

Mackay Regional Council

# Priorities for freight transport

 **redc**  
regional economic  
development corporation  
MACKAY & WHITSUNDAY





# Priorities for Freight Transport

## Executive Summary

Mackay is the principal centre for a bustling region with a diverse economy of mining, agriculture and tourism. Recent growth in mining activity has exposed shortcomings in the freight transport network that threaten to jeopardise the region's growth. The freight task Australia wide will double by 2020 servicing population needs, let alone specific regional industrial growth.

There has been a lot of focus on improving the efficiency of the freight networks getting product to the ports, particularly for mining. What has been neglected is the network for transporting the inputs that drive the region's industry.

These networks are operating at near capacity. With a projected boom in coal mining just around the corner, there is little time to take remedial action that is required to ensure that the region's industries remain competitive in global markets.

### Key Regional Statistics

The following table presents the scale of the economic growth in the Mackay Whitsunday region.

	Current period	Current Value	Growth
Gross Regional Product (\$b)	2008-09	\$17.3	22.7%
Population	2008	167,666	2.5%
Projected population	2031	255,614	
Unemployment	Sep Q 09	3.8%	
Labour Force	Sep Q 09	95,083	11.2%
Coal Exports (Mt)	2008-0	104.1	6.7%
Total Industrial sales (Value)	Year to Dec 09	\$4.6m	51.8%
Dwelling Approvals	6 mths to Dec 09	673	11.8%
Employment (Northern Bowen Basin)* Mines	2009	9,000	3%

\*Mackay Whitsunday Region also includes some mines in the Central Bowen Basin – separate figures not available.

### Future Growth

Abare<sup>1</sup> lists mining projects for the Mackay Whitsunday region in excess of \$5.5 billion with construction workforce of at least 7,000 and operational workforce minimum of 2,600 to be developed by 2014. Value and workforce figures are currently available for less than half of the 18 proposed projects so these values could be considerably higher.

If these matters are not addressed in the short to medium term, there is the serious risk that the freight network for transportation of industrial inputs, particularly for mining, could restrict growth. This could lead to the loss of 5,000 new jobs and gross regional product of \$6 billion per annum.

### Priorities

Key areas for urgent attention are:

1. Efficient freight network between the Port of Mackay, industrial areas and the Bowen Basin mines.
2. Bypass of Walkerston township. Currently there are around 100 fuel tankers per day traversing the township of Walkerston past schools, around tight bends and over an aging bridge.
3. Eton Range crossing of the Peak Downs highway. This steepness of the crossing has safety issues particularly in wet weather. Remedial action has improved matters but this still presents as a significant safety hazard.
4. Intermodal facilities at the port of Mackay to support the continual modal shifts for freight to the port between road and rail as access to rail infrastructure is limited.
5. Improved co-ordination between all three levels of government to develop an integrated transport plan for the Mackay region.
6. Accommodate land facilities for the transport and logistics Industry in the next Planning Scheme.

<sup>1</sup> ABARE Major Minerals and Energy Projects October 2009.

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Longer term there is the potential to develop the City of Mackay as a transport and logistics hub due to its strategic location midway between Brisbane and Cairns, and the growing need to service regional population and industrial growth.

Failure to invest in this vital economic infrastructure will have serious ramifications for the economic future of Australia.

**Priority actions** in the short term are:

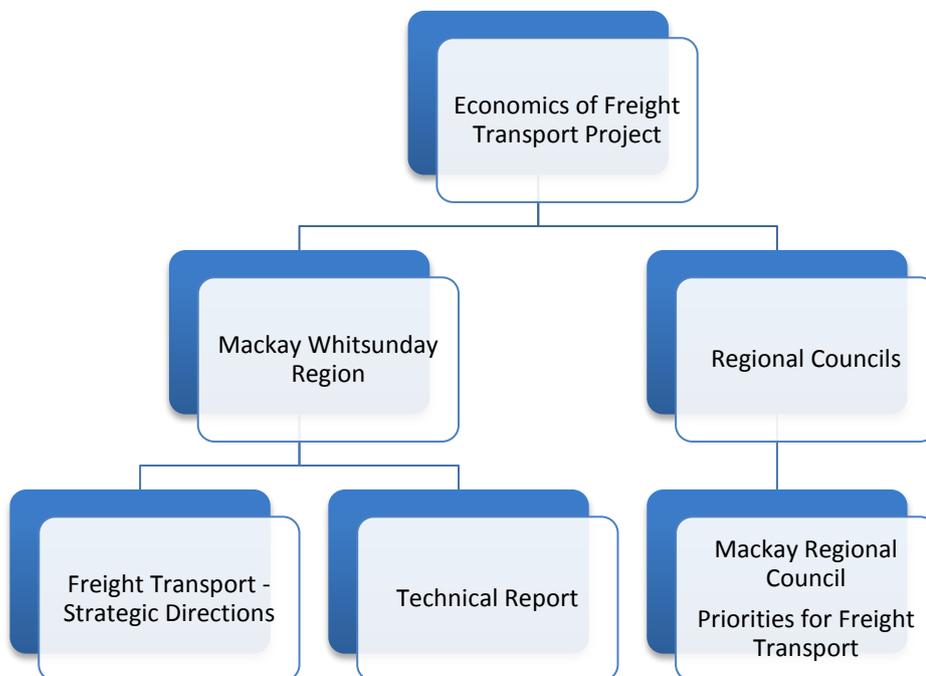
- Support the feasibility study for western by-pass of Mackay including alignment to link to the Walkerston by-pass and the port access corridor.
- Preserve the above proposed corridor in Mackay Regional Council planning scheme.
- Obtain funding for and commence development of the Walkerston by-pass.

- Completion of study on alternative alignment or upgrade for the Eton Range crossing of the Peak Downs Highway.
- Obtain funding for and determine timeframe for a new or upgraded crossing over the Eton range.
- Commence a feasibility study for intermodal facilities in the region including the Port of Mackay.
- Establish structure between all three levels of government to advise the development of a regional integrated transport plan.
- Obtain funding for and develop a timeframe for a regional integrated transport plan for the Mackay Whitsunday region.
- Conduct a study of potential future locations for the transport and logistics industry within the Mackay region in the longer term.

## Relationship to other Studies

This study is part of a broader project titled :“The Economics of Freight Transport in the Mackay Region”.

The Following diagram identifies the relationship between this study and the broader project.



# Priorities for Freight Transport

## 1. Efficient Freight Network

Mackay Regional Council hosts two ports being the Port of Mackay and the Port of Hay Point.

### Port of Hay Point

The Port of Hay Point is the largest coal export port in the world and hosts two coal terminals, the Hay Point Coal Terminal (HPCT) which commenced operation in 1971 and the Dalrymple Bay Coal Terminal (DBCT) which commenced operation in 1983. Throughput in 2008-09 was 82.5 million tonnes of coal (thermal and coking coal).

There are plans to develop both terminals further to a future combined capacity of 160 Mtpa. There are proposals to develop additional coal export facilities at Dudgeon Point just North of Hay Point with anticipated capacity of 100 – 120 Mtpa.

This would see the Port of Hay Point with a potential export capacity of around 280 Mtpa.

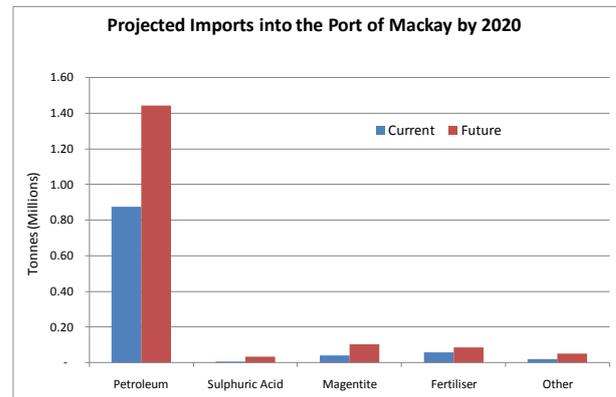
### Port of Mackay

Export of bulk commodities other than coal is through the Port of Mackay with raw and refined sugar, grain, ethanol, cattle and meat products exported directly to international and Australian destinations.

Exports (t)	2008-09	Imports (t)	2008-09
<b>Raw Sugar</b>	598,735	Petroleum	876,397
<b>Refined Sugar</b>	314,843	Sulphuric Aid	5,005
<b>Grain</b>	310,909	Magnetite	39,798
<b>Scrap metal</b>	30,347	Fertiliser	58,301
<b>Alcohol</b>	12,319	Other	19,561
<b>Other</b>	24,290		
<b>Total</b>	1,391,443	<b>Total</b>	999,062

The Port of Mackay is the major point of entry of bulk input commodities to support the region's industry such as petroleum products, chemicals, fertilizer and concrete.

Like most Australian ports, the functionality of the Port of Mackay is impacted by urban congestion, reducing the efficiency of the freight network servicing the port. This has exacerbated since the mining boom of 2003 which has seen an increase in imports of 53% (353,000 tonnes) primarily petroleum.



### Future prospects for Port of Mackay

The port of Mackay has a key role to play in regional industry for the foreseeable future, with North Queensland Bulk Ports planning further expansion to meet demand including provision of container handling facilities. Projected imports to 2020 show continued growth.

The new port management structure with the formation of North Queensland Bulk Ports in 2009 will see strategic consideration of the most suitable distribution chain for inputs into the region, between the Port of Mackay and the proposed multi cargo facility at Abbot Point, to maintain the efficiency of regional industries. It is anticipated that Abbot Point will become the port for imports to support Galilee Basin developments whilst the Port of Mackay will continue to service Bowen Basin mines.

### Current Inefficiencies

There is the capacity for large mining equipment to be imported via sea in modular form, assembled at the port and transported to the mine sites 2-4 hours to the west via the Peak Downs Highway. This is the most efficient route for delivery of this equipment but is constrained at present by limited over-dimension access to the port and load limits on part of the peak Downs Highway.

The alternatives of landing in Gladstone or Brisbane mean transit times of 200-400%. This impacts the efficiency of the freight network, reduces competitiveness of industry in the global economy and greatly increases the carbon footprint of the supply chain.

# Priorities for Freight Transport

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## **Mackay Area Integrated Transport Plan**

A potential solution to the port access was mentioned in the Mackay Area Integrated transport Plan 2002-2025, but was deemed not to be required in the timeframe of the plan. However since that plan was completed, the region has undergone unprecedented growth of 2.5-3.5% per annum population and up to 30% per annum gross regional product.

## **Western Bypass and port access**

The growth factors alone signal the urgent need to commence a feasibility study for a western bypass of Mackay to allow through freight on the Bruce Highway to avoid urban congestion. With linkages into the Peak Downs Highway and the road and rail corridor between the Bruce Highway and the port,

this would provide high efficiency freight transport links avoiding the urban congestion in Mackay.

The feasibility study and preferred route needs to be determined soon to ensure the entire route is protected from urban encroachment, and serves as a western boundary for urban growth in Mackay city.

North Queensland Bulk Ports has already acquired most of the land required for the access corridor from the Bruce Highway to the Port of Mackay and is keen to work with government to provide efficient access to the port.

Studies have been undertaken to look for alternative solutions to urban congestion. The dangerous nature of the majority of freight (petroleum, explosive, mining materials) necessitates that this freight be separated from urban areas as much as possible.

The feasibility study should include:

- Cost benefit analysis including cost reductions in increased efficiency;
- Carbon footprint;
- Environmental assessment; and
- Risk assessment (environmental, safety, climate change)



# Priorities for Freight Transport



**Key**

- Major Highway / Arterial Road - Existing
- Major Highway / Arterial Road - Proposed
- Railway - Existing
- Railway - Proposed
- Existing Port

- Proposed Port
- Airport
- Railway - Stations
- Long Distance Bus Terminal
- Passenger Ferry Services

- Public Transport - Service Area
- Public Transport - Connections
- Public Transport - Multi-Route Interchanges



## 2. Walkerston Road Bypass

The town of Walkerston is located on the Peak Downs Highway, 9km west of the City of Mackay. The continuing expansion in the mine service industries based at the Paget industrial estate in Mackay and mine expansion and production in the central highlands, has substantially increased mine related traffic on the Peak Downs Highway and through the central business area of Walkerston.

### Current traffic volumes

Trucks carrying millions of litres of fuel are forced to navigate an intricate road over a narrow bridge and around a sharp corner whilst passing within metres of a school, a shopping centre and residences. The Standing Committee on Transport and Regional Services<sup>2</sup> saw this as an area of concern and suggested that it should be subjected to a Black Spot Audit. Although no deaths have been recorded, this report identifies the potential for this to become a “black spot”.

With anticipated growth in mining, freight volumes through the township will increase by 70% within the next 10 years.

### Future for Walkerston

Walkerston is identified by the Mackay Regional Council as a future residential growth area due to its proximity to the mines and the Paget industrial area. Walkerston had a population of 2,600 in 2006 with an expected population growth rate of 4.5% compound growth over 24 years to achieve 7,500 by 2020

### Network inefficiencies

The transport industry has expressed the desire to improve safety and reduce travel time by avoiding the traffic congestion through the township of Walkerston.

Apart from the speed restrictions which rightfully exist within the township, there are school crossings and shopping centre access points within the CBD that present risks for freight transport.



### Department of Transport and Main Roads

Transport and Main Roads (TMR) conducted extensive community consultation on the Walkerston bypass during 2007 and 2008, and have determined the preferred alignment. They are proceeding with the detailed design of the bypass, however the project is not currently funded.

The bypass will also allow for a safe and efficient limited access route for the heavy and dangerous goods vehicles from Paget to the mines.

This option follows Stockroute Road at its eastern end but deviates to the south at its western end. It has the following features:

- Removes vehicles transporting heavy and dangerous goods from the main street of Walkerston, improving the safety.
- Provides direct connection with the expanding industrial area of Paget.
- Improves the safety and efficiency of the Peak Downs Highway.
- Delays the requirement for duplication of the Peak Downs Highway.
- Reduces the conflicts between commuter vehicles and heavy and dangerous goods vehicles using the Peak Downs Highway between City Gates and Walkerston.

TMR finalised the alignment within the Stockroute Road corridor and is seeking funding for construction.

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<sup>2</sup> The Great Freight Task, Standing Committee on Transport and Regional Services July 2007.

# Priorities for Freight Transport

## 3. Eton Range Crossing

The current Eton Range crossing represents a critical constraint to the safe and efficient operation of the Peak Downs Highway between Mackay and Nebo. The range section has tight curves and a very steep grade (maximum 11%).



### Current Usage

Approximately 4,000 vehicles per day use the range. Commercial vehicles comprise 14% of which approximately 110 vehicles are B-doubles travelling to the mines. The freight carried includes 1.7 million litres per day of diesel and 80 tonnes per day of dangerous goods other than fuel, including explosives.

Mines are increasingly transporting their workforce from Mackay via bus with an estimated 200 coaches per month in 2008 with projected growth of around 30% per annum from 2010. Grey nomads and other tourists traverse the range in campervans and caravans, a dangerous mix with heavy freight loads on a narrow winding road and steep gradient.



This is the only designated B-double route west from Mackay to the mines in the Bowen Basin.

Road Trains cannot traverse the Eton Range crossing, and must leave trailers at the top of the range for collection in a separate trip increasing transportation costs further.

### Safety Concerns

Transport companies interviewed generally considered the Eton Range a major impediment both now and in the future. The main concern is one of safety, but most recognise an economic cost when accidents and delays occur. Whilst they acknowledge an important role for driver education, examples of accidents involving compliant vehicles driven in the approved manner by experienced drivers with good safety records were provided by industry.



There are shortages of qualified and experienced truck drivers in the region due to competition with the mines for skilled workforce. An increasing percentage of drivers navigating the range lack the relevant experience to safely navigate the Range section.

Accidents involving B-doubles have a nominal cost of \$650,000 per B-double plus the blockage of the range for up to 90 minutes, causing problems with scheduling freight transport within the driver fatigue guidelines. The frequency of these accidents represents a huge economic cost.

## 4. Intermodal Facilities at the Port of Mackay

There is a trend for agricultural outputs previously transported by rail to be transported by road to the Port of Mackay. Grain outputs in particular have found it increasingly difficult to access sufficient rail capacity, due to the monopolisation of the rail network by the coal mining industry. Above average grain crops in the past three years in conjunction with a coal mining boom has seen the situation escalate.

### Sugar

Mackay Sugar advises that it will continue to transport raw sugar to the Port of Mackay by road rather than rail. The 2009 trial proved that there was a cost saving because of the relatively short distances involved.

Proserpine Mill negotiated a new contract with Queensland Rails' bulk specialist ARG for transportation of bulk sugar from the 2009 harvest to the Port of Mackay, after serious consideration of road transportation.

This trend has seen exports in the order of 700,000 tonnes (50% of exports) move from rail to road over the past 2-10 years.

The above shift from road to rail has highlighted the lack of intermodal facilities at the Port of Mackay and limited capacity to readily accommodate modal shifts in an efficient manner. As these modal shifts often occur at relatively short notice, there is limited capacity for the port to provide efficient facilities for unloading bulk commodities from different modes.

### Government Studies

The Australian Government recognizes that efficient intermodal facilities are an important component of the overall effectiveness of regional transport services.<sup>3</sup> Ernst and Young in the *North-South Rail Corridor Study* commented that if key

intermodal facilities are not operating efficiently, this would actually negate gains made from improving infrastructure along the corridor.<sup>4</sup>

A study of modal share now and into the future and required facilities to support modal shifts and facilitate intermodal transfers for bulk and non bulk freight is urgently required.



### Strategic location at the Port of Mackay

The Port of Mackay would seem to be a logical location for intermodal facilities as there is sufficient land available and it is a point of termination for all modes in some capacity. This could be considered in conjunction with plans to establish container handling facilities at the port.

The freight volumes within the region, particularly non-bulk freight, are not currently sufficient to warrant the establishment of intermodal facilities. Much of the general non-bulk freight to supply the region's population is transported to Townsville via rail for distribution back via road at increased economic and environmental cost.

Provision of facilities to enable uncoupling of carriages with regional supplies at a distribution centre would reduce road transport considerably including reduction in environmental impacts.

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<sup>3</sup> Department of Transport and Regional Services Submission to the Standing Committee on Transport and Regional Services.

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<sup>4</sup> Ernst & Young et al, North-South Rail Corridor Study – Detailed Study Report, June 2006.

## 5 Co-operative Approach to Freight Transport Planning

The freight transport network is stretched to capacity keeping pace with the demands from industry expansion in the region. Many recent works have been a quick reaction to the situation to relieve immediate pressures.

### Strategic

There is a need for a more strategic, proactive, master planning approach to the freight transport network in the region to maximize the return on investment. Funding for infrastructure is limited and we need to ensure that we maximise the return from this expenditure to deliver outcomes that will enable the region's industries to grow for the benefit of the region, the state and the country.

There was general agreement during consultation on the lack of a strategic approach to infrastructure planning for the freight transport network for the region. Whilst this may have been acceptable in the past, the boom in 2003 exposed serious flaws in this ad hoc approach to infrastructure provision.

### Holistic

Government has responded to the resources boom with a focus on the coal supply chain from mine to port with great success. What is needed now is a more holistic approach to the entire freight network, including inputs and outputs, bulk and non-bulk freight both within the region and across regions.

Transport and logistics must be treated as a single entity with investment decisions being based on overall system performance and productivity. All components of the industry must be considered including air, rail, road, sea, port access and intermodal centres as well as examining urban congestion issues.<sup>5</sup>

Urban congestion around the major population centres is impacting the efficiency not just of the

region's network, but freight traversing the region particularly via the Bruce Highway. The master plan should also consider associated facilities that are required to promote safe carriage of freight, including rest areas and minimizing intersections, particularly between different modes of transport.

All levels of government must agree on the proposed structure of key transport corridors in the long term. This will enable council to position transport companies and support services in appropriate locations to support the future network structure through their planning scheme.

### Climate Change

The Master Plan should map out primary and secondary routes for inputs and outputs catering for the predicted increased frequency of severe climatic events. Flood proofed road and rail networks supporting industry need to be planned and maintained to meet changing conditions.

### Triggers for Development

Thresholds for commencement of development of new economic infrastructure should be developed as part of the plan, based on key indicators such as mine production, port capacity or resident population.

Thresholds must be related to the expected lead time for project approvals including

funding in addition to actual construction times. This is the best mechanism to ensure that this vital economic infrastructure is delivered to meet industry requirements.

Of primary importance in the master plan is the identification of future infrastructure corridors to ensure they are protected to provide the functionality required in the future.

It must be a truly co-operative approach between all three levels of government as they all have a vested interest in ensuring that the Mackay region continues to be an economic powerhouse for Australia.

**This needs to be a truly co-operative approach between all three levels of government as they all have a vested interest in ensuring that the Mackay region continues to be an economic powerhouse for Australia.**

<sup>5</sup> The National Strategy for the Transport and Logistics Freight Industry 2008-2015.

## 6 Accommodate Transport Industry

Mackay Regional Council is currently working on a consolidated planning scheme across the entire area covered by Council. It is important that studies undertaken to develop the planning scheme include consideration of the potential location of the transport and logistics industry into the future.

### Development of the Transport Industry

The transport industry in the region grew out of the sugar and beef industries and traditionally has tended to be located on agricultural land often in locations with poor road access.

This was acceptable whilst the industry was primarily servicing agriculture, however the increased mining activity this decade has seen a substantial increase in transport activity from these locations, presenting many issues of safety, accessibility and road infrastructure.

### Relationship to Industrial Areas

Many of the larger national and multi-national companies are situated at the port or in the Paget industrial area, depending on the nature of their business. Some companies have relocated from the port to Paget as their business has moved towards a greater proportion of transport to the mines via the Peak Downs Highway with associated efficiency gains.

The smaller local companies however find that the land prices within designated industrial areas such as Paget are prohibitive for low margin businesses requiring significant hardstand areas including truck storage and manoeuvring.

There is already significant congestion in the Paget industrial area, and locating more transport relating industries within the area will only exacerbate the situation.

### Planning Studies

A study needs to be undertaken to determine a suitable area to promote for location of the transport and logistics industry players that do not require location within industrial areas. This needs to be strategically located in relation to the current and future freight transport corridors.

The study needs to consider what facilities could be providing within this designated area including fully functional Truck Stop facilities. These could include:

- sleeping accommodation;
- toilets;
- eatery;
- truck maintenance;
- truck washing;
- recreational facilities;
- internet cafe; and
- secure parking for trucks and trailers.

This could become the hub for a developing transport and logistics industry within the region, signalling the intent of the region to cater to the specialist needs of the transport industry.

Mackay is strategically located midway between Brisbane and Cairns, and could be promoted as a suitable rest stop within driver fatigue and log book requirements.

# Priorities for Freight Transport

## Queensland Government Policy Checklist

The Strategic Directions in this document contribute to the attainment of the following:

### Towards Q2

✓	Creating a diverse economy powered by bright ideas
✓	2020 Target: Queensland is Australia's strongest economy, with infrastructure that anticipates growth
✓	Protecting our lifestyle and environment
✓	2020 Target: Cut by one-third Queenslanders' carbon footprint with reduced car and electricity use
✓	Supporting safe and caring communities

### Climate Change

✓	Reducing Queensland's greenhouse gas emissions
✓	Lowering the cost of climate change to households and business
✓	Investing in the productive future of our key industries
✓	Preparing Queensland for the physical impacts of climate change

### Other Policies

<b>More jobs for Queenslanders</b>	
✓	Target a rate of five percent unemployment in five years
✓	Assist business and industry to create secure and sustainable jobs
<b>Building Queensland's regions</b>	
✓	Increase Statewide development so that Queensland's regions prosper
✓	Build and encourage infrastructure to support Statewide development
✓	Expand export markets and encourage value adding industries
<b>Skilling Queensland - the Smart State</b>	
✓	Encourage innovation and flexibility by industry and Government to strengthen Queensland's position in the information age

## Department of Transport & Main Roads

Strategy to ensure the safe, efficient and sustainable movement of freight including:

✓	Developing a truly integrated, multi-modal approach to the transport task to ensure we get the best transport solution every time
✓	Creating a cohesive, integrated approach to managing key aspects of freight transport
✓	Managing key transport priorities, such as congestion management, climate change and the future security of energy supplies
✓	Pursuing the integration and connectivity of the state's freight task with the broader strategic national transport network, and associated national investment.

## Mackay Regional Council

<b>Council Supports</b>
<ul style="list-style-type: none"> <li>• B-Double routes that link the prime industrial areas with both the Ports and the Mines.</li> <li>• Ring Road to by-pass the City Centre and provide safe access.</li> <li>• Support for appropriate links, both rail and road, between key industrial groups and the two ports.</li> <li>• Recognition by Council of the value of the heavy industry and the freight sector to the health of the regional economy.</li> <li>• Support for appropriate service industries</li> </ul>

to support the freight industry, particularly in the Paget Industrial area.
<ul style="list-style-type: none"> <li>• Local road design in industrial areas to accommodate the heavy vehicle movement including large lots which allow B-Doubles to turn on site.</li> </ul>
<b>At this stage Council Recognises</b>
<ul style="list-style-type: none"> <li>• There are no major Truck Stop Facilities developed near the Paget Industrial area.</li> <li>• Off-road Truck standing areas - short term.</li> <li>• Weather and information guides including road conditions, facilities.</li> </ul>

**This report was prepared by Norris Consulting Services for the Mackay Whitsunday Regional Economic Development Corporation**