Albany Ring Road
- Stages 2 and 3

Draft submission to Infrastructure Australia for Federal funding
August 2012
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Organisation: Main Roads Western Australia

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Date: 10 August 2012

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Signed:

Name and Position (please print): Maurice Cammack A/Manager Project Programming

Date: 10 August 2012
<table>
<thead>
<tr>
<th>Item</th>
<th>Document Title</th>
<th>Related Initiative</th>
<th>Version (If applicable)</th>
<th>Author</th>
<th>Date</th>
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<td>Albany Ring Road Stages 2 and 3 Infrastructure Australia Submission Draft Revision A</td>
<td></td>
<td>Draft Revision A</td>
<td>Main Roads WA</td>
<td>10/8/2012</td>
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Proposal Summary

<table>
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<th>Initiative Name:</th>
<th>Albany Ring Road - Stages 2 &amp; 3</th>
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<tbody>
<tr>
<td>Location (State/Region(or City)/Locality):</td>
<td>Albany, Great Southern Region, Western Australia</td>
</tr>
<tr>
<td>Name of Proponent Entity:</td>
<td>Main Roads Western Australia</td>
</tr>
<tr>
<td>Contact (Name, Position, phone/e-mail):</td>
<td>Maurice Cammack, A/Manager Project Programming, email: <a href="mailto:maurice.cammack@mainroads.wa.gov.au">maurice.cammack@mainroads.wa.gov.au</a></td>
</tr>
</tbody>
</table>

The Great Southern Region of Western Australia is a key agricultural area that contributes significantly to the State’s exports of wheat and woodchips. Albany is the region’s major industrial, commercial and retail centre and is connected to the surrounding region by key freight routes that extend through the city to Albany Port.

The rail and road transport network provides a critical service to the region by supporting its economic development and community connectivity. The network is important for the grain industry, agroforestry (woodchips), expanding mining, tourism activities, and for outlying communities.

Albany has experienced modest population growth and increased tourism resulting in greater volumes of local traffic and pressure upon its urban road network causing congestion at peak periods. Albany’s growing traffic demand is placing increasing pressure upon the efficiency of the region’s grain freight task, which passes directly through the City to Albany Port. This manifests in delays in freight delivery to the port, reductions in number of trips per day, and imposes costs upon the region’s transport and grain industries.

Road safety has deteriorated due to the greater volumes of local traffic that combine with the freight task. Compared to the State, Albany has a higher rate of car crashes involving heavy vehicles as well as a higher fatality rate. The Albany Highway / Chester Pass Road / South Coast Highway intersection is the tenth worst intersection in regional Western Australia in terms of number of car crashes. The situation is anticipated to worsen due to the projected population growth of Albany as well as the trends towards increased movement of grain by road.

The proposal aims to support the economic development and wellbeing of the community by optimising the efficient use of the freight network, improving safety and social amenity outcomes, and alleviating the impact of heavy freight movements on regional centres.

The scope of the preferred solution involves the construction of a 10 km ring road around Albany that will connect freight routes from the east, north and west more directly with Albany Port and avoid built up urban areas. Other elements of the project include:

- Relocation of 4 km of railway;
- Construction of grade separated interchange at Albany Highway;
- Construction of an at grade interchange at Hanrahan Road; and
- Construction of 17 minor at grade intersections.

The initiative will provide the following benefits:

- Efficient movement of heavy vehicles travelling to and from Albany Port. This has flow on benefits to regional industries in terms of productivity and international competitiveness. The Ring Road will also ensure sufficient capacity in the regional network system to accommodate projected growth in primary industries into the longer term;
- Improved level of road safety within the city boundaries and particularly at the main Albany roundabout; and
- Improved social amenity through reductions in air and noise pollution, and enhancement of Albany’s liveability and character.
Is this a new submission? Yes

Estimated cost of problems? The estimated costs associated with the problem are currently being reviewed and evaluated by Main Roads WA and will be provided when available.

Estimated Capital Cost of Initiative by Proponent ($M, nominal, undiscounted): $150 million (Order of Magnitude estimate).

Commonwealth contribution sought by Proponent ($M, nominal, undiscounted): $120 million (80:20)

Other funding (source/amount/cash flow) ($M, nominal, undiscounted): Nil

BCR by Proponent excluding Wider Economic Benefits The estimated costs associated with the problem are currently being reviewed and evaluated by Main Roads WA and will then inform the BCR which will be provided when available.

Estimated program

The proposed option is programmed for 2013/14 to 15/16 there is currently planning funds of $1M. Main Roads WA.

The activities, budgets and timeframes are indicative and reliant on approval of project funding.

Indicative Implementation Timeframes and Budgets

<table>
<thead>
<tr>
<th>Year</th>
<th>Activity</th>
<th>Approved Estimated Budget</th>
<th>or</th>
<th>Proposed C'wealth Commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014/15</td>
<td>Planning and preconstruction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015/16</td>
<td>Commencement of Construction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016/17</td>
<td>Construction and practical completion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
Goal Definition

Goal Statements
This submission has the following goals:

1. Build on the global competitive advantage of the south west of Australia; ensuring global demands for the regions and Australia’s resources are met;
2. Improve the productivity and competitiveness of the Great Southern Region’s primary industries through more efficient transport connectivity with export markets; and
3. Improve road safety for the Albany community and visitors to the area.

Objective Statements
The objective statements below support the primary Infrastructure Australia Priorities of:

1. Global Competitive Advantage;
2. Increased Productivity; and
3. Improving Social Equality and Quality of Life in Cities and Regions.

Global Competitive Advantage
This proposal seeks to achieve and maintain Australia’s global competitive advantage by:

- Removing constraints on freight movements and particularly the types of cargoes to support the region’s major exports, wheat and woodchips. Doing nothing has the potential to impact the competitiveness to produce such goods in Australia;
- Connect regions of supply and demand to ensure the flow of goods into the regions maintains and builds upon the regions global competitive advantage into the future; and
- Maximise the utilisation of other areas of Australia by providing direct links to primary growth regions.

Economic Development (Increased Productivity)
This proposal supports the economic development of Australia by:

- Providing efficient and important freight infrastructure to the economic regions of South West Australia which currently accounts for approximately $1.1 billion (2008-09) or 15% of the gross value of agricultural production in WA;
- Removing cost barriers to Australian suppliers to industry in the regions of South West Australia;
- Reducing travel time, fuel consumption and general traffic congestion. It is estimated that traffic congestion in Perth could cost $2.2 Billion per annum by 2020; and
- Providing fit for purpose infrastructure that increases the productive capacity of the freight network.

Improve Road Safety
This proposal will result in improved road safety by:

- Reducing freight traffic on local and regional roads;
- Reducing the rate of car crashes involving heavy vehicles by separating the preferred routes for both vehicle types; and
- Reduce the number of car crashes at the Albany Highway / Chester Pass Road / South Coast Highway intersection by construction of a grade separated interchange on Albany Highway.
Contribution to National Infrastructure Priorities

Figure 1 represents the alignment between Infrastructure Priorities, Nation Building 2 Themes, project goals, National and State Policies that the project provides.

Figure 1: Contribution to National Infrastructure Priorities

Further discussion of alignment to National, State and Regional Policies and Plans is contained in Appendix 1.
Proposal Prioritisation

The inclusion of this proposal in state and regional plans and the close alignment with national strategies indicates that addressing these goals is a high priority. Future growth in the Great Southern region will depend on the capacity and efficiency of Albany and the transport corridors into the port.

Albany is the major industrial and primary administrative and service centre for the Great Southern Region. Albany’s economy is linked primarily to the agricultural and forestry industries in the surrounding district. Albany also has a thriving tourism industry. Albany currently has a population of 33,650, which accounts for over half of the Great Southern Region’s population. Population is forecast to grow to between 43,000 and 47,800 by 2026.¹

Albany Port plays a critical role in the region’s economic strength and capability, exporting predominantly grain, woodchips and minerals to offshore markets.

The Great Southern Region is the second largest agricultural region in Western Australia. Cereal crops such as wheat, barley and oats contribute approximately half the annual value of production. The Great Southern Region accounts for 13.7 per cent of the total value of crop production in Western Australia. The Department of Regional Development and Lands estimated the Gross Regional Product of the Great Southern Region at $3.8 billion for 2009-10, which comprises 2.1 per cent of Gross State Product.²

A key priority of the State Government is to improve the efficient transport of freight to ports to enhance economic development of the State. Road safety is also a key outcome that is sought from better freight connectivity. This is supported by a number of national, state and regional strategies.

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¹ Western Australia Tomorrow Population Report No. 7, 2006 to 2026 (2012)
² Department of Regional Development and Lands
Problem Identification

Problem Statement

Albany is facing continued deterioration in the movement of freight and local traffic as a result of population growth and changes in freight logistics. Freight movements must increasingly compete with private traffic for road space, which leads to delays in freight arrivals at Albany Port. This has also led to a decline in the safety of other road users and reduced the amenity of the City’s citizens. Forecasts suggest that the situation will continue to worsen.

The key problems that this submission is addressing are:

1. Road freight to Albany Port is inefficient due to the inadequacy of urban roads to carry freight and local traffic. This is having an impact on the economy through lost productivity.

2. The safety and wellbeing of the Albany community is at risk due to heightened level of shared road use between local traffic and freight transporters.

Table 1: Proposal’s Problem, Objective and Benefits

<table>
<thead>
<tr>
<th>Problem</th>
<th>Project Objectives</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inefficient movement of goods to port, resulting in added costs to industry</td>
<td>Support economic development and productivity gains</td>
<td>Increased productivity and competitiveness for the region's grain industry. Albany's business climate is strengthened supporting new investment</td>
</tr>
<tr>
<td>Low level of road safety in areas of shared freight and local traffic</td>
<td>Provide a safe network that maximises safety for all network users</td>
<td>Improved road safety resulting in reductions in vehicle accidents and loss of human life</td>
</tr>
</tbody>
</table>

Current Issues

As the regional centre for the Great Southern Region, Albany plays an important role in supporting the region's agricultural production and exports. Albany is the principle point of export for the region's commodities, and is linked to surrounding districts through a network of freight roads and rail lines which all lead directly to Albany Port.

The road transport network in Albany is comprised of the following:

- Chester Pass Road is the major grain haulage route in the Albany zone, providing access from the grain producing areas of the southern Wheatbelt to Albany Port. It is also an important tourist route to the Porongurup and Stirling Range National Parks;
- Albany Highway links the city with Perth and is an urban distributor that carries large amounts of local traffic and is also the access road to Albany Port. The road currently carries approximately 4,000 vehicles per day, with a high proportion of heavy vehicles;
- The South Western Highway links Albany with the western region;
- South Coast Highway links the Kalgoorlie Esperance Regions with Albany and is the only east west link between the Albany and Esperance Ports;
- Albany Port Road provides the only link between Chester Pass Road/ South Coast Highway, the South Western Highway and Albany Highway, and Albany Port via the Albany Roundabout; and
- Stage 1 of the Ring Road provides a northern link between Chester Pass Road and Albany Highway. This allows log trucks from the eastern districts to bypass Albany through to Mirambeena Industrial Estate.
Figure 2 shows the daily distribution of cars and heavy vehicles on Albany’s major roads. A high percentage of heavy vehicles pass along Albany Highway (17.6%) and Chester Pass Road (14%).

In the Albany area, the key port access routes are Chester Pass Road, Albany Highway, South Coast Highway and South Western Highway. These routes currently pass through Albany’s residential and commercial areas and converge at a roundabout to the north west of the Albany town centre. Trucks then access the port along Hanrahan Road and Princess Royal Drive, which also connects the town centre with the Lower Denmark and Frenchman Bay roads. Princess Royal Drive also links commercial and tourism nodes.

Growth in population and tourism in Albany is resulting in an increase in the volume of private vehicles travelling throughout Albany. This is creating congestion at key intersections, principally at the main roundabout at Chester Pass Road/South Coast Highway and Albany Highway. Freight and local traffic converge at this point resulting in congestion as the roundabout reaches its capacity. This is exacerbated as Road Trains cannot remain lane correct and thereby use the full width of lanes as they traverse the roundabout to Port. Furthermore, as the roundabout provides the only transport route to and from the port, there are restrictions on incoming heavy machinery and equipment that may come into Port and traverse through the built up area.
Future Scenarios
It is anticipated that the abovementioned issues will be exacerbated by the following future scenarios;

- Inability to service needs of expanding cities and regions in Australia’s south results in limitation to expansion of these regions and demand not met by supply due to infrastructure limitations;
- Productivity of regions is limited by current standard and level of infrastructure resulting in increased freight costs; and
- Failure of region to capitalise on the competitive global advantage due to inadequate connections to areas of freight supply;
- Increased traffic and congestion issues for the Albany residential and tourist areas;
- Continued frustration by the freight industry and general community that fit for purpose freight infrastructure has not been developed;
- Continued frustration by the local council and general community that road safety issues are not being addressed;
- Conflicting land uses continue to impede reaching improved amenity for the community and does not provide certainty of future improvements to road network; and
- The transport of freight through residential areas continues to have significant local effects by contributing to local air pollution, noise pollution and visual impacts.

Problem Preventing Goal Achievement

Table 2: Problem preventing goal achievement

<table>
<thead>
<tr>
<th>Goal Statement</th>
<th>Problem or Constraint to Achieving Goal/Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global competitive advantage</td>
<td>Congestion resulting from not having fit for purpose freight routes is reducing freight efficiency.</td>
</tr>
<tr>
<td>Improve freight efficiency</td>
<td>Current freight route is not fit for purpose and results in costly inefficiencies for the network.</td>
</tr>
<tr>
<td>Improve Road Safety</td>
<td>Increasing heavy vehicle traffic through Albany is resulting in a higher number of car crashes involving heavy vehicles than in the rest of WA.</td>
</tr>
</tbody>
</table>
Problem Assessment

**Key Driver 1: Economic Activity**

Improving the efficiency of the transport network in Albany is a priority as it will position the region for stronger economic growth opportunities arising from increased productivity and capacity to move greater volumes of freight in the future. This has the effect of improving the business climate in the Great Southern Region which will support capital investment and industry growth.

Albany Port is also experiencing various constraints, which hinder the export of woodchips and grain. CBH is the main tenant at Albany Port and has a grain storage capacity of 470,000 tonnes. CBH considers Albany Port to be the most constricted of all its operations and expansion of facilities and other options is currently under consideration. The Port is experiencing some operational constraints associated with congestion at the woodchip precinct, which is despite the woodchip company APEC operating at 65% capacity.

These constraints at the port are not affected by or impact on the movement of freight trucks to the Port, however they add to the growing inefficiency throughout the transport supply chain and reduce competitiveness of moving freight through Albany Port.

Industry productivity improvements will increase the volume capacity of grain production, attributable to improved wheat varieties and tillage technology, as well as climate change. The transfer from livestock activities to cropping due to more favourable grain prices also has contributed to higher volume of grain production. In recent months there has been a considerable increase in the price of grain worldwide as a result of climate conditions in North America and has led to increased demand for Australian grain supply.

The Department of Agriculture and Food advises that climate change over the course of the next 30 years will see more rainfall occurring in the southern region, resulting in an increase in the production of wheat. Western Australia's wheat production will increasingly be drawn from western and southern areas of the Wheatbelt, which are generally closer to ports (KPMG 2009).

The Department of Agriculture and Food WA estimates that the state's annual grain harvest will increase from 14 million tonnes to between 16.3 million tonnes (low scenario) and 18.9 million tonnes by 2035. This represents 0.7% and 1.4% annual growth respectively above today's levels of production; Refer to Figure 3.
For the Great Southern Region, increased grain production is forecast to be between 5,000 and 20,000 tonnes per annum while adjacent regions to the north and east have more significant levels of increased production. Importantly, grain from these regions is most likely to continue being transported to Albany by road due to the absence of rail. Refer to Figure 4.

These models indicate that the additional tonnage will be located closer to port. It is also likely that as the increased tonnage will be located closer to port, it will be actively sought in the contested new market environment, with a higher propensity to be moved by road.

Another driver that is increasing the volume of grain being transported on roads is the deregulation of grain handling and marketing. This has changed the economics and operation of the grain network resulting in greater variability in the logistics task. In the long term, growers that are adversely affected by higher rail freight rates at local sites are likely to respond by using alternative transport options, including road transport.

The cost efficiency of road compared with rail has also improved. Generally, road infrastructure has improved, the capacity of heavy vehicles has increased and heavy vehicles can access more transport routes than before (Productivity Commission).
The Freight and Logistics Council of WA\textsuperscript{3} noted that deregulation creates challenges in the management of regional transport infrastructure. The provision, maintenance and usage of road and rail assets in WA’s Wheatbelt requires careful management and planning to:

- Provide the grain industry with safe and cost-effective access to export ports;
- Maximise the use of the most economically efficient transport infrastructure;
- Concentrate scarce funding into the most viable rail and road corridors, avoiding duplication of investments (i.e., between competing road and rail routes); and
- Minimise the impact of grain movements on population centres and other users of transport corridors.

These observations are directly relevant to the freight-related challenges facing Albany and which this submission proposes to resolve.

\textsuperscript{3} Report prepared for Freight and Logistics Council of WA on behalf of the Strategic Grain Network Committee (2009)
Key Driver 2: Road Safety

The increased congestion and number of crashes on the existing road network involving heavy vehicles, is becoming unacceptable and concerns are being raised by Local Government and the community.

The rate of car crashes in Albany is lower compared to Western Australia; however Albany has a higher rate of crashes that involve heavy vehicles as well as a higher rate of fatalities. These comparisons are shown in Table 3.

Table 3: Comparison of Accidents between Albany and Western Australia (2007-2012)

<table>
<thead>
<tr>
<th></th>
<th>Albany</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Total Incidents</td>
<td>1815</td>
<td>-</td>
</tr>
<tr>
<td>Incidents per 1000 people</td>
<td>53.94</td>
<td>-</td>
</tr>
<tr>
<td>Total Incidents involving Heavy Vehicles</td>
<td>32</td>
<td>1.76</td>
</tr>
<tr>
<td>Total Incidents resulting in Fatality</td>
<td>13</td>
<td>0.72</td>
</tr>
</tbody>
</table>

Source: Main Roads Western Australia (2012)

A large number of accidents occur at the main roundabout on Albany Highway / South Coast Highway with the majority of these being rear-end accidents. This roundabout is the 10th ranked intersection in the State for crashes, costing an estimated $6.1 million per annum. It is envisaged that without a suitable treatment, traffic at the Chester Pass Roundabout will increase beyond a safe and manageable level.

Road safety is a significant problem in Albany that goes back several years. In 2003 a working group comprising community, industry and Government was formed to develop an action plan to the growing problem of freight and car traffic in Albany. The action plan was based primarily around promoting rail instead of road transport and developing the road network in a way to minimise the negative impact of heavy trucks.

Other impacts that heavy vehicles place on the Albany community is a general loss of amenity as a result of noise and air pollution, and erosion of the town's character. Reduced levels of amenity impact on the town's tourism industry, as well as affecting property values in proximity to key transport routes. Building a strong public domain throughout Albany is affected by the passing of large numbers of heavy vehicles.

Emergency evacuation of the Port Precinct has been identified as a potential risk due to the possibility of the roundabout becoming grid locked. There are few alternative routes to access the port (in or out) should the roundabout fail or be rendered impassable.

A summary of impacts on Albany as a result of the growing demands on transport infrastructure is outlined in Table 4.
Table 4: Summary of Impacts from Traffic Congestion in Albany

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td></td>
</tr>
<tr>
<td>Transport Efficiency</td>
<td>• Operator costs related to longer travel times (freight and private users).</td>
</tr>
<tr>
<td></td>
<td>• Inefficiencies related to travel time unreliability.</td>
</tr>
<tr>
<td></td>
<td>• Higher maintenance costs from inappropriate use of local roads.</td>
</tr>
<tr>
<td>Constraining Growth</td>
<td>• Lost production through insufficient freight supply.</td>
</tr>
<tr>
<td></td>
<td>• Investment potential not realised.</td>
</tr>
<tr>
<td></td>
<td>• Economy wide flow-on effects.</td>
</tr>
<tr>
<td>Tourism</td>
<td>• Congestion and perception of safety risks in Albany will act as a deterrent</td>
</tr>
<tr>
<td></td>
<td>to visitors travelling to the Great Southern Region.</td>
</tr>
<tr>
<td>Social</td>
<td>• Loss of quality of life from noise and vibration caused by increasing</td>
</tr>
<tr>
<td></td>
<td>volume of heavy vehicles affecting residential areas.</td>
</tr>
<tr>
<td>Amenity</td>
<td>• Loss of life, injury and property damage associated with heavy vehicle</td>
</tr>
<tr>
<td></td>
<td>movements.</td>
</tr>
<tr>
<td>Safety</td>
<td>• Decreased participation in activities due to reduced accessibility</td>
</tr>
<tr>
<td></td>
<td>associated with congestion.</td>
</tr>
<tr>
<td>Accessibility</td>
<td>• Pollution associated with inefficient freight transport (longer routes</td>
</tr>
<tr>
<td></td>
<td>and idling in congestion).</td>
</tr>
<tr>
<td>Environmental</td>
<td></td>
</tr>
</tbody>
</table>

Problem Analysis

Key Impact 1: Freight Efficiency

Albany Port is the major commercial deepwater port in the Great Southern Region. Comprising four berths, the port’s throughput has been between 3 million and 4 million tonnes per annum over the last 5 years owing to variations in rainfall and grain production. Woodchips account for around 45% of the exported volume while grain is around 43%. Refer to Figure 5.

Figure 5: Albany Port Authority Throughput 2002 – 2011
Source: Department of Transport, 2011

The major commodities that are exported through Albany are woodchips, wheat, canola and barley. Agricultural output is valued at $1.1 billion (2008-09) representing about 15% of the gross value of agricultural production in WA. The timber industry also contributes to the Great Southern Region’s Gross Regional Product⁴.

⁴ Great Southern Planning and Infrastructure Framework 2012 (draft)
Rail provides the base load transport option for the majority of freight to Albany Port. All of the region’s woodchip output and around 50% of the 2 million tonne grain harvest is transported to the port by rail. The remaining 50% of the grain harvest is transported to the port by heavy vehicles through built up areas of Albany. Grain transport is therefore the predominant road freight task in the Albany area, with the majority of this sourced from areas to the northeast and east of Albany where rail doesn’t exist or short loads are more cost effective.

Growth in volume of woodchip and grain exports is anticipated to remain stable in the near future due to increased international competition for woodchips and a general plateau in regional grain production. The APEC wood chipping plant at Mirambeena is currently operating at 65% capacity, which has reduced the volume of planned throughput to the port. Port throughput however is anticipated to rise to around 10 million tonnes per annum by 2030 subject to the construction of the approved Southdown magnetite mine located 90 km east of Albany. The Southdown Joint Venture, if progressed, will bring about a new era in the port’s trade and development role with the region. This development will not impact directly on roads as it is intended that ore will be transported to the port by slurry pipeline.

At present, road freight movements through Albany during the peak harvest period averages around 135 trucks per day.

The timber industry generates significant volumes of heavy vehicle movements outside of Albany, which transport logs to the woodchip mill for chipping at Mirambeena Industrial Estate before being transported to the port by rail. A trend in the forestry industry is towards on-site chipping of logs using mobile chippers. This has the potential to generate truck movements directly from forest plantations through Albany to the port in order to avoid double handling at Mirambeena.

The congestion along the freight routes in the vicinity of the roundabout impacts directly on the transport and grain industries. Delays result in lost productivity for transport operators, which in turn places costs on the supply chain and interferes with the efficient export of goods. The main implications of Albany’s inefficient freight network are:

- Lower driver productivity - driver salaries are a major component of the cost of transporting road freight. The economic output for each driver hour is determined by the volume of freight that the driver can transport. Congestion reduces the number of trips that a driver can make in a day, thereby reducing the drivers’ productivity.
- Higher vehicle operating costs - longer and/or congested routes (idling unnecessarily) add to the fuel requirement and therefore operating costs of freight vehicles. Reductions in freight movements increase the need for additional vehicles to undertake the freight task, therefore adding costs.
- Lower revenue - the potential for running additional trips and generating revenue is lost by time spent on inefficient movements.
- Higher greenhouse gas emissions - unnecessary idling results in high levels of emissions, including greenhouse gases, which places an external cost on the wider community.

The problems associated with freight movements through Albany will be exacerbated if there is an increase in the volume of grain being transported on the region’s road network. This will come about either as a result of increased grain production or by a shift in transport mode from rail to road. A combination of both scenarios would place significant strain on the capacity of freight roads within Albany, further eroding the efficient movement of freight to the port resulting in losses in productivity. Associated with this is the potential for continued high rates of car and heavy vehicle accidents unless effective safety countermeasures are put in place.
Key Impact 2: Social Amenity (Road Safety)

Future traffic volumes on the main routes in the City of Albany are expected to grow as a result of developments unfolding with the local mining industry, increased agricultural production (including timber), increased tourism and general growth from the development of Albany. Freight movements from the east and northeast of Albany via Chester Pass Road will continue to move through the city to the Port. There is also likely to be steady growth in traffic servicing the agricultural and industrial areas.

The Albany population has grown by 1.4% per annum over the past 10 years to its current size of 33,650. It is forecast to grow by 1.5% per annum up to 43,000 by 2026. The extra 10,000 residents will introduce a further 7,400 cars into the district, based on an average of 1.9 cars per dwelling. This will place additional pressure upon local roads and the movement of freight through to the port.

In 2005, it was projected that the timber industry would have the greatest impact on local road freight with about 50% (1.25Mtpa) of the woodchips being chipped on-site and transported by road to the port. This indicates that tonnages on Princess Royal Drive (Albany Port) will be at least double from 2008 levels. These estimates have not eventuated due to global economic conditions and international competition, however it is reasonable to assume that freight movements are occurring at around 65% projected levels in keeping with APEC’s reduced output, which continues to remain a significant freight task.

The likely projected traffic volumes for both the existing and future road network have been estimated based on 2020 projections. The projected traffic volumes indicate that there is likely to be a general increase in traffic of about 40% out to 2020, above 2005 levels. Heavy vehicle percentages are projected to be higher on the main routes leading into the City. It is assumed that Albany Highway and Chester Pass Road will remain the major freight routes to the Port from the east and North East.

The local safety problem is that accidents are occurring due primarily to the large number of freight vehicles that use what is designed to be a road servicing the local community and minimal freight movements. Capacity on the current alignment is constrained and causes detrimental impacts and as such a solution to the problem has been a priority of local and state government. Without an upgrade to freight infrastructure, the increasing freight demands for the existing routes will continue to exacerbate Albany’s current road safety problems.

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5 Australian Bureau of Statistics ABS 3235.0
6 It is assumed that road trains with a payload of 65 tonnes are used and haulage over 250 days per year, an additional 154 road train movements per day (including an empty return trip) will be generated.

Main Roads WA – Infrastructure Australia Submission
Albany Ring Road Stages 2 & 3 – Draft Revision A
Root Cause

The root cause of the problem is the lack of a dedicated fit for purpose freight route connecting Albany Port with existing intrastate freight routes. Increased freight movements through Albany are a direct result of growth in agricultural production in Australia’s South West. Additionally, planned mining investments in the South West are forecast to put further demand pressure on port capacity and freight routes.

Need for Government Intervention

In summary, this proposal has been developed as a priority to address the following concerns:

1. Freight routes to major economic centres are inefficient resulting in lost productivity;
2. There is a risk that these major industrial areas do not fulfil their economic potential; and
3. Quality of life in the region is being adversely impacted by loss of amenity and safety concerns.

For this particular problem a government response is required to address the adverse effects on the community currently being experienced. Suppression of the root cause, such as restricting the number of exports from Australia’s South West would have an impact on the Australian economy. The government response in this instance is to find alternative policy and infrastructure options that can support this economic growth and reduce the safety and social impacts from high freight movements on roads that are not fit for purpose. Government intervention is required to promote growth through the provision of essential key infrastructure.

Infrastructure is needed to remove the bottlenecks from Albany’s export system, and reduce the impact of freight traffic on the local community.
Option Generation

Selection Criteria
In order to determine a preferred solution to the problem, the assessment framework contains six weighted evaluation criteria for determining each option's relative strengths and weaknesses. Weightings have been applied according to the significance of the issue in light of competing priorities. The assessment criteria are:

- **Whole of lifecycle costs** (weighting - high) - the forecast total costs including construction, maintenance, and depreciation over a 30 year period. This provides comparability of required resources for each option which can be matched against benefits through the BCA.

- **Supports economic development** (weighting - high) - the anticipated outcomes associated with each option in terms of increased business productivity, cost savings, job creation, industry investment, and tourism.

- **Network efficiency** (weighting - high) - the extent to which the option resolves traffic congestion and enables road freight to move freely to Albany Port.

- **Road safety** (weighting - high) - extent to which the option will reduce car crashes and fatalities.

- **Community acceptance (amenity/social)** (weighting - medium) - the extent to which the option will appease the local community in terms of noise and vibration, enhance township character, and enable greater connectivity.

- **Environmental sustainability** (weighting - medium) - the degree of impact the option has upon the local environment in terms of greenhouse emissions, pollution, embedded energy, water management, and air quality.

Option Description
Six transport planning measures have been identified as potential solutions in relation to the freight and road safety problems in Albany. These measures entail both supply and demand side solutions that are categorised according to the reform and investment options outlined in Infrastructure Australia's Reform and Investment Framework.

<table>
<thead>
<tr>
<th>Regulatory reform</th>
<th>Governance reform</th>
<th>Better Use reform</th>
<th>Capital Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand management</td>
<td>nil</td>
<td>Demand management</td>
<td>Repave Chester Pass Road</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Albany Ring Road</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inland Intermodal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Extent railway to the North East</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Roundabout Treatments</td>
</tr>
</tbody>
</table>

A qualitative assessment of each potential solution against the criteria is presented in Appendix 2.
Option Assessment

A multi criteria assessment of the options is summarised in Table 13 below and includes, asset and non-asset options.

Table 6: Summary of Options' Performance against Assessment Criteria

<table>
<thead>
<tr>
<th>Option</th>
<th>Criteria</th>
<th>Network Efficiency</th>
<th>Road Safety</th>
<th>Supports Economic Development</th>
<th>Whole of Life Cycle Costs</th>
<th>Community Acceptance</th>
<th>Consider (Yes/No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Demand Management</td>
<td>VVV</td>
<td>V</td>
<td>V</td>
<td>VVV</td>
<td>X</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>Upgrade Chester Pass Road</td>
<td>VV</td>
<td>V</td>
<td>V</td>
<td>VVV</td>
<td>V</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Ring Road around Albany</td>
<td>VVV</td>
<td>W</td>
<td>VVV</td>
<td>V</td>
<td>V</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>Develop Inland Intermodal</td>
<td>X</td>
<td>V</td>
<td>V</td>
<td>X</td>
<td>X</td>
<td>No</td>
</tr>
<tr>
<td>5</td>
<td>Extend Railway North East of Albany</td>
<td>V</td>
<td>V</td>
<td>VVV</td>
<td>X</td>
<td>VV</td>
<td>No</td>
</tr>
<tr>
<td>6</td>
<td>Roundabout Treatments</td>
<td>V</td>
<td>W</td>
<td>X</td>
<td>VV</td>
<td>X</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Does not meet criteria</td>
</tr>
<tr>
<td>V</td>
<td>Partially meets criteria</td>
</tr>
<tr>
<td>VVV</td>
<td>Meets the criteria</td>
</tr>
<tr>
<td>VVVV</td>
<td>Exceeds the criteria</td>
</tr>
</tbody>
</table>

The Preferred Option

Based on the assessment above, the Ring Road (option 3) is the preferred option.

The proposed Ring Road will comprise 10km single carriageway extending from Stage 1 of the Ring Road (existing) through to Albany Port. This will include construction of a 'grade separated' interchange at Albany Highway and Albany Ring Road, as well as an 'at grade' interchange at Hanrahan Road and Frenchman's Bay Road. Refer to Figure 6.

Approximately 4.5 km of single rail track will need to be realigned as well as a relocation of an 'at grade' road/rail crossing at Frenchman's Bay Road. A further 17 minor at grade intersections will be required to be constructed.

The Ring Road will provide an alternative route for heavy vehicles accessing Albany Port and remove the need for these vehicles to pass through built up urban areas of the City. The Ring Road will cater for increased traffic due to growth in industry, population and tourism.
The benefits that will result from the proposal include:

- Efficient movement of heavy vehicles travelling to and from Albany Port. This has flow on benefits to regional industries in terms of productivity and international competitiveness;
- Improved travel times for local and interregional traffic travelling around Albany;
- Improved level of road safety at the roundabout and on main roads connecting to the roundabout;
- Reduced air and noise pollution along the Albany Highway, Chester Pass Road and Albany Port Road corridors, thereby improving the urban sustainability and liveability of the city;
- Removal of conflicts between the heavy haulage routes of Albany Highway and the Albany TAFE and the South Western Highway and the Locker Primary School; and
- Provide capacity in the regional network system to accommodate projected growth in primary industries into the longer term.
The Ring Road will provide for the long term transport needs of Albany, by providing an alternative route for heavy vehicles accessing Albany Port and remove the need for these vehicles to travel through built up areas of the City. The Ring Road will cater for travel demands associated with:

- Growth in the grain, woodchip, other agricultural industries and the emerging mining industry;
- Continued population growth and urban expansion; and
- Increased number of tourists.

The Albany Ring Road has been flagged in various State and regional plans as an option for addressing current and anticipated traffic issues in and around Albany. Stage 1 of the Ring Road was completed in 2008 allowing logging vehicles to bypass the town. Stage 2 and 3 will result in the completion of the Ring Road and permit heavy vehicles from the west, east and north to access the port while avoiding the built up areas of the city.

The new alignment is currently being advertised by the WA Planning Commission as part of the Metropolitan Region Scheme with an anticipated approval date of early 2013.

**Preferred Option Delivery risk**

The key risks for the delivery of this option are:

- Ability to deliver the project within budget and possibility of cost escalations due to shortage of labour and materials;
- Environmental issues and approvals delays;
- Community relations and expectations;
- Interface and construction restrictions of road and rail; and
- Indigenous affairs approvals.

**Alternative Financing Options**

It is proposed that the Albany Ring Road is entirely funded by the combined contributions of Federal and State government. Table 0 shows that other options for funding are being considered for this project.

<table>
<thead>
<tr>
<th>Funding Option</th>
<th>Feasibility Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road User Charging - Tolls</td>
<td>- It is not the policy of the WA government to implement.</td>
</tr>
<tr>
<td></td>
<td>- The cost of implementing a toll system on the Albany Ring Road will be disproportionately large for a relatively short stretch of road.</td>
</tr>
<tr>
<td></td>
<td>- Tolls will limit the level of diversion to the Albany Ring Road from the existing network thus constraining the benefits of the project.</td>
</tr>
<tr>
<td>Private Sector Contributions from Specified Beneficiaries</td>
<td>- Project will benefit a large number of operators to varying degrees.</td>
</tr>
</tbody>
</table>

**Solution Evaluation**

Main Roads WA is committed to the project and is currently undertaking additional planning and project development work regarding the new alignment of the proposed infrastructure.

The estimated costs associated with the problem are currently being reviewed and evaluated by Main Roads WA and will then inform the BCR which will be provided when available.
Appendices

Appendix 1

National Policies and Strategies

The proposal’s goals deliver on key strategic priorities of Infrastructure Australia:

The planning and future investment required to facilitate economic development of Albany and the productivity of industry throughout the region is supported various national strategies. The relationship of key strategies is presented in Figure 1. This submission has particular relevance to the following:

- Infrastructure Australia National Strategies;
- Nation Building II; and
- The National Ports Strategy.

Infrastructure Australia has adopted seven strategic priorities that define the outcomes required by the Australian Government from major infrastructure project funding. Increasing Australia’s Productivity and Improving Social Equity and Quality of Life in Cities and Regions is the most relevant of these. The proposal’s alignment against these is outlined below.

Infrastructure Australia National Strategies

<table>
<thead>
<tr>
<th>Infrastructure Australia Strategic Priorities</th>
<th>Alignment of Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasing Australia’s productivity</td>
<td>Upgrading infrastructure to address freight demand and deliver travel time savings contributes to ‘increasing Australia’s productivity’. In addition moving goods and people safely and efficiently along the corridor contributes to ‘developing our cities and regions’.</td>
</tr>
<tr>
<td>Improving Social Equity and Quality of Life in Cities and Regions</td>
<td>The proposal will reduce costs associated with the delivery of grain and other export items to Albany Port. Local workforce and commercial road users will experience improvements in time taken to commute and carry out business.</td>
</tr>
</tbody>
</table>

National Ports Strategy

The National Ports Strategy focuses on driving the development of efficient, sustainable ports and related freight logistics, thereby supporting Infrastructure Australia’s strategic priority to increase Australia’s productivity.

National Ports Strategy alignment with proposal

<table>
<thead>
<tr>
<th>National Ports Strategy Strategic Objectives</th>
<th>Alignment of Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve the efficiency of port related freight movements across infrastructure networks, minimise externalities associated with such freight movements and influence policy-making in areas relevant to freight.</td>
<td>The proposal will improve the efficient transport of freight to Albany Port and reduce negative externalities on the surrounding community.</td>
</tr>
<tr>
<td>Other national goals, including security and safety, are also important.</td>
<td></td>
</tr>
</tbody>
</table>
Nation Building II
The Nation Building II program focuses on increasing Australia's productivity and the quality of life for Australians. The Moving Freight theme and Local Freight objective are directly relevant to this submission.

### Nation Building II alignment with proposal

<table>
<thead>
<tr>
<th>Nation Building II</th>
<th>Alignment of Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moving Freight — to support economic growth through efficient and connected freight networks</td>
<td>The proposal aims to support the international competitiveness of industry in the Great Southern Region by providing faster and more effective freight transport options.</td>
</tr>
<tr>
<td>Local Freight - to improve freight connections within cities and regions and improve access to ports</td>
<td></td>
</tr>
</tbody>
</table>

### Perth Albany Corridor Strategy
The WA Government has adopted objectives consistent with the AusLink for the State strategic network: Increasing the efficiency and handling capacity of the network; improving safety on the network; and improving the productivity of State strategic and export-oriented freight corridors. The Perth Albany Corridor Strategy builds upon these objectives.

### Perth-Albany Corridor Strategy alignment with proposal

<table>
<thead>
<tr>
<th>Perth-Albany Corridor Strategy</th>
<th>Alignment of Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve road safety and efficiency on the corridor.</td>
<td>Improving efficient movement of freight through Albany is anticipated to result in positive road safety and amenity impacts throughout the community.</td>
</tr>
<tr>
<td>Minimise adverse community amenity impacts of the increasing freight task.</td>
<td></td>
</tr>
</tbody>
</table>

### State Policies and Strategies

#### Planning Strategy for the Lower Great Southern Region
The Planning Strategy for the Lower Great Southern Region promotes an effective regional road network that caters for the needs of the bulk commodities and tourism industries and commuter traffic.

### Regional Planning Strategy alignment with proposal

<table>
<thead>
<tr>
<th>Planning Strategy for the Lower Great Southern Region</th>
<th>Alignment of Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address potential capacity constraints arising from export production and resource projects.</td>
<td>The proposal is focussed on increasing the capacity of freight infrastructure to Albany Port.</td>
</tr>
</tbody>
</table>

#### Western Australian Regional Freight Transport Network Plan (Draft)
The Western Australian Government seeks to optimise the efficient use of the freight network, improve safety and social amenity outcomes, and alleviate the impact of heavy freight movements on regional centres. This is outlined in the Western Australia Regional Freight Transport Network Plan (draft). The development of this plan reflects the need for Government to respond to the challenges facing regional economies to ensure sufficient infrastructure is in place to facilitate growth and support competitiveness of regional industries.

A key issue facing Western Australia is ensuring the provision of infrastructure meets the growing freight task and supports resource development. The Albany proposal responds to this issue by contemplating the future growth of freight to and from the Port arising from resource projects in the region and projected growth in road transport of grains.
Main Roads WA Corporate Policies and Strategies

Main Roads WA has a range of corporate policies and strategies that identify the Albany Ring Road as being a high priority and a key infrastructure that will contribute to the prosperity of the South West Region. These policies and strategies are summarised below.

Main Road’s 2K12 Corporate Plan

The Main Roads WA 2K12 Corporate Plan outlines a number of strategic challenges and visions. The primary vision identified in the strategy is:

“A safe and efficient road network that will support a vibrant community, help ensure the economic vitality of the state and enable environmental values to be enhanced.”

A key strategic challenge identified by the corporate plan is to provide infrastructure that meets the growing freight task and supports resource development.

The proposed project will contribute to the Main Roads 2K12 Corporate Plan and Strategic Asset Plan 2012/13 by providing a fit for purpose freight route to the Albany and reducing conflict with passenger vehicles.

Main Roads’ Strategic Asset Plan 2012/13

Main Roads WA annually prepares and Strategic Asset Plan as part of the state’s budgetary process. This report outlines the proposed projects of the agency for the next 10 years, with specific budgets and program dates for funded projects and indicative costs and programs for unfunded projects. The Strategic Asset Plan is based on the following principles:

- Reliable and efficient movement of people and goods;
- Facilitate economic and regional development;
- A safe road environment;
- Improved community access and roadside amenity; and
- A well maintained road network.

The Western Australian Government has identified four goals that Main Roads must achieve in making roads work. Main Roads has developed business outcomes intended to guide outcome-based decision making in addressing these goals. The goals are listed below together with the Main Roads business outcomes, which in turn are related to outcomes from this proposal.

Main Roads Strategy alignment with proposal

<table>
<thead>
<tr>
<th>Government Goal</th>
<th>Main Roads Outcomes</th>
<th>Proposal Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcomes based service delivery</td>
<td>A safe road environment</td>
<td>This submission addresses safety concerns related to freight movements in and around Albany</td>
</tr>
<tr>
<td></td>
<td>Reliable and efficient movement of people and goods</td>
<td>Although focused on removing inefficiencies related to freight movement, reliability and efficiency for people movement will also be improved</td>
</tr>
<tr>
<td>State building major projects</td>
<td>Facilitate economic and regional development</td>
<td>This proposal will facilitate the imminent continued economic growth of the Great Southern Region and support the future industrial development</td>
</tr>
<tr>
<td>Stronger focus on the regions</td>
<td>A well maintained road network</td>
<td>This proposal is focused on regional Western Australia</td>
</tr>
<tr>
<td>Social and environmental responsibility</td>
<td>Improved community access and roadside amenity</td>
<td>This submission addresses amenity concerns relating to the movement of freight</td>
</tr>
</tbody>
</table>
## Appendix 2 - Options Assessment

<table>
<thead>
<tr>
<th><strong>Option 1</strong></th>
<th><strong>Demand Management</strong></th>
</tr>
</thead>
</table>
| **Description** | This option involves distributing the freight task more evenly throughout the day/year in order to avoid peak periods. This can occur by:  
- Encouraging farmers to stockpile grain on farms to avoid higher transport costs and exploit deregulated market pricing.  
- Develop niche markets for grain varieties that mature outside of peak harvest season.  
- Introduce urban road freight restrictions at designated times of the day.  
- Amend regulations to allow larger sized trucks pass through Albany thereby reducing number of truck movements. |
| **Lifecycle costs** | Nil |
| **Economic development** | Restrictions will be regarded as red-tape that impacts directly on business. Farmers are already able to stockpile grain and exploit pricing and niche markets. Economic drivers are not sufficient to support this transition. This may have an impact on the viability of train services which rely on concentrated demand for large volumes of long haul freight. |
| **Network efficiency** | Distributing the freight task over a longer period of the day/year would have a positive benefit for the efficiency of the network. Congestion likely to continue from current and forecast volumes of car movements. |
| **Road safety** | Distributing the freight task will have minimal effect on road safety. The majority of crash incidents are between private cars. |
| **Community acceptance** | The community would not be likely to support the continuance of heavy vehicles through Albany's streets. A wider distribution will result in noise and amenity impacts prevailing over a longer period. |
| **Environmental sustainability** | Little impact on environmental sustainability outcomes. Some emissions savings will result from less idling time. |

<table>
<thead>
<tr>
<th><strong>Option 2</strong></th>
<th><strong>Upgrading Chester Pass Road (Albany-Lake Grace Road)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>This option involves reconstructing, widening and realigning the main access route used to transport grain freight to the town of Albany.</td>
</tr>
<tr>
<td><strong>Lifecycle costs</strong></td>
<td>&gt;$150 million</td>
</tr>
<tr>
<td><strong>Economic development</strong></td>
<td>Improvements to Chester Pass Road are not expected to result in substantial cost savings or improve delivery certainty for businesses.</td>
</tr>
<tr>
<td><strong>Network efficiency</strong></td>
<td>This Option would improve the link to the Albany town and improve network efficiency on that section, but would not address the efficiency and safety issues being experienced in the Albany township.</td>
</tr>
<tr>
<td><strong>Road safety</strong></td>
<td>The frequency and severity of crashes is not expected to change.</td>
</tr>
<tr>
<td><strong>Community acceptance</strong></td>
<td>The community would not be likely to support the continuance of heavy vehicles through Albany's streets.</td>
</tr>
<tr>
<td><strong>Environmental sustainability</strong></td>
<td>Little impact on environmental sustainability outcomes. Some improvement to water management can be expected through Water Sensitive Urban Design.</td>
</tr>
</tbody>
</table>
### Option 3: Ring Road Around Albany

**Description**
This option entails constructing a single carriageway around Albany. This will complete the outer link from South Coast Highway, Chester Pass Road (Albany-Lake Grace Road) and Albany Highway, bypassing the centre. This will involve grade separation interchange at Albany Highway and an at grade interchange at Hanrahan Road. Approximately 4 km of rail line will need to be relocated.

**Lifecycle costs**
>$125 million

**Economic development**
Improved flow of traffic through Albany will improve productivity for local businesses and transport industry. This will support the region’s competitiveness as an export hub and destination for business investment.

**Network efficiency**
Removal of freight task and proportion of light vehicles from major road network will free up these roads for local traffic. Capacity of these roads will be restored allowing significant reduction in congestion.

**Road safety**
Vehicle kilometres re-assigned from local roads to high standard roads will decrease the frequency and severity of crashes. Removal of trucks from Chester Pass Road / Albany Highway Roundabout will improve safety for passing traffic.

**Community acceptance**
The community is likely to strongly support this option due to increases in urban amenity and community safety.

**Environmental sustainability**
Minimal sustainability improvements are expected. Emission reductions resulting from free flowing traffic in Albany will be offset by longer distances travelled by trucks and other vehicles on the ring road.

### Option 4: Develop inland intermodal

**Description**
This option involves developing an inland port or intermodal in an industrial estate (e.g. Mirambeena) adjacent to Albany. Trucks would terminate delivery of grain at the intermodal which is in turn transferred to rail to the Port. This would reduce the number of trucks passing through Albany.

**Lifecycle costs**
>$100-200 million

**Economic development**
Highly seasonal nature of the grain freight tasks limits the opportunities for all year utilisation of the asset and attraction of related business investment. Some trucks will have further to travel, placing additional operational costs on producers. There would be double handling of the grain loads.

**Network efficiency**
The short rail link would provide transport inefficiencies and may not be utilised by industry as it is potentially a more costly approach than road transport directly to the Port. Concentration of heavy vehicles will be placed upon Albany Highway for several kilometres. Likely to be of benefit only to trucks travelling down Albany Highway.

**Road safety**
Road safety will be marginally improved to the extent that trucks do not pass through Albany’s streets. Current and projected volumes of car traffic will not be impacted by this measure.

**Community acceptance**
A large proportion of heavy vehicles will continue to travel through Albany causing community concerns.

**Environmental sustainability**
No net improvement in emissions reductions due to additional kilometres travelled and/or double handling of freight.
### Option 5  
**Extend railway North East of Albany**

<table>
<thead>
<tr>
<th>Description</th>
<th>This option involves providing a rail service to the region north east of Albany where grain is at present required to be transported to port by road via Chesterpass Road (Albany-Lake Grace Road).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifecycle costs</td>
<td>&gt;$150 million</td>
</tr>
<tr>
<td>Economic development</td>
<td>Improved network efficiency will improve productivity and return benefits to growers and transport industry. Train will only be viable for long haul trips with high concentrations of districts’ grain harvest. Double handling may offset transport cost savings.</td>
</tr>
<tr>
<td>Network efficiency</td>
<td>Network efficiency gains will result from partial removal of heavy vehicles from Albany’s roads. Local traffic volumes on Albany’s roads will continue with some congestion at peak times at the roundabout. Some road freight trips may continue from grain growers closer to Port.</td>
</tr>
<tr>
<td>Road safety</td>
<td>Reduction of trucks from Albany will improve the safety of roads in Albany. Road safety outside of Albany will be improved from reduction in road freight.</td>
</tr>
<tr>
<td>Community acceptance</td>
<td>Broader community acceptance at a regional scale.</td>
</tr>
<tr>
<td>Environmental sustainability</td>
<td>Environmental benefits will be limited to reductions in emissions. Environmental impacts in developing corridor (water management, vegetation loss, embedded energy).</td>
</tr>
</tbody>
</table>

### Option 6  
**Roundabout treatments**

<table>
<thead>
<tr>
<th>Description</th>
<th>This involves directly addressing the congestion of the roundabout by developing fly-over or installing traffic signals.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifecycle costs</td>
<td>Subject to form of treatment.</td>
</tr>
<tr>
<td>Economic development</td>
<td>Economic development outcomes will not be improved</td>
</tr>
<tr>
<td>Network efficiency</td>
<td>Network efficiency is not likely to be improved.</td>
</tr>
<tr>
<td>Road safety</td>
<td>Road safety will be improved as a result of managed flow of traffic.</td>
</tr>
<tr>
<td>Community acceptance</td>
<td>Community unlikely to support traffic control measures or development of flyovers, which impact on city’s rural character.</td>
</tr>
<tr>
<td>Environmental sustainability</td>
<td>Environmental benefits are not anticipated. Idling times or cost of embedded energy causes level of emissions to generally remain.</td>
</tr>
</tbody>
</table>