoria's transport challenges"</i> Victorian Department of Transport Melbourne Vic
State Government of Victoria (2008)	<i>"The Victorian Transport Plan"</i> Overview Government of Victoria 121 Exhibition Street Melbourne Vic 3000
State Government of Victoria (2008)	<i>"Switchpoint: Victorian Rail Freight Review"</i> Chair: Tim Fischer Government of Victoria 121 Exhibition Street Melbourne Vic 3000
State Government of Victoria (July 2018)	<i>"Delivering the Goods, Creating Victorian Jobs, Victorian Freight Plan 2018-50"</i> , Department of Economic Development, Jobs, Transport and Resources, 1 Spring Street, Melbourne Vic 3000.
Sunassist Volunteer Helpers Inc (July 2017)	<i>"Mallee Local Transport Options Paper – Stage 1 Baseline of Current Transport Services"</i> Sunassist Volunteer Helpers Inc on behalf of the Department of Economic Development, Jobs, Transport and Resources (July 2017)
Swan Hill Rural City Council (2014) Tonkin Consulting (2015)	<i>"Active Transport Strategy 2014-2034"</i> Swan Hill Rural City Council (2014) <i>Buronga to Monak Interface Study Investigations Report</i> Wentworth Shire Council, Tonkin Consulting 2015

Victorian Skills Commissioner (2017)	<i>"2017 Regional Skills Demand Profile, The Mallee"</i> Victorian Skills Commissioner Level 1, 21 Degraeves Street, Melbourne VIC 3000
VicRoads (undated possibly 2017)	<i>"Country Roads Your insights, our actions – Connecting our Communities' VicRoads</i>
Victorian Act	<i>"Transport Integration Act 2010 Part 2 – Victorian statement, objectives, principles, and statement of policy principles"</i>
Wentworth Shire Council	<i>"Community Strategic Plan 2017-2027"</i>