AUSLINK IS A MAJOR AUSTRALIAN GOVERNMENT INITIATIVE DESIGNED TO ACHIEVE BETTER NATIONAL LAND TRANSPORT PLANNING, FUNDING AND INVESTMENT DECISION MAKING.

A key component of the AusLink process is the development of a strategy for each corridor of the AusLink National Network. A Corridor Strategy is a statement of the shared strategic priorities of the Australian and State/Territory Governments for the long-term (20-25 year) development of the AusLink Network. Corridor strategies provide guidance to decision-makers and project proponents formulating network initiatives, and most importantly, inform development of the next and subsequent National Land Transport Plans.

Consistent with the spirit of AusLink, the Melbourne–Brisbane Corridor Strategy is a collaborative initiative that is jointly owned by the Australian Government Department of Transport and Regional Services (DOTARS), the New South Wales Department of Planning, the Roads and Traffic Authority (RTA) and the New South Wales Ministry of Transport (MOT), the Victorian Department of Infrastructure (DOI) and VicRoads, the Queensland Department of Main Roads (QDMR) and Queensland Transport (QT). The strategy builds on planning work already undertaken by the New South Wales, Queensland and Victorian Governments.
"Address congestion, safety and reliability on under-performing sections of the road links and improve rail’s performance and share of the freight market"

The Melbourne–Brisbane Corridor provides an inland link between Australia’s second and third largest capital cities and major primary industry regions in northern Victoria, central New South Wales and southern Queensland. As defined on the Australian National Network, the road corridor starts at the beginning of the Hume Freeway on the northern edge of Melbourne, passes through central Victoria along the Goulburn Valley Highway to Tocumwal, where it connects with the Newell Highway and continues to the Queensland border. In Queensland the road corridor continues from Goondiwindi to Toowoomba via the Cunningham, the Leichhardt and Gore Highways, and then to the outskirts of Greater Brisbane along the Warrego Highway. The route has some divided carriageways at each end, but for more than 90 per cent of its 1535 kilometre length, it is a two lane single carriageway with occasional passing lanes.

There is currently no direct continuous inland rail link between Melbourne and Brisbane, with end-to-end rail freight moving via Sydney along the AusLink Sydney–Melbourne and Sydney–Brisbane rail corridors. However the corridor is served by several sections of rail line that separately contribute to the freight task within the corridor. The broad gauge rail line from Tocumwal to Melbourne serves the Goulburn Valley, the Murray Valley and the southern Riverina; standard gauge rail lines link the central NSW regions surrounding Dubbo and Parkes, via Cootamundra to either Melbourne via Albury or to Sydney; and further north, the cotton growing regions surrounding Moree and Narrabri are linked by standard gauge rail to Maitland where it joins the Sydney–Brisbane rail line. Within Queensland, the unconnected narrow gauge rail links Goondiwindi to Brisbane via Warwick, Toowoomba and Ipswich. A study to scope the engineering and alignment of an inland railway linking Melbourne and Brisbane has been announced.

This corridor has many roles as:

- a major interstate transport route between Victoria, NSW and Queensland for passengers (including tourism) and freight;
- a regional traffic route serving and linking a range of regional towns and centres; and
- a link to domestic and export markets for agricultural products.

The volume of road traffic reflects these roles. There are high daily traffic levels of above 30,000 vehicles along the southern and northern sections which connect with metropolitan Melbourne (via the Hume Freeway) and South East Queensland (via the Warrego Highway). Daily traffic is more than 10,000 vehicles each day in the vicinity of several major regional centres (including Dubbo, Moree and Toowoomba), but drops below 5,000 vehicles a day on rural sections of the corridor. There are more than 1,000 heavy vehicles a day on most sections of the route, with heavy trucks making up 20 per cent of the traffic flow for most of the route, and over 30 per cent on many of the inter-town sections. According to the Bureau of Transport and Regional Economics (BTRE) projections, heavy truck traffic is expected to increase by around 50 per cent over the next 20 years and will be an increasing proportion of total traffic.

While the rural sections of the road corridor are generally adequate for current and forecast traffic levels, some sections are constrained by topography, lack of overtaking opportunities and poor geometric design. Daytime congestion is a problem in several larger towns, while heavy vehicles compromise night-time amenity in some communities. Strip development along the highway increasingly conflicts with traffic flow. The road corridor provides reliable travel times, but blockages such as crashes and flooding can affect large numbers of vehicles.

The majority of freight travelling on the corridor is not end-to-end, but rather from one part of the corridor to another – at least 17.3 million tonnes compared to 4.5 million tonnes. Rail plays an important role with around 30 per cent market share of the end-to-end freight task between Melbourne and Brisbane and, with ongoing improvements to the interstate rail network, this share is expected to increase. According to projections prepared by BTRE and for the North–South Rail Corridor Study, the tonnage of freight moving between Melbourne and Brisbane is expected to approximately double over the next 20 years. Rail also has a major role in transporting primary production (including exports of wheat, rice, cotton, wool and coal) to ports in Melbourne, Sydney and Brisbane. For transport to and from locations along the corridor, road and rail mostly function to complement each other, rather than compete directly. This situation is expected to continue.
There are several factors that constrain the function and performance of the rail corridor including the lack of a more direct rail link between Melbourne and Brisbane and the consequent need to transit through Sydney. Committed improvements by the Australian Rail Track Corporation to the interstate line from Melbourne to Brisbane via Sydney will improve efficiency and reduce travel times, but problems remain, especially with movement of freight trains through the congested network in Sydney and north to Newcastle and with intermodal terminal capacity and efficiency in Sydney. In addition, there are deficiencies with cross-corridor rail lines – the capacity of rail links to Sydney is likely to be insufficient if primary production increases and coal mining continues to grow; the export/import rail link from Tocumwal to Shepparton is in sub-standard condition; and steep grades on the Toowoomba range and congestion in the Brisbane urban rail network adversely affects the efficiency of links to the Port of Brisbane.

The key challenges facing the Melbourne–Brisbane Corridor and the short-term priorities for the corridor are summarised in the following table. These priorities centre around four strategic themes:

- safety, especially in areas with high casualty crash rates and at intersections;
- the condition of the road infrastructure, especially in relation to the use of high productivity vehicle configurations and other approved technologies;
- preserving the amenity of towns along the road route; and
- capacity, reliability and performance of the Melbourne to Brisbane rail corridor and its connectivity with other strategic corridors.
### TABLE 1 Summary of Key Challenges and Short-Term Strategic Priorities

<table>
<thead>
<tr>
<th>Key Challenges</th>
<th>Short-Term Priorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providing safe, efficient and reliable interstate and local freight connections, especially to export industries and rural and remote communities.</td>
<td>Develop agreed options for construction of the road crossing of the Toowoomba Range, including a bypass of the City of Toowoomba.</td>
</tr>
<tr>
<td>Managing fatigue related safety for all drivers given long travel distances.</td>
<td>Increase safety measures on parts of the road route with high traffic volumes and a high proportion of heavy vehicles and address nuisance flooding.</td>
</tr>
<tr>
<td>Ensuring, where feasible and economic, increasing numbers of heavy vehicles and any infrastructure improvements have minimum impact on local amenity (noise, views, air quality, smell) and improve efficiency.</td>
<td>Strengthen, widen and improve road pavements and bridges to cater for increasing numbers of heavy vehicles per day.</td>
</tr>
<tr>
<td>To further reduce the casualty crash rates along the corridor given the traffic mix, night-driving by heavy vehicles and mixed driving conditions.</td>
<td>Finalise an integrated overtaking lane plan with agreed levels of regularly spaced overtaking lane.</td>
</tr>
<tr>
<td>The ability of rail and intermodal terminal capacity and performance, especially through Sydney and north to Newcastle, to respond to the forecast increase in the rail freight task and thereby limit the impact arising from the need to transit Sydney.</td>
<td>Address high crash locations.</td>
</tr>
<tr>
<td>Facilitating road and rail connectivity to support the requirements of intermodal terminals.</td>
<td>Manage fatigue related safety issues.</td>
</tr>
<tr>
<td>Managing traffic and land use within and around towns to preserve the functions of the corridor.</td>
<td>Realign the sections with poor geometry and alignment, including tight curves, right-angle intersections and locations subject to flooding.</td>
</tr>
<tr>
<td>Managing access to and from the road network.</td>
<td>Consistent treatment of level crossing risk along the whole corridor.</td>
</tr>
<tr>
<td>To mitigate incidence and duration of flooding, while minimising impact on natural flows.</td>
<td>Increase rail capacity and reliability between North Strathfield and Hornsby.</td>
</tr>
<tr>
<td>Consistent management of the whole of the corridor under the responsibility of three jurisdictions.</td>
<td>Increase capacity and performance of intermodal terminals in Sydney, Melbourne and Brisbane to support the movement of interstate rail freight.</td>
</tr>
<tr>
<td>Maintaining the road asset and improving structural performance of pavements.</td>
<td>Engineering and scoping study of alignment of inland railway linking Melbourne and Brisbane.</td>
</tr>
<tr>
<td>To optimise freight movement in the corridor from a triple bottom line perspective.</td>
<td>Facilitate improved access to and from rail-road intermodal facilities along the corridor.</td>
</tr>
<tr>
<td></td>
<td>Maintain capacity by strengthening bridges to serve forecast increases in vehicle mass on the network, particularly between Tocumwal and Moree.</td>
</tr>
<tr>
<td></td>
<td>A programme of urban and rural intersection improvements.</td>
</tr>
<tr>
<td></td>
<td>Manage local and through-traffic in the urban areas including villages and consideration of bypasses where appropriate.</td>
</tr>
</tbody>
</table>
Chapter 1

AU SLINK

AusLink is a major Australian Government initiative designed to achieve better national land transport planning, funding and investment decision making. The AusLink National Network and its connections to the broader transport network are the passenger and freight backbone of Australia’s national land transport system and are the focus of the Australian Government’s planning and funding responsibility. The smooth and efficient operation of this network is a crucial element in achieving integration of all transport modes and supporting economic development.

AU SLINK NETWORK OBJECTIVES

The Melbourne–Brisbane Corridor Strategy is based on the AusLink Network objectives. The AusLink Network will support national economic growth by developing sustainable transport solutions that:

• increase its infrastructure handling capacity and efficiency;
• improve its safety and security;
• improve transport productivity on its nationally strategic and export-oriented freight corridors;
• improve the reliability of travel on interstate and inter-regional corridors; and
• are consistent with viable, long-term economic and social outcomes, and with the obligation to current and future generations to sustain the environment.

These objectives guide the activities of the Australian Government and the States and Territories working collaboratively to develop corridor strategies and plan further development of the AusLink Network.

AU SLINK CORRIDOR STRATEGIES

A key component of the AusLink process is the development of a strategy for each corridor of the AusLink National Network. These corridor strategies take a broad multi-modal systems view of the operation of the transport corridor; look at both freight and passenger movement and actively consider innovative approaches and alternatives to build infrastructure solutions.

This corridor strategy is a statement of the shared objectives and strategic priorities of the Australian and State/Territory Governments for the long-term (20-25 year) development of the Melbourne–Brisbane Corridor. It diagnoses the current and future condition and adequacy of the transport links that make up the corridor and establishes strategic priorities.

This corridor strategy was prepared jointly by the Australian, New South Wales, Queensland and Victorian Governments, with input from industry and key stakeholders. It provides guidance to decision-makers and project proponents formulating network initiatives, and informs development of the next and subsequent National Land Transport Plans.

PROCESS AND METHODOLOGY

The Melbourne–Brisbane Corridor Strategy is a result of a process of research, analysis and consultation that draws on information from a wide range of sources, including Australian, New South Wales, Queensland and Victorian Government policy settings, strategies and objectives, inputs from key stakeholders and commissioned research and analysis. In particular the strategy was informed by:

• the AusLink White Paper (Australian Government, 2004);
• BTRE working papers 35 and 66;
• the North–South Rail Corridor Study (NSRCS) (Ernst & Young, 2006);
• Melbourne–Brisbane Corridor Study (GHD–Meyrick) and draft strategies (2007) covering other AusLink corridors;
• Brisbane Urban Corridor Strategy;
• Sydney Urban Corridor Strategy;
• Melbourne Urban Corridor Strategy;
• Sydney–Brisbane Corridor Strategy; and
• Sydney–Melbourne Corridor Strategy.

A draft strategy was posted for public comment on the AusLink website for a four week period over April and May of 2007. Written submissions were received from various stakeholders and these views have been considered by the project team in the finalisation of this strategy document.
DESCRIPTION OF THE CORRIDOR

The Melbourne–Brisbane Corridor links Australia’s second and third largest capital cities along 1,535 kilometres of road, traversing major primary industry regions in northern Victoria, central New South Wales and southern Queensland (see Figure 1). Over seven million Australians live along the corridor (including the populations of Melbourne and Brisbane), representing more than 35 per cent of Australia’s total population. There is currently no direct continuous inland rail link between the two capital cities, with end-to-end rail freight moving via Sydney along the AusLink Sydney–Melbourne and Sydney–Brisbane rail corridors. The corridor services the sea ports of Melbourne, Brisbane and Sydney. Airports in Melbourne, Brisbane and Sydney are the primary aviation hubs serving the corridor, although several regional airports provide an important aviation support role.

Freight and infrastructure developments in both Melbourne and Brisbane have significant impacts on the function of the end-to-end freight task along the corridor.

Road

The Melbourne–Brisbane road corridor, as defined on the AusLink National Network starts at the beginning of the Hume Freeway, on the northern edge of Melbourne, and tracks north-east to Seymour. This 85 kilometre section of the Hume Freeway along the Melbourne–Brisbane Corridor is shared with the Sydney–Melbourne Corridor and this link is discussed within the Sydney–Melbourne Corridor Strategy.

From Seymour, the corridor passes through central Victoria along the Goulburn Valley Highway to Tocumwal, where it connects with the Newell Highway. The Victorian portion of the corridor is 240 kilometres in length.

The NSW section of the corridor comprises the Newell Highway, which extends from Tocumwal on the southern border north-easterly across New South Wales for 1,060 kilometres until it connects with the Cunningham Highway at the border with Queensland.

In Queensland the corridor comprises sections of four Highways: the Cunningham, the Leichhardt and the Gore Highway between Goondiwindi and Toowoomba. On the south-western outskirts of Toowoomba the corridor joins the Warrego Highway to its end on the outskirts of Greater Brisbane, where the Warrego Highway intersects with the Ipswich Motorway at Dinmore. The Queensland portion of the corridor is 320 kilometres long.

The road also supports considerable cross-corridor freight as shown by high volumes of heavy traffic along certain sections of the corridor where trucks enter, travel along for some distance and then turn off for their destination. The impact of export freight on road traffic in the corridor is indicated by the higher than average number of heavy vehicles in the sections of the corridor which produce export commodities. For example:

- 3.5 million tonnes each year\(^1\) is trucked along some sections of the road in central NSW to rail heads where the freight travels to Sydney for export or redirection to Brisbane or Melbourne; and

- The proportion of heavy vehicles of total traffic often exceeds 30 per cent for significant lengths of the corridor, including between Jerilderie and Forbes, the rural sections between Narrabri and Goondiwindi and the length of the Gore Highway between Goondiwindi and Toowoomba.

Rail

The lack of a more direct rail link means that rail movements between Melbourne and Brisbane are currently via the Sydney–Melbourne Corridor, through the dense, complex and capacity constrained Sydney Metropolitan rail network and then along the Sydney–Brisbane rail corridor. The general alignment for both segments was established in the 19th century. NSRCS showed that current train on-time reliability is very poor. Rail services on the standard, broad and narrow gauges along parts of the corridor are important to the functionality of the corridor.

The interstate standard gauge rail track infrastructure generally runs in parallel with the Hume Highway between Melbourne and Sydney, except for the section between Albury and Yass where the rail corridor deviates through Wagga Wagga.

The total interstate standard gauge rail track length is 961 kilometres, with double track running between Sydney and Junee. A broad gauge rail track runs parallel from Dynon to Wodonga in Victoria. It has branch lines to Shepparton,

\(^1\) RTA (2004)
FIGURE 1  Melbourne–Brisbane Corridor

AusLink Corridors
- Melbourne-Brisbane
- Melbourne-Sydney
- Road

Key Infrastructure
- Other road
- Seaport
- Airport
- Intermodal freight hub

The rail route from Sydney to Brisbane starts in parallel with the Pacific Highway to Newcastle before diverting from the coast through Maitland to Taree. The rail line parallels the Pacific Highway to Coffs Harbour where the line turns inland to Grafton and runs through Casino, crosses the Queensland border via Beaudesert and on to Acacia Ridge in Brisbane.

Between Sydney and Maitland the rail line is a dual commuter and freight line and carries significant numbers of commuter passenger traffic. Between Sydney and Newcastle the route is constrained in parts by steep terrain and requirements for significant river crossings. The Sydney–Brisbane rail link is discussed in the Sydney–Brisbane Corridor Strategy3 and the Sydney rail network is covered in the Sydney Urban Corridor Strategy4.

The Melbourne–Brisbane inland corridor is served by several sections of rail line that separately contribute to the freight task within the corridor. The broad gauge rail line from Tocumwal to Melbourne delivers grain, dairy, fruit and vegetables and foods processed in the Goulburn valley, the Murray valley and the southern Riverina. Passenger services also operate on the section between Shepparton and Melbourne. Another section of rail links the central NSW regions surrounding Dubbo and Parkes, via Cootamundra to either Melbourne via Albury or to Sydney. Further north, the cotton growing regions surrounding Moree and Narrabri are linked by standard gauge rail to Maitland where it joins the Sydney–Brisbane rail line. Within Queensland, the narrow gauge rail corridor links Goondiwindi to Brisbane via Warwick, Toowoomba and Ipswich. The efficiency of the corridor is limited by capacity constraints on the Toowoomba Range (and to a lesser degree on the Little Liverpool Range) caused by steep grades, tight curvature and old infrastructure including bridges and tunnels which restrict axle loads. In addition, freight capacity is influenced by the need to give priority to passenger rail services where the corridor enters the metropolitan network at Ipswich. This affects the timing of capacity for freight rather than limits overall capacity.

Sea

The major ports of Melbourne and Brisbane are near each end of the corridor. However, freight is also transported from the corridor, via both road and rail to other ports including Sydney (Port Botany), Port Kembla, Newcastle, Hastings and Geelong.

Port of Melbourne is Australia’s largest container and general cargo port, handling 39 per cent of the nation’s container trade. The Port has 34 commercial berths that handle cargos ranging from timber to motor vehicles, specialised berths for dry cargos and specialist facilities for liquid cargos5. The rail connection to the Port of Melbourne is along dual gauge line (broad and standard) from West Footscray.

The Port of Brisbane’s location in the southeast corner of Queensland has supported record trade growth, as it services a geographical area including South East Queensland and northern New South Wales. Brisbane trade consists of a range of containerised, bulk and break-bulk cargos. Brisbane is Australia’s leading beef and cotton port, handling about 50 per cent of Australia’s total exports of these two commodities as well as being a coal exporter. The rail connection to the Port of Brisbane is along dual gauge line (narrow and standard) from Acacia Ridge.

Significant tonnages of freight move by rail across the corridor to the NSW ports (see Figure 3).

Air

Two international airports and a range of regional airports serve the Melbourne–Brisbane Corridor.

Both Brisbane and Melbourne have a main airport with international and domestic operations that service both the major and minor airlines as well as the airfreight industry. Melbourne Airport is located at Tullamarine. Avalon Airport serves passenger and freight services. Regional airports located along the corridor include Dubbo, Parkes and Moree.

The Melbourne–Brisbane route was the third most travelled passenger route in Australia in 2005, and was also the third highest in terms of aircraft movements.

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2 DOTARS (2007)
3 DOTARS (2007)
4 DOTARS (2007)
5 Port of Melbourne (2006)
Intermodal Terminals

Intermodal facilities play an important role along the corridor and are often co-located with processing facilities for bulk and containerised freight to the ports.

The Melbourne–Brisbane Corridor intersects with other AusLink corridors and a number of major inter-regional highways. Trucks using the route require services and access to intermodal terminals along the corridor. City and Shire Councils have responded to the freight traffic growth by zoning for intermodal terminals to support the transport and logistics sectors.

There are several rail-road intermodal terminals located in Melbourne, Brisbane and along the corridor. The intermodal terminals at Altona (three in all), Appleton Dock, West Swanson Dock, Dynon (north, middle and south) and Somerton in Melbourne are discussed in the Melbourne Urban Corridor Strategy. The main intermodal container terminals in Brisbane are at Acacia Ridge and the Port of Brisbane. These two facilities are discussed in the Brisbane urban Corridor Strategy.

In Sydney, the intermodal terminal for interstate domestic freight is at Chullora. Intermodal terminals along the corridor are located at Mooroopna (Shepparton), Tocumwal, Parkes, Dubbo, Narrabri, and Moree. New or expanding intermodal terminals are under construction in Wodonga (on the rail-freight line), Parkes and Toowoomba.

The Sydney–Adelaide rail line intersects at Parkes and freight trucked along the corridor is transferred at Parkes for rail to Sydney, Adelaide, Perth and export/import markets. The two intermodal terminals at Parkes have recently been expanded to encompass an area of 303.5 hectares of land with strong support from the Parkes Shire Council.

The Charlton/Wellcamp Region Industry Zone is being developed for light industry, warehousing and transport facilities. Situated 10 kilometres from Toowoomba’s CBD, the 1,600 hectare site integrates land use with the proposed Toowoomba Range road and rail crossings.

Links with Other Corridors

The major links that interact with this corridor include those at Table 2.

ROLE AND FUNCTION OF THE CORRIDOR

This corridor has three distinct roles with sometimes conflicting demands:

- as a regional traffic route serving and linking a range of regional towns and centres to each other;
- as a major interstate transport route for passengers and freight; and
- to transport agricultural products to domestic and export markets.

Connecting Regional and Rural Communities

The corridor provides an important transport link for rural communities along its length – giving access to education, health, commercial and government services in regional town centres, although overall traffic levels along the rural sections of the corridor are less than 5,000 vehicles per day.

Figure 2 shows traffic level spikes at each regional town centre along the corridor with regional towns and cities that generate a significant amount of local traffic, including Ipswich (132,000 people), Toowoomba (116,000 in Greater Toowoomba), Moree, Narrabri and Parkes (15,000 each), Dubbo (40,000 people) and the City of Greater Shepparton (60,000 people).

The daily traffic levels at each end of the corridor exceed 30,000 vehicles a day where the Warrego Highway meets Brisbane via Ipswich in the north (expected future population of Ipswich growth area is 300,000 by 2026) and in the growth areas of Hume and Whittlesea north of Melbourne (with anticipated populations by 2030 of 150,000 and 130,000 people respectively). These local populations use the corridor to commute to urban areas for work, leisure and to access education, shops and services.

Although several rural sections of the road route host a general traffic level of less than 5,000 vehicles each day, some sections of the rural road route have more than 20,000 vehicles. There are also several local peaks in daily traffic levels of over 10,000 vehicles a day along the route.

Heavy vehicles make up more than 20 per cent of the traffic flow for more than 75 per cent of the length of the route and heavy vehicles make...
TABLE 2 Interstate and Intra-state Corridor Links

<table>
<thead>
<tr>
<th>Route</th>
<th>Function</th>
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</thead>
<tbody>
<tr>
<td>Hume Highway</td>
<td>Sydney–Melbourne AusLink Corridor.</td>
</tr>
<tr>
<td>Northern Highway</td>
<td>Links Melbourne with central Victoria and Murray River region.</td>
</tr>
<tr>
<td>Midland Highway</td>
<td>Regional route connecting Benalla, Shepparton, Bendigo, Ballarat and Geelong.</td>
</tr>
<tr>
<td>Murray Valley Highway</td>
<td>Connects Robinvale, Swan Hill, Echuca and Albury/ Wodonga.</td>
</tr>
<tr>
<td>Riverina Highway</td>
<td>Road link serving the Riverina region between Deniliquin and Albury.</td>
</tr>
<tr>
<td>Olympic Highway</td>
<td>From Albury–Wodonga to Narrandera.</td>
</tr>
<tr>
<td>Sturt Highway</td>
<td>Sydney–Adelaide AusLink Corridor.</td>
</tr>
<tr>
<td>Mid Western Highway</td>
<td>Connects the Newell Highway at West Wyalong to the Sturt Highway at Hay.</td>
</tr>
<tr>
<td>Orange to Broken Hill Rail Line</td>
<td>Main East–West Rail Line at Parkes.</td>
</tr>
<tr>
<td>Mitchell Highway</td>
<td>Sydney–Dubbo AusLink Corridor and extending to Charleville via Burke.</td>
</tr>
<tr>
<td>Oxley Highway</td>
<td>Connects the North Coast at Port Macquarie, Tamworth and Coonabarabran.</td>
</tr>
<tr>
<td>Cunningham Highway</td>
<td>Alternative route to Brisbane from Goondiwindi via Warwick and Ipswich.</td>
</tr>
<tr>
<td>South–western rail line from Goondiwindi via Warwick to Toowoomba</td>
<td>An extension of the western line which supports regional freight flows including grain to the Port of Brisbane.</td>
</tr>
<tr>
<td>Leichhardt Highway</td>
<td>Connects Goondiwindi to Rockhampton.</td>
</tr>
<tr>
<td>Barwon Highway</td>
<td>Connects Goondiwindi to St George and the Carnarvon Highway.</td>
</tr>
<tr>
<td>Warrego Highway</td>
<td>Brisbane–Darwin AusLink Corridor.</td>
</tr>
<tr>
<td>Western rail line linking Toowoomba to Ipswich</td>
<td>Services significant freight flows including coal. This line also links to a planned intermodal terminal at Charlton–Wellcamp to Brisbane.</td>
</tr>
<tr>
<td>New England Highway</td>
<td>Connects Toowoomba to Warwick on the Sydney–Brisbane AusLink Corridor (inland).</td>
</tr>
</tbody>
</table>

FIGURE 2 Total And Heavy Traffic, 1999-2003

RTA, VicRoads, QDMR.
up over 30 per cent of the inter-town total traffic volume in the following sections of the route:

between the Murray Valley Highway and Mid Western Highways and between the Leichhardt Highway and the Warrego Highway.

Passenger travel between Melbourne and Brisbane is predominantly by air. In 1999:

- 84.4 per cent of yearly passenger trips, 839,000 out of 993,000 were by air;
- 13.4 per cent was by car; and
- 1.6 per cent was by bus.

By contrast, with the domination of air travel between Melbourne and Brisbane, private car is the dominant mode of travel for visitors to places along the corridor. For instance 91.5 per cent of visitors to the Central West came by car in 2005, compared with only 2.7 per cent of visitors by coach and 2.5 per cent by plane.

Tourism

The corridor links Melbourne with Brisbane for business travellers, tourists, and those visiting friends and relatives. All three types of trips are increasing on this corridor. Business growth in South East Queensland is leading to extra business travel and as interstate migration from the southern states to Queensland continues. Relatives and friends visit in both directions.

Domestic intercity travel is seasonal – residents moving north from Victoria at the beginning of winter passing some Queenslanders travelling south to ski fields. Tourism is an important source of employment in most regions along the corridor.

In NSW tourists visit well known attractions such as the Western Plains Zoo in Dubbo (200,000 visitors each year), the Warrumbungles National Park near Coonabarabran (up to 70,000 visitors each year), the nearby Siding Springs Observatory (10,000 visitors) and the CSIRO Radio Telescope Astronomical Observatory at Parkes (120,000 visitors).

In Victoria tourist visits include lake and river activities along the Goulburn and Murray valleys.

The Freight Task

The dominant mode for end-to-end transport along the corridor and between the two major cities is road (61 per cent) followed by rail (30 per cent) and shipping (nine per cent). The entire road route is capable of accommodating B-Double vehicles. Road trains are restricted to sections of the corridor between Tocumwal and Narrandera (the southern section of the Newell), Coonabarabran and Goondiwindi (northern section) and through to Toowoomba. The Newell Highway is generally the eastern limit for road trains in New South Wales.

Domestic and export/import markets are connected to the northern sections of the corridor and to Brisbane by road, due to the lack of continuous standard gauge rail links to Brisbane. Rail links from Narrandera move freight via Sydney to Port Botany. The key message from Figure 3 is that the majority of freight travelling on the corridor is not end-to-end but rather from one part of the corridor to another – at least 17.3 million tonnes compared to 4.5 million tonnes. The major exports carried on this corridor are:

- dairy and fruit from the Goulburn Valley and Riverina districts that produce 75 per cent of Australia’s canned fruit. The region also grows vegetables for canny processing (eg tomatoes) and value-added foods including jams, pasta sauces and condiments. In 2004-05, 30 per cent of SPC/Ardmona’s canned fruit produced export earnings of $41 million. The value of milk and dairy products from the Goulburn Valley–Broken Creek region was two billion dollars in 2005;
- horticultural products, mainly vegetables and forage from the irrigation area of Queensland’s Lockyer Valley and the Darling Downs destined for regional and southern markets;
- cereals, including wheat, from along the length of the road corridor. Forty seven per cent of Australia’s cereal farms are located in the Murray Darling basin, producing export revenue of $3.3 billion in 2001. This corridor serves the eastern-most third of the Murray Darling basin – an average of 800,000 tonnes of wheat each year travels to the Port of Melbourne from the Riverina along the corridor. More than half of the grain

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7 BTRE (2006)
8 Tourism NSW (2006)
9 GHD (2006)
10 Road trains permitted on this corridor in Queensland and NSW are limited to a maximum length of 36.5 metres.
grown in southern NSW is currently transported on road to ports. The Goulburn–Broken Catchment region produced 555,431 tonnes of cereals in 2003-04. A lot of the grain in Queensland also goes to the Port of Brisbane by road; almost the entire Australian rice crop is grown in the Murray Darling Basin and travels by road and rail to domestic and export markets. More than 650,000 tonnes of rice grown each year in the Riverina is carried by rail for export through Melbourne ports; in NSW (cereals) and southern Queensland (grains) move by road or rail or a combination of road and rail to seaports or other domestic consumers including feedlots; all of the Australian cotton growing regions are located along the road route for this corridor.

Cotton is grown in the Namoi and Gwydir valleys of NSW and in the Macintyre Valley, St George–Dirranbandi, Goondiwindi and the Darling Downs in Queensland, producing approximately two million bales. Cotton from the Darling Downs is freighted on this corridor from Toowoomba for transport to Brisbane. Cotton products are warehoused around the towns of Goondiwindi, Moree, Narrabri and Wee Waa. Cotton is transported by both road and rail in forty-foot containers for export from Botany and Brisbane ports.

wool grown in central NSW is exported from the Port of Sydney after moving across the corridor by rail. NSW produced 165,000 tonnes of Australia’s 475,000 tonnes of wool grown in 2004-05;
beef and sheep are also major products from the corridor, with around half of the meat products exported. Live animals are predominantly trucked along the corridor whereas processed carcasses are moved by refrigerated containers on both road and rail; and

- coal mined near the northern end of the corridor around Ipswich and between Dalby and Toowoomba. Approximately four million tonnes of coal each year moves by rail to the Port of Brisbane. In addition, 500 kilo tonnes of coal moves from Acland to Swan Bank Power Station by road.

Other Products
Goods manufactured in or imported into Brisbane and Melbourne are distributed via the corridor to regional centres. Melbourne also supplies considerable quantities of manufactured goods to sustain Brisbane’s growth. A range of manufacturing industries in regional areas make products for both export/import and local markets, for example:

- machinery and equipment manufacturing are worth $245 million and $165 million respectively to the Central West NSW economy; and
- manufacturing turnover in the Darling Downs statistical division in Queensland was two billion dollars in 1999-2000, 6.3 per cent of Queensland’s total manufacturing output.

Competition between Transport Modes
Road is the dominant mode for freight and private motor vehicle journeys. Road clearly has the advantage on this corridor with more direct and timely services between Melbourne and Brisbane compared to rail transport. This is despite the fact that the length of the journey potentially makes it an attractive corridor for long haul rail freight services. The need to go through Sydney is a major challenge for Melbourne–Brisbane rail freight on the corridor.

Rail competes with road in some limited locations and markets. Rail’s share of the end-to-end freight task is 30 per cent (in 2004) and rail takes some of the freight task off the road in the Riverina, central and north-west NSW by moving freight along alternative routes through Sydney and Newcastle. Broad gauge rail freight services between Tocumwal, Shepparton and Melbourne also remove freight from the Victorian sections of the road route.

Direct competition between road and rail on some parts of the corridor for freight movements is limited. For shorter journeys the majority of agricultural products transported from within the

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**FIGURE 4 Melbourne–Brisbane End-to-End Freight Forecasts**

![Graph showing Melbourne–Brisbane End-to-End Freight Forecasts](image)

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16 North–South Rail Corridor Study, Ernst & Young (2006)
corridor are dominated by road freight solutions although bulk cargo such as coal and grain are carried on the corridor by rail.

In the longer distance passenger market, air services dominate the end-to-end market on price and journey time. Private vehicles supply local and inter-regional travel needs as well as tourism and travel that is not time sensitive.

Excluding coal, the end-to-end freight task between Melbourne and Brisbane in 2004 was 4.5 million tonnes, compared with inter-regional freight in 2004 of 28.5 million tonnes\(^1\). Figure 4 shows the tonnage for each of the modes in 2004 was 2.75 million tonnes for road, 1.35 million tonnes for rail, 0.41 million tonnes by sea and 0.05 million tonnes by air.

The lack of a more direct rail link between Melbourne and Brisbane impacts on rail's market share in the corridor. Although rail capacity will have been substantially upgraded by 2009, there will continue to be deficiencies that impact on railway speed and efficiency, reflecting the long established track alignment and the need for rail freight to move through the capacity constrained Sydney network. The ability of existing intermodal terminals to support increased rail and port freight growth will also impact on rail’s ability to accommodate increased demand.

CURRENT PERFORMANCE

The current performance of the rail corridor is discussed in four other corridor strategies: Sydney–Melbourne Corridor Strategy, Sydney Urban Corridor Strategy, Sydney–Brisbane Corridor Strategy and Brisbane Urban Corridor Strategy. In addition, the performance of this corridor is impacted upon by other strategic connecting corridors. The discussion below focuses on the performance of the road route.

Urban speed restrictions do not generally represent a major impediment along the corridor. More than 90 per cent of the road route is able to support traffic moving at 100 kilometres an hour and the current end-to-end drive time is estimated at 19 hours (excluding rest periods). Towns along the corridor account for only five per cent of the length of the road route. One of the positive effects of towns along the route is the contribution to managing fatigue in drivers by providing rest opportunities.

Without a direct Melbourne–Brisbane rail service, performance of the current corridor is focused on the Sydney–Melbourne rail link, which is standard gauge dual track south from Sydney to Junee, then single track to Melbourne, and then initially dual track and then in parts multiple/single track between Sydney and Brisbane. The performance of the track reflects its alignment which was established in the 19th century. There are many locations having tight curvature and steep grades, poor track quality and insufficient passing capacity. Rail freight movements are also highly constrained for significant parts of the day in the urban areas of Sydney with priority given to passenger services. This combination of factors inhibits the ability of rail to compete against road freight transport.

Capacity

Most rural sections of the road corridor are adequate for the traffic levels. The entire length of the road route is able to accommodate B-Double type vehicles. However, some sections of the road corridor are constrained. Most notable is the difficulty encountered by heavy vehicles in negotiating the Toowoomba escarpment in both directions. The topography through the Warrumbungles involves a high number of curves and short climbs and descents. The 16 kilometres of road south of Tocumwal is affected by poor geometry with tight curves, narrow bridges and speed restrictions. These and other shorter sections suffer from a lack of overtaking opportunities. Road train combinations are permitted along the Newell Highway in the Riverina region of NSW between Tocumwal and Jolly's Creek, 24 kilometres south of Narrandera and in the north between Coonabarabran and Toowoomba.

Capacity is reduced where through-traffic has to negotiate the high number of villages, towns and regional centres located along the corridor. Daytime congestion is evident in larger towns while heavy vehicles can compromise night time amenity of some residents where there is no town bypass.

At the northern end of the corridor there is a need to upgrade intersections and lane capacity on the Warrego Highway to cope with impacts of growth in the Western Corridor, including developments surrounding Ebenezer freight terminal, Aerospace Park and Air Force Base expansion at Amberley.

Under the current AusLink and Australian Rail Track

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\(^1\) North–South Rail Corridor Study, Ernst & Young (2006)
Corporation (ARTC) investment programmes, a number of the current major rail deficiencies are being addressed, including increasing the number of passing lanes between Melbourne and Junee to significantly increase capacity, reduce transit time and improve reliability and construction of a dedicated freight line for a distance of 30 kilometres between Macarthur and Sefton in southern Sydney. Concrete sleepering of the entire ARTC leased track between Melbourne, Sydney and the Queensland border will allow increased train speeds, reduce the incidence of temporary speed restrictions and delays due to track work, and eliminate speed restrictions imposed on high temperature days.

The Brisbane Urban Corridor Strategy and the Melbourne Urban Corridor Strategy address the capacity and other issues at either end of the road corridor.

Efficiency and Productivity

In some places with increasing demands on local access, land use decisions have resulted in strip development that reduces local speed limits and increases the transit times for through-traffic along the road routes.

Sustainability of land use and future urban development along the corridor will need to be monitored and managed over the period of the strategy to mitigate risks to traffic capacity arising from ribbon-development and safety risks arising from driveway and access arrangements. As traffic increases, congestion issues will need to be kept under review at key intersections and towns along the route.

Some rail-road intermodal terminals along the corridor experience road-side and rail-side freight handling delays and inefficiencies partly due to the lack of investment in modern equipment and systems. Customs or quarantine functions at inland terminals would further reduce delays at the ports.

The current average Melbourne–Brisbane terminal to terminal transit time along the coastal rail corridor is 36 hours and 10 minutes. The NSRCS found that there are several major infrastructure constraints that impact on the ability of rail to provide an optimal service along the existing coastal route without significant capital investment. These include the metropolitan rail network constraints through northern Sydney, the vertical grades and horizontal curvature through Cowan Bank and similar geometric constraints and environmental considerations through the Hawkesbury area.

The Toowoomba Range poses a similar challenge to the movement of freight trains west of Brisbane.

Reliability

Reliability is a measure of the ability of the network to enable consistent and predictable travel times. In normal circumstances, the road corridor permits predictable and routine trip times between Melbourne and Brisbane. Travel times can be severely constrained by urban congestion at each end particularly impacting on freight. These issues are addressed in the relevant urban corridor strategies.

Overall reliability of the corridor is considered adequate in terms of journey times. However, low flood immunity at a number of locations on the road reduces reliability. Along Newell Highway:

- between 10 and 90 kilometres north of Moree, there are 10 locations where the road is prone to flooding at an average recurrence interval of five years or less; and
- between 10 and 100 kilometres north of Narrabri, there are five locations where the road is prone to flooding at an average recurrence interval of five years or less and one location where flooding recurs at a 10 year interval.

A current programme of works is in place to reduce the delay from “nuisance flooding” and allow traffic on the corridor when a minor flood occurs to access the next town or a detour route. However, culverts or a bridge may be required to upgrade the route to mitigate against flooding in these locations.

The Queensland Department of Main Roads indicates that flooding occurs over sections for approximately 70 kilometres north of Goondiwindi. Flood events at these locations occur at intervals of between one and five years and can result in road closures of up to three days during larger events. Major flooding also occurs at the Condamine River floodplain, north of Millmerran, with a maximum road closure of seven days.

The NSRCS found that reliability on this corridor is currently 98 per cent for road and 40 per cent for rail; a significant impediment to rail’s ability to effectively compete with road transport despite

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18 ARTC Interstate Rail Network Audit, April 2001.
19 RTA (2004)
the long haul nature of the Melbourne–Brisbane Corridor. The study has projected an inland railway through Parkes will improve rail’s reliability.

**Safety, Security and Sustainability**

The corridor historically arose from linking a series of regional roads. Commencing with the most crash-prone sections, safety could be improved by addressing a number of items: narrow bridges, lack of sealed shoulders and seal width, pavement width and quality, substandard intersections, treatment of level crossings, increasing the number of rest areas, increasing the number of overtaking lanes, and removing the remaining 90 degree intersections. Other complementary measures include enforcement and education.

Trucks driving the full length of the route will often be driving at night. Because of its length, rest stops are particularly important to address driver fatigue. However, both the spacing of rest stops and the level of facilities provided to travellers vary along the route.

The NSRCS found that the coastal route through Sydney had a higher security risk given the potential impact on passenger and freight flows. There are limited standard gauge route alternatives to maintain rail freight traffic between Melbourne and Brisbane.

The solid bars of Figure 5 show the collective risk to vehicles travelling along the corridor. Collective risk shows the density, or total number, of crashes on a road over a given length. The average casualty crash rate along the entire length of the road route is 0.25 a kilometre.

According to the AusRap 2005 risk ratings, a collective risk rate above 0.17 casualty crashes per kilometre is considered medium-high and a rate above 0.29 is considered high and falls into the worst 20 per cent of roads on the AusLink Network. Figure 5 shows that there are four segments of the road (Craigieburn to Seymour, Toowoomba to Helidon, Helidon to Gatton and Gatton to Ipswich) where the collective risk is 0.63, 1.21, 0.36 and 0.9 respectively.

An alternative measure of risk takes traffic volumes on the road explicitly into account and measures individual (each vehicle) risk. Individual risk is measured by calculating casualty crash rates for each vehicle kilometre travelled as shown by the line in Figure 5.

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The casualty crash rate for the full length of the road route is 9.27 for each 100 million vehicle kilometres travelled (MVKT). The AusRap risk ratings have indicated that an individual risk rating above 12.34 for each 100 MVKT is medium-high and the worst 20 per cent of the AusLink Network has an individual risk rating above 16.44.

The highest casualty crash rate for this corridor occurs on the Warrego Highway between Helidon and Toowoomba, where the rate is 21, however the casualty crash rate is consistently high between the NSW border through Toowoomba to Ipswich. In Victoria, the Goulburn Valley Highway casualty crash rate is also high between Nagambie and the NSW border, peaking at 13.84 between Numurkah and the NSW border.

The National Road Safety Strategy 2001-2010 aims to dramatically reduce death and injury on Australian roads with a target of a 40 per cent reduction in the number of fatalities per 100,000 population by 2010, to no more than 5.6 fatalities per 100,000 people by 2010. This will require a 30 per cent reduction in fatalities from 2000 levels.


Suitable reliable alternative routes via the Hume Highway and Pacific Highway exist to meet road-based freight demands, thereby reducing the security risk for the road corridor to ‘low’.
INFLUENCES THAT WILL SHAPE THE FUTURE OF THE CORRIDOR

The NSRCS forecasts that the end-to-end freight task for this corridor will have doubled by 2024 and reached approximately 11.5 million tonnes by 2029. The long haul freight task is already an important percentage of the total transport task on this corridor, accounting for an average of a third of daily vehicle trips.\(^{21}\)

Improved and increasing trade through the Port of Brisbane will assist exports originating within the corridor regions to maintain competitiveness. This will be particularly important if the volume of agricultural production is maintained despite reduced access to water and crop re-structuring over the period of the strategy.

Planned improvements in road and rail infrastructure on the corridor will help address some current deficiencies in the corridor. For example, the ARTC work programme will significantly improve reliability and transit times.

Options for more direct rail links between Melbourne and Brisbane are identified in the NSRCS. The Australian Government has also asked the ARTC to undertake an engineering and scoping study to determine the best alignment for an inland railway, should it proceed. This study will be completed in 2009. An inland railway could deliver transit time and other benefits for the corridor.

Factors that are expected to shape demand for transport and travel in the corridor include:

- population growth in south eastern Queensland, Melbourne and areas along the corridor;
- in Sydney, Government policy to increase the rail mode share of freight moved to and from Port Botany and rail mode share of passenger journeys, combined with increasing population and demand for passenger rail services. These issues are discussed in the Sydney Urban Corridor Strategy;
- growth in exports and agricultural production. Almost all exports of the commodities produced on the corridor are expected to grow in both value and quantity over the Australian Bureau of Agricultural and Resource Economics forecast horizon to 2011.\(^{22}\)
- increasing use of containerisation for bulk goods, including grains and fibres;
- potential changes as agricultural activities respond to changing market conditions and natural resource management; and
- the BTRE passenger movements forecasts\(^{23}\) predict that air travel will continue to gain mode share, growing by 2.9 per cent each year and reaching 95 per cent by 2030-31 for travel between Melbourne and Brisbane.

The following road and rail projects at Table 3 will also improve performance.

Impact of Current Programme of Works by ARTC and RailCorp

The NSRCS has confirmed that the $1.67 billion programme of works being undertaken by ARTC and RailCorp to 2009 will deliver a significant improvement to reliability and transit times along the Sydney–Melbourne and Sydney–Brisbane rail routes serving this corridor. At the completion of the programme, the ARTC estimates that the transit time between Melbourne and Brisbane will be 27 hours. The key part of this programme is discussed in more detail in the Sydney Urban Corridor Strategy.

Competition between Modes

Due to the rail route for this corridor travelling through Sydney, the potential for mode shift is limited to end-to-end freight or freight that can enter the rail route at points along the Sydney–Melbourne segment, such as Wodonga, Junee or Cootamundra, in Sydney or along the Sydney–Brisbane segment at Maitland.

The NSRCS found that under certain assumptions expected mode share for the Melbourne–Brisbane rail corridor through Sydney should increase to around 54 per cent in 2009 as a result of the current ARTC improvements. From 2009, without further investment in rail, mode share will increase to 63 per cent over the following 20 years. Development of additional intermodal terminal capacity and further intermodal efficiencies (especially in Sydney) would be required to support the projected increase in rail mode share. Capacity and alignment enhancements would improve rail reliability on the corridor and this would encourage an increase in rail modal share.

\(^{21}\) BTRE (2006)
\(^{22}\) Australian Bureau of Agricultural and Resource Economics (2006)
\(^{23}\) BTRE (2006)
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Location</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goulburn Valley Highway – Arcadia Duplication</td>
<td>Duplication of 11 kilometres of two lane road and bypass to improve the flow of traffic, including commercial vehicles.</td>
<td>Arcadia</td>
<td>Due for completion in late 2007.</td>
</tr>
<tr>
<td>Nagambie Bypass</td>
<td>Bypass to improve the flow of traffic and improving amenity for the residents of Nagambie.</td>
<td>Nagambie</td>
<td>Route identified in planning schemes.</td>
</tr>
<tr>
<td>Strathmerton Deviation</td>
<td>Eliminating a number of curves and narrow bridges approaching the Murray River near the border with NSW, whilst also saving 9 kilometres of travel.</td>
<td>Strathmerton to Tocumwal</td>
<td>Route identified in planning schemes.</td>
</tr>
<tr>
<td>Shepparton Bypass</td>
<td>Bypass to improve the level of service for commercial traffic whilst also relieving congestion and improving amenity for Shepparton and Mooroopna.</td>
<td>Shepparton</td>
<td>Route identified in planning schemes.</td>
</tr>
<tr>
<td>Bogan to Coobang Upgrade</td>
<td>Pavement reconstruction and addition of overtaking lanes.</td>
<td>Parkes</td>
<td>Under construction.</td>
</tr>
<tr>
<td>Trewiiga Realignment</td>
<td>Straightening sub-standard curves.</td>
<td>Parkes</td>
<td>Under planning.</td>
</tr>
<tr>
<td>Coonabarabran Bypass</td>
<td>Bypass including new crossings of the Castlereagh River and railway line.</td>
<td>Warrumbungle</td>
<td>Under planning.</td>
</tr>
<tr>
<td>Tycannah Creek Causeway Improvement</td>
<td>New long bridges and approaches.</td>
<td>Narrabri and Moree</td>
<td>Under construction.</td>
</tr>
<tr>
<td>Moree Bypass</td>
<td>Bypass.</td>
<td>Moree</td>
<td>Construction expected to begin late in 2007 Planning for Section 2 continuing.</td>
</tr>
<tr>
<td>Toowoomba Bypass</td>
<td>Bypass to improve safety and congestion on the existing range crossing and improve amenity through Toowoomba.</td>
<td>42 km deviation and bypass of Toowoomba</td>
<td>Planning and corridor acquisition complete Public Private Partnership Business Case underway.</td>
</tr>
<tr>
<td>ARTC South Improvement Works</td>
<td>Improving reliability and capacity on the corridor to reduce transit times by approx four hours.</td>
<td>Between Melbourne and Sydney</td>
<td>Construction has commenced on some projects with others to follow through to 2009.</td>
</tr>
<tr>
<td>Northern Sydney</td>
<td>Works on the Sydney metropolitan track from North Strathfield to improve operational efficiency.</td>
<td>Various locations</td>
<td>Planning underway.</td>
</tr>
<tr>
<td>RailCorp Clearways Projects</td>
<td>Platforms to allow freight and inter-city trains to by-pass terminating passenger trains.</td>
<td>Berowra and Hornsby</td>
<td>Berowra completed; Hornsby under construction.</td>
</tr>
<tr>
<td>ARTC Southern Sydney Freight Line</td>
<td>Construction of a dedicated freight line for a distance of 30 kilometres between Macarthur and Sefton in southern Sydney, which will allow passenger and freight services to operate independently.</td>
<td>between Macarthur and Sefton</td>
<td>Planning underway.</td>
</tr>
<tr>
<td>ARTC upgrading the Hunter Valley Rail Network</td>
<td>Increasing the current capacity of the coal rail system to meet a forecast growth of coal freight.</td>
<td>Newcastle– Werris Creek</td>
<td>Planning underway.</td>
</tr>
<tr>
<td>ARTC route upgrades on the North Coast rail line</td>
<td>Improving reliability and capacity on the corridor to reduce transit times by approx four hours.</td>
<td>Various location on the Sydney– Brisbane (North Coast) line</td>
<td>Planning completed.</td>
</tr>
</tbody>
</table>
MOST LIKELY FUTURE SCENARIO

Expected Growth

Road currently dominates the end-to-end freight market between Melbourne and Brisbane as well as freight within regional sections. However, this is projected to change with rail’s mode share and volumes increasing strongly over the forecast period as a result of current rail upgrades on the coastal route between Sydney and Brisbane and rail’s share could be further enhanced by the longer-term proposal for the inland railway linking Melbourne and Brisbane through Parkes.

The NSRCS estimates the end-to-end freight tonnage to grow from 4.5 million tonnes in 2004 to approximately 11.5 million tonnes by 2029 on this corridor according to various fuel price and market assumptions (see Figure 4). This estimate is limited to end-to-end freight and does not include freight movements within the corridor. Despite the improvements currently being made to the AusLink rail route, the Study shows that the rail route north of Newcastle will reach capacity around 2019 without significant further rail infrastructure investment. Railcorp expects capacity constraints in the Strathfield–Hornsby and Hornsby–Newcastle (particularly Cowan Bank) sections to emerge earlier than this for certain parts of the day. Similarly, further capacity constraints will be experienced in southern Sydney, notwithstanding the short to medium-term alleviation provided by the construction of the Southern Sydney Freight Line.

The most likely future scenario is that road transport will continue to dominate regional freight transport. The quantities carried on the corridor will grow significantly to 2030 causing traffic congestion and an increased risk of crashes. This traffic growth will impact on regional centres where local traffic shares the highway.

Rail links from inland regions to ports will nevertheless carry significant tonnages from agricultural regions, removing a portion of the freight task from the road corridor.

Ability of Corridor to Manage Forecast Demand

The road corridor is expected to experience significant increases in freight and passenger volumes even with likely improvements in rail freight volumes and rail performance. As well as necessary maintenance, safety improvements and targeted pavement upgrades, consideration will need to be given to addressing some key sections of the corridor (identified below) which otherwise will be affected by increased congestion and safety risk to 2030.

A future inland railway would lessen demand on the current network, and the current ARTC works programme should also improve performance on the line going into Sydney.

PRESENT AND EMERGING CORRIDOR DEFICIENCIES

There are a range of present and foreseeable deficiencies that will adversely affect the safety, efficiency, productivity, reliability and amenity of the corridor. These deficiencies are classified as:

- short-term deficiencies – these are deficiencies that are already apparent or foreseeable over the period to 2015 in the context of expected growth in demand and the likely benefits of projects already underway or committed. This is the period of the current and next National Transport Plan; and
- longer-term deficiencies – these are deficiencies that are foreseeable for the period from 2015.
Short-Term Deficiencies

Short-term deficiencies for this corridor are summarised in Table 4 and shown in Figure 6.

| SHORT-TERM (to 2015) | The road through Toowoomba with urban congestion and intersection safety and the Toowoomba Range being constrained by low speed curves down the escarpment. The alignment and gradient of the road causes congestion and crashes and limits the loading of heavy vehicles. Rail network capacity for freight through Sydney and north to Newcastle, especially from North Strathfield to Hornsby. The congested Sydney urban network and the constrained Sydney–Newcastle–Brisbane route are discussed in more detail in the Sydney Urban and Sydney–Brisbane Corridor Strategies respectively. Similar capacity shortcomings exist in Melbourne and are discussed in the Melbourne Urban Corridor Strategy. Higher casualty crash rates on the road between Nagambie and Tocumwal and along the Queensland segment of the corridor. On the road between Shepparton and Toowoomba the road has insufficient pavement widths, flood-prone sections and narrow bridges, except for the sections of the corridor between Tocumwal and Jerilderie and between Forbes and Dubbo. Condition of pavements for heavy vehicle traffic. Insufficient or inadequate rest areas, roadside stops and truck parking bays with adequate advanced signage to address driver fatigue management along the majority of the corridor. Poor alignment is an issue on the Newell Highway between Finley and Marsden, Forbes and Peak Hill, Dubbo and Coonabarabran and north of Moree to the border. There are insufficient overtaking opportunities between Finley and Jerilderie, West Wyalong to Marsden, Forbes to Tichborne (just south of Parkes), and Gilgandra to Warkton. Loss of community amenity in regional centres caused by heavy vehicles mixing with higher levels of local traffic is an issue, particularly at Nagambie, Shepparton, West Wyalong, Narrandera, Forbes, Parkes, Dubbo, Moree, Millmerran and Toowoomba. Safe access to local roads and properties along the road corridor. Poor road geometry and intersections, including 90 degree corners, need suitable re-alignments or treatments. The rail export/import line from Tocumwal to Shepparton is in sub-standard condition. Without improvement, the ability of this line to contribute to the freight task will reduce over time. |

TABLE 4  Summary of Short-Term Deficiencies (to 2015)
FIGURE 6  Short-Term Deficiencies of the Melbourne–Brisbane Corridor
Longer-Term Deficiencies

Longer-term deficiencies (from 2015) for this corridor are summarised in Table 5.

<table>
<thead>
<tr>
<th>LONGER-TERM (from 2015)</th>
<th>Potentially deteriorating safety performance of passenger and freight traffic, particularly for two lane sections of the road corridor and increase of impact of higher number of heavy vehicles.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Potential loss of the amenity in local and regional centres along the corridor.</td>
</tr>
<tr>
<td></td>
<td>Inconsistent and inadequate seal width and pavement strength (needed to serve forecast increases in Higher Mass Limits (HML) and Performance Based Standards (PBS) vehicles changes over time) with appropriate maintenance programme.</td>
</tr>
<tr>
<td></td>
<td>Under-strength bridges north of Tocumwal due to forecast increases in vehicle mass on the network.</td>
</tr>
<tr>
<td></td>
<td>Lack of consistent overtaking opportunities along the full length of the road route.</td>
</tr>
<tr>
<td></td>
<td>Consistent treatment of level crossing risk along the whole corridor.</td>
</tr>
<tr>
<td></td>
<td>Lack of consistent access for PBS vehicles to the road corridor.</td>
</tr>
<tr>
<td></td>
<td>Access to ports and export/import markets for those sections of the corridor that do not have access to standard gauge continuous rail routes.</td>
</tr>
<tr>
<td></td>
<td>Access to intermodal terminals on and at the ends of the corridor.</td>
</tr>
<tr>
<td></td>
<td>Addressing flooding issues not addressed in short-term priorities.</td>
</tr>
<tr>
<td></td>
<td>Rail freight capacity and reliability from Hornsby to Newcastle and in southern Sydney.</td>
</tr>
<tr>
<td></td>
<td>Addressing impacts of growth on the Western Ipswich Corridor.</td>
</tr>
</tbody>
</table>
The overarching challenges for the Melbourne–Brisbane Corridor relate to the ongoing safety, efficiency, productivity and reliability of the corridor. These challenges occur in an environment of rapid growth in demand for the movement of freight within the corridor to deliver agricultural exports to ports while maintaining safety for visitors and residents travelling along the road route. The challenges listed below should be considered together with Australia-wide challenges likely to affect the whole AusLink Network.

The specific challenges are:

- providing safe, efficient and reliable interstate and local freight connections, especially to export industries and rural and remote communities;
- managing fatigue related safety for all drivers given long travel distances;
- ensuring, where feasible and economic, increasing numbers of heavy vehicles and any infrastructure improvements have minimum impact on local amenity (noise, views, air quality, smell) and improve efficiency;
- to further reduce the casualty crash rates along the corridor given the traffic mix, night-driving by heavy vehicles and mixed driving conditions;
- the ability of rail and intermodal terminal capacity and performance, especially through Sydney and north to Newcastle, to respond to the forecast increase in the rail freight task and thereby limit the impact arising from the need to transit Sydney;
- facilitating road and rail connectivity to support the requirements of intermodal terminals;
- managing traffic and land use within and around towns to preserve the functions of the corridor;
- managing access to and from the road network;
- to mitigate incidence and duration of flooding, while minimising the impact on natural flows;
- consistent management of the whole of the corridor under the responsibility of three jurisdictions;
- maintaining the road asset and improving structural performance of pavements; and
- to optimise freight movement in the corridor from a triple bottom line perspective.
STRATEGIC PRIORITIES

The strategic priorities are a response to objectives for the AusLink Network and the challenges facing the Melbourne–Brisbane Corridor. They are measures that are of national importance; are consistent with the AusLink objectives; and need the most urgent attention. The corridor priorities provide specific guidance to investment priorities and framing of projects for the corridor as a whole or a specific link.

The strategic priorities for the Melbourne–Brisbane Corridor are in two groups:

- short-term (to 2015) – corresponding to the priorities for the next National Transport Plan and associated investment programme; and
- longer-term (from 2015) priorities.

The priorities below are those considered to be the most important across the full length of the routes covered by this strategy and are centred around five strategic themes that represent the shared objectives of the Australian and Victorian, New South Wales and Queensland Governments for the long-term development of the corridor. The themes are:

- improving the safety, reliability and efficiency of passenger and freight movement on the road corridor, especially the two lane sections;
- improving the safety of the road corridor to reduce casualty crashes particularly in areas of high casualty crash rates and at intersections;
- improving rail and intermodal capacity, reliability and performance between Melbourne and Brisbane;
- improving infrastructure along the corridor to facilitate the use of PBS heavy vehicle configurations and other technological improvements approved for use in the freight transport industry; and
- maintaining and improving where possible economic, local safety and residential amenity for communities along the corridor.

Short-Term Priorities

Responding to the challenges facing the Melbourne–Brisbane Corridor will require a combination of making more efficient and sustainable use of existing road and rail infrastructure; targeted investment in infrastructure upgrades; and planning for longer-term needs. The short-term priorities are listed below against the strategic themes and cross-referenced against the AusLink objectives in Table 4.

Improving the safety and efficiency of passenger and freight movement along the road corridor, especially the two lane sections:

- develop agreed options for construction of the road crossing of the Toowoomba Range, including a bypass of the City of Toowoomba;
- increase safety measures on parts of the road route with high traffic volumes and a high proportion of heavy vehicles;
- manage fatigue related safety issues;
- strengthen, widen and improve road pavements and bridges to cater for increasing numbers of heavy vehicles per day, and address nuisance flooding; and
- finalise an integrated overtaking lane plan with agreed levels of regularly spaced overtaking lanes.

Improving the road corridor to reduce casualty crashes:

- address high crash locations;
- realign the sections with poor geometry and alignment, including tight curves, right-angle intersections and locations subject to flooding; and
- consistent treatment of level crossing risk along the whole corridor.

Increased rail and intermodal capacity, and improved rail reliability and performance between Melbourne and Brisbane:

- increase rail capacity and reliability between North Strathfield and Hornsby;
- increase capacity and performance of intermodal terminals in Sydney, Melbourne and Brisbane to support the movement of interstate rail freight; and
- commence engineering and scoping study of alignment of an inland railway linking Melbourne and Brisbane.

Improve infrastructure along the corridor to facilitate the use of PBS heavy vehicle configurations and other technological improvements approved for use in the freight transport industry:

- facilitate improved access to and from rail-road intermodal facilities along the corridor; and
TABLE 6 Summary of Short-Term Priorities

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<tbody>
<tr>
<td>Develop agreed options for construction of the road crossing of the Toowoomba Range, including a bypass of the City of Toowoomba.</td>
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<td>Increase safety measures on parts of the road route with high traffic volumes and a high proportion of heavy vehicles.</td>
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<td>Strengthen, widen and improve road pavements and bridges to cater for increasing number of heavy vehicles per day, and address nuisance flooding.</td>
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<td>Finalise an integrated overtaking lane plan with agreed levels of regularly spaced overtaking lanes.</td>
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<td>Address high crash locations.</td>
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<td>Manage fatigue related safety issues.</td>
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<td>Realign the sections with poor geometry and alignment, including tight curves, right-angle intersections and locations subject to flooding.</td>
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<td>Consistent treatment of level crossing risk along the whole corridor.</td>
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<tr>
<td>Increase rail capacity and reliability between North Strathfield and Hornsby.</td>
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<tr>
<td>Increase capacity and performance of intermodal terminals in Sydney, Melbourne and Brisbane to support the movement of interstate rail freight.</td>
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<td>Engineering and scoping study of alignment of inland railway linking Melbourne and Brisbane.</td>
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<tr>
<td>Facilitate improved access to and from rail-road intermodal facilities along the corridor.</td>
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<td>Maintain capacity by strengthening bridges to serve forecast increases in vehicle mass on the network, particularly between Tocumwal and Moree.</td>
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<td>A programme of urban and rural intersection improvements.</td>
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<td>Manage local and through-traffic in the urban areas including villages and consideration of bypasses where appropriate.</td>
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</table>

● Direct linkage to objective ○ Indirect linkage to objective

This corridor is considered to be low-risk in respect of security issues.
• maintain capacity by strengthening bridges to serve forecast increases in vehicle mass on the network, particularly between Tocumwal and Moree.

Maintain local safety and residential amenity for communities along the corridor:
• a programme of urban and rural intersection improvements; and
• manage local and through-traffic in the urban areas including villages and consideration of bypasses where appropriate.

Longer-Term Priorities

To a large extent, the longer-term priorities are a continuation of short-term priorities as the key challenge is to support the economic activities along the corridor and to ensure safety and freight efficiency for road and rail are maintained. The longer-term strategic priorities are listed in Table 7 Summary of Longer-Term Priorities below.

<table>
<thead>
<tr>
<th>TABLE 7  Summary of Longer-Term Strategic Priorities</th>
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<tbody>
<tr>
<td><strong>LONGER-TERM Priorities</strong> (from 2015)</td>
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<tr>
<td>Continue to improve safety outcomes by addressing remaining lengths of two lane carriageway with casualty crash rates above the national average.</td>
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<tr>
<td>Provide appropriate enhancements to road infrastructure especially for sections of the corridor with the highest volumes of increased freight movement (for example, through improved pavement strength, overtaking lanes and reducing susceptibility of high risk flood areas).</td>
</tr>
<tr>
<td>Continue programme of works to improve capacity and access on the rail corridor between Melbourne and Brisbane, particularly to increase rail capacity from Hornsby to Newcastle and any other areas where there are major impediments to improve rail reliability and reduced transit times.</td>
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<tr>
<td>Consideration of outcomes of inland railway engineering and scoping study.</td>
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<tr>
<td>Consider additional road capacity and traffic management measures on sections of the corridor through towns and their surrounds to maintain safety and amenity for users and residents.</td>
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<tr>
<td>Improve HML access from the AusLink network to key sites, including intermodal facilities at junctions with other corridors and major regional highways.</td>
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<tr>
<td>As traffic and freight flows increase, facilitate better road and rail access to major export/import ports.</td>
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<tr>
<td>Address flooding issues not addressed in short-term priorities.</td>
</tr>
</tbody>
</table>

NEXT STEPS

Once the Corridor Strategies are complete they will be provided to the Council of Australian Governments (COAG), which has sought them by 30 June 2007. The Strategic Priorities identified in each of the Strategies will provide a basis for the Australian and State/Territory Governments to negotiate project funding priorities for future infrastructure development on the AusLink National Network.
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ABARE

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National Intermodal Terminal Study, Meyrick, ARUP (2006)


Port of Melbourne (2006)

Tourism NSW (2006)
Australian Government Department of Infrastructure, Transport, Regional Development and Local Government
GPO Box 594, Canberra ACT 2601
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Department of Infrastructure
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Department of Main Roads
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