



Warrego Highway Upgrade Strategy

Brisbane to Charleville

Connecting Queensland's regions

February 2012

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Production

The Queensland Government’s *Warrego Highway Upgrade Strategy* is a Department of Transport and Main Roads’ publication. It builds on the 12-year *Warrego Highway Upgrade Program (Helidon – Morven)*, which was a joint submission developed with the south-west Queensland Council of Mayors following the Warrego Highway Summit held in Toowoomba in May 2010. It also had the strong support of the Royal Automobile Club of Queensland (RACQ) and the Queensland Trucking Association (QTA).

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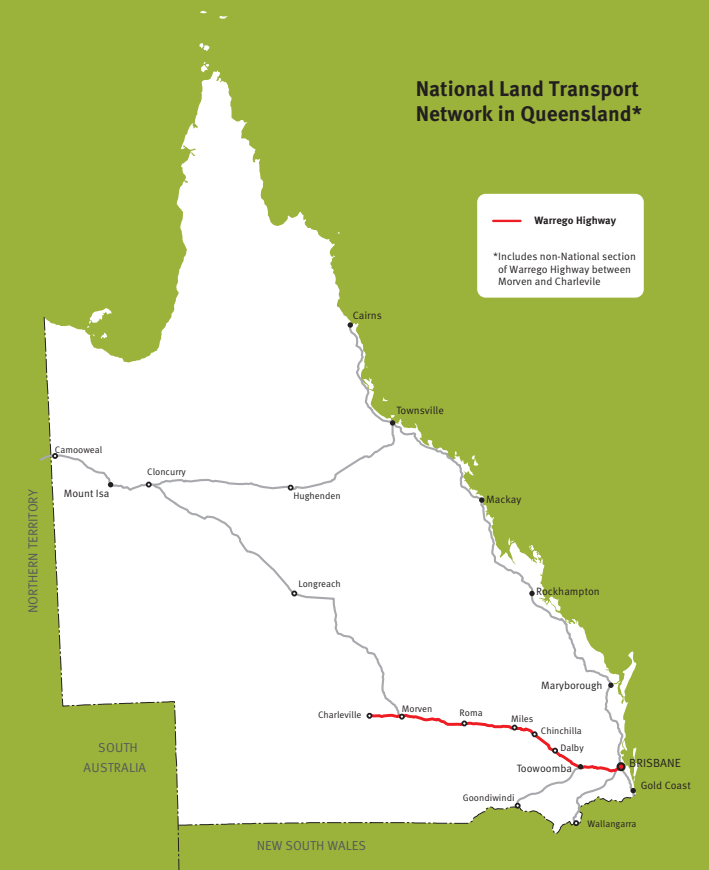
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Cover image – Warrego Highway approaching the Toowoomba Range near Withcott.

Foreword



The Warrego Highway has long been the lifeblood of southern and south-western communities, connecting Brisbane to Charleville. It forms part of the National Land Transport Network and is the second-highest trafficked rural national highway in Queensland.

This highway can continue to play a crucial role in the economic development of our state, as growth in the burgeoning energy sector in the Surat Basin gathers pace.

By upgrading the Warrego Highway, we can help unlock the enormous economic potential of the region and capitalise on the resource-driven growth that has been forecast for Queensland over the next 40 years.

We are on the cusp of massive prosperity for our State and it is through targeted infrastructure projects like this one that we seize that opportunity with both hands and make our resource prosperity work for all Queenslanders.



An upgraded Warrego Highway will deliver wide-ranging benefits to the region and the state, including improved road safety, industry productivity and community access. It will also play an important role in strengthening regional communities to cater for future growth and generating jobs.

But it's not just about the developing resource sector. An upgraded Warrego Highway will provide substantial economic benefits to producers and livestock transporters alike, supporting the region's strong tradition of agricultural production. It will also support the *Queensland Regionalisation Strategy* to strengthen Queensland's regions.

The *Warrego Highway Upgrade Strategy* proposes major investments in upgrading the highway to transform the route into a modern, safe and efficient transport link.

Key elements of this Strategy over the next 20 years include:

- staged upgrade of the highway to motorway standard between Ipswich and Toowoomba

- construction of the Toowoomba Second Range Crossing
- increased capacity west of Toowoomba, including progressively upgrading to four lanes to Dalby
- strengthen and widen narrow pavements between Dalby and Morven
- flood mitigation works at critical locations, such as Jingi Jingi Creek, and in association with general highway upgrades
- bypasses or alternative heavy vehicle routes at or around Dalby, Chinchilla and Roma.

The Queensland Government will continue to work closely with the Australian and local governments, industry and the community, to ensure the Warrego Highway supports a progressive and prosperous future for the communities and industries of south-west Queensland.

The Honourable Anna Bligh, MP
Premier and Minister for Reconstruction

The Honourable Craig Wallace MP
Minister for Main Roads, Fisheries and Marine Infrastructure



Introduction

This document provides a long-term investment strategy to improve the safety, reliability, capacity, transport efficiency and flood immunity on the Warrego Highway. The highway is Queensland's principal east-west freight route, extending 714km west from Brisbane to Charleville.

As the primary road link in south-western Queensland, providing access and economic opportunity to communities and industry in the region, the Warrego Highway provides an essential freight route for the movement of commodities such as coal, grain, meat and cotton to domestic and international markets.

The highway is a four-lane, dual carriageway highway between Ipswich and Toowoomba, and generally a two-lane highway west of Toowoomba. A high proportion of heavy vehicle traffic services the region's agricultural, energy and commercial sectors.

Continued strong growth along the South East Queensland western corridor and the development of the Surat Basin energy province are placing significant pressures on the highway.

The *Warrego Highway Upgrade Strategy* identifies short, medium and long-term priorities spanning the length of the Warrego Highway from Brisbane to Charleville. Collectively, these priorities demonstrate how the Warrego Highway can support the growth and prosperity of southern Queensland over coming decades.

These priorities will be supported by ongoing corridor improvements and continued maintenance as part of a broader vision for safe, reliable and efficient travel. Of these priority investments, those within the one to four-year time horizon are funded (or are the subject of current funding submissions to the Australian

Government), and are either under construction or well-advanced in terms of planning. These priorities are published in the current *Queensland Transport and Roads Investment Program*.

Investments beyond the four-year horizon will be dependent on available federal and state funding. This Strategy will form the basis for future funding negotiations with the Australian Government.

As part of the National Land Transport Network, of which the Warrego Highway is a critical link, funding support from the Australian Government is required to enable related highway projects to be completed. The Queensland Government will continue to work closely with the Australian Government to agree on a prioritised pipeline of investments to make this plan a reality.

Key Warrego Highway Facts

- Queensland's principal east-west freight route, extending 714km west from Brisbane to Charleville
- Forms part of the Australian Government's National Land Transport Network
- Is the second-highest trafficked rural national highway outside South East Queensland, after the Bruce Highway
- Passes through the major regional centres of Ipswich, Toowoomba, Oakey, Dalby, Chinchilla, Miles, Roma, Mitchell, Morven and Charleville, and serves as a key tourist route to outback Queensland
- A vital transport link for communities and rural settlements in the Lockyer Valley, Darling Downs, Maranoa and south-west Queensland regions
- Is the transport gateway for the burgeoning energy sector in the Surat Basin
- Will support a predicted population increase of 95,000 by 2031 in the Surat Basin region (including Toowoomba, Western Downs and Maranoa regional councils)

Planning for stronger regions

The *Warrego Highway Upgrade Strategy* forms part of the Queensland Government's overall strategic planning for the state. This planning ensures infrastructure and services can be provided to accommodate population growth, support economic prosperity and enhance the liveability of Queensland's regions.

Queensland Regionalisation Strategy and Queensland Infrastructure Plan

Regionalisation is a key tool in shaping the future of Queensland and accommodating expected growth.

The *Queensland Regionalisation Strategy* focuses on building stronger regions and ensuring growth and economic opportunities are shared throughout Queensland. It provides a vision for Queensland's regions and is the overarching strategic framework for regional policy and planning.

The *Queensland Infrastructure Plan* has been developed alongside the *Queensland Regionalisation Strategy* to ensure that Queensland has the infrastructure to respond to prosperity and quality of life needs as the state's population and economy continue to grow. To be updated annually, the *Queensland Infrastructure Plan* outlines principles to guide long-term infrastructure investment in collaboration with all levels of government and the private sector, supported through a pipeline of investment in growth-related infrastructure when and where it is needed most.

A key action of the *Queensland Regionalisation Strategy* is improving the efficiency and reliability on east-west and inland freight routes, including the Warrego Highway, with priorities for improving safety, reliability, capacity, transport efficiency and flood immunity.

Transport Coordination Plan

The *Transport Coordination Plan* delivers the vision for the transport system to connect Queensland, promote economic development and improve the quality of life for Queenslanders. It informs more detailed transport system strategies, plans and investment decisions.

Integrated Freight Strategy for Queensland

Developed by the Department of Transport and Main Roads in conjunction with industry, the *Integrated Freight Strategy for Queensland* (IFSQ) is a high-level strategy that establishes principles and guidelines to inform government policy, planning, regulation and investment to develop more efficient freight solutions for the future. As a key link in the Australian Government's proposed National Land Freight Network, the Warrego Highway has an important role in the efficient movement of freight. Current capacity constraints of the rail network limit the opportunity for bulk transport by rail of commodities such as coal and grain, making the upgrade of the Warrego Highway even more urgent.

Regional Planning

The *Queensland Regionalisation Strategy* provides the framework for other planning activities to ensure consistency and to support the outcomes of regionalisation.

Other plans, such as statutory regional plans, council planning schemes, regional planning policies and integrated regional transport plans all contribute to good planning across Queensland's regions. A range of plans and government strategies are in place across the state to respond to Queensland's population and economic growth.



Oakey gas fired power station

Connecting SEQ 2031

Connecting SEQ 2031 is the Queensland Government’s long-term transport plan to develop a sustainable transport system in the south-east corner of the state. Over the next two decades, the vision for South East Queensland includes the development of a more fully integrated transport network to support a prosperous region. Upgrading of the Warrego Highway and the Toowoomba Second Range Crossing are strategic priorities identified in the plan for completing the motorway network.

2007 Brisbane – Darwin and Melbourne – Brisbane Corridor Strategies

The *2007 Brisbane - Darwin Corridor Strategy* and the *2007 Melbourne - Brisbane Corridor Strategy* – jointly developed by the Australian and Queensland Governments – provide short and long-term visions for the Warrego Highway corridor. Along with identifying emerging transport demand pressures and performance issues, these strategies provide statements of key challenges, shared objectives and strategic priorities for the corridor and have guided development of the *Warrego Highway Upgrade Strategy*.

Queensland Transport and Roads Investment Program

The *Queensland Transport and Roads Investment Program*, developed by the Department of Transport and Main Roads, is a four-year rolling program of road and transport infrastructure works. It is published annually on the basis that works identified in years one and two are fully committed, with those in years three and four indicative for planning purposes. This allows local government, industry and the community to plan ahead with greater certainty.

Key projects in the *Queensland Transport and Roads Investment Program* are reflected in the *Queensland Infrastructure Plan*.

Surat Basin Future Directions Statement and Draft Surat Basin Regional Transport Strategy

The *Surat Basin Future Directions Statement* released by the Queensland Government in 2010 establishes a framework for the state, community and industry to work together to achieve a prosperous and sustainable future for the Surat Basin region.

Development of the vast coal and coal seam gas resources in the Surat Basin, located between Toowoomba and Roma, will drive significant economic

development in the region over the next 20 years and beyond. While this provides opportunities for economic development, it also puts extreme pressure on local communities, services and infrastructure, including the Warrego Highway. This Statement aims to maximise economic benefits and minimise any unintended consequences of rapid growth for the region. It recognises that an upgraded Warrego Highway is vital to facilitate development of the Surat Basin energy province.

The draft *Surat Basin Regional Transport Strategy* prepared in 2011, considered the various and wide-ranging impacts on the transport network in the Surat Basin and identified strategic actions to support sustainable growth in the region. It recognises that development in the Surat Basin is currently, and will continue to place, significant pressure on the already strained Warrego Highway, and that significant investment needs to be made to ensure the transport network will be able to cater for current and future traffic demand and support continued economic development.

The draft Transport Strategy identifies upgrading the Warrego Highway, including the Toowoomba Second Range Crossing, as short to medium-term priorities.



The Warrego Highway

Functions

As Queensland's principal east-west freight route, extending west 714km from Brisbane to Charleville, the Warrego Highway (M2/A2) is an important strategic link in Queensland's national and state road networks.

The highway connects Brisbane to Toowoomba and southern Queensland, central and western New South Wales and Victoria (via the A39 Gore Highway) and the Northern Territory (via the A2 Landsborough and Barkly highways). (Refer Figure 1, page 6).

West of Brisbane, between Ipswich and Morven, the highway forms part of the Australian Government's National Land Transport Network Brisbane – Darwin national corridor. The Ipswich to Toowoomba section also forms part of the Melbourne – Brisbane national corridor.

West of Morven, the highway becomes an alternative route to the A2 national corridor via Charleville,

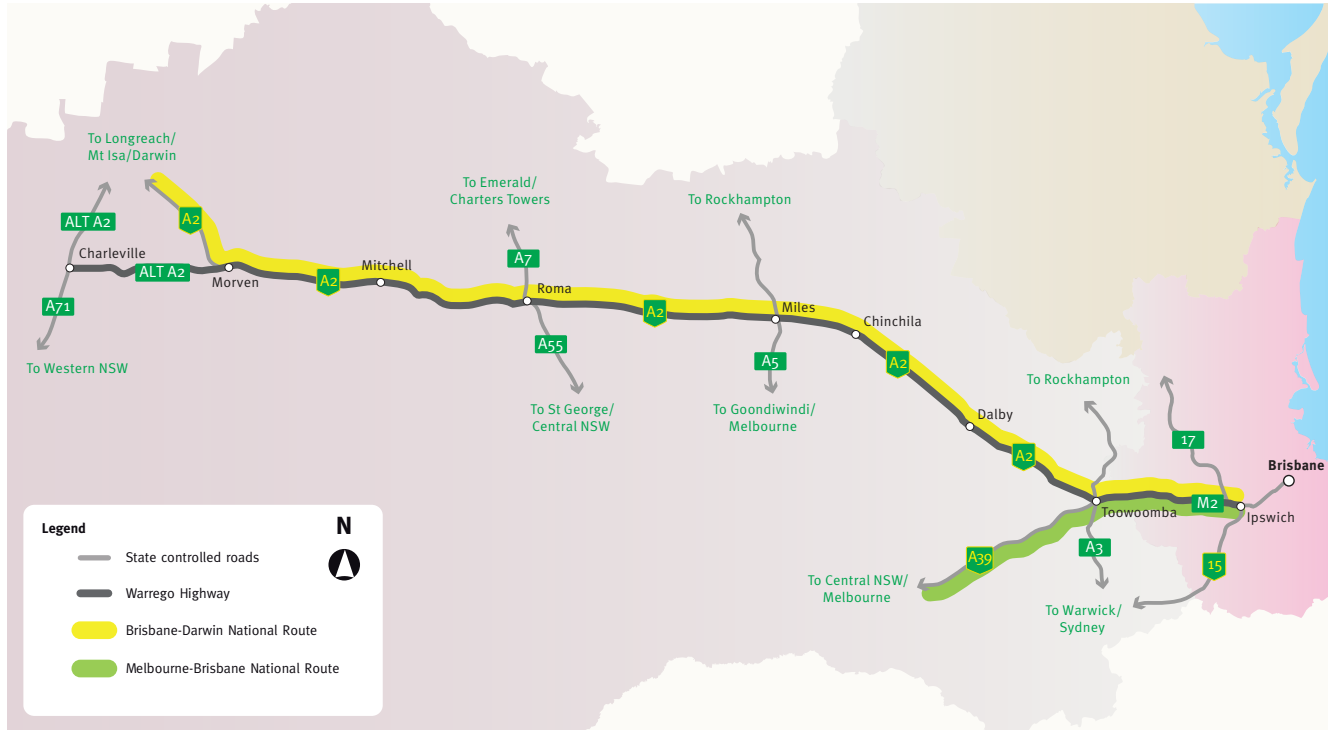
providing access to communities and the gas and oilfields of south-west Queensland.

The highway supports a range of interstate, intrastate, inter-regional and local functions, including:

- connecting primary producers and industries in southern Queensland and central New South Wales to the Port of Brisbane
- serving as the east-west spine of southern Queensland's road network, providing connections to key north-south interstate routes to Sydney, Melbourne and Darwin, and intrastate routes to Rockhampton and Townsville
- serving as the principal freight route to the emerging Surat Basin energy resource province
- connecting produce growers of the Lockyer Valley to domestic markets in Queensland, New South Wales and Victoria

- connecting towns and rural/remote communities to essential services, including health, education, employment and commerce
- providing improved access for industry and the community to domestic and international airport facilities in Brisbane
- serving as a strategic interstate tourist route, it represents one of the key linkages for drive-based tourism to Queensland's outback regions, which are important to the economy of many towns on the Warrego Highway and beyond
- serving as a strategic military route between southern Queensland and the Northern Territory and as a link between key military installations in southern Queensland, including Amberley RAAF base, Oakey army aviation centre, Borneo Barracks and the Greenbank military area.

Figure 1. Warrego Highway and major connecting routes



Freight access

The Warrego Highway provides the following heavy vehicle access:

- Ipswich to Toowoomba – up to 25-metre B-doubles (and up to 30-metre performance based vehicles PBS Level 2B under permit to the Port of Brisbane)
- Toowoomba to Mitchell – up to Type 1 road trains
- Mitchell to Morven – up to Type 2 road trains
- Morven to Charleville – up to Type 1 road trains

The National Network section of the Warrego Highway is a high-capacity freight route with Higher Mass Limits vehicle access. The highway is currently being upgraded between Mitchell and Roma to extend Type 2 road train access to the western outskirts of Roma.

A vital freight artery

The Australian and Queensland Governments recognise the vital role the Warrego Highway plays in transporting people and freight between and around the southern region. As part of the National Land Transport Network and the proposed National Land Freight Network, the highway provides for major freight movements interstate, and regionally (between the administrative and commercial centres of Toowoomba, Dalby and Roma, the agriculture sectors in the Lockyer Valley, Darling Downs and the south-west, and the energy and resource developments of the Surat Basin).

The highway carries large volumes of seasonal harvest exports, such as grains and cotton to port; cattle between pastures, saleyards, feedlots and abattoirs; produce to domestic markets; coal to power stations;

mining and drilling equipment and supplies to mines, as well as general freight, including food, consumer goods, building materials, fuel, petrochemicals, fertilisers and machinery.

Brisbane, at the eastern end of the Brisbane – Darwin and Melbourne – Brisbane corridors, is one of the fastest growing economies in Australia. As the centre of significant commercial and industrial activity, Brisbane is the origin of general freight, beverages, plant and equipment, fuel and other products that are transported via the Warrego Highway to south-west, central-west and north-west Queensland through to Darwin.

Agriculture plays a major role in the economy of southern Queensland and provides a major contribution to Australia’s food security.

The rich fertile soils of the Lockyer Valley and the Darling Downs produce over a third of the total value of agriculture in Queensland. This includes the majority of the state’s wheat and oilseeds, approximately half its maize, as well as oats, sorghum, barley, millet, cotton, soybeans and sunflowers.

Livestock production is primarily focused on beef, but also includes wool, lamb, pork and poultry products. Local saleyards (including two of Australia’s largest cattle saleyards at Roma and Dalby), feedlots and several major abattoirs (including Beef City, west of Toowoomba, the largest meat packer and export facility in Australia) form a vital link in the state’s food supply chain.

Warrego Highway is a vital link for the movement of cattle and agricultural products



Connecting communities in southern Queensland

The Warrego Highway is a vital transport link for communities and rural settlements in the Lockyer Valley, Darling Downs, Maranoa and south-west Queensland regions. Strong population growth is planned along the South East Queensland western corridor, comprising Ipswich City and the Scenic Rim, Lockyer Valley, Somerset and Toowoomba Regional Councils and, more generally in South East Queensland within the next 20 years. As such, the Warrego Highway will play a major part in supporting regional growth.

The corridor from Toowoomba to Dalby is projected to experience strong population growth associated with the development of the Surat Basin energy province and resurgence in the agricultural sector following the end of the extended drought of the last decade.

By 2031, the population of the Surat Basin (including Toowoomba, Western Downs and Maranoa Regional Councils) is projected to increase by 95,000 people, with approximately 90 per cent expected to live within the Toowoomba Regional Council area.

Supporting the Surat Basin Energy Province

The Surat Basin contains vast coal and gas energy reserves which will see the region transform into a major energy province over the next 20 years. The region is estimated to contain 6.3 billion tonnes of thermal coal, 565 billion cubic metres of coal seam gas, 6 million barrels of oil and 2.6 million barrels of liquid petroleum gas.

The region is already a major producer of electricity with 10 coal and gas-fired power stations generating over 6000 megawatts of electricity.

Additional stations are proposed, including the proposed Solar Dawn solar thermal gas hybrid plant at Chinchilla, which forms part of the Australian Government's Solar Flagship Program.

Coal mines around Wandoan are also planned, with the region's existing five coal mines (New Acland, Commodore, Wilkie Creek, Kogan Creek and Cameby Downs) currently supplying thermal coal to domestic and international markets. Industries are also considering opportunities for alternative uses for coal; for example, Linc Energy's \$1.2 billion gas-to-liquids Chinchilla demonstration facility is currently investigating options to convert coal to syngas to produce diesel.

Most development, however, will focus around the coal seam gas fields which will feed Queensland's developing liquid natural gas (LNG) industry at Gladstone.

The LNG industry has already committed to over \$50 billion in private sector investment. Agreements are in place for the export of over 27 million tonnes per annum (mtpa), however, this could grow to 50 mtpa, creating over 18,000 direct and indirect jobs across Queensland, including over 4,300 in the Surat Basin. This industry growth is expected to double the Surat Basin's population and fuel economic growth, doubling gross regional product to over \$9 billion per annum.

As the principal road link to and within the Surat Basin, traffic on the Warrego Highway is expected to grow faster than the current 6 per cent per year, which is double the current state average. This will place major strain on the already stressed highway.

Catering for regional employment opportunities

Development of the Charlton Wellcamp Enterprise Area will create a significant industrial area for southern Queensland. Strategically located 13 km west of Toowoomba at Charlton, Toowoomba Regional Council estimates the 1,600 hectare industrial and transport hub has the potential to generate approximately 10,000 jobs.

Proximity of the Charlton Wellcamp Enterprise Area to the Warrego, Gore and New England Highways and the proposed Melbourne-Brisbane inland rail project also means that it will be a critical element of the state and national freight and logistics network connecting southern Queensland and the southern states – and, in the course of time, central and north western Queensland.

The proposed Melbourne-Brisbane inland railway would result in a major transformation of freight haulage network in eastern Australia and bring a national rail freight focus to Toowoomba. When developed, the railway would establish Toowoomba as a major inland multi-modal freight hub.

Challenges

The Warrego Highway is critical to the economic health and wellbeing of communities and economic activity in southern Queensland, particularly supporting the development of the Surat Basin energy province.

The main challenges going forward for managing the highway are to improve capacity, safety, asset condition and preservation to cater for the existing and emerging freight task.

Specific challenges that need to be addressed are:

- growth in travel and freight movement double the state average, due to strong population growth along the highway corridor and economic development in the Surat Basin
- safety and access on non-motorway sections of the four-lane highway between Ipswich and Toowoomba
- freight efficiency heavily constrained at the crossing of the Great Dividing Range escarpment and through Toowoomba central urban area
- flooding, which closes the highway in numerous places, causing delays and costs to freight and passenger travel
- safety and capacity from increased traffic on two-lane highway sections and mixing of heavy vehicles and local traffic, including drive-in, drive-out workforces from south-east Queensland and regional centres to the remote gas fields and mines
- managing increased traffic movement through and around cities and towns.

The planned and proposed infrastructure investment outlined in this Strategy will help address these challenges.

Current investment initiatives

The Queensland Government, in partnership with the Australian Government, has committed to delivering a number of projects focused on improving safety and freight efficiency. These include:

- \$15 million for overtaking lanes and rest areas between Oakey and Dalby (Federal funding)
- \$50 million upgrade between Mitchell and Roma, including a new bridge across the Maranoa River at Mitchell, to extend Type 2 road train access from Mitchell to the western outskirts of Roma (Joint funding)
- \$8 million Federal Blackspot program at various locations
- \$7.5 million upgrade of Lockyer Creek bridge at Helidon and Dogwood Creek bridge at Miles to improve heavy vehicle access. (Federal funding)

Recognising the highway's vital role in supporting economic growth in southern Queensland and the emerging Surat Basin energy province, the Queensland Government has committed an additional \$164 million to:

- \$30 million Stage 1 of Warrego Highway Safety Improvement Program between Ipswich and Withcott
- \$96 million Stage 1 of highway duplication between Toowoomba and Oakey
- \$11 million for intersection safety improvements in Toowoomba
- \$10 million additional funding for pavement widening and strengthening between Macalister to Warra (total project \$37 million)
- \$10 million for project planning and preconstruction for developing future highway upgrade projects between Toowoomba and Morven
- \$7 million additional funding for safety and asset preservation.



Warrego between Dalby and Chinchilla – Development of the Surat Basin energy province has resulted in rapid growth in traffic volumes



Warrego Highway at Charlton

Current Performance

Current highway performance

Rapid development of the Surat Basin energy province, growth of region centres, such as Toowoomba, and continued increase in the national freight task are significant challenges to the safe, efficient and reliable performance of the Warrego Highway.

Safety

High traffic volumes and mixing of local and highway traffic contribute to serious and fatal crashes along the Warrego Highway. The highway between Brisbane and Toowoomba, and the regional centres of Dalby, Miles and Roma, are particular black spots for road safety improvement. West of Toowoomba, road safety is influenced by high proportions of road trains and other heavy vehicles sharing the road with local and tourist traffic.

The crossing of the Great Dividing Range escarpment and Toowoomba City have the highest crash rates on the highway.

This is largely due to the steep and winding alignment of the highway as it crosses the escarpment and the busy urban traffic conditions through central Toowoomba. (See Figure 2).

Capacity and transport efficiency

The Warrego Highway is the second-highest trafficked rural national highway outside South East Queensland, after the Bruce Highway. Current traffic volumes vary from an average of more than 40,000 vehicles per day (vpd) at Ipswich, to approximately 25,000 vpd through Toowoomba, 5,000 vpd approaching Dalby to less than 1,000 vpd west of Mitchell. (See Figure 3).

Heavy vehicles comprise a significant proportion of traffic on the Warrego Highway, making up approximately a quarter of all traffic west of Toowoomba, and approaching a third of all traffic on the lower-trafficked sections west of Roma. Over 5,700 heavy vehicles per day travel on the highway on the eastern section of the

highway around Ipswich and 3,000 heavy vehicles per day through Toowoomba. On the western sections of the highway, heavy vehicle volumes steadily decrease from 1,500 west of Toowoomba to around 200 at Morven, and below 100 vehicles per day approaching Charleville.

Current capacity constraints are generally limited to:

- delays from slow heavy vehicles negotiating the steep and winding crossing of the Great Dividing Range at Toowoomba
- congestion and delays through Toowoomba city due to urban travel conditions, including 60 km/h speed zone, 16 signalised intersections and an at-grade rail crossing
- delays from limited overtaking opportunities on two-lane sections between Toowoomba and Dalby. The Toowoomba to Oakey section has traffic volumes of 11,000 vehicles per day, which is at capacity for a two-lane highway and warrants duplication.

Figure 2. Fatal and seriously injured crashes along the Warrego Highway (2005-2009)

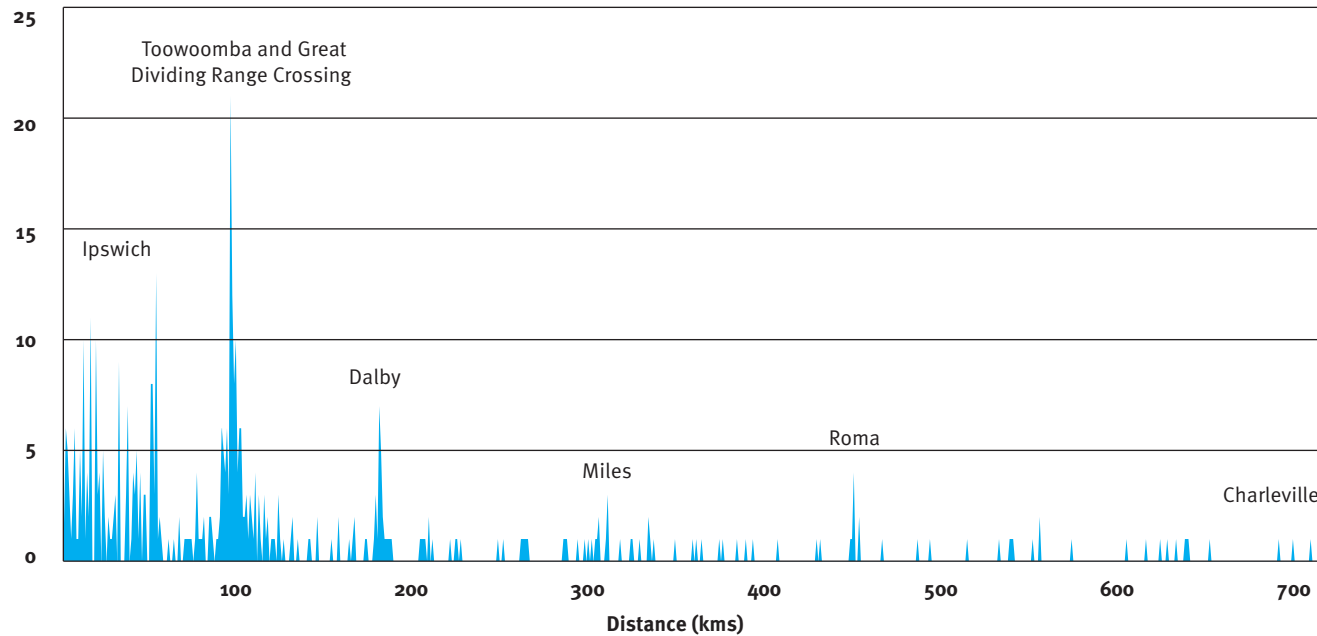


Figure 2 illustrates the fatal and seriously injured crashes on the Warrego Highway. An increase in the number of crashes generally occurs on the higher-trafficked sections between Ipswich and Dalby.

Figure 3. Total and heavy vehicle traffic volumes (2011 and projected 2031)

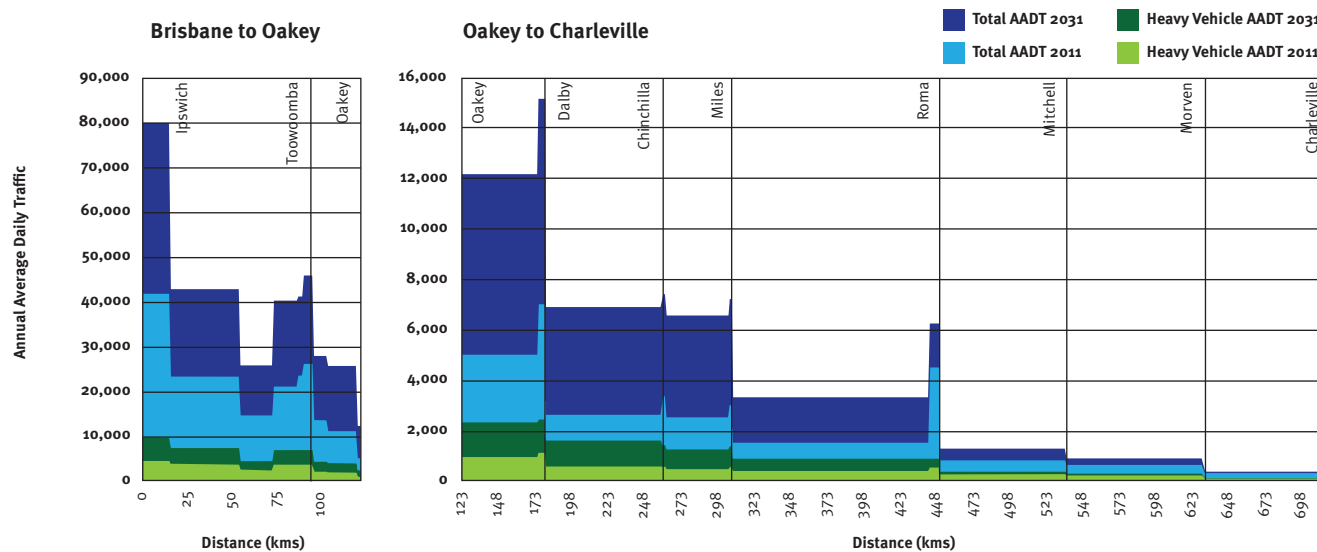


Figure 3 illustrates 2011 and 2031 Average Annual Daily Traffic (AADT) for total traffic (light and heavy vehicles) and for heavy vehicles on the Warrego Highway. Traffic volumes between Ipswich and Roma are projected to more than double over the next 20 years due growth in South East Queensland, Toowoomba and Surat Basin energy province.



Flood damage to the highway at Blyth Creek east of Roma

Flood immunity and reliability

The Warrego Highway crosses numerous floodplains and floodways, and flooding can close the highway at multiple locations for prolonged periods. This impacts on reliability, increasing travel times and costs of delays for industry and communities.

Key locations subject to flooding include:

- Crowley Vale – Laidley Creek
- Gatton – Lockyer Creek
- Toowoomba – East and West Creeks
- Oakey – Gowrie Creek
- Dalby – Doctors and Myall Creeks
- Macalister – Coranga Creek
- Chinchilla – Charlies Creek
- Miles – Dogwood Creek

- Jackson – Tchanning Creek
- Roma – Blyth Creek
- Morven – Angellala Creek

Severe flooding, which occurred in southern Queensland from mid 2010 to early 2011, resulted in lengthy highway closures of over a week in some locations. This resulted in many communities being isolated for extended periods.

Investments within this Strategy aim to improve long-term immunity along the highway, including the raising of floodways when associated with adjoining works.

In the aftermath of the floods which devastated the community of Grantham in the Lockyer Valley in 2011, the Queensland Government is re-establishing the community on a new site to the north. Development of the Grantham Reconstruction Area may support a need for a new access to the Warrego Highway. Access options for Grantham are subject to ongoing planning.

Natural Disaster Relief and Recovery Arrangements

Between mid 2010 and early 2011, southern Queensland experienced some of the worst flooding and extreme weather events in more than a century, affecting numerous communities along the Warrego Highway. This flooding caused multiple road closures and extensively damaged the existing road network and structures.

A significant portion of the Warrego Highway between Ipswich and Charleville suffered extensive damage, including closures of the Toowoomba range crossing and partial closure of the Marburg range crossing, west of Ipswich.

Recovery and restoration works funded under the Natural Disaster Relief and Recovery Arrangements (NDRRA) are currently underway.

20-year Masterplan

Vision

The Queensland Government's 20-year vision is to increase the standard of the Warrego Highway to a more efficient, safer and reliable highway. Strategic priorities include:

- improving capacity, safety and heavy vehicle efficiency
- strengthening and rehabilitating ageing pavements and structures
- improving route reliability and connectivity by addressing high-risk flood prone sections
- improving safety and efficiency on the rural two-lane sections of the highway by widening pavements and providing overtaking lanes
- managing local and through traffic conflicts, and provision of heavy vehicle bypasses, where warranted.

Strategic priorities will be accomplished by staged upgrading of the highway towards the following 20-year vision standard:

- Ipswich (Dinmore to Blacksoil) – six-lane motorway
- Ipswich to Toowoomba (Blacksoil to Toowoomba) – four-lane motorway, including a new second crossing of the Toowoomba Range
- Toowoomba to Dalby – long-term upgrade to four-lane divided highway, with upgrades west of Oakey initially focusing on widening pavements to 11 metres and increasing overtaking opportunities
- Dalby to Miles – rural two-lane highway (11-metre width) with overtaking lanes at approximately 5-10 km intervals (dependent upon traffic volumes)
- Miles to Roma – rural two-lane highway (10-metre width) with overtaking lanes at approximately 10 to 20 km intervals (dependent upon traffic volumes)

- Roma to Morven – rural two-lane highway (10-metre width)
- Morven to Charleville – rural two-lane highway (8-metre width)
- maximum time of closure in a severe flood event not exceeding 12 hours
- undertaking selected safety treatments to reduce severity and frequency of road crashes
- planning and preservation of corridors for future heavy vehicle bypasses at Charlton, Dalby, Chinchilla and Roma.

Improving safety

High traffic volumes, local and through-traffic conflicts in urban areas, narrow and failing pavements and limited overtaking opportunities contribute to accidents along the highway.

Proposed investments outlined in this Strategy aim to improve overall safety through highway duplication, intersection upgrades, pavement and shoulder widening, speed control, ongoing maintenance and other measures (such as rest areas) to counter driver fatigue. The progressive upgrading of the highway to motorway standard between Ipswich and Toowoomba will significantly improve safety by removing cross-traffic turning movements and improving highway access.

In addition, the Queensland Government is focussed on delivering the targeted fatal and serious injury crash reductions outlined in the *National Road Safety Strategy*. This will be achieved by providing tried, tested and innovative infrastructure safety features and, therefore, reduce the risk of more severe crashes from occurring. This approach will be adopted on the Warrego Highway.

Motorway through South East Queensland

An important element of the vision is the upgrading of the highway between Ipswich and Toowoomba to motorway standard, when warranted. The highway is currently a four-lane highway, with some grade-separated interchanges between Ipswich and Toowoomba.

The 13 kilometre section between Dinmore (junction of the Ipswich Motorway) and the Ipswich-Warrego Highway Connection Road carries the greatest volume of traffic and is already a declared motorway (M₂). The remainder of the highway to Toowoomba will be progressively upgraded to achieve motorway standard.

This planned transformation to motorway standard will include the closure of all median openings, removal of direct access to property, and connection to all other roads only at interchanges.



*Warrego - Chinchilla - Jingi Jingi Creek culvert.
Current structure imposes restrictions on heavy vehicle movements and it is subject to flooding*

Creation of interim at-grade connections or access to the future motorway needs to be consistent with the planning for its ultimate design, as relocation or removal is usually problematic considering the resultant land-use and traffic patterns previously established.

Upgrading to motorway standard will significantly improve road safety by reducing the current number of crashes by up to two-thirds, as well as improving traffic capacity and freight efficiency.

Increasing capacity and transport efficiency

Continued strong growth in South East Queensland and Toowoomba and development of the Surat Basin energy province, are predicted to generate significant growth in traffic over the next 20 years.

Based on predicted annual growth rates, over the next 20 years, estimated daily traffic volumes are expected to double between Ipswich and Toowoomba, and nearly treble on sections between Toowoomba and Miles. West of Miles, traffic is predicted to increase by one third. Over this 20-year period, heavy vehicle traffic is also expected to double from Ipswich to Roma, with the section between Dalby and Miles nearly trebling as a result of Surat Basin development.

By 2031, significant congestion and delays will be experienced on the highway between Ipswich and Miles and through Roma. The increase in traffic volumes, particularly heavy vehicles, will also have a significant impact on social and environmental amenity in Toowoomba and the towns it passes through, including Dalby, Chinchilla, Miles, Roma and Mitchell.

Boosting flood immunity and reliability

Given the number and length of floodways and locations subject to flooding on the Warrego Highway, it is not realistic or practical to entirely flood-proof the highway. However, incremental improvements to flood immunity at key locations will be undertaken, in conjunction with general improvements to the highway. The aim is to increase reliability and resilience of the corridor over the long-term to achieve closures not exceeding 12 hours in a severe flood event.

In some urban and built-up areas, such as in Toowoomba, Dalby, Chinchilla and Miles, opportunities to improve flood immunity on the existing highway alignment will be extremely limited, if at all available, due to potential consequences of increased afflux impacting adjoining properties.

Developing bypasses

In addition to the Toowoomba Second Range Crossing, this Strategy identifies three potential heavy vehicle bypasses on the highway. These are located at Dalby, Chinchilla and Roma. These projects require detailed investigation to determine where and when these facilities would be required, if they are deemed appropriate by the community.

Bypasses at these locations would:

- provide improved travel time for through highway traffic
- improve safety for road users and the local community by reducing conflicts between local and through traffic and between heavy vehicles, cars, cyclists and pedestrians
- improve highway reliability as a new highway alignment would offer the opportunity to improve flood immunity
- improve social and environmental amenity for local residents.

The benefit of identifying these investments now will become increasingly apparent as Queensland's regional population and economy grows. Preserving essential corridors now will provide greater certainty for industry and communities alike. Extensive community consultation on preferred bypasses will occur prior to any decision to proceed.

Toowoomba Second Range Crossing

A critical priority project on the Warrego Highway is the Toowoomba Second Range Crossing. Toowoomba and the crossing of the Great Dividing Range are the main choke points for freight travelling to/from the Port of Brisbane to the Surat Basin energy province, Melbourne and Darwin.

Most of the existing range crossing has a 10 per cent grade and tight horizontal curves. This results in high levels of congestion and a very poor crash record.

Coupled with the section of the highway running through Toowoomba City, the existing route falls short of specified national highway levels of service.

In addition to development of the Surat Basin energy province, the proposal to construct an inland rail link between Melbourne and Brisbane via Toowoomba has the potential to significantly increase heavy vehicles travelling in, around and through Toowoomba, including the Warrego Highway.

The Second Range Crossing will remove through traffic from Toowoomba and Withcott, providing an opportunity to refocus the function of the existing highway to better serve local and regional needs and residents living along the route.

Acknowledging the significance of Toowoomba as the gateway to the Surat Basin energy province, the confluence of two major national freight corridors and its future as a major inland inter-modal freight hub, the Toowoomba Second Range Crossing is of national significance.

In recognition of its importance, the Queensland Government is progressing planning of a revised business case so as to be in a position to progress the project to construction at the earliest opportunity.

Priority investments

To turn the vision into a reality, the Queensland Government has identified 41 priorities which address safety, capacity, transport efficiency, reliability and improved flood immunity.

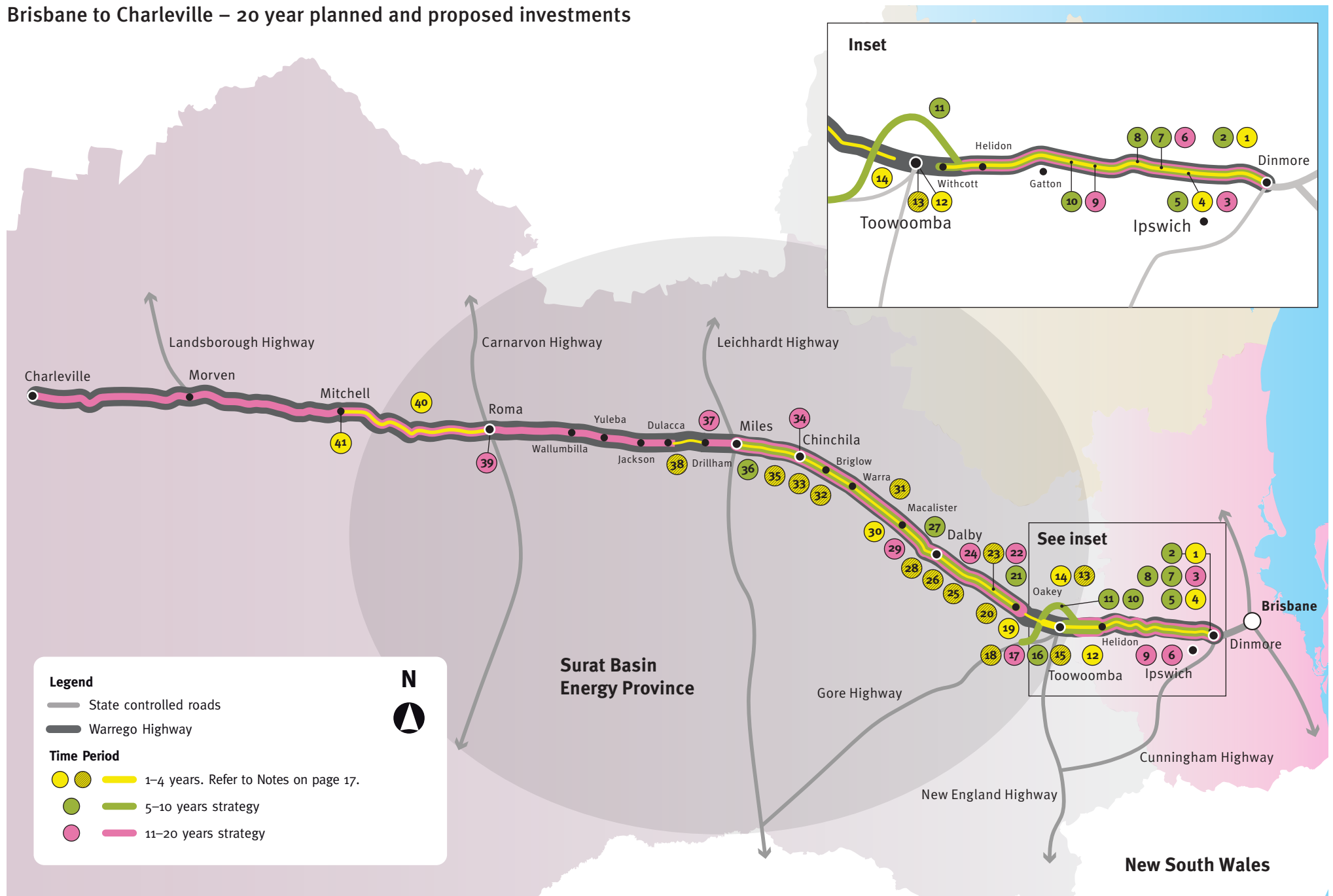
These projects will be supported by an ongoing program of general maintenance and minor upgrades to improve the performance and safety along the entire length of the highway.

These priorities are outlined on page 17.



Warrego Highway at the Toowoomba Range crossing – Approximately 3,000 heavy vehicles cross the Toowoomba Range every day

Brisbane to Charleville – 20 year planned and proposed investments



This Strategy identifies short, medium and long-term project priorities:

- **YELLOW** – short-term projects with committed funding, which have either commenced or are currently in the detailed project planning phase, and are scheduled to commence between 2012 and 2015

Number	Project
1 ⁽¹⁾	Warrego Highway Safety Improvement Program – Stage 1
2	Warrego Highway Safety Improvement Program – Stage 2
3	Dinmore to Blacksoil 6-laning
4 ⁽²⁾	Blacksoil interchange
5	Blacksoil to Helidon Spa motorway upgrade
6	Blacksoil to Helidon Spa motorway upgrade (continued)
7	Haigslea overpass
8	Minden interchange
9	Hatton Vale interchange
10	Glenore Grove interchange
11	Toowoomba Second Range Crossing
12 ⁽⁴⁾	Toowoomba intersection safety upgrades

Also identified are unfunded projects subject to federal funding approval, with construction proposed over a four-year period to meet current demand

- **GREEN** – medium-term investment proposals which have a longer horizon of 5–10 years

Number	Project
13 ⁽³⁾	Toowoomba pavement rehabilitation
14 ⁽¹⁾	Toowoomba to Oakey duplication – Stage 1
15 ⁽³⁾	Toowoomba to Oakey duplication – Stage 2
16	Charlton future corridor investigation
17	Toowoomba to Oakey duplication – Stage 3
18 ⁽³⁾	Oakey to Jondaryan upgrade
19 ⁽⁴⁾	Oakey to Dalby capacity upgrade – Stage 1
20 ⁽³⁾	Oakey to Dalby capacity upgrade – Stage 2
21	Oakey to Dalby safety upgrade
22	Oakey to Dalby duplication
23 ⁽³⁾	Malu to Victory Downs upgrade
24	Dalby bypass
25 ⁽³⁾	Dalby eastern access upgrade
26 ⁽³⁾	Dalby western access upgrade – Stages 1 & 2

- **PINK** – long-term proposals which are planned over an 11–20 year timeframe.

Medium and long-term projects are dependent on federal and state funding availability. As such, the state will work closely with the Australian Government to deliver this Strategy.

Number	Project
27	Dalby to Miles safety upgrade
28 ⁽³⁾	Dalby to Miles capacity upgrade
29	Dalby to Miles capacity upgrade (continued)
30 ⁽¹⁾	Macalister to Warra upgrade
31 ⁽³⁾	Jingi Jingi Creek upgrade
32 ⁽³⁾	Brigalow to Chinchilla upgrade
33 ⁽³⁾	Chinchilla rail crossing upgrade
34	Chinchilla bypass
35 ⁽³⁾	Miles western access upgrade
36	Miles to Charleville upgrade
37	Miles to Charleville upgrade (continued)
38 ⁽³⁾	Drillham to Palardo upgrade
39	Roma alternative heavy vehicle route
40 ⁽²⁾	Roma to Mitchell upgrade
41 ⁽²⁾	Maranoa River bridge replacement

NOTES:

(1) Queensland Government commitment in 2011-12 State Budget to address urgent capacity and safety needs.

(2) Jointly funded by Australian and Queensland Governments.

(3) Currently unfunded; subject to Australian Government funding approval, with construction proposed over a four year period to meet current demand.

(4) Federally funded.



South East Queensland

The Warrego Highway in South East Queensland is currently a four-lane divided highway with some grade-separated interchanges. The eastern-most 13km section between Dinmore and Brassall carries the greatest volume of traffic and is already a declared motorway (M2).

Over the next 20 years, this Strategy will seek to progressively upgrade the highway to full motorway standard along its full length in South East Queensland.

This will include upgrading the highway to six lanes between Dinmore and Blacksoil, removal of at-grade intersections and property accesses and the construction of interchanges.

Safety upgrades, including intersection improvements, shoulder widening and safety barriers, are proposed to address existing and developing safety issues prior to upgrading to full motorway standard.

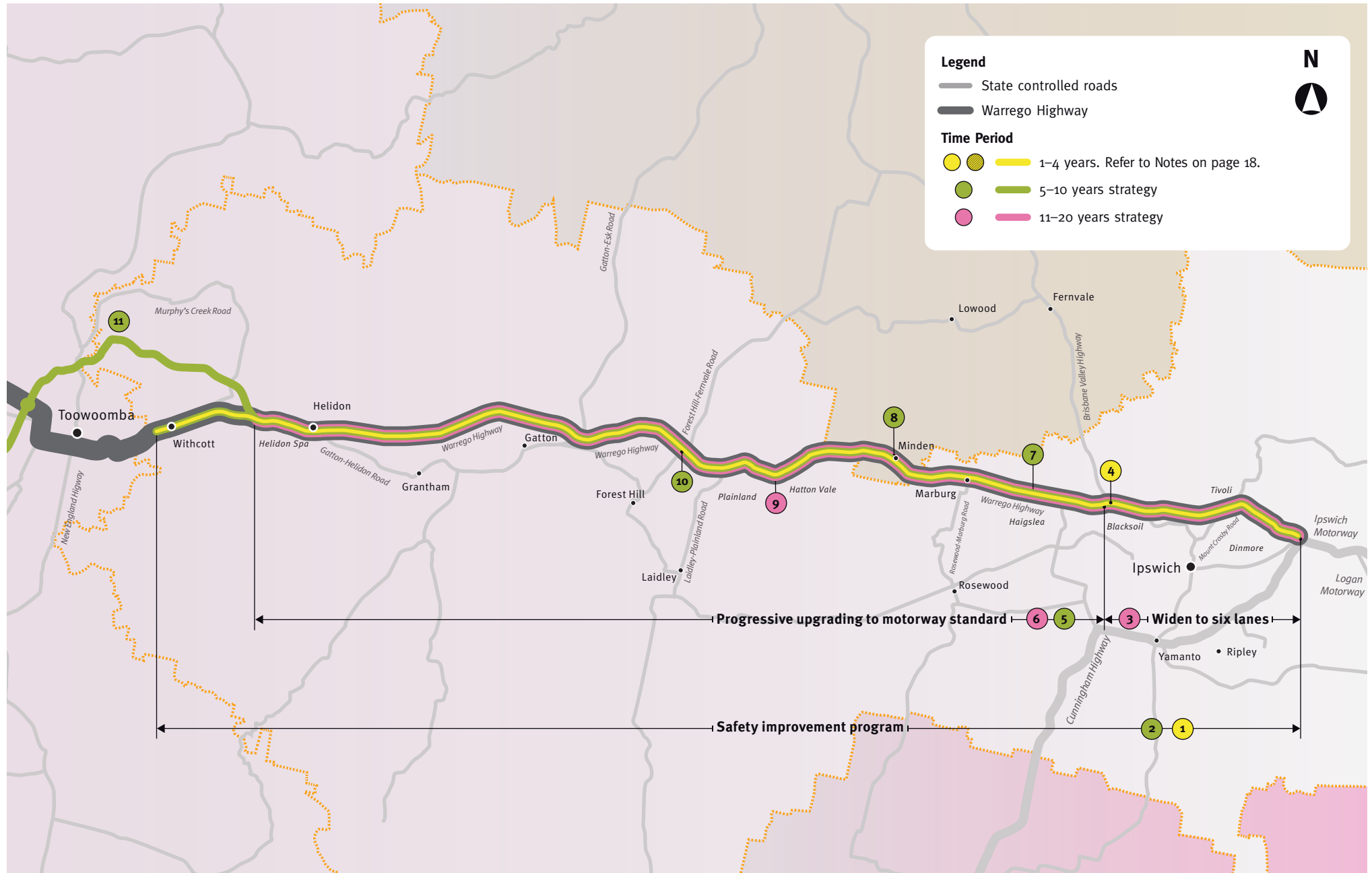
A major issue on this section is the management of highway access to improve road safety. Developing and implementing effective access management plans are essential to ensure the function of the highway is maintained and, over time, allows progressive upgrading to motorway standard whilst minimising impacts on adjoining land uses.

Number	Name	What	Why	When
1 ⁽⁴⁾	Warrego Highway Safety Improvement Program – Stage 1	Upgrade intersections, removal of roadside hazards and installation of guardrail between Dinmore and Withcott	Improve road safety through cost-effective treatments	1-4 years
4 ⁽²⁾	Blacksoil interchange	Construct interchange at junction with Brisbane Valley Highway and Wulkuraka Connection Road and provision of service roads	Improve road safety, reduce congestion and improve freight efficiency by removing all at-grade crossings of the Warrego Highway	1-4 years
2	Warrego Highway Safety Improvement Program – Stage 2	Upgrade intersections, removal of roadside hazards and installation of guardrail between Dinmore and Withcott	Improve road safety on high crash-risk sections of highway	5-10 years
5	Blacksoil to Helidon Spa motorway upgrade	Commence construction of service roads and rationalise highway access to bring highway up to motorway standard	Improve road safety, traffic efficiency and capacity by removing at-grade cross traffic and turning conflicts	5-10 years
7	Haigslea overpass	Construct overpass at the location of the future Western Ipswich Bypass interchange and construction of connection to Haigslea-Amberley Road	Improve road safety, traffic efficiency and capacity by replacing existing at-grade intersection	5-10 years
8	Minden interchange	Construct new interchange at Lowood-Minden Road and Tallegalla Road at Minden	Improve road safety, traffic efficiency and capacity by replacing existing at-grade intersection	5-10 years
10	Glenore Grove interchange	Construct new interchange at Forest Hill-Fernvale Road at Glenore Grove	Improve road safety, traffic efficiency and capacity by removing at-grade cross-traffic turning conflicts	5-10 years
11	Toowoomba Second Range Crossing	Construct a new crossing of the Toowoomba Range and a bypass of Toowoomba City	Improve road safety, freight efficiency, traffic capacity and reliability by providing a high-standard crossing of the Toowoomba Range, and improve local amenity in Toowoomba	5-10 years
3	Dinmore to Blacksoil 6-laning	Widen section to six lanes	Improve road safety, traffic capacity and freight efficiency on heavily-trafficked section of highway	11-20 years
6	Blacksoil to Helidon Spa motorway upgrade (continued)	Complete construction of service roads and rationalise highway access to bring highway up to motorway standard	Improve road safety, traffic efficiency and capacity by removing at-grade cross traffic and turning conflicts	11-20 years
9	Hatton Vale interchange	Construct new interchange at Summerholm Road at Hatton Vale	Improve road safety, traffic efficiency and capacity by replacing existing at-grade intersection	11-20 years

NOTES:

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- (2) Jointly funded by Australian and Queensland Governments.
- (3) Currently unfunded; subject to Australian Government funding approval, with construction proposed over a four year period to meet current demand.
- (4) Federally funded.

Brisbane to Toowoomba





Darling Downs South West

The Warrego Highway in the Darling Downs South West region varies from a four-lane divided highway crossing the Toowoomba Range, a four-lane urban arterial through Toowoomba City and Dalby, to a two-lane rural highway between Toowoomba and Charleville with a limited number of overtaking lanes between Toowoomba and Bowenville.

Toowoomba to Dalby

Over the next 20 years, this Strategy proposes a major transformation of the highway in this region to facilitate development of the rapidly growing Surat Basin energy province and growth in Toowoomba. Key projects include the Toowoomba Second Range Crossing which incorporates a bypass of Toowoomba, pavement strengthening and widening at selected locations and upgrades to improve capacity between Toowoomba and Dalby.

New overtaking lanes will initially provide much needed capacity improvements on the highway, west of Oakey. However, if development of the Surat Basin reaches projected levels of growth, it is predicted that, within the next 20 years, traffic volumes on the highway between Oakey and Dalby will reach levels that will warrant duplication.

Between Bowenville and Dalby, the existing corridor has low flood immunity and utility services that warrant consideration of upgrading the highway on a new alignment. To reduce traffic congestion and conflicts between local and through traffic, either a bypass or alternative heavy vehicle route will be developed for Dalby.

These improvements are expected to significantly improve road safety and transport/freight efficiency on the highway and provide the Surat Basin energy province with the necessary transport infrastructure to support the basin's development to its full potential.

Number	Name	What	Why	When
12 ⁽⁴⁾	Toowoomba intersection safety upgrades	Provide intersection upgrades and minor safety improvements through Toowoomba City	Improve road safety at high crash-risk intersections in Toowoomba	1-4 years
13 ⁽³⁾	Toowoomba pavement rehabilitation	Rehabilitate and renew failed sections of pavements through Toowoomba City	Improve road safety and transport efficiency	1-4 years
14 ⁽⁴⁾	Toowoomba to Oakey duplication – Stage 1	Duplicate 6 km section to four lanes between Nugent Pinch Road and Charlton	Improve road safety and reduce delays on the western approach to Toowoomba	1-4 years
15 ⁽³⁾	Toowoomba to Oakey duplication – Stage 2	Duplicate 4 km section to four lanes between Charlton and Kingsthorpe	Improve road safety and reduce delays on the western approach to Toowoomba	1-4 years
18 ⁽³⁾	Oakey to Jondaryan upgrade	Strengthen failing pavements between Oakey Power Station and Jondaryan and safety upgrade of Jondaryan-Sabine Road intersection	Improve road safety, freight efficiency and support development of the Surat Basin	1-4 years
19 ⁽⁴⁾	Oakey to Dalby capacity upgrade – Stage 1	Construct additional overtaking lanes and rest areas between Oakey and Dalby	Improve road safety, freight efficiency and support development of the Surat Basin	1-4 years
20 ⁽³⁾	Oakey to Dalby capacity upgrade – Stage 2	Construct additional overtaking lanes between Oakey and Dalby	Improve road safety, freight efficiency and support development of the Surat Basin	1-4 years
23 ⁽³⁾	Malu to Victory Downs upgrade	Widen and strengthen narrow and failing pavements between Malu and Bowenville and at Victory Downs	Improve road safety, freight efficiency and support development of the Surat Basin	1-4 years
25 ⁽³⁾	Dalby eastern access upgrade	Duplicate to four lanes between Winton Street and Condamine Street at Dalby	Improve road safety and freight efficiency on the eastern approach to Dalby	1-4 years
26 ⁽³⁾	Dalby western access upgrade – Stages 1 & 2	Duplicate 3.5 km section to four lanes between Condamine Street and Watt Street and widen and strengthen 2 km of narrow and rough pavement between Watt Street and Dalby-Kogan Road at Dalby	Improve road safety and freight efficiency on the western approach to Dalby	1-4 years
11	Toowoomba Second Range Crossing	Construct a new crossing of the Toowoomba Range and a bypass of Toowoomba City	Improve road safety, freight efficiency, traffic capacity and reliability by providing high standard crossing of the Toowoomba Range and improve local amenity in Toowoomba	5-10 years
16	Charlton future corridor investigation	Investigate long-term corridor options to complement capacity of existing highway	Reduce traffic impacts on the highway associated with development of the Charlton-Wellcamp industrial precinct	5-10 years
21	Oakey to Dalby safety upgrade	Provide safety improvements including intersection upgrades, removal of roadside hazards and installation of safety barriers	Improve road safety through cost-effective treatments	5-10 years
17	Toowoomba to Oakey duplication – Stage 3	Duplicate 9 km section to four lanes between Kingsthorpe and Oakey	Improve road safety and reduce delays on the western approach to Toowoomba	11-20 years
22	Oakey to Dalby duplication	Duplicate section to four lanes from Oakey to Dalby	Improve road safety and traffic capacity to cater for future traffic growth	11-20 years
24	Dalby bypass	Construct bypass of town centre of Dalby	Improve road safety, freight efficiency and local amenity, as well as improve route reliability as section is subject to flooding	11-20 years

NOTES:

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- (4) Federally funded.



Darling Downs South West

Continued.....

Dalby to Charleville

Over the next 20 years, the Warrego Highway will be progressively upgraded to provide a minimum sealed highway width of:

- 11-metres between Dalby and Miles
- 10-metres between Miles and Morven
- 8-metres between Morven and Charleville.

New overtaking opportunities will be provided between Dalby and Roma to provide additional capacity to cater for the expected traffic growth associated with continued development of the Surat Basin energy province.

To improve safety, local amenity and flood immunity, a bypass will be developed at Chinchilla, when warranted. At Roma, an alternative heavy vehicle route will be developed to improve freight access to the east of Roma and to reduce conflicts between local traffic and through heavy vehicles.

These improvements are expected to improve road safety and transport efficiency on the highway supporting tourism, primary industry and resource sectors.

Number	Name	What	Why	When
28 ⁽³⁾	Dalby to Miles capacity upgrade	Construct up to seven overtaking lanes between Dalby and Miles	Improve road safety, freight efficiency and traffic capacity to cater for future traffic growth from development of the Surat Basin	1-4 years
30 ⁽⁴⁾	Macalister to Warra upgrade	Widen and strengthen 13 km of narrow and failing pavements and improve flood immunity between Macalister and Warra	Improve road safety, freight efficiency and support development of the Surat Basin	1-4 years
31 ⁽³⁾	Jingi Jingi Creek upgrade	Construct new culvert at Jingi Jingi Creek	Improve freight efficiency by replacing load restricted culvert	1-4 years
32 ⁽³⁾	Brigalow to Chinchilla upgrade	Widen and strengthen 10 km of narrow and failing pavements between Brigalow and Chinchilla	Improve road safety, freight efficiency and support development of the Surat Basin	1-4 years
33 ⁽³⁾	Chinchilla rail crossing upgrade	Upgrade safety at the open level rail crossing at Chinchilla	Improve road safety. (Increased coal mining will generate a greater number of freight movements)	1-4 years
35 ⁽³⁾	Miles western access upgrade	Upgrade the Leichhardt Highway western intersection and strengthen failing pavements between the intersection and Miles	Improve road safety and freight efficiency at Miles	1-4 years
38 ⁽³⁾	Drillham to Palardo upgrade	Rehabilitate and strengthen failing pavements between Drillham and Palardo	Improve road safety, freight efficiency and support development of the Surat Basin	1-4 years
40 ⁽²⁾	Roma to Mitchell upgrade	Widen and strengthen narrow and failing pavements between Roma to Mitchell	Improve road safety and extend Type 2 road train access from Mitchell to the west of Roma	1-4 years
41 ⁽²⁾	Maranoa River bridge replacement	Construct a new wider bridge across the Maranoa River at Mitchell	Improve road safety and freight efficiency by replacing extremely narrow bridge	1-4 years
27	Dalby to Miles safety upgrade	Provide safety improvements between Dalby and Miles	Improve road safety and freight efficiency	5-10 years
36	Miles to Charleville upgrade	Provide general highway improvements, including safety initiatives, intersection upgrades, overtaking lanes; widen and strengthen pavements and structures; and provide vehicle stopping and rest areas	Improve road safety and freight efficiency	5-10 years
29	Dalby to Miles capacity upgrade (continued)	Construct additional overtaking lanes between Dalby and Miles	Improve road safety, freight efficiency and traffic capacity to cater for future traffic growth from development of the Surat Basin	11-20 years
34	Chinchilla bypass	Construct bypass of town centre of Chinchilla	Improve road safety and freight efficiency by reducing conflicts between local and through traffic at Chinchilla	11-20 years
37	Miles to Charleville upgrade (continued)	Continue general highway improvements, including safety initiatives, intersection upgrades, overtaking lanes; widen and strengthen pavements and structures; and provide vehicle stopping and rest areas	Improve road safety and freight efficiency	11-20 years
39	Roma alternative heavy vehicle route	Construct an alternative route for heavy vehicles at Roma	Improve road safety and freight efficiency by reducing heavy vehicle through traffic in Roma	11-20 years

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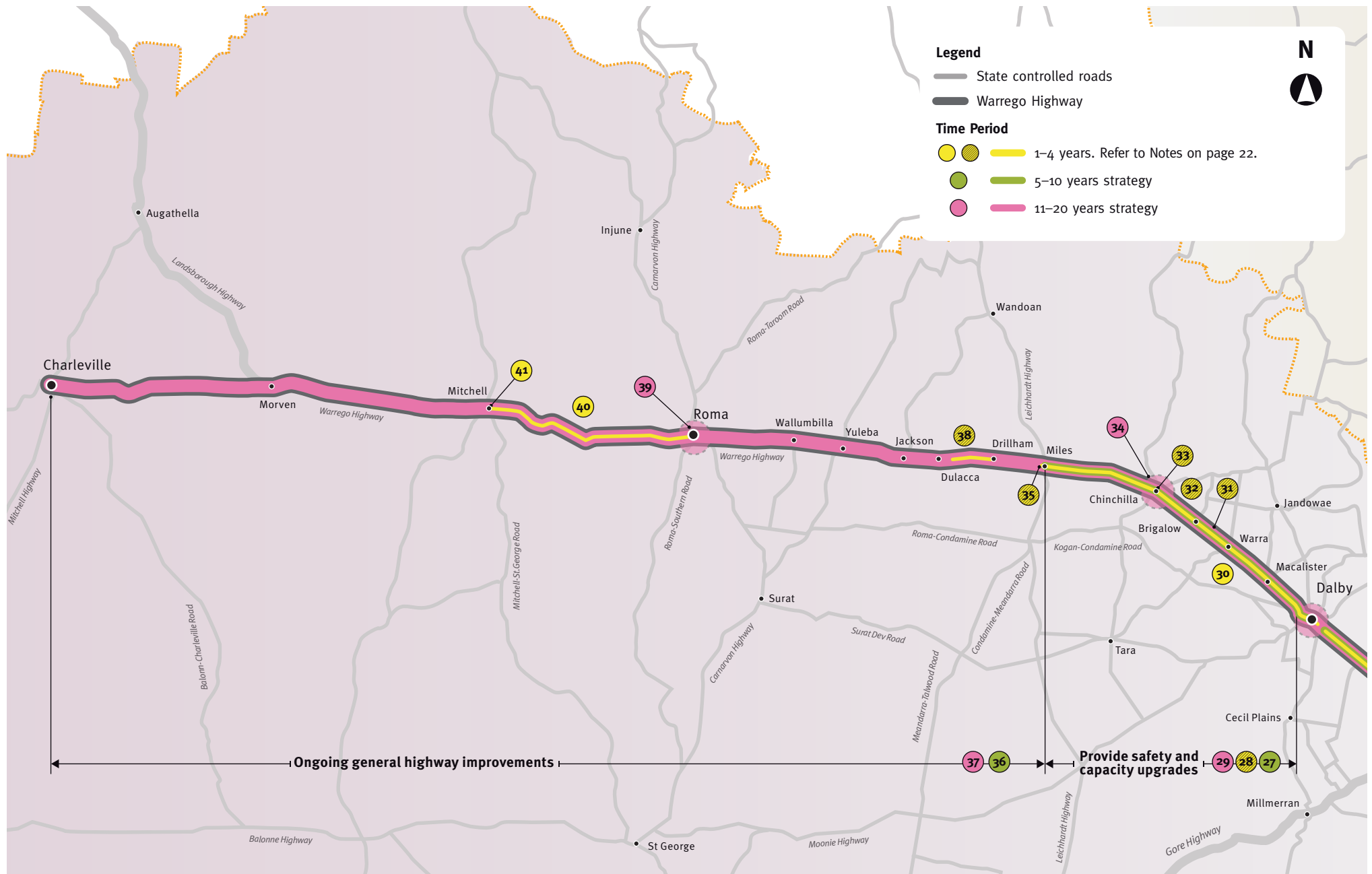
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Dalby to Charleville



Warrego Highway restoration works on the Marburg Range following heavy rains and flooding in early 2011



The Way Forward

Several of the short-term projects listed in this Strategy, such as the Blacksoil interchange and Toowoomba urban intersection upgrades, are currently in the advanced planning stages and are proposed to commence as early as 2012. However, implementing the longer-term actions in the Strategy is dependent on available funding.

The Queensland Government has a strong record of successfully managing and implementing projects in partnership with the Australian Government.

The Queensland Government will continue to work with the Australian Government to implement as many network upgrades, within the earliest possible timeframe, to ensure this vital highway supports Queensland's communities.

The *Warrego Highway Upgrade Strategy* identifies priorities for future highway investment and guides applications for funding and ultimate investment decisions. This will enable the Queensland Government to articulate a clear long-term plan to ensure upgrades on the Warrego Highway keep pace with regional needs and future economic growth.

As a vital link in the transport system for both Queensland and Australia, a long-term plan for investment is a positive step forward in supporting regional communities and economies.

Investment in the Warrego Highway will enhance productivity and liveability of both Queensland and Australia. It will support Queensland's export industries, agricultural and tourism sectors and is critical in developing the Surat Basin energy province.

Ongoing planning and investment will create jobs and provide vital support in building stronger Queensland regions, which are essential to a prosperous future for the state.

