FITZROY

DRAFT REGIONAL TRANSPORT PLAN

2018

Queensland Government

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We acknowledge the Traditional Owners and Custodians of the land to which this plan applies and pay our respects to their Elders both past and present.

The Department of Transport and Main Roads wishes to acknowledge the valuable input and contribution from our local government partners to develop this plan.

Cover images: Fisherman's Landing, Port of Gladstone (background); Cattle road train (inset, left); Cycling near Central Queensland University (inset, centre); Airplane (inset, right).

Inside cover image: Pineapples on sale at Farmer's Market, Yeppoon

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Farm near Biloela

1. Introduction

1.1 A shared direction for transport

The *Fitzroy Regional Transport Plan* (the Plan) outlines a shared direction for shaping the region's transport system over the next 15 years.

The Plan was developed in consultation with local government and key stakeholders, with input from customers and industry. The Department of Transport and Main Roads will continue to work in partnership with all levels of government, the community and industry to implement the Plan and achieve shared goals for the region.

The Plan covers all modes of transport with a focus on the networks and services in the region, and the inter-regional and international connections that are vital to the region's social and economic prosperity.

The Fitzroy region is home to over 226,000 people and includes the local government areas of Banana, Central Highlands, Gladstone, Livingstone, Rockhampton and Woorabinda.[1]

1.2 What is a Regional Transport Plan

The purpose of the *Fitzroy Regional Transport Plan* is to set out regional transport priorities and actions for developing the transport system in a way that supports regional goals for the community, economy and environment.

The Plan has been developed in accordance with the *Transport Planning and Coordination Act 1994* and meets the department's legislative responsibility to develop integrated regional transport plans that complement land use planning, and support the goals and objectives of Regional Plans.

Regional Transport Plans are a fundamental component in the hierarchy of integrated system planning. They have an essential role in defining local responses to wider community goals, system objectives, problems and priorities, through the development of policy choices and transport system strategies at a regional level.

The approach to developing Regional Transport Plans is aligned with the *Australian Transport Assessment and Planning Guidelines* for best practice transport assessment and planning (Figure 1).

The regional policy choices and system strategies expressed in the Plan are used to:

- inform detailed planning or investigations at a network, area, corridor, route or link level
- guide development, assessment and selection of specific investment solutions.

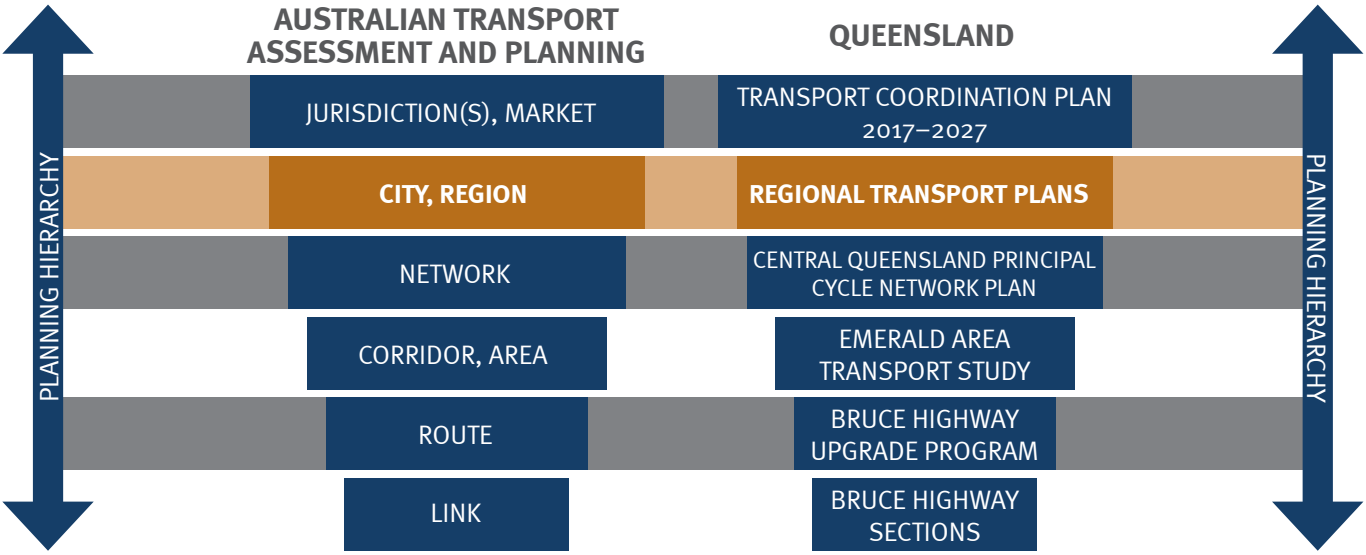


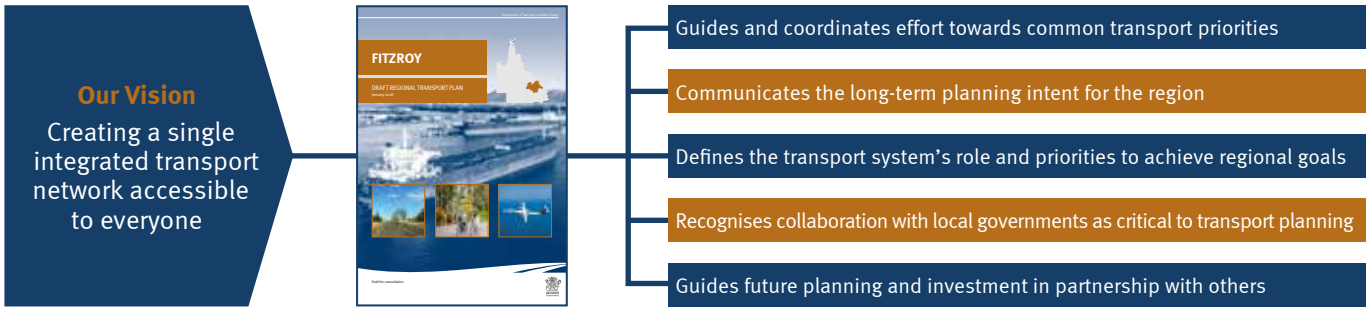
Figure 1: Examples of how Queensland responds to the Australian Transport Assessment and Planning hierarchy

1 Australian Bureau of Statistics. (2017). *Regional Population Growth, Australia (Catalogue No. 3218.0).*

The Plan supports the department's vision of 'creating a single integrated transport network accessible to everyone' through:

- guiding and coordinating effort towards common transport priorities
- communicating the long-term planning intent for the region
- defining the transport system's role and priorities to achieve regional goals
- recognising collaboration with local governments as critical to 'one-network' transport planning
- guiding future planning and investment in partnership with others.

The Plan will be used by Transport and Main Roads to inform investment decisions to develop the regional transport network.



1.3 Strategic alignment

This Regional Transport Plan has been developed in the context of policies, strategies, plans and investment frameworks across all levels of government (see Table 1). These policy and planning documents are reflected in the objectives, challenges, opportunities and priorities identified in the Plan.

The Plan aligns with:

- *State Infrastructure Plan*
- *State Planning Policy*
- *Central Queensland Regional Plan 2013*
- local government land use and transport plans, and strategies
- economic development strategies
- the Australian Government's *Australian Infrastructure Plan* (prepared by Infrastructure Australia).

The Plan responds to customer needs, as well as the goals and directions of the community, industry and all levels of government.

Transport and Main Roads also produces statewide strategies and plans that guide coordinated outcomes for transport networks and services across Queensland. These high-level plans set the broader framework for taking action at the regional and local level.

Key planning documents include:

- *Transport Coordination Plan 2017–2027*
- 'Queensland transport Strategy' (draft)
- *Transport and Main Roads Strategic Plan 2016–2020*
- 'Queensland Freight Strategy' (draft)
- *Moving People Connecting Communities*
- *Safer Roads, Safer Queensland: Queensland's Road Safety Strategy 2015–2021*
- *Queensland Cycling Strategy 2017–2027*
- *Queensland Road System Performance Plan*
- *Bruce Highway Action Plan*
- 'Heavy Vehicle Network Plan' (draft).

Priorities and actions identified in the Plan align with current statewide transport policies and objectives. The department regularly reviews and updates statewide strategies and plans. Future updates to the Plan will reflect any additional or amended statewide plans and strategies as part of the update.

Table 1: The strategic fit of Regional Transport Plans

FRAMEWORK ELEMENT	DIRECTION SETTING	STRATEGIC PLANNING	PROGRAMMING (including investment)	DELIVERING
	Establish broad, high level strategic intent or policy positions	Develop plans or strategies to focus on key themes or areas	Identify, evaluate, prioritise and program initiatives including addressing funding/ investment requirements, competing needs and timeframes	Provide services and infrastructure such as public transport, bridges and tunnels, maintenance, regulation and compliance/ monitoring activities
National	▪ Australian Infrastructure Plan ▪ Our North, Our Future: A White Paper on Developing Northern Australia ▪ Smart Cities Plan	▪ Australian Transport and Assessment Planning Guidelines ▪ Infrastructure Australia's Infrastructure Priority List ▪ National Land Freight Strategy ▪ Infrastructure Australia's Urban Transport Strategy	▪ Infrastructure Investment Program ▪ Australian Infrastructure Audit ▪ National Land Transport Network investment strategies	▪ Plan and preserve the Rockhampton Ring Road corridor ▪ Bruce Highway-Rockhampton Northern Access Upgrade ▪ Cooroy to Curra, Section A ▪ Toowoomba Second Range Crossing
Queensland Government	▪ Objectives for the community ▪ Advance Queensland ▪ State Planning Policy	▪ Central Queensland Regional Plan 2013 ▪ State Infrastructure Plan Part A ▪ Building Queensland's Infrastructure Pipeline ▪ Queensland Cycling Strategy 2017–2027	▪ Project Assessment Framework ▪ State Infrastructure Plan Part B ▪ Building Queensland Business Case Assessment ▪ Bruce Highway Action Plan	▪ Dawson Highway Timber Bridge Replacement Program ▪ Rockhampton – Yeppoon Road ▪ Gavial Gracemere Road, safety and capacity upgrade planning
Departmental	▪ Transport Coordination Plan 2017–2027 ▪ 'Queensland transport Strategy' (draft) ▪ Transport and Main Roads Strategic Plan 2016–2020	▪ **Regional Transport Plans** ▪ System strategies and plans (e.g. rail, ports, freight, passenger, road safety, cycle strategies) ▪ Area and corridor transport strategies ▪ Route and link plans ▪ Principal cycle network plans	▪ 10-year transport infrastructure portfolio investment planning ▪ Queensland Transport and Roads Investment Program (QTRIP) ▪ Highway investment strategies ▪ Transport System Planning Program	▪ Transport service contracts ▪ Transport Infrastructure Development Scheme ▪ Safer Roads Sooner
Local	▪ Vision statements ▪ Strategic/corporate plans	▪ Planning schemes ▪ Local area plans ▪ Local transport plans	▪ Local government infrastructure plans ▪ Local government investment and works programs	▪ Local roads projects ▪ Bikeway and footpath projects ▪ Local bus infrastructure projects

1.4 Alignment with the *State Infrastructure Plan*

The *State Infrastructure Plan* outlines the Queensland Government's strategic direction for the planning, investment and delivery of infrastructure throughout Queensland. This Regional Transport Plan applies the transport policy objectives of the *State Infrastructure Plan* at a regional level.

The Queensland Government's strategic direction for transport infrastructure is expressed by the *State Infrastructure Plan* responses (Table 2). Accordingly, many of the planning actions in this plan respond to these with a particular focus on improving supply chains, safer connections between regional centres, and better use of data and technology.

Table 2: State Infrastructure Plan responses (Part A, p 52)

TRANSPORT				
Focus on maintenance and rehabilitation of existing infrastructure to reduce the long-term cost of repair and improve network resilience.	Unlock the potential of critical supply chains by identifying and improving the freight network.	Seek innovation and technology solutions to create a better performing and lower emissions transport system.	Digitally connected smart infrastructure to improve capacity, safety and security.	Connect regional communities with access to essential services and opportunities.

1.5 Alignment with the *Transport Coordination Plan*

The Transport Coordination Plan 2017–2027 (TCP) provides a strategic framework for the planning and management of transport resources in Queensland over a 10-year timeframe. The TCP was developed in accordance with the requirements of the *Transport Planning and Coordination Act 1994* and identifies the high level objectives for transport in Queensland, across five key areas:

- **Customer experience and affordability** – transport meets the needs of all Queenslanders, now and into the future.
- **Community connectivity** – transport connects communities to employment and vital services.
- **Efficiency and productivity** – transport facilitates the efficient movement of people and freight to grow Queensland's economy.
- **Safety and security** – transport is safe and secure for customers and goods.
- **Environment and sustainability –** transport contributes to a cleaner, healthier and more liveable environment and is resilient to Queensland's weather extremes.

The TCP provides a suite of transport key performance indicators (KPIs) to measure progress towards these objectives and also includes clear criteria for prioritising spending on transport that align with the *State Infrastructure Plan*'s options assessment approach.

The TCP is the overarching medium-term strategic document that provides guidance and direction for more detailed transport strategies and plans produced by Transport and Main Roads, such as Regional Transport Plans and modal strategies. The TCP is consistent with the Queensland Government's overall strategic planning for Queensland, including the government's objectives for the community, and the *State Infrastructure Plan*.

The system-wide transport objectives articulated in the TCP have informed the Fitzroy region's priorities and corresponding transport objectives, actions and measures of success. The TCP's transport KPIs have provided a means to measure the impact the Regional Transport Plan has on the region's transport system – and what this will mean for customers, the community, the economy and the environment.

1.6 Alignment with the *State Planning Policy*

The State Planning Policy 2017 outlines the Queensland Government's interests in land use planning and development for Queensland. It identifies and seeks to protect, through the planning framework, three state transport interests: state transport infrastructure; strategic airports and aviation facilities; and strategic ports.

The State Planning Policy identifies three strategic airports within the region – the Rockhampton, Emerald and Gladstone Airports and two strategic ports – Port of Gladstone and Port Alma.

1.7 Alignment with regional planning

The Queensland Government produces statutory regional plans to provide strategic direction and policies to deliver regional outcomes which align with the state's interests in land use planning and development. They aim to ensure that a consistent framework is operating across all of Queensland, integrating federal, state and local government planning agendas and linking infrastructure and service provision.

Central Queensland Regional Plan

The *Central Queensland Regional Plan* was released in 2013 and is a statutory document supporting the delivery of regional outcomes. Covering the same local government areas as the *Fitzroy Regional Transport Plan*, the *Central Queensland Regional Plan 2013* has identified two high level regional outcomes:

- Agriculture and resources industries within the Central Queensland region continue to grow with certainty and investor confidence.
- The growth potential of towns within the Central Queensland region is enabled through the establishment of Priority Living Areas. Compatible resource activities within these areas which are in the communities' interests can be supported by local governments.

Since the development of the regional plan in 2013, there have been changes to the mineral commodity values and the mining investment cycle. This has resulted in a shift in population trends and settlement patterns within the region, including an overall slowing in the population growth. Transport and Main Roads has used updated population forecasts to inform its transport planning activities. Although the population projections outlined in the regional plan are no longer current, the broad goals and intent are still relevant, and have informed the development of the *Fitzroy Regional Transport Plan*.

The regional plan takes precedence over all local government planning instruments and provides the context for local planning. It recognises the need for an integrated transport network throughout the region to enable communities to become better connected and more accessible. The priority outcomes for the transport network include:

- prioritising transport programs to improve freight networks, including those affected by growing and changing demands related to the surrounding coal basins
- improving the reliability and condition of transport networks affected by population and resource sector growth and the networks' resilience during natural disasters
- better modelling and the identification of emerging transport issues
- achieving community benefits through improving accessibility to destinations and improved safety and amenity.

Reconstruction works on the Dawson Highway, Collards Creek

Roadworks on the Bruce Highway, south of Miriam Vale

1.8 Achievements to date

Transport and Main Roads has reflected on the objectives outlined in the *Central Queensland Regional Plan 2013*, along with other strategic direction setting documents. The following transport network improvements have been delivered in the region to support the regional plan's priority outcomes.[2]

Safety initiatives

Safety initiatives across the region that have been recently completed or are underway include intersection upgrades, road widening, overtaking lanes, and more rest and parking areas for heavy vehicles. Wide centreline treatments are a key initiative that are progressively being rolled out along the length of the Bruce Highway, reducing the likelihood of cross centreline crashes.

On the Bruce Highway south of Bororen, intersection upgrades and the addition of overtaking lanes at various locations are being delivered as part of the Bruce Highway Safety Package. These works are making improvements to the safety and travel times on the Bruce Highway. Similarly, various sections of the Burnett Highway between Monto and Biloela have been widened and sealed to enhance road safety.

In 2017–2018 financial year, the High Risk Roads Program will provide a 20-kilometre section of the Gladstone–Benaraby Road with wide centreline treatments and other intersection and access safety improvements to address the high accident rates on this link.

Network resilience and capacity

In the 2017–2018 financial year, a bridge replacement program to replace five aging timber bridges on the Dawson Highway between Gladstone and Biloela will near completion. This project will address structural concerns and provide access to higher-mass vehicles. A similar project was the replacement of the old timber bridge at Poor Man's Gully on the Burnett Highway. There were structural concerns about the bridge's capacity and it was replaced with a wide, modern, pre-stressed concrete bridge able to handle higher-mass vehicle loads.

In early 2018, on-site work commenced to duplicate the Bruce Highway north of Rockhampton at Parkhurst to address the growth and development underway in this corridor.

Improving heavy vehicle access and efficiency

Road infrastructure upgrades targeted at improving heavy vehicle access and freight efficiency are delivered across the region each year. Recent examples include intersection improvements to allow last mile travel for high productivity vehicles (HPV) through Rockhampton to access the two abattoirs and address industry concerns about safety and time losses due to cross-loading of cattle. The construction of overtaking lanes, road widening and break down facilities on the Gregory Highway, between Clermont and Emerald, has enabled this link to accommodate HPVs (in a project jointly funded by the Queensland and Australian governments).

In the 2017–2018 financial year, upgrades to the Capricorn Highway (between Rockhampton and Gracemere) are being planned to address increased traffic due to the growth in development at Gracemere. This project will also improve access and freight efficiency to the Bowen Basin and Western Queensland.

Active transport

The *Central Queensland Principal Cycle Network Plan* (CQPCNP) and associated priority route maps were developed collaboratively by local governments and Transport and Main Roads. The CQPCNP identifies high-order cycle routes that make up the regional cycle network and is used to guide coordinated delivery of a connected cycle network in the region. Local governments in the region are able to apply for funding through the Cycling Infrastructure Program to deliver projects under the CQPCNP. On-road cycling infrastructure works on Norman Road and North Street have addressed missing links in Rockhampton's cycling network. Works have also been completed in Gladstone on the priority cycle network.

2 Department of Transport and Main Roads. (2017). *QTRIP 2017–2018 to 2020–2021. Fitzroy District.*

1.9 Developing Regional Transport Plans

Planning principles

All levels of government routinely face increasing pressure to fund more public services and infrastructure in order to meet community expectations. Funding is limited, so competing priorities must be continually balanced.

Regional Transport Plans will help to achieve this in several ways:

- by establishing the region-centric planning that leads to good investment decisions—a focus at this level helps to ensure that funds are prioritised to meet regional needs and customer expectations
- by promoting consideration of non-infrastructure solutions for regional priorities, which are often more cost effective than building new infrastructure
- by helping to identify and align cross-agency priorities and actions to promote efficient and coordinated planning and investment.

In the context of constrained funding, Regional Transport Plans are being developed with the view that solutions to transport challenges and customer needs and requirements are not always about building new or expanding existing infrastructure, but include identifying new and innovative ways to do more with less. The best outcome may not be a new road or other type of transport facility. Instead, it may be modification of an existing asset, for example, reconfiguring a road to accommodate bicycle or bus lanes.

Consideration of lower cost and non-infrastructure solutions within planning and investment decision-making processes ensures we are getting the most from our existing assets and using infrastructure smarter and more efficiently than before. Identifying shared goals and partnership opportunities across government and with the private sector positions the region to leverage collective expertise and resources to achieve more with available funding. The department's approach to identifying, prioritising and investing in transport system solutions aligns to the *State Infrastructure Plan's* options assessment approach as shown in Figure 2.

Emu Park bus stop, part of the Rockhampton urban bus network

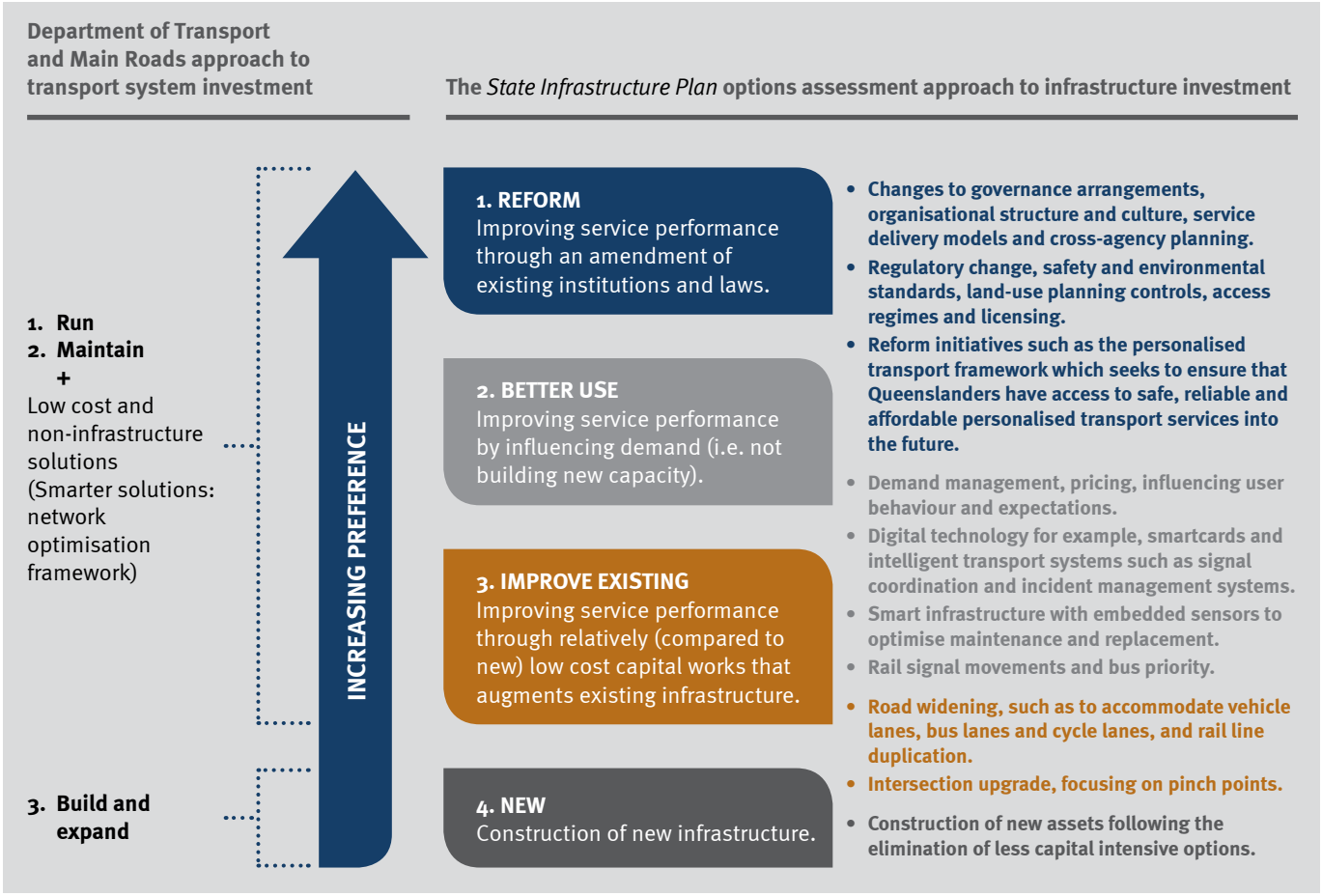


Figure 2: Alignment between the departmental and government approaches to infrastructure investment

Process

The Plan was developed with a 'customer-first' and 'one network' approach. Early engagement with customers, stakeholders and partners was vital to identify and understand the region's issues, challenges, opportunities, goals and priorities for taking action. Key stages in the development process are set out below.

Early engagement with partners, stakeholders and customers through meetings and workshops to understand regional goals, challenges and opportunities

Review of relevant strategies, plans and policies to establish a holistic understanding of transport objectives and desired regional transport outcomes

Analysis of economic and population trends to understand key drivers underpinning future transport needs

Collaborative development of priorities and actions to set a framework for future planning and delivery partnerships

Customer-first approach

A 'customer-first' approach is about being conscious of how customers experience the transport system, and being willing to change the way we do things to improve that experience. It also means viewing the transport system as customers do: as 'one network', with little perceivable difference between the various parts provided or managed by the different levels of government. Transport and Main Roads' customer-centric approach is central to the way it does business. The approach is about shaping deliverables and services with customers in mind, co-designing solutions that embrace the future, and communicating effectively and meaningfully.

Engaging with our customers

To achieve a 'one network' approach, the department involved customer representatives early in the creation of all Regional Transport Plans, and engaged and developed content in partnership with local government and other government agencies. To inform the development of the Plan, representatives were selected from different locations in the region, covering a range of sectors and interests, including agriculture, mining, health, tourism and small business. To gain customer input, the department hosted workshops, and facilitated a number of one-on-one interviews. Some of the key issues that emerged from this engagement included:

- Insufficient reliable, all-weather access routes and services to and within the region.
- Poor intra and inter-regional connectivity (including between regional cities) impacts on accessibility and can cause isolation of communities.
- Variability in road and rail network conditions limiting the efficiency of the transport network.
- Changing climate and seasonal weather patterns intermittently restrict the reliability of the existing transport network.
- The dispersed land use pattern of the region makes it challenging to maintain an efficient transport system, and minimise environmental impacts.

This input from customers has informed the priorities and actions for action identified in this Plan.

One network

Regional Transport Plans are developed on the basis that the transport system operates as one-network. Working and collaborating with all relevant transport system stakeholders to develop this Plan ensures planning priorities for the regional transport system are considered as a whole. Transport and Main Roads will continue to partner with local governments and transport operators to continuously improve the transport system and the experiences of our customers.

Structure

The document comprises five chapters covering an introduction, setting the scene, planning context, transport response and implementation. The sequence and content of chapters reflects the development and implementation stages for the Plan.

- **Chapter 1** introduces the purpose, scope and strategic alignment of the Regional Transport Plan.
- **Chapter 2** provides an overview of the region's community, economy and transport system.
- **Chapter 3** describes the region's goals, challenges and opportunities and their relationship to transport.
- **Chapter 4** sets out the priorities, objectives and actions for shaping the transport system over the next 15 years.
- **Chapter 5** outlines the Plan's implementation and review process.

Table 3 outlines the key components of the Regional Transport Plan.

Table 3: Structure of the draft Fitzroy Regional Transport Plan

STRATEGIC CONTEXT

SETTING THE SCENE
Chapter 2: The Fitzroy Region

THE REGION | THE TRANSPORT NETWORK

Chapter 2 provides an overview of the key characteristics of the communities that make up the Fitzroy region, and the different elements of the region's current transport system across all modes, networks and services.

PLANNING CONTEXT
Chapter 3: Goals, challenges and opportunities

GOALS	CHALLENGES	OPPORTUNITIES
▪ Improve liveability, accessibility and connectivity for all communities. ▪ Strengthen and grow the region's diverse and adaptive economy. ▪ Promote a safe environment for residents and visitors. ▪ Promote a cleaner, healthier and more liveable environment.	▪ Accessibility and community connectivity. ▪ Private vehicle dependency. ▪ Variability in network conditions. ▪ Network resilience. ▪ Safety. ▪ Supporting the efficient movement of freight. ▪ Managing road freight growth. ▪ Funding, planning and coordination of transport network projects.	▪ Growth in agriculture. ▪ Mining expansion. ▪ Self-drive tourism trend. ▪ Defence industry. ▪ Advancements in technology.

Chapter 3 details the goals, challenges and opportunities that are the main drivers for establishing the region's transport priorities and actions. Review of existing planning, analysis of information, and consultation with customers were key steps in defining the goals, challenges and opportunities.

TRANSPORT RESPONSE

SHAPING TRANSPORT TO ACHIEVE REGIONAL GOALS
Chapter 4: Priorities and actions

PRIORITY 1 Community	PRIORITY 2 Economic development	PRIORITY 3 Safety	PRIORITY 4 Environment and sustainability
An accessible and integrated transport network that supports all transport modes and connects communities within and outside of the region.	A transport system that supports economic growth and diversification by providing efficient and effective access to markets and destinations.	A safe transport network that meets the demands of all users and manages interactions between incompatible network users.	A sustainable and resilient transport network that provides access to and within the region.

ROLE OF TRANSPORT

OBJECTIVES AND MEASURES OF SUCCESS

ACTIONS – SHORT-TERM, AND ACTIONS – MEDIUM/LONG-TERM

Chapter 4 sets out the transport response to achieving regional goals, addressing challenges and supporting opportunities. The transport priorities express the regional goals with a transport system focus. The priorities set the high-level direction for framing objectives, measures of success and actions.

Transport objectives describe the desired future state for transport in meeting the region's goals and transport priorities. Meeting each objective through taking action will result in real and measurable outcomes or 'measures of success' that can be tracked to indicate progress over time.

The majority of actions identify the Queensland Government's strategic intent for taking the critical steps in the short-term towards achieving the transport objectives and regional goals over the indicative 15-year life of the Plan.

Medium/long term actions identify possible responses to emerging or potential future transport planning needs.

Actions are led by the Queensland Government, however many will involve partnerships and collaboration with industry and community.

TAKING ACTION
Chapter 5: Implementation

DELIVERING IN PARTNERSHIP | MONITORING AND REVIEW

Chapter 5 outlines the approach for delivering in partnership to implement the Plan. It also sets out the framework for monitoring and review.

Walking on Wreck Beach, Great Keppel Island

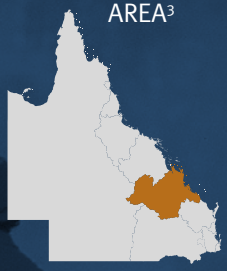
2.
The Fitzroy Region

2.1 Region overview

FITZROY REGION COVERS AN AREA OF

117,813 KM²

OR 6.8% OF QUEENSLAND'S LAND AREA[3]



LOCAL GOVERNMENT AREAS INCLUDE:

1. BANANA SHIRE COUNCIL
2. CENTRAL HIGHLANDS REGIONAL COUNCIL
3. GLADSTONE REGIONAL COUNCIL
4. LIVINGSTONE SHIRE COUNCIL
5. ROCKHAMPTON REGIONAL COUNCIL
6. WOORABINDA ABORIGINAL SHIRE COUNCIL

POPULATION GROWTH[4]

2016 **226,300** (**4.7%** OF QLD POPULATION)

2036 **324,200**

120,500

JOBS IN THE REGION (SEPTEMBER 2017)[3] WITH A GRP IN 2016 OF

$16B[5]

GLADSTONE IS HOME TO

2

OF THE WORLD'S LARGEST ALUMINA REFINERIES

THE FITZROY RIVER CATCHMENT HAS A WELL-DOCUMENTED **HISTORY OF FLOODING**, STEMMING FROM HEAVY RAINFALL EVENTS IN THE DAWSON RIVER OR CONNORS-MACKENZIE RIVER CATCHMENTS[6]

HEALTH CARE AND SOCIAL ASSISTANCE (10.1%), RETAIL TRADE (9.6%) AND EDUCATION AND TRAINING (9.0%) ARE THE TOP EMPLOYING INDUSTRIES[7]

17%

OF LIVINGSTONE'S POPULATION IS OVER 65, HIGHER THAN FITZROY'S 12.6%[3]

KEY FEATURES OF THE REGIONAL ECONOMY

A quarter of the global LNG supply is from Central Queensland[8]

Agriculture in Fitzroy accounts for 11% of Queensland's total agricultural production[9]

Rockhampton is known as Australia's Beef Capital

Rockhampton and Gladstone are major population centres[7] and provide access to higher order goods and services

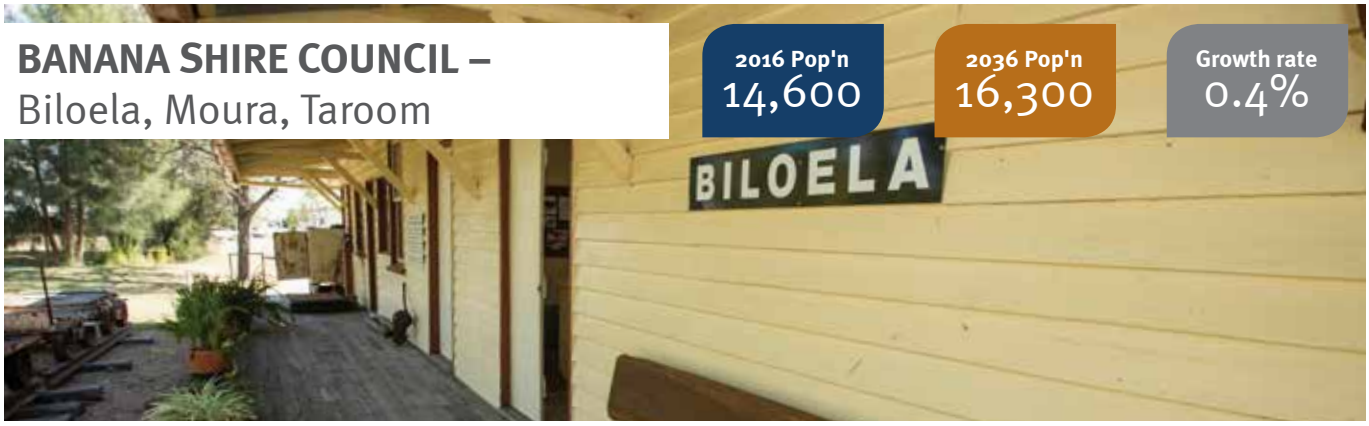
2016 regional tourism expenditure totalled $1,032 million and with an average compound growth rate of 2.4% over nine years leading to 2015[10]

Between 2013 and 2016, an average of 96% of visitors to Fitzroy were domestic travellers[10]

3 Queensland Government Statistican Office, Queensland Treasury. (2017). *Queensland Regional Profile for Fitzroy region.*
4 2016: Australian Bureau of Statistics. (2017). *Regional Population Growth, Australia (Catalogue No. 3218.0).*
2036: Queensland Government Statistician's Office. (2015). *Queensland Government Population Projections, 2015 edition (medium series).*
5 Gladstone Regional Council. (2017). *www.economyprofile.com.au/gladstone/industries/gross-regional-product.*
6 Queensland Department of Environment and Heritage Protection. (2016). *Draft Climate change in the Central Queensland region.*
7 Australian Bureau of Statistics. (2017). *Census of Population and Housing, 2016, General Community Profile - G51 and unpublished data.*
8 Queensland Government. (2017). *www.business.qld.gov.au/industries/invest/mining/resources-potential/petroleum-gas.*
9 Australian Bureau of Statistics. (2017). *Value of Agricultural Commodities Produced, Australia, 2014–15 (Catalogue: 7503.0).*
10 Tourism Research Australia. (2016). *Local Government Area Profiles.*

Local government areas

Local government areas and population centres*	2016 estimated resident population	2036 projected population	Average annual growth rate (2011—2036)



Employment and economy

Major employing industries are: agriculture, forestry and fishing (19.7 per cent); mining (14.9 per cent); and retail trade (7.3 per cent).

Access

The region is serviced by three major highways: the Leichardt Highway connecting from the Capricorn Highway in the north through to Goondiwindi in the south; the Dawson Highway connecting from Gladstone to Springsure to the west; and the Burnett Highway which starts just outside Rockhampton and connects through to Nanango in North Burnett. Direct flights from Brisbane arrive at Thangool Aerodrome. Banana Shire also includes the Moura Coal Rail system, a predominantly coal network of rail corridors connecting to the Port of Gladstone.

Employment and economy

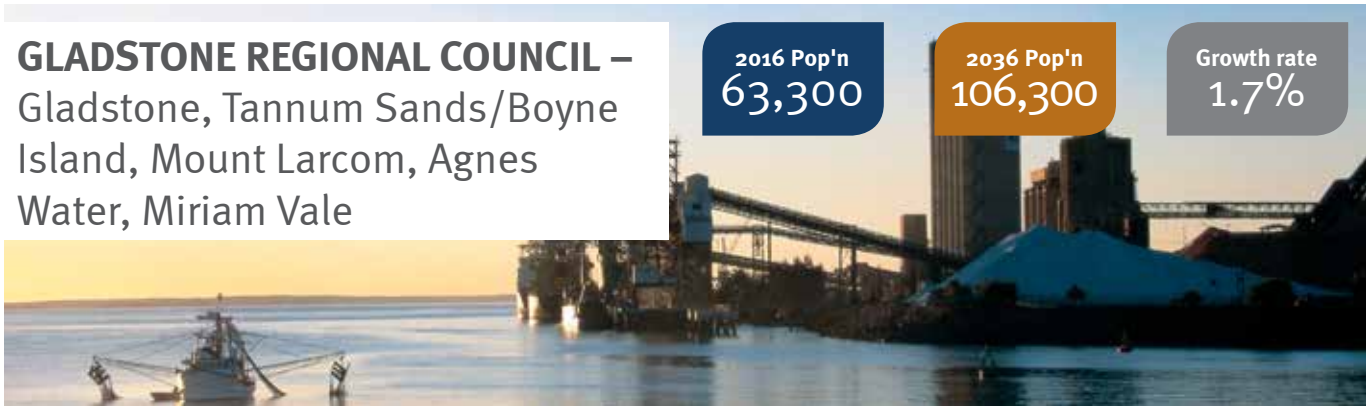
Major employing industries are: mining (24.3 per cent); agriculture, forestry and fishing (12.8 per cent); and retail trade (8.1 per cent).

Access

Central Highlands local government area includes: a major north–south connection along the Gregory Highway connecting Emerald to Clermont in the north and continuing south to Springsure where it connects to the Dawson Highway; and an east–west link with the Capricorn Highway connecting to Longreach in the west and Rockhampton in the east. The Central Highlands local government area is on the Central West Rail line which utilises the Blackwater Coal Rail system between Rocklands and Nogoa and supports both passenger and freight services.

* Employment statistics in this section are sourced from Australian Bureau of Statistics. (2016). *Census of Population and Housing – General Community Profile – G51 (Industry of Employment by Age and Sex)* and unpublished data. Employment industries are categorised as per the employment divisions of Australian Bureau of Statistics. (2013). *Australian and New Zealand Standard Industrial Classification 2006 (Revision 2.0) (Catalogue No. 1292.0)*. Population statistics are sourced from various editions of Australian Bureau of Statistics. *Regional Population Growth, Australia (Catalogue No. 3218.0)*.

Local government areas and population centres*	2016 estimated resident population	2036 projected population	Average annual growth rate (2011—2036)



GLADSTONE REGIONAL COUNCIL – Gladstone, Tannum Sands/Boyne Island, Mount Larcom, Agnes Water, Miriam Vale

Employment and economy

Major employing industries are: manufacturing (13.6 per cent); construction (11 per cent); and retail trade (9.6 per cent).

Access

Gladstone Regional Council area is serviced by several highways and major arterials. The Bruce Highway provides a major north–south connection to southern centres such as Brisbane and the northern centres of Mackay, Townsville and Cairns. The Dawson Highway provides a major east–west route, connecting with the Bruce and other highways and providing access to central and western sections of the region. The highway network is supported by major arterial roads, including Gladstone–Mount Larcom Road and Gladstone–Benaraby Road, that connect to the Bruce Highway.

Gladstone is home to Queensland's largest multi-commodity port (with eight main wharf centres) and is connected to the resource sector through private rail lines. The North Coast line provides freight and passenger rail services, connecting to centres along the east coast of Queensland between Brisbane and Cairns. Gladstone Airport offers daily passenger services as well as freight capabilities.

Gladstone provides marine transport services to islands within the Great Barrier Reef, including North West Island and Heron Island, supporting the region's tourism market.

LIVINGSTONE SHIRE COUNCIL – Yeppoon, Emu Park

Employment and economy

Major employing industries are: health care and social assistance (11.4 per cent); education and training (10.9 per cent); retail trade (9.7 per cent); and construction (9.7 per cent).

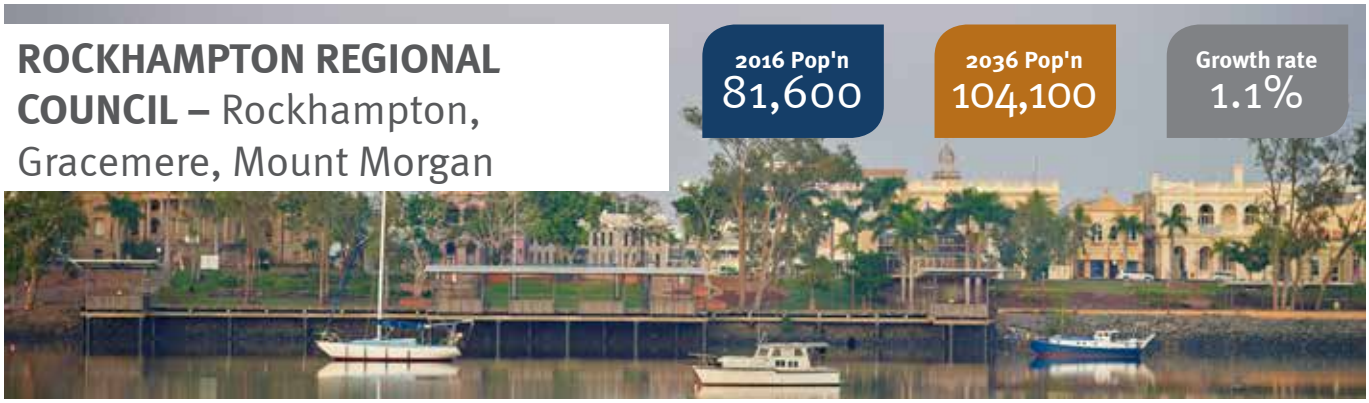
Access

The Bruce Highway traverses the shire, although access to the population centres of Yeppoon and Emu Park are through Rockhampton via Rockhampton–Yeppoon Road and Rockhampton–Emu Park Road respectively. Yeppoon provides marine transport services to the Keppel Island Groups, supporting the region's tourism market.

* Employment statistics in this section are sourced from Australian Bureau of Statistics. (2016). *Census of Population and Housing – General Community Profile – G51 (Industry of Employment by Age and Sex)* and unpublished data. Employment industries are categorised as per the employment divisions of Australian Bureau of Statistics. (2013). *Australian and New Zealand Standard Industrial Classification 2006 (Revision 2.0) (Catalogue No. 1292.0)*. Population statistics are sourced from various editions of Australian Bureau of Statistics. *Regional Population Growth, Australia (Catalogue No. 3218.0)*.

Local government areas and population centres*	2016 estimated resident population	2036 projected population	Average annual growth rate (2011—2036)

ROCKHAMPTON REGIONAL COUNCIL – Rockhampton, Gracemere, Mount Morgan



Employment and economy

Major employing industries are: health care and social assistance (15.1 per cent); retail trade (10.6 per cent); education and training (9.8 per cent); and construction (9.8 per cent). Rockhampton is also known as the beef capital of Australia, demonstrating the importance of the beef industry to the region.

Access

Rockhampton Regional Council area is serviced by several major highways and arterial roads. The Capricorn Highway connects Rockhampton to western centres such as Emerald and Barcaldine. The Burnett Highway to the south-west links to Mount Morgan and Biloela. The Bruce Highway connects Rockhampton to major centres on the eastern seaboard, including Brisbane to the south and Townsville and Cairns to the north. Rockhampton supports an airport with regular daily passenger services and freight capabilities. The city is also the junction of two rail lines: the North Coast line and the Blackwater Coal Rail system, both supporting passenger and freight services.

The Port of Rockhampton (Port Alma) provides access to national and foreign markets.

WOORABINDA ABORIGINAL SHIRE COUNCIL – Woorabinda

Employment and economy

Major employing industries are: public administration and safety (23.3 per cent); health care and social assistance (21.8 per cent); and education and training (19.7 per cent).

Access

Access to the Woorabinda township is provided via the Fitzroy Developmental Road, which connects to the Capricorn Highway in the north and the Dawson Highway in the south. An east–west connection is provided to the shire via Baralaba–Woorabinda Road. Woorabinda has no dedicated public transport service. The shire is supported by an airstrip however no regular flights service the airport.

FITZROY REGION TOTAL	226,300	324,200	7.2%

* Employment statistics in this section are sourced from Australian Bureau of Statistics. (2016). *Census of Population and Housing – General Community Profile – G51 (Industry of Employment by Age and Sex)* and unpublished data. Employment industries are categorised as per the employment divisions of Australian Bureau of Statistics. (2013). *Australian and New Zealand Standard Industrial Classification 2006 (Revision 2.0) (Catalogue No. 1292.0)*. Population statistics are sourced from various editions of Australian Bureau of Statistics. *Regional Population Growth, Australia (Catalogue No. 3218.0)*.

2.2 Transport network

The region's transport network includes road, rail, marine, air, active transport and public transport infrastructure and services. An overview of the region's transport network is shown in Figure 3.

Figure 3: Overview of Fitzroy region transport network

366 KM
NATIONAL LAND TRANSPORT NETWORK

3,163 KM
STATE-CONTROLLED ROADS

14,647 KM
LOCAL GOVERNMENT MANAGED ROADS[11]

PORT ALMA HAD A TOTAL THROUGHPUT OF

233,285 TONNES

IN THE 2016–2017 FINANCIAL YEAR AND SPECIALISES IN EXPORT/IMPORT OF DANGEROUS GOODS[12]

COMMERCIAL OPERATORS MANAGE A NUMBER OF

RAIL LINES

CONNECTING COAL MINES TO THE PORT OF GLADSTONE

THE NORTH COAST RAIL LINE CARRIED

6.8 BILLION

GROSS TONNE KILOMETRES AND THE CENTRAL WEST LINE

85 MILLION

IN THE 2015-2016 FINANCIAL YEAR[13]

565,716

PASSENGERS PASSED THROUGH ROCKHAMPTON AIRPORT AND

303,262

THROUGH GLADSTONE AIRPORT IN THE 2016-2017 FINANCIAL YEAR[14]

PORT OF GLADSTONE IS THE LARGEST MULTI-COMMODITY PORT IN QUEENSLAND WITH A TOTAL THROUGHPUT OF

120.4 MILLION

TONNES IN THE 2016–2017 FINANCIAL YEAR[15]

CAR

IS THE DOMINANT MODE OF TRANSPORT IN THE REGION

THE PORT OF GLADSTONE HANDLES

30 DIFFERENT COMMODITIES, HAS

8 MAIN WHARF CENTRES COMPRISING OF

20 WHARVES[15]

100

FATALITIES AND

1522

CRASHES REQUIRING HOSPITALISATION OCCURRED BETWEEN 2012 TO 2016[16]

5.1%

OF HOUSEHOLD DO NOT HAVE A CAR COMPARED TO QUEENSLAND'S

6%[17]

11 Transport and Main Roads. (2016). *QTRIP 2016–2017 to 2019–2020.*
12 Gladstone Ports Corporation. (2017). *www.gpcl.com.au/operations/port-alma-shipping-terminal.*
13 Queensland Rail. (2016). *Queensland Rail Annual Report 2015-16.*
14 Department of Infrastructure and Regional Development. (2017) *Airport traffic data statistical report.*
15 Gladstone Ports Corporation. (2017). *www.gpcl.com.au/operations/port-of-gladstone.*
16 Queensland Government. (2017). open data *www.data.qld.gov.au/dataset/crash-data-from-queensland-roads/resource/e88943c0-5968-4972-a15f-38e120d72ec0.*
17 Australian Bureau of Statistics. (2017). *Census of Population and Housing, 2016, General Community Profile- G30.*

Roads

The Fitzroy region's road network plays an essential role in connecting people and goods to where they need to go, both within and outside the region. It provides for a range of freight and passenger movements, including oversize overmass (OSOM), other heavy vehicle movements, commuter, coach and tourist trips, which support the regional economy and enhance liveability.

The Bruce Highway is the region's primary north–south inter-regional road route and is part of the National Land Transport and National Key Freight Route Networks. It connects the region's coastal centres with major centres along Queensland's coastline, including Brisbane, Townsville and Cairns. The Bruce Highway passes through Rockhampton, Marlborough, Calliope and Miriam Vale.

The State Controlled Road Network includes a range of highways and arterial roads supporting freight and passenger movements within and through the region. The Capricorn Highway is the region's primary east–west route and part of the National Key Freight Route. It connects with the Bruce Highway at Rockhampton and the Landsborough Highway in Barcaldine. The Dawson Highway is an alternate east–west route, with sections providing an important freight role as well as connecting communities to inland and major coastal centres and destinations. The Gregory, Carnarvon, Leichhardt and Burnett Highways provide north–south connections, linking with the Capricorn and Dawson highways and supporting access to neighbouring regions.

The region's highway network is supported by a network of arterial roads, providing connectivity within and between towns. Local roads support access within urban areas and to tourism attractions and farm gates.

A high proportion of heavy vehicle movements are evident on state-controlled roads, contributing on average a quarter of the annual average daily traffic in the region. This presents challenges for road safety, pavement condition and amenity with trucks passing through towns.

The Roads and Transport Alliance and Regional Roads and Transport Groups

The Roads and Transport Alliance is a cooperative governance arrangement between the Department of Transport and Main Roads, the Local Government Association of Queensland (LGAQ) and local governments to invest in and regionally manage the Queensland transport network. Its objectives are to:

- maximise the economic, social and environmental benefits of joint investments
- achieve maximum efficiencies through collaboration and innovation in network planning, program development and delivery
- improve technical skills through training, technology and knowledge transfer
- optimise safety
- maximise investment on the Queensland transport network.

The Alliance includes Regional Roads and Transport Groups (RRTG) where Transport and Main Roads and local government representatives within the region work collaboratively to plan and prioritise investment on road and transport infrastructure. This includes allocating funding to the highest priority projects and identifying opportunities for financial efficiencies. In the Fitzroy region, there are three RRTGs: Rockhampton, Gladstone and Bowen Basin (which includes Isis Regional Council).

Road rehabilitation west of Calliope

Bus and coach

Urban public transport bus services are available in Rockhampton and Gladstone. The Rockhampton area supports 19 urban bus routes extending to the nearby towns of Yeppoon, Emu Park, Mount Morgan and Gracemere. Services generally operate every 30 minutes to one hour during the peak hours and every one to two hours in the off-peak period. Capricorn Sunbus and Young's Bus Service operate these services in addition to school services in Rockhampton, Gracemere and Yeppoon and bus charters.

In Gladstone, Buslink operate eight routes on weekdays and no weekend services. The frequency of services is typically low, varying between five and 12 buses a day per route. Buslink also operates Gladstone's school services.

Several subsidised long-distance coach lines operate in the region, operated by Mackay Transit and Bus Queensland. Mackay Transit provides daily return services between Emerald and Mackay, while Bus Queensland provides three return services per week between Toowoomba and Rockhampton. Greyhound Australia offers two return services per week between Rockhampton and Longreach and five return services per week between Emerald and Rockhampton. Greyhound Australia and Premier Motor Services both provide services between Brisbane and Cairns. Several bus and coach companies provide contracted/charter long-distance coach services between Mackay, Emerald, Gladstone and Rockhampton and to mines and infrastructure projects in the Bowen Basin.

Coach services provide important inter-regional connections for passengers and in some cases also carry freight. In 2016–2017, contracted and subsidised bus and coach services transported approximately $30,000 in freight throughout the region.[18]

Urban bus service arriving at Yeppoon

18 *Information is collected on a monthly basis as per the terms and conditions of Service Contracts and executed between the Department of Transport and Main Roads and all contracted operators.*

Rail

The region's rail network includes the North Coast and Central West lines, and Blackwater and Moura Coal Rail systems, facilitating both freight and passenger movements. The North Coast line links Brisbane to Cairns, running through the centre of Rockhampton. In the 2015–2016 financial year, the North Coast line carried 6.8 billion gross tonne kilometres (GTKs) of containerised and general freight, industrial products, sugar and molasses.[19] The Central West line adjoins the Aurizon Blackwater Coal Rail system at Emerald and runs from Emerald to Winton via Longreach. In the 2015–2016 financial year, the Central West line carried 85 million GTKs of livestock and gypsum.[19] A substantial component of the rail network in the Fitzroy region is currently owned and operated by Aurizon as part of the Blackwater and Moura Coal Rail systems. These systems primarily service coal mines, with connections to power stations and the Port of Gladstone.

Passenger services include:

- The Queensland Rail Spirit of the Outback rail service, a twice weekly return service on the Central West line and Aurizon network between Rockhampton and Longreach, stopping within the region at Duaringa, Bluff, Blackwater, Emerald and Anakie. The service originates in Brisbane on the North Coast line.
- The Tilt Train rail service on the North Coast line providing a seven-hour 30-minute journey between Brisbane and Rockhampton with seven return services per week and stopping within the region at Gladstone, Mount Larcom and Miriam Vale.
- The Spirit of Queensland is Queensland's longest rail service supporting five return services per week from Brisbane to Cairns. The service stops within the region at Miriam Vale, Gladstone, Mount Larcom and Rockhampton.

Air

Four regional airports support passenger services. Passenger services are available at:

- Rockhampton Airport and Gladstone Airport by QantasLink, Virgin Australia and Jetgo
- Emerald Airport by QantasLink, Virgin Australia and Alliance
- Thangool Airport by Fly Corporate.

Airstrips across the region also support aviation services.

Rockhampton Airport is the region's largest airport with capabilities to support both domestic and international aircraft, including B747 to B776 and A340.[20] In the 2015–2016 financial year, 604,594 passengers travelled through Rockhampton Airport. Owned and operated by Rockhampton Regional Council, Rockhampton Airport is also a base for the Royal Flying Doctor Service.

Gladstone Airport is operated by Gladstone Airport Corporation under direct control of the Gladstone Regional Council.[21] In the year ending August 2015, 429,585 passengers passed through Gladstone Airport.[22]

Air freight services are available through Australian Air Express (Qantas) and Toll Air Express (Virgin Australia) at both Rockhampton Airport and Gladstone Airport.

Rockhampton Airport

19 Queensland Rail. (2016). *Queensland Rail Annual Report 2015–2016.*
20 Rockhampton Regional Council. (2017). *www.rockhamptonregion.qld.gov.au/CouncilServices/Rockhampton-Airport.*
21 Gladstone Airport Corporation. (2017). *www.gladstoneairport.com.au/.*
22 Department of Infrastructure and Regional Development. (2015). *www.bitre.gov.au/publications/ongoing/airport_traffic_data.aspx.*

Marine

The Port of Gladstone and Port Alma Shipping Terminal are located within the Fitzroy region and are both managed by Gladstone Ports Corporation. The Port of Gladstone is Queensland's largest multi-commodity port, handling over 30 different products including coal, bauxite, alumina, aluminium, cement and Liquefied Natural Gas (LNG). The port is located on Gladstone Harbour and has eight main wharf centres, comprising 20 wharves. In the 2015–2016 financial year, the Port of Gladstone had a total throughput of 115.9 million tonnes, with over 1800 vessels visiting the port. Coal exports accounted for 70.8 per cent of total port throughput, followed by alumina at 23.8 per cent and with the remainder comprising a variety of other products including cement, petroleum, grain and sugar.[23]

The Port Alma Shipping Terminal is a smaller port terminal within the Port of Rockhampton. It is located 62 kilometres east of Rockhampton on the southern tip of the Fitzroy River delta. The Port Alma Shipping Terminal has three wharf facilities and limited supporting infrastructure. Berths 1 and 2 are suitable for general cargo operations while Berth 3 is dedicated to tallow/fuel cargoes.[24] In 2016, the port handled 227,268 tonnes of cargo, with over 60 vessels passing through the port with the cargo including class 1 explosives, ammonium nitrate, bulk tallow and military equipment for exercises held regularly at Shoalwater Bay to the north of Rockhampton.[25]

Recreational boating is an important aspect of the region's lifestyle. In June 2016, 47,842 recreational vessels were registered in the Gladstone region which equates to one vessel for every 11 people (compared with a statewide average of one in 18) and one out of every four people held a recreational maritime licence (compared to one in five statewide). Recreational boating is supported by a range of boating infrastructure across the region such as floating walkways, pontoons and boat ramps including facilities at Rosslyn Bay Boat Harbour, Gladstone Marina, Boyne Island, Seventeen Seventy, Callide Dam and Coorooman Creek.

Active Transport

Active transport refers to non-motorised travel such as walking and cycling. Active transport infrastructure is provided across the region in the form of footpaths, shared pedestrian and cycle paths and on and off road cycle lanes.

Rockhampton has the most extensive cycle network in the region while the population centres of Gladstone, Emerald and Yeppoon, have a varying level of cycle facilities and network connectivity. Aside from these centres, the cycle network is largely undeveloped. Ongoing development of the region's cycling network for recreational and commuter use is guided by the *Central Queensland Principal Cycle Network Plan*.

Census data (2016) shows that 4.2 per cent of the region's working population used active transport to travel to work on the day of the census. This was less than the proportion for the neighbouring Mackay, Isaac and Whitsunday region (5.3 per cent) but similar to the whole of Queensland (4.3 per cent).[26]

Mobility and community transport services

Convenient and affordable transport options for access to employment, education, social and community services are essential for supporting liveable and prosperous communities.

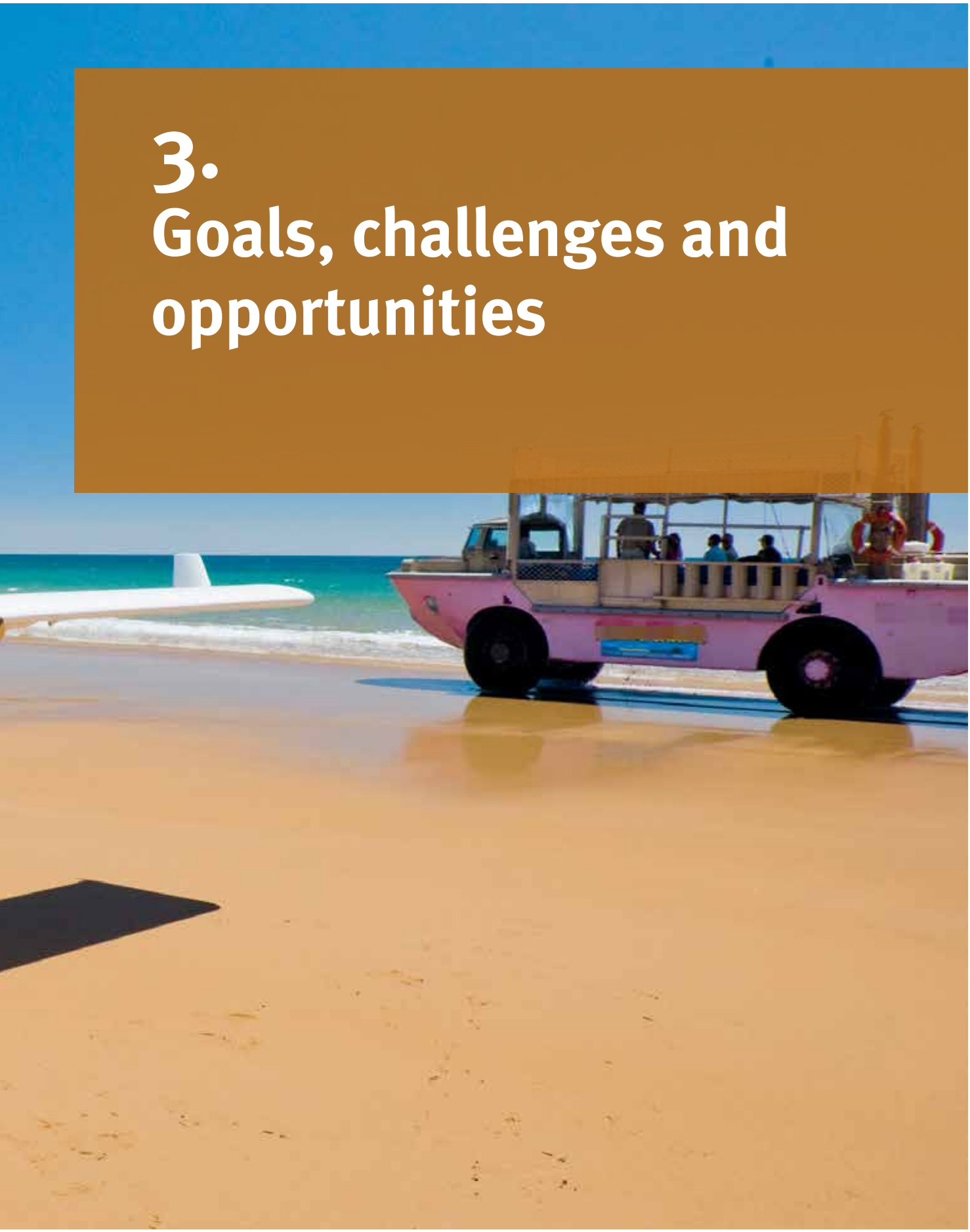
Travel subsidies and special transport services are available to people with a transport disadvantage, including the elderly, sick and people with a disability who require travel assistance to access essential health and community service needs. The range of transport services available in the region include subsidised taxi travel, community bus services, and patient transport services delivered by the Queensland Ambulance Service.

Taxi services are available in Biloela, Blackwater, Emerald, Gladstone, Mount Morgan, Rockhampton and Yeppoon. Other personalised transport services such as booked hire now also play a role in the region's transport system. This trend towards more diverse transport options offers customers improved choice about how they travel.

23 Gladstone Ports Corporation. (2017). *www.gpcl.com.au/operations/port-of-gladstone.*
24 Port of Rockhampton Gladstone Ports Corporation. (2017). *www.gpcl.com.au/operations/port-alma-shipping-terminal.*
25 Department of Transport and Main Roads. (2017). *Port Procedures and Information for Shipping – Port Alma, www.msq.qld.gov.au/Shipping/Port-procedures/Port-procedures-port-alma.*
26 Australian Bureau of Statistics. (2017). *Census of Population and Housing, 2016, Working Population Profile - W22 (place of work).*

Bustard Head, Seventeen Seventy

3.
Goals, challenges and opportunities



3.1 Goals

Goals describe the region's desired economic, social and environmental outcomes that set the direction for all planning activities and initiatives in the region, not just for transport. Transport and Main Roads has engaged with the region's local governments, industry representatives and other state agencies to understand the high level goals for the region's future development.

Goals were developed for the *Fitzroy Regional Transport Plan* based on a review of local, regional, state and national planning documents and directions set by stakeholders. Goals help frame the priorities and actions for transport towards achieving regionally specific outcomes for the community, economy and environment.

The relationship between goals and priorities is presented in Figure 4. Priorities are the transport response to the region's goals in the context of addressing challenges, and supporting opportunities.

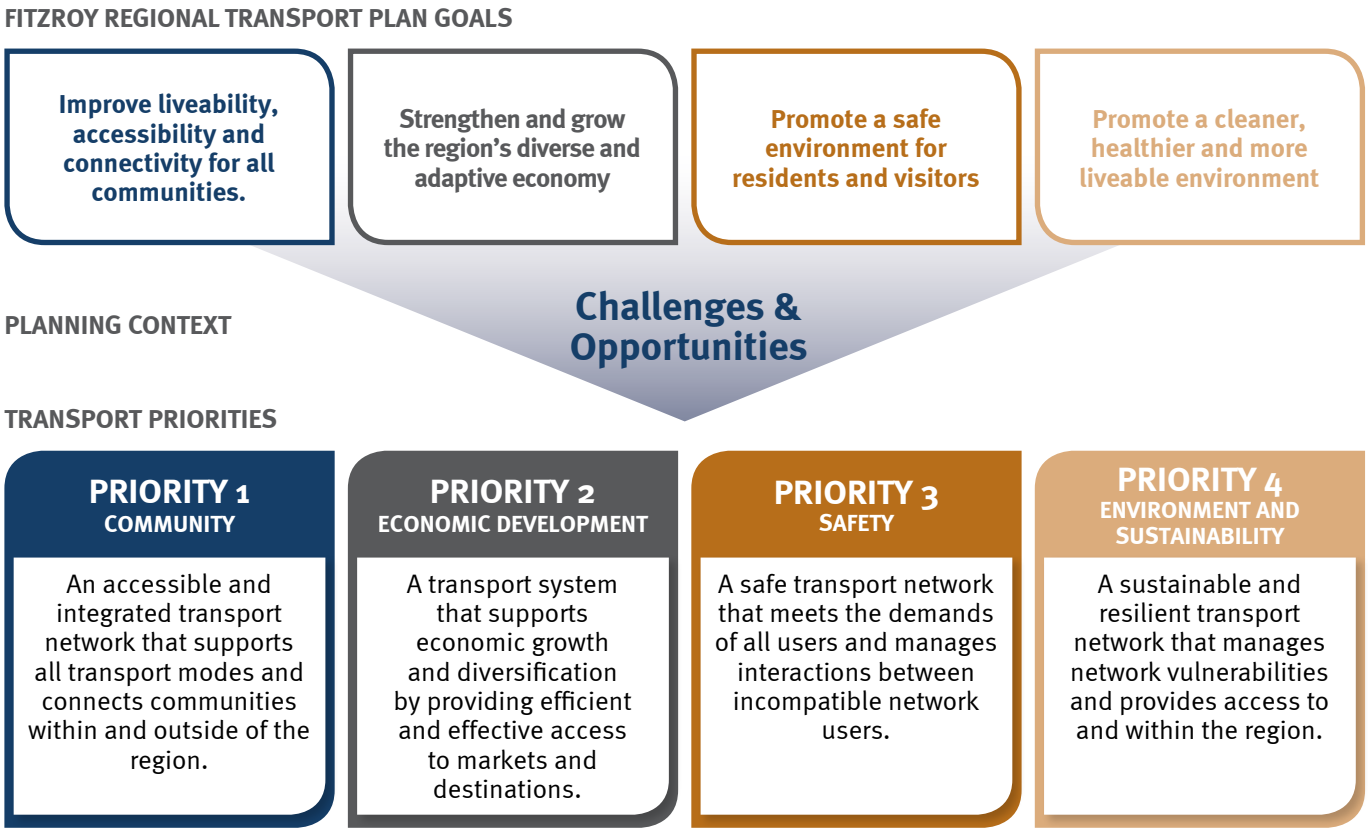


Figure 4: Regional goals and relationship to transport priorities

Fitzroy River Bridge

3.2 Challenges

Accessibility and community connectivity

Accessibility and community connectivity are major functions of the transport network and a challenge in some areas of the region, particularly for less populated inland areas. Transport enables access to employment and the goods and services that are required to sustain local communities. Although employment opportunities and basic goods and services are available in towns across the region, access to higher order services such as specialist medical care, speciality shopping and major events requires travel to major centres within and outside the region.

Accessibility varies across the region particularly to the major centres of Rockhampton, Gladstone and Brisbane which offer differing levels of higher order services.[27] Rockhampton and Gladstone also act as regional hubs for access to rail and air services to other major centres such as Brisbane, Mackay, Townsville and Cairns. Scheduled long-distance coach services connect smaller centres on the Capricorn, Dawson and Bruce highways to Rockhampton.[28]

Passenger air services provide connectivity with shorter travel times than other modes to major centres outside the region. For those living in the Fitzroy region, air travel can be less affordable due to the need to take multiple flights to reach many destinations. Additional air routes and services in Fitzroy particularly to the Central West will improve regional connectivity for residents and tourists between the east coast and central Queensland.

Although the Fitzroy region has a lower proportion of households without access to a car (5.1 per cent) when compared to Queensland (6 per cent), the impact is potentially higher in towns that do not have passenger transport services or personalised public transport such as a taxi service for local trips and passenger air and long-distance coach service for regional and inter-regional trips.

The Rockhampton and Gladstone areas both have urban bus and taxi services, while Biloela, Emerald, Blackwater, Mount Morgan and Moura have access to taxi services. Outside of these areas, those without access to a motor vehicle are reliant on active transport and community transport options where available. Low population densities, coupled with widely dispersed communities, make it challenging to provide viable public transport services, placing a greater reliance on car use.

Active transport connectivity varies across the region. For cyclists, connectivity is challenged by factors such as: topography and natural barriers; urban development patterns; conflict with the high proportion of heavy vehicle movements on major corridors; and missing links in cycle infrastructure.

Woorabinda is the most isolated community in the region with no scheduled long-distance passenger services, and a high rate of households without a motor vehicle (48.6 per cent compared to Queensland's six per cent).[29] Woorabinda residents have no access to regular passenger services and must rely on community buses or private vehicle travel. Without public transport and motor vehicle access, accessibility to services outside the local community can be limited.

Children riding to school, Rockhampton

27 Department of Transport and Main Roads. (2017). *www.tmr.qld.gov.au/business-industry/Taxi-and-limousine/Industry-information/Taxi/Taxi-fares-service-areas-and-maps/Central-Queensland.*
28 Department of Transport and Main Roads. (2014). *Central Queensland Principal Cycle Network Plan.*
29 Queensland Government Statistician's Office, Queensland Treasury. (2017). *Queensland Regional Profile Fitzroy region.*

Private vehicle dependency

For much of the region, access to employment, education, goods and services is principally provided through private vehicle travel. In addition to a high proportion of households with access to a motor vehicle, the region also has a higher proportion of households owning two or more vehicles than the Queensland average (as shown in Table 4).[30] This reliance on private vehicle travel, coupled with future population growth, places increasing pressure on the road network.

In the Rockhampton local government area, future population growth in suburbs such as Parkhurst and Gracemere and growth in the adjacent towns of Yeppoon and Emu Park will lead to more trips on the road network between these centres.[31] Current traffic volumes impact on travel times and this trend is anticipated to continue. The impact of increased traffic volumes include reduced network reliability, reduced safety and longer travel times. Increased greenhouse gas and air pollutant emissions, poor community amenity and health are also linked to a high reliance on private vehicle use.[32,33]

Congestion around schools was raised by stakeholders as an issue; school-based congestion is common in many urbanised centres across Australia, evidenced by changing travel-to-school behaviours. Only 20 per cent of secondary students and approximately 37 per cent of primary school children use active modes of transport to travel to school which is a reduction from close to 70 per cent in 1970.[34] Within the region, 24 per cent of school trips in Gladstone are by active transport, while for Rockhampton only 14 per cent of education trips are by active transport.[35,36]

Variability in network conditions

Transport network accessibility, reliability, efficiency and safety can be impacted by differing road conditions. In the Fitzroy region these include a combination of sealed and unsealed roads, narrow seal widths and bridge load limits on the road network and single track sections, speed restrictions imposed by load restrictions on timber bridges and distances between signals for the rail network. Variations in transport network conditions impact safety and the efficiency of freight to, from and within the region.

Freight efficiency is dependent on the weakest link in the transport connection between production and market. These weakest links are often the 'first and last mile' that provide a connection for industry to the road network but also can be associated with narrow seals and bridge load limits on higher order roads. These issues restrict the size of vehicles that can be used to transport freight and limits

Table 4: Motor vehicles per occupied private dwelling within the Fitzroy region local government areas compared to Queensland (2016)[30]

	Dwellings with no motor vehicles	1 motor vehicle	2 motor vehicles	3 or more motor vehicles
	%	%	%	%
Fitzroy region	5.1	31.5	38.1	21.4
Banana	4.0	25.3	36.1	29.9
Central Highlands	3.1	28.9	39.1	24.8
Gladstone	4.0	30.4	41.3	21.3
Livingstone	4.1	30.6	38.1	22.5
Rockhampton	6.9	34.7	36.0	18.6
Woorabinda	48.6	31.8	11.4	1.2
Queensland	6.0	34.2	37.4	19.0

30 Australian Bureau of Statistics. (2017). *Census of Population and Housing, 2016, General Community Profile - G30.*
31 Department of Transport and Main Roads. (2012). *Fitzroy River Floodplain Study.*
32 Commonwealth of Australia. (2017). *Australia State of the Environment, 2017, www.soe.environment.gov.au/theme/built-environment/topic/2016/livability-transport.*
33 The State of the Environment Report identify health impacts associated with communities with high reliance on private vehicle include higher incidences of diseases associated with inactivity such as obesity and heart disease.
34 Bureau of Infrastructure, Transport and Regional Economics. (2016). *Australia State of the Environment Report 2016.*
35 Department of Transport and Main Roads. (2012). *Household Travel Survey Gladstone and Biloela.*
36 Department of Transport and Main Roads. (2015). *Household Travel Survey Rockhampton and Yeppoon.*

the use of High Productivity Vehicles (HPV). HPVs deliver the greatest benefit if they can be used for the entire door to door journey as the costs of breaking down and assembling vehicles can easily exceed line haul savings if the larger vehicle cannot be used for the whole journey.

For rail freight, efficiency can be improved through infrastructure upgrades such as passing loops and signalling upgrades, which can allow longer trains to use the network at a higher frequency.

The Capricorn Highway provides an example of network condition impacting safety. Variations in seal width with large sections of narrow seal mean road users have limited margin for error when overtaking or passing other vehicles. Inconsistent seal widths and substandard road conditions increase the chances of crashes on the network and impacts asset costs due to increased pavement edge damage and maintenance needs.

Network resilience

The region is located within the Fitzroy Basin, the largest river catchment in Queensland. The Fitzroy catchment has a history of flooding due to large rainfall events — most recently in February 2015 from Cyclone Marcia and April 2017 with Cyclone Debbie. Following Cyclone Debbie, the Bruce Highway and North Coast line rail services were closed for eight days and Rockhampton Airport was closed for a total of 12 days.[37,38] These events significantly impact the region's economy and community, damaging infrastructure and private property. Poor weather resilience and a lack of flood immunity prolong these impacts, particularly where damage to transport network assets close or limit use.

Both the Bruce and Capricorn Highways have several waterway crossings that flood with heavy rainfall. During flood events in 2010 and 2011, the Capricorn Highway experienced repeated closures and suffered significant damage at multiple locations between Rockhampton and Emerald. These flood events isolated communities, resulting in food and medical supplies shortages. Access is critical immediately after a disaster event to allow first responders to assess damage and community impacts. Improved flood immunity and network resilience can be achieved by taking a network approach through strategic investment at a route level in improving flood immunity, identifying alternate routes, real-time information during and following an event advising route options and use of other modes (such as air) for disaster management planning and response.

Safety

In the Fitzroy region, there were 100 fatalities and 1522 crashes requiring hospitalisation between 2012 and 2016.[39] Alcohol, fatigue and speed were contributing factors to these crashes. Hitting objects, overturned vehicles, rear-end and angle crashes are the major crash types which accounted for over 80 per cent of the total crashes during the five-year period. Due to the high speed and remote nature of many of the region's state-controlled roads, 42 per cent of crashes occurred at a posted speed limit of 80–110 km/h.

Driver fatigue among non-resident workers is a road safety risk for the region's rural highways. The relative risk of fatality as a result of fatigue is 13.5 times higher on rural roads than in urban areas.[40] Driver fatigue combined with mobile phone black spots and high volumes of heavy vehicles associated with the mining and agricultural industries contribute to this risk. Increased caravan traffic associated with the annual drive tourism season is also a risk, creating safety issues due to caravans sharing the road with heavy vehicles.

Maritime safety is also an issue in the region. During 2016, the region received 64 marine incident reports involving 85 vessels—76 Queensland regulated ships and nine domestic commercial vessels. The most commonly reported incidents were collisions between ships, collisions with objects, swamping and groundings. Eighteen people were injured, including three who died and eight admitted to hospital.[41]

Supporting the efficient movement of freight

The region is heavily reliant on the freight industry and the transport network to connect key production areas to market. Transport also supports the supply of essential goods to communities throughout the region. The quality and efficiency of freight connections influence the cost of living for residents, the productivity and profitability of industry and is a factor in the region's attractiveness for new investment. Network resilience, the condition of the transport network, interactions with incompatible land uses, intermodal integration, potential conflicts between freight movements and other network users and levels of access for HPV and oversize overmass (OSOM) vehicles are challenges for freight efficiency within and beyond the region.

37 RACQ. (2017). *www.live.racq.com.au/2017/04/good-news-bruce-hwy-reopened-rocky/.*
38 Queensland Rail. (2017). *www.queenslandrail.com.au/aboutus/mediacentre/media%20releases/RailshuttleservicesforfloodaffectedNQ.*
39 Queensland Government. (2017). *Open data www.data.qld.gov.au/dataset/crash-data-from-queensland-roads/resource/e88943c0-5968-4972-a15f-38e120d72ec0.*
40 Legislative Assembly of Queensland, Parliamentary Travelsafe Committee. (2005) *Driving on empty: Fatigue driving in Queensland.*
41 Department of Transport and Main Roads. (2017). *Marine incidents in Queensland 2016 www.msq.qld.gov.au/About-us/Marine-incident-annual-reports.*

Increasing freight demand and potential conflicts between freight and other road network users can affect the efficiency of freight movements. The competing demands of local, commuter, tourist and freight vehicles can impact safety, travel time reliability and the availability of rest stops, particularly on higher-trafficked routes such as the Capricorn and Bruce highways. This issue is also evident in Rockhampton where heavy vehicle routes converge and transect the city.

In urban areas, traffic signals, property access and high local traffic volumes during travel peaks, impact road freight efficiency. The Bruce Highway has 6.5 kilometres of direct property access, 17 signalised intersections and 47 un-signalised intersections as it passes through Rockhampton impacting on traffic flow and freight movements. In other areas, such as Emerald, road freight movements through town are also impacted due to reduced speed limits, traffic calming and interactions with local traffic.

The movement of OSOM freight on the road network is important in providing access to Shoalwater Bay Training Area and for the resource and agriculture industries. The challenge with OSOM is to provide a network that supports OSOM movements through corridors with adequate height and width clearance, pavement strength and suitable geometry. Managing the movement of OSOM vehicles by time and route mitigates potential efficiency impacts on other freight and general traffic movements. Increased mining activity in the region will potentially add to the demand for OSOM freight movements.

Rail freight efficiency in the Fitzroy region is impacted by numerous level crossings and poor track alignment in some urban areas. This is particularly an issue in Rockhampton where the North Coast line shares road space through the centre of the CBD, causing delays and safety issues for all modes. The load limit on Alexandra Rail Bridge over the Fitzroy River is a prime constraint on rail freight traffic in this area, and deficiencies on the Yeppoon rail line restrict agricultural supply chains. There are also constraints resulting from the single track sections and limited lengths of passing loops.

Managing road freight growth

Across Queensland, road freight accounts for 69 per cent of domestic freight by volume and freight volumes are forecast to increase by 50 per cent by 2030.[43] The region relies on the road network for the transport of essential goods to communities and for the efficient movement of freight to market within and external to the region, even when rail is an available alternative.

HPVs or larger truck combinations are an efficient way to move more freight with fewer trips, but these vehicles can require more room to safely corner and negotiate intersections, larger break down areas, and can have a greater impact on the life of road pavements.

A mode shift to rail will ease the pressure on the road network particularly for bulk materials such as fuel, gravel and quarry materials. Stakeholders indicate a combination of factors contribute to the underutilisation of rail freight including a lack of ongoing investment, operational restrictions and cost structures. Central Queensland Inland Port's strategic location will take advantage of rail and road network access and may assist in addressing some inefficiencies of rail transport, while upgrades to the Yeppoon Branch line to the meatworks in Rockhampton could also encourage a mode shift from road to rail. The Queensland Government provides subsidies through the Regional Freight Transport Services Contract and the Livestock Transport Services Contracts to contribute to the affordability and continuation of rail freight services.

CASE STUDY:
Improving freight efficiency

Improved freight efficiency can be achieved through non-transport aspects of the supply chain. A new meat processing facility is being considered near Emerald with the proposed capability to process over 100,000 head of cattle per annum to supply the domestic and international markets. With its location providing easy access to a significant supply of local cattle and the site positioned close to road and rail networks, the facility offers potential advantage in transport cost savings with both efficient transport of cattle to the facility and processed meat to customers in the Australian or export marketplace.[42]

Cattle truck, Central Highlands

42 Central Highlands Regional Council. (2015). *Central Highlands Meat Processing Plant Feasibility Study.*
43 CSIRO. (2016). *Transport Network Strategic Investment Tool (TraNSIT).*

CASE STUDY: The Central Queensland Inland Port

The first stage of an intermodal 'inland port' is being developed at Yamala, 25 kilometres east of Emerald. Intermodal freight terminals provide a point in the land based supply chain where freight is transferred between different modes of transport. This occurs to combine the flexibility of road transport with the line-haul efficiency of rail as shown in Figure 5.[44]

The site at Yamala is 21.3 kilometres from the junction of the Gregory and Capricorn highways, has Type 1 heavy vehicle access and freight rail access connecting to the Port of Gladstone. The site will be co-located with an existing cotton gin and is suitably located to support the grain industry.

The objective of the inland port is to improve supply chain efficiency between key origins and destinations, incentivising greater utilisation of rail freight and preserving the level of service on state-controlled roads, providing benefits to the wider community.

Planning for the inland port encompasses industrial and support activities on site, servicing the surrounding agricultural catchment and facilitating bulk and containerised aggregation, intermodal transfers and efficient distribution.[45]

To deliver the first stage, funding has been secured from the Department of State Development, Manufacturing, Infrastructure and Planning under the Building our Regions program and from the Central Highlands Regional Council. This stage includes a major upgrade to the intersection of the Capricorn Highway and Bonnie Doon Road and an upgrade to Bonnie Doon Road for access to the site. Construction of a 1.5-kilometre rail siding will also provide rail access in the first stage.

As a junction point for rail and road networks, an intermodal freight terminal in this location is a way to encourage a modal shift from road to rail, particularly in supporting the resource sector. For high volume commodities, such as fuel, inland ports provide the opportunity for rail to move freight in bulk from port to the intermodal facility where road transport then distributes to final destination.

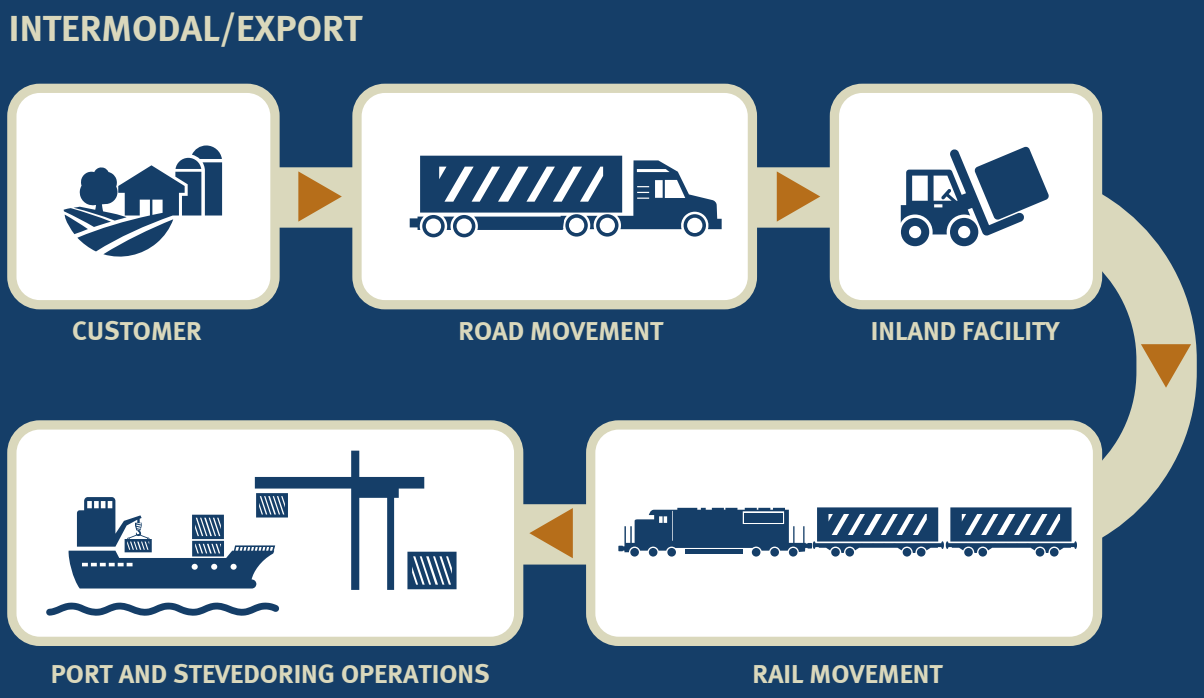


Figure 5: Intermodal transport from road to rail to port

44 Queensland Transport and Logistics Council. (2017). *www.qtlc.com.au/transport-logistics-industry/land-based-logistics-industry/*
45 CQ Inland Port. (2017). *www.cqinlandport.com.au/*

Funding, planning and coordination of transport network projects

The Fitzroy region transport network comprises a combination of national, state and local government-owned and privately-owned or operated infrastructure assets. Local governments own and manage airports and manage approximately 14,647 kilometres of road or 80 per cent of the region's road network. Outside the population centres of Gladstone and Rockhampton local government areas, small populations mean a limited rates base to fund essential services, including the management of the transport network. Queensland and Australian Government programs are essential in assisting local governments in the delivery of services.

Coordinating planning, funding and delivery of projects remains a key challenge across jurisdictional boundaries. This often occurs where key routes have differing strategic value within or across local government boundaries. Integrating planning and coordinating priorities across the region are important to ensure that the region's infrastructure and network meets the needs of the region.

The development, upgrade and maintenance of the region's transport network are essential to deliver regional transport priorities. However, attracting investment can be a challenge, particularly when comparing traffic volumes on rural roads to that of urban roads. Alternative investment decision making tools can be utilised to augment traditional cost-benefit analysis techniques where economic return is often difficult to ascertain. In this regard, the state government is working with the CSIRO to develop a regionally focussed freight model and Austroads have also released a tool designed to identify and support investment in 'Life Line' freight routes.[46]

Cotton gin on the Central Queensland Inland Port site, Yamala

46 Austroads. (2016). *www.austroads.com.au/news-events/item/358-supporting-life-line-freight-routes.*

3.3 Opportunities

Growth in agriculture

The Fitzroy region produced agricultural commodities with an estimated value of $1.3 billion in 2015–2016 with the local government areas of Banana and Central Highlands accounting for over 75 per cent of the region's total agricultural production.[47,48] Agricultural production across the region is underpinned by the Fitzroy Basin which is the largest river catchment flowing to the eastern seaboard. The region's highly productive agricultural land and its production of a small number of minimally processed commodities provides significant trade and export opportunities.

Of the region's land area, 81 per cent is used for agriculture, with around 75 per cent of agricultural land used for grazing.[49] The Fitzroy region is characterised by high-productivity grazing land with significant meat processing capabilities, and facilities capable of processing cattle from both within and outside the region. Currently, there are three abattoirs located in the region (two in Rockhampton and one in Biloela) with a combined processing capacity of 3320 head of beef per day primarily for the export market. Opportunity for future development of additional meat processing facilities is being promoted to attract funding by Central Highlands Regional Council for Emerald. The future expansion and development of cattle feedlots in areas close to current abattoirs in Rockhampton and Biloela will also increase the supply of higher value cattle to processors in the region. Opportunity to target higher value niche markets through enhanced production specifications, such as certified organic beef products are also available.

There are two identified water management projects which will support the long-term supply of quality water to the region's agricultural areas through enhancing the availability of water for the Fitzroy and adjoining regions.

- **Lower Fitzroy River Infrastructure Project:** The raising of Eden Bann Weir and construction of a new weir at Rookwood on the Fitzroy River. This project has an approved Environmental Impact Statement with conditions.
- **Nathan Dam and pipelines:** An 888,000-megalitre dam, with annual yield of 66,000 megalitres; and a 149-kilometre trunk pipeline. This project currently has an active Environmental Impact Statement.

When implemented, these projects will provide the Fitzroy region with further opportunities to expand and grow the agricultural industry through effective water management. With expansion, there will be increased agricultural output requiring transport to domestic and international markets.

Mandarins growing near Emerald

47 Australian bureau of Statistics. (2017). *Value of Agricultural Commodities Produced Australia 2015–2016 Table 4 State and SA4 Region.*
48 Department of Agriculture and Fisheries. (2016). *Queensland Agricultural Land Audit.*
49 Ibid.

CASE STUDY: Growing Central Queensland

Growing Central Queensland is a regional initiative by Regional Development Australia Fitzroy and Central West Incorporated (RDAFCW) to capture sustainable agribusiness opportunities for individuals and communities across Central Queensland. The initiative includes four potential agriculture precincts within the Fitzroy region (shown in Figure 6). [50]

1 **Mackenzie River Agricultural Corridor** – this corridor is a highly productive area with some of the best soils in Central Queensland that produce crops and cattle.

2 **Fitzroy River Agricultural Corridor** – this area has potential for development of an agricultural corridor along the Fitzroy River and surrounding region.

3 **Dawson River Agricultural Corridor** – includes the proposed Nathan Dam and pipelines and the proposed Duaringa Weir with a capacity of 6,000 megalitres.

4 **Gladstone Agribusiness Corridor** – includes the Port of Gladstone with associated infrastructure and the city of Gladstone which offers an ideal setting to locate a hub for value-adding field of agricultural transport and logistics.

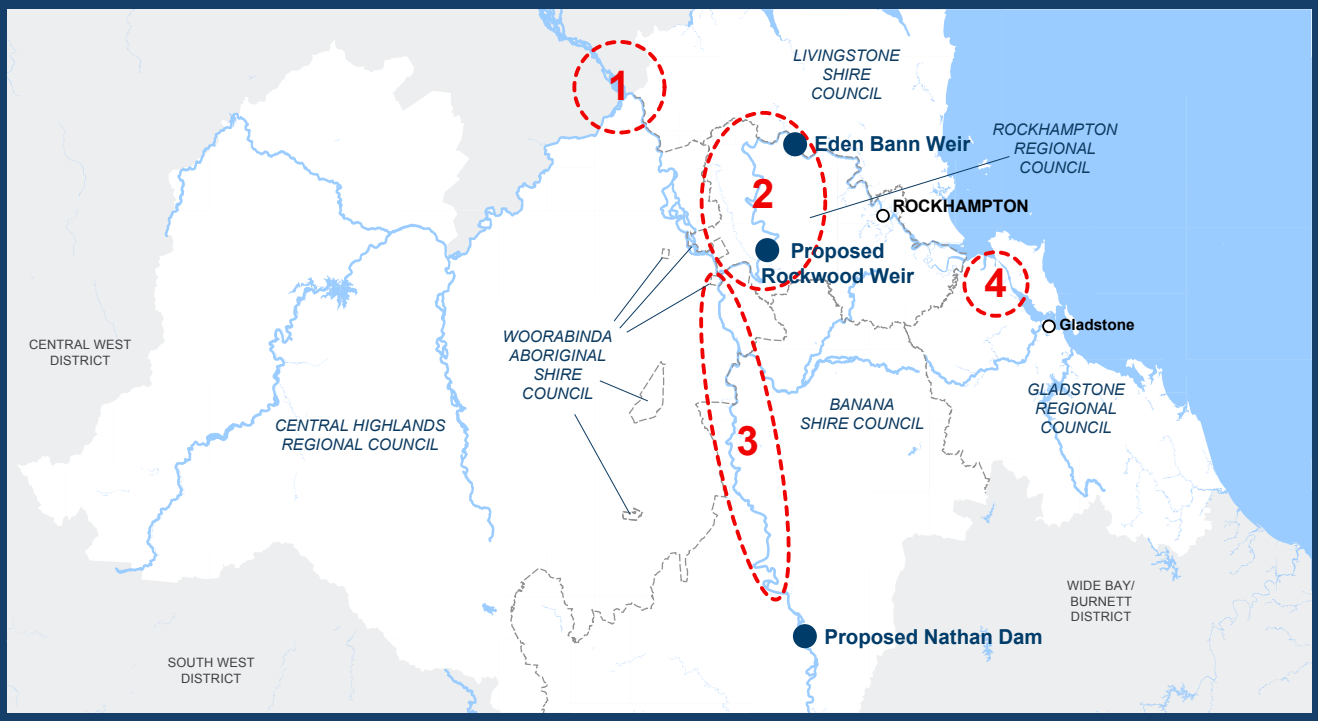


Figure 6: Growing Central Queensland agricultural corridors[51]

The strength of agricultural production and agribusiness manufacturing sectors in the Fitzroy Region provides for a diverse range of beef investment opportunities. Meat processing facilities are substantial in scale and contribute significantly to the regional economy and state exports. New investment is being sought to extend the capacity and productivity of Central Queensland's beef sector in response to increased global demand for the commodity.[52]

RDAFCW has proposed a list of transport and logistic infrastructure projects required to support these agricultural corridors. Containerisation facilities, cold storage, multi-modal freight coordination and improved road train access to Port of Gladstone are amongst the initiatives sought.

50 Regional Development Australia Fitzroy and Central West Inc. (2015). *Growing Central Queensland Review.*
51 Regional Development Australia Fitzroy and Central West Inc. (2014). *Growing Central Queensland ww.rdafcw.com.au/growing-central-queensland/.*
52 Regional Development Australia Fitzroy and Central West Inc.(2015). *Growing Central Queensland Beef Investment Prospectus.*

Mining expansion

The region's mining and resource activity includes underground and open-cut thermal and coking coal mining, minerals and coal seam gas (CSG), quarrying, and gemstones extraction.[53] The central, southern and western parts of the region (the local government areas of Banana, Central Highlands and Gladstone) are key areas for resource operations, processing and transportation. The region has also contributed significantly to the development of Queensland's liquefied natural gas (LNG) industry. The Bowen and Surat basins' production of CSG provides the primary gas supply for the state's export LNG industry through Port of Gladstone.

To support the timely, safe and efficient movement of freight, ongoing improvements and maintenance of the transport network will be required, especially where new mine developments, such as in the Galilee Basin, will generate increased demand, particularly during construction.

The challenge of catering to the development of new mines in the Bowen and Galilee basins is determining which mines will be developed and the timeframe. There is currently a large volume of freight moving across the region, and the addition of further demand will lead to potential conflicts between heavy vehicles and an increase in commuter movements on the network resulting in safety and efficiency challenges.

Conditioning mine operators to provide transport for workers, such as bus transport, will minimise potential safety and demand impacts of a 'drive in drive out' workforce. This is already occurring with some mines out of Emerald. New mining projects may also require greater 'fly-in fly-out' capacity, and upgrades to existing airports to cater for any growth in demand for these services. Rockhampton is an example, being selected as one of two 'fly-in fly-out' hubs for Adani's new Carmichael coal mine. The airport will support flights between Rockhampton and a new airstrip located at the mine.

Self-drive tourism trend

Self-drive tourism is popular, with caravans and recreational vehicles frequenting the region. This market is expected to experience significant growth due to Australia's aging population and a corresponding increase in retirees who travel around Australia.[54] The region's self-drive tourism market encompasses those that travel long distances by road from other regions and states and those that fly into the region and then drive to explore the area. Data shows that tourism expenditure in the Fitzroy region has increased by an average annual compound rate of 2.4 per cent over the nine years to 2015 and is largely driven by intra and inter-state tourists, with 96 per cent of the region's visitation comprising domestic visitors.[55]

Although a significant opportunity for the region, growth in self-drive tourism is also a challenge, particularly for the region's road network in catering for increased demand and conflicting network users. The influx of private vehicles (many towing caravans) during peak holiday periods can interfere with the efficient movement of freight. Variations in road conditions, long distances between overtaking lanes and high traffic volumes can result in travel time delays and safety risks. Other issues include increased demand for available rest areas, wayfinding signage and a lack of education for tourists about driving to the conditions experienced on regional roads and interacting with freight vehicles (including OSOM vehicles).

The consistency and condition of the road network, tourism signage and the provision of tourist rest and scenic stops are important to the growth of self-drive tourism. These factors contribute to a positive visitor experience, along with improved mobile network coverage for safety, navigation and access to real-time transport network information.

CASE STUDY: Cycling tourism

Cycling tourism is an emerging market. Scenic cycle routes and disused rail corridors as active transport links between areas of interest may present an opportunity for tourism and recreational use. The Capricorn Coast Pineapple Rail Trail is currently only a 4.5-kilometre link in Yeppoon, but has the potential to follow the disused rail corridor to the south of Rockhampton. Such routes can attract day trippers and contribute to the local economy.

Cycling tourism, although still attracting a small market share, is an emerging trend with more domestic and international travellers looking for experiences that involve adventure and help maintain a healthy lifestyle.[56] Continued investment in the Fitzroy region's active transport networks, and providing information targeted at tourists on suggested routes and itineraries, may assist in attracting cycling tourism to the region.

53 Department State Development, Infrastructure and Planning. (2013). *Central Queensland Regional Plan.*
54 Queensland Government. (2016). *Business and Industry Portal Drive Tourism in Queensland.*
55 Based on an average between 2013 and 2016. Tourism Research Australia. (2017). *Central Queensland Regional Profile.*
56 Australian Government Austrade. (2015). *Growing Cycling Tourism in Victoria – Summary.*

Defence industry

The region includes the Shoalwater Bay Training Area. The site is managed by the Australian Army from a base in Rockhampton, but is also used by the Royal Australian Navy and Air Force as well as foreign forces. It has direct access to or is within close proximity to three major highways, rail lines and port facilities, offering future growth opportunities for the defence industry to build their capability through enhancing and improving training capacity.[57]

Rockhampton Airport's 2.6-kilometre, high strength, main runway, taxiway and aprons, is regularly used by the Australian Defence Force, the Republic of Singapore Air Force and, biennially, by United States Defence as part of Exercise Talisman Sabre. The Optech Building, which is leased to Defence, and associated aprons are located to the north of the Rockhampton Airport passenger terminal.

Advancements in technology

Telecommunications and other technologies provide opportunities to improve community connectivity, safety and reliability of transport networks in the region.

Communications technology can reduce the need to travel on the transport network through the use of email, internet and video conferencing, allowing individuals to work, access distance education, seek healthcare and socialise with others regardless of location. It also offers an opportunity for improved user experience through the provision of real-time information. Real-time information could provide road condition, road work and incident information to road users in advance of travel, allowing users, including the freight industry, tourists and the local community, to retime their journey or select an alternative route, reducing delays and improving the efficiency of travel. Currently, signage and publications of road conditions can be slow to respond to changed conditions, inconveniencing road users and compromising safety.

The communication of real-time information may also improve safety at level crossings. Dedicated Short Range Communication (DSRC) is a wireless technology which has been applied by LaTrobe University to improve safety at level crossings. The technology application has been piloted, providing vehicles and train drivers a 360-degree level of awareness of the surrounding traffic situation that can be used between trains approaching a level crossing and vehicles approaching the crossing. Where there is the possibility of a collision a warning message is delivered to the driver's vehicle.[58]

Technological advancements, such as electric and automated vehicles have the potential to change the way freight and people move, and the type of vehicles travelling on the network. For regional areas, a significant challenge to the deployment of electric and automated vehicles is the provision of supporting infrastructure which could include requirements for physical infrastructure such as sealed roads, signage and road marking, and digital infrastructure such as mapping data and communications infrastructure.[59]

Technology has also allowed for improved and automated data collection and vehicle tracking tools, providing the opportunity to more accurately and cost effectively understand and plan for freight movements and travel demand. Drone technology is also assisting with the condition inspection of transport infrastructure, including inspections post network flooding.

Road status signage, Bruce Highway

57 Department of Defence. (2017). *Australia-Singapore Military Training Initiative www.defence.gov.au/Initiatives/ASMTI/.*
58 LaTrobe University. (2017). *www.latrobe.edu.au/technology-infusion/innovation/transport/improving-safety-at-level-crossings.*
59 Australian Government Department of Infrastructure and Regional Development. (2017). *Submission to the Standing Committee on Industry, Innovation, Science and Resources Inquiry into the social issues related to land.*

Campervan at the Dawson River, Moura

Salt mine, Port Alma

4.
Priorities and actions

Priorities set the direction for the region's transport network over the next 15 years. The four regional priorities established through the *Fitzroy Regional Transport Plan* development process are:

- **Priority 1**: An accessible and integrated transport network that supports all transport modes and connects communities within and outside of the region.
- **Priority 2**: A transport system that supports economic growth and diversification by providing efficient and effective access to markets and destinations.
- **Priority 3**: A safe transport network that meets the demands of all users and manages interactions between incompatible network users.
- **Priority 4**: A sustainable and resilient transport network that provides access to and within the region.

Actions are identified under each of the priorities. Actions are grouped into short-term and medium/long-term. Short-term actions identify the first critical steps needed to achieve the transport objectives and regional goals over the indicative 15-year life of the Plan. Medium/long-term actions identify possible responses to emerging or potential future transport planning needs.
Actions will be reviewed and updated periodically as part of the implementation, monitoring and review process described in Chapter 5.

Actions are primarily planning and partnership initiatives to be further scoped, defined and programmed in collaboration with partners and stakeholders. Transport and Main Roads through its planning, investment, management, operations and maintenance of the transport network gives priority to improving safety for our customers.

Actions, and the subsequent project recommendations that follow, will inform future updates of investment plans and programs – such as the *State Infrastructure Plan*, the *Queensland Transport and Roads Investment Program* (QTRIP), and other relevant service and infrastructure investment strategies – across all levels of government and transport service providers.

Each action under the four priorities are linked to transport objectives and measures of success. Transport objectives are key drivers for taking action. Measures of success have been selected where data to track performance is readily available. Base-line data and performance metrics will be included in separate implementation plans. These metrics will be used to indicate progress towards meeting the goals and priorities set out in this Plan.

The relationship framework linking priorities, objectives and measures of success is shown in Table 5.

Boolimba Bluff Walk, Carnarvon National Park

Table 5: Relationship between priorities, transport objectives and measures of success

TRANSPORT SYSTEM

The safety of all transport system customers is our primary priority as we create a single integrated transport network accessible to everyone.

RTP PRIORITIES

PRIORITY 1 Community	PRIORITY 2 Economic development	PRIORITY 3 Safety	PRIORITY 4 Environment & sustainability
An accessible and integrated transport network that supports all transport modes and connects communities within and outside of the region.	A transport system that supports economic growth and diversification by providing efficient and effective access to markets and destinations.	A safe transport network that meets the demands of all users and manages interactions between incompatible network users.	A sustainable and resilient transport network that provides access to and within the region.

ROLE OF TRANSPORT

Responding to the challenges of: ▪ accessibility and community connectivity ▪ private vehicle demand growth and dependency and maintaining travel time reliability. **And opportunities for:** ▪ advances in technology. **By taking action to:** ▪ improve liveability, accessibility and connectivity for all communities in the Fitzroy region.	**Responding to the challenges of:** ▪ variation in network conditions ▪ managing road freight growth ▪ supporting the efficient movement of freight. **And opportunities for:** ▪ growth in agriculture ▪ mining expansion ▪ defence ▪ advances in technology. **By taking action to:** ▪ strengthen and grow the Fitzroy region's diverse and adaptive economy.	**Responding to the challenges of:** ▪ safety ▪ variability in network condition. **And opportunities for:** ▪ growth in agriculture ▪ self-drive tourism trend ▪ advances in technology. **By taking action to:** ▪ promote a safe environment for residents and visitors.	**Responding to the challenges of:** ▪ variability in network conditions ▪ accessibility and community connectivity ▪ supporting the efficient movement of freight ▪ network resilience. **And opportunities for:** ▪ advances in technology. **By taking action to:** ▪ improve the resilience of the Fitzroy region's transport network.

TRANSPORT OBJECTIVES

1.1 A transport system that connects communities and provides reliable access to essential goods and services across the Fitzroy region. **1.2** A multi-modal transport system that offers a range of accessible, efficient and reliable transport options for residents and visitors. **1.3** A transport system that is integrated with land use, providing residents with a range of viable transport options that promote active and sustainable transport modes.	**2.1** An integrated transport network that increases the productivity and efficiency of supply chains. **2.2** A transport system that provides safe and reliable access to the region's natural assets and tourism destinations.	**3.1** A transport network that is safe and reliable for all users. **3.2** All transport users understand safe travel behaviour.	**4.1** A resilient transport network that keeps the Fitzroy region open and moving following weather events, and provides the emergency connections needed to keep the region safe.

MEASURES OF SUCCESS

▪ Level of transport disadvantage decreases. ▪ Greater access and connectivity to places, services and information. ▪ Proportion of people choosing to walk, cycle and take public transport increases. ▪ Improved customer satisfaction rating of transport facilities and quality of experience.	▪ Maintain or improve road network reliability. ▪ Freight productivity improves. ▪ Transport supports the region's tourism economy.	▪ Reduction in transport-related incidents, crashes, injuries and fatalities. ▪ Improvements in safety of the National Land Transport Network.	▪ Reduced frequency and duration of unplanned closures.

4.1 Priority 1: Community

Yeppoon

Priority 1 aligns to:

- the *Transport Coordination Plan's* objectives for transport that connects communities to employment and vital services, and contributes to a healthier and more liveable environment
- the *State Infrastructure Plan's* focus on transport infrastructure that improves prosperity and liveability by connecting regional communities with access to essential services and opportunities
- the *Central Queensland Regional Plan's* priority outcome to achieve community benefits through reliability and condition of transport networks affected by population and resource sector growth and achieving community benefits through improving accessibility to destinations and improved safety and amenity.

An accessible and integrated transport network that supports all transport modes and connects communities within and outside of the region.

Liveability is shaped by a combination of factors such as the amenity of the natural and built environments, economic prosperity, social stability and equity, accessibility, educational opportunity as well as cultural, entertainment and recreational possibilities. The affordablity of essential goods and services and employment are basic factors influencing liveability, as is access to centres providing higher-order goods and services.

Transport systems play an essential role in the liveability of communities by facilitating access to employment, education, goods and services as well as social and entertainment opportunities. Providing convenient and accessible connections to where people want to go is a key objective for building and operating the transport system.

Transport objectives and measures of success

Objective 1.1: A transport system that connects communities and provides reliable access to essential goods and services across the Fitzroy region.

Liveability and lifestyle opportunities significantly impact on where individuals choose to reside. Accordingly, promoting liveability and the sustainable growth of the Fitzroy region through inclusive access to educational establishments, employment opportunities, health facilities and other essential goods and services is important. Through the expansion and maintenance of transport schemes, services and infrastructure that connects communities, efficient and affordable access to goods and services, including recreational areas, the liveability of the region for residents can be improved.

Objective 1.2: A multi-modal transport system that offers a range of accessible, efficient and reliable transport options for residents and visitors.

Mobility decisions are heavily dependent on the availability, affordability and reliability of the transport network and services. The transport system should be fit-for-purpose and provide safe and efficient travel options for all members of the community, regardless of age or personal circumstances. This includes public and active transport facilities to increase mode choice and enhance the mobility of residents and visitors, while also supporting a decrease in road network congestion in major centres.

Objective 1.3: A transport system that is integrated with land use, providing residents with a range of viable transport options that promote active and sustainable transport modes.

Integrated and effective land use and transport planning ensures that transport infrastructure and services are aligned with land uses, making it easier for people to access jobs, services and experiences that promote health and well-being. Transport network planning should identify current and future access needs in a way that sustains economic growth, conserves the environment and supports quality of life for both residents and visitors.

Measures of success

Measure of success	Proposed indicator	Source	Objectives		
			1.1	1.2	1.3
Level of transport disadvantage decreases.	Proportion of population in areas of unmet transport need (high mobility disadvantage and not served by public transport).	Transport and Main Roads	✓	✓	✓
Greater access and connectivity to places, services and information.	Proportion of the population with good accessibility to a range of essential services in urban areas (by walking or public transport).	Transport and Main Roads	✓	✓	✓
	Frequency of services for long-distance rail, air and coach services connecting regional centres to local town centres in rural areas.	Operators	✓	✓	✓
	Availability of 'mobility as a service' options (e.g. demand responsive transport, taxis, ride-share).	Operators	✓	✓	✓
Proportion of people choosing to walk, cycle and take public transport increases.	Proportion of people choosing to walk, cycle and take public transport.	Transport and Main Roads	✓		
Improved customer satisfaction rating of transport facilities and quality of experience.	Emerging Indicator.	To be confirmed			

Actions

PRIORITY 1: COMMUNITY	OBJECTIVES
Objective 1.1: A transport system that connects communities and provides reliable access to essential goods and services across the Fitzroy region.	
Objective 1.2: A multi-modal transport system that offers a range of accessible, efficient and reliable transport options for residents and visitors.	
Objective 1.3: A transport system that is integrated with land use, providing residents with a range of viable transport options that promote active and sustainable transport modes.	

Actions – short-term	1.1	1.2	1.3
A1.01 Public transport plan Partner with local governments to develop public transport plans for major and service centres in the region (i.e. Gladstone, Rockhampton, Yeppoon and Gracemere), with a focus on investigating opportunities to: ▪ improve connectivity, efficiency and service frequency between residential areas, major centres and key employment and education nodes ▪ improve connections between active and public transport modes to increase accessibility and promote patronage growth ▪ introduce alternative service models that meet different or changing customer needs (e.g. Demand Responsive Transport services).	✓	✓	✓
A1.02 Pedestrian access and mobility plan Work with local government to develop a Pedestrian Access and Mobility Plan for key activity centres in cities and towns (including Rockhampton, Gladstone and Yeppoon) to strengthen and preserve walkability, urban design and local amenity.	✓	✓	✓
A1.03 Principal cycle network Partner with local government to undertake options analysis and business case development for highest priority routes on the Central Queensland Principal Cycle Network to support more cycling, more often on safe, direct and connected routes.	✓	✓	✓
A1.04 Principal cycle network plan Review and update *Central Queensland's Principal Cycle Network Plan* every five years with the accompanying priority route maps updated every two years in collaboration with local government.	✓	✓	✓
A1.05 Boating infrastructure Continue to prioritise investment in boating infrastructure across the region based on an assessment of demand and input from the community and stakeholders.		✓	

PRIORITY 1: COMMUNITY

OBJECTIVES
Objective 1.1: A transport system that connects communities and provides reliable access to essential goods and services across the Fitzroy region.
Objective 1.2: A multi-modal transport system that offers a range of accessible, efficient and reliable transport options for residents and visitors.
Objective 1.3: A transport system that is integrated with land use, providing residents with a range of viable transport options that promote active and sustainable transport modes.

Actions – medium/long-term	1.1	1.2	1.3
A1.06 Community based transport Identify opportunities to better utilise existing community based transport solutions to improve access to local and regional services such as hospitals, health, education and sport or cultural activities for residents in regional areas, and increase connectivity for isolated communities. Opportunities to better utilise digital networks and associated technologies for the coordination of these services should also be considered.	✓	✓	✓
A1.07 Network and area studies Undertake and update multi-modal network and area studies and support implementation of these plans through operational planning where appropriate to plan for anticipated future transport demands, including those relating to population, employment and economic changes and growth, including for major centres such as Rockhampton, Gracemere and the Capricorn Coast, Gladstone and Emerald.	✓	✓	✓
A1.08 Electric and autonomous vehicles Partner with local government and industry to identify facilitation requirements and responsibilities, network impacts and potential benefits of electric and autonomous vehicles in the Fitzroy region and to inform statewide strategic policy and planning, including for example responding to *The Future is Electric: Queensland's Electric Vehicle Strategy*.	✓	✓	✓
A1.09 Active transport Partner with local government to promote active transport in the Fitzroy region through the development and promotion of educational and travel behaviour change programs.		✓	
A1.10 Air services Partner with local government to explore the feasibility of improving air services, including additional flight routes and schedules to improve accessibility and connectivity within the Fitzroy region and to key locations outside the region (e.g. Emerald and Longreach).	✓	✓	

CASE STUDY: Demand Responsive Transport

Demand Responsive Transport (DRT) is a new type of shared transport designed to make it easier to get around a local area when buses and trains aren't available. It is being trialled across Logan (in South East Queensland) to make it easier for Logan residents who do not have walkable access to buses and trains to get around their local area. The trial is offered across a number of suburban areas.

Residents register to set up a DRT account and book a service by phone and provide pick up location and destination, planned travel time and information on any special requirements such as luggage or accessibility information. Users also receive automated phone calls as a reminder of an upcoming trip and SMS alerting that the driver is approaching.

DRT sends out smaller vehicles like sedans or mini vans to pick up several passengers at once and take them to selected destinations. This includes transport to local bus and train stations (to connect with other TransLink services) and selected local facilities - such as shops, medical centres and libraries.

The DRT model offers a range of benefits with greater flexibility and convenience for customers, and improved efficiency in service delivery. Service providers use sophisticated route optimisation software to create genuine shared trips – not just vehicle sharing – grouping passengers into flexible service routes. The pre-booked, shared transport services are flexible and adapt to customer demand. Unlike a typical bus, DRT changes its routes and vehicles to suit the number of passengers who want to travel and where they're going.

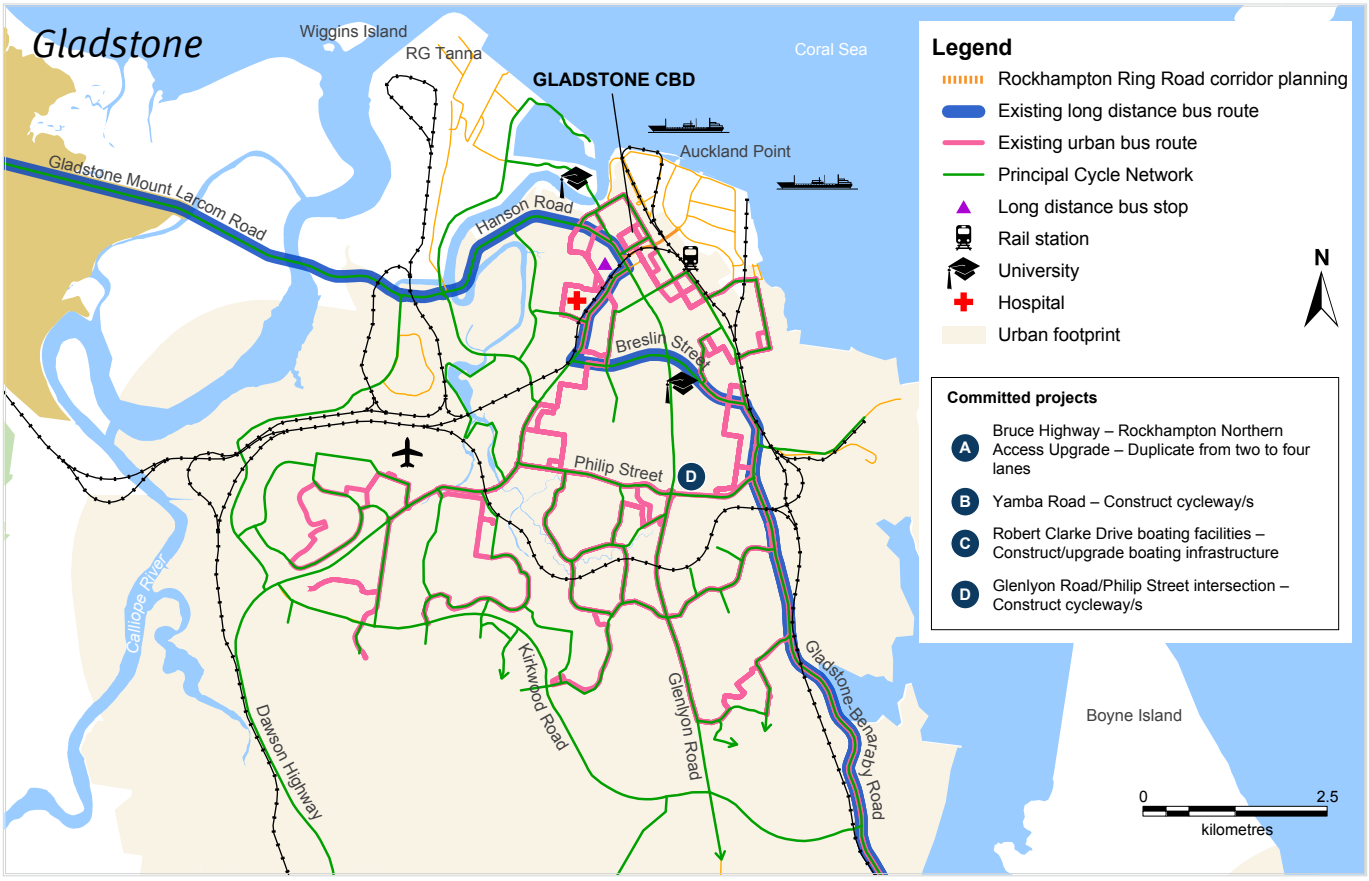
By matching vehicles and travel timetables with actual demand, DRT offers a more efficient way to provide transport for people living in areas that may be lacking public transport services due to population size or because the geography limits access of traditional vehicles like buses. It also provides the most efficient vehicle use during times of lower demand.

DRT may be an alternative service model that could be adopted in the Fitzroy region as part of a wider Public Transport Plan to improve access within major towns and centres in the region.

Maxi taxi collecting passengers in Logan trial

Figure 7: Priority 1 region map

This map is indicative to illustrate proposed strategies for the region and is not intended to be accurate in terms of exact geographic extent.



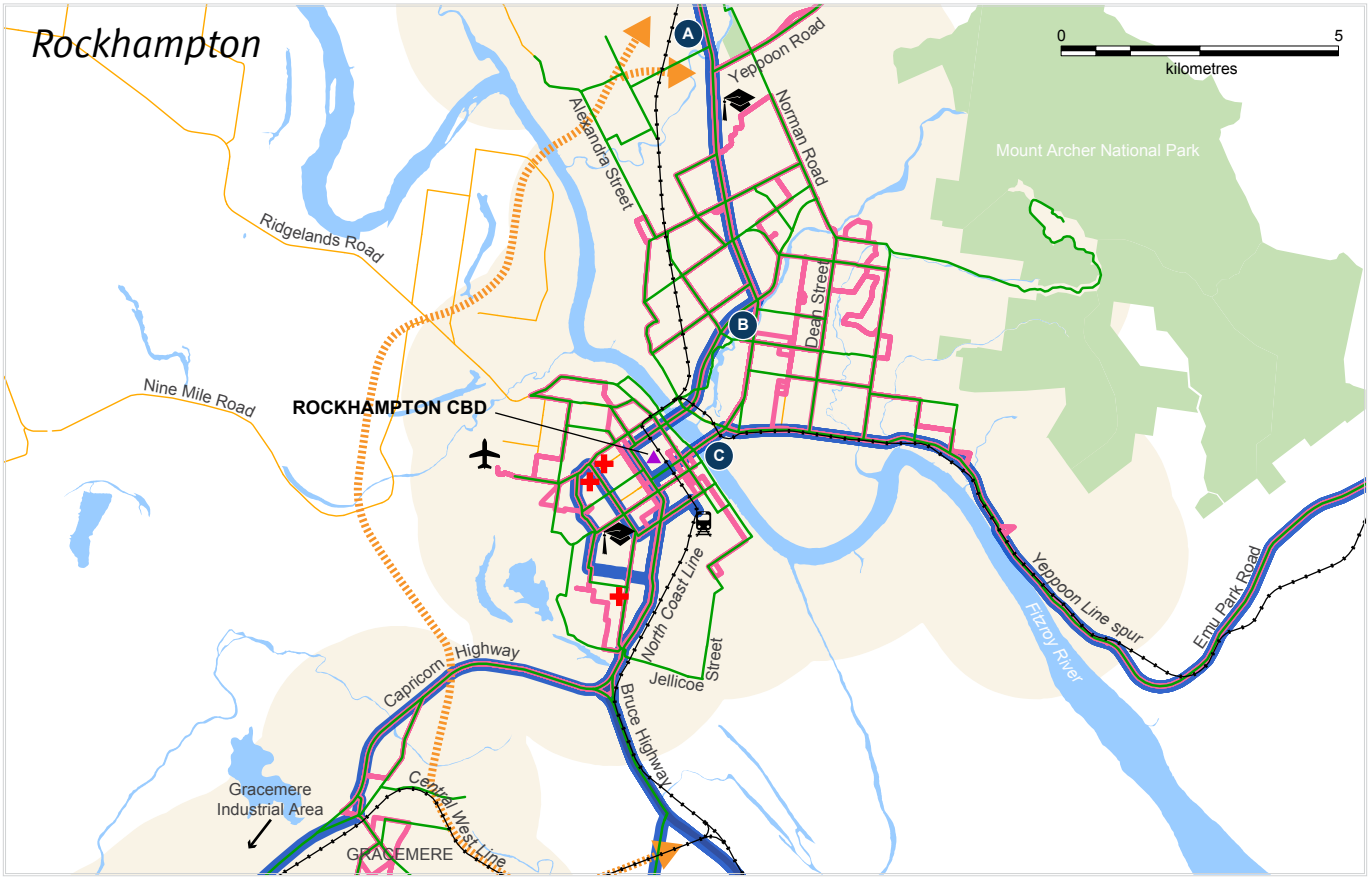


Figure 8: Priority 1 Gladstone and Rockhampton maps

This map is indicative to illustrate proposed strategies for the region and is not intended to be accurate in terms of exact geographic extent.

4.2 Priority 2: Economic development

Gracemere saleyard

A transport system that supports economic growth and diversification by providing efficient and effective access to markets and destinations.

A transport system that supports economic development and diversification will help position the region for a strong economic future. This will support growth in jobs, enable businesses to expand and support the development of new economic opportunities for the region's residents.

Reliable and efficient supply chains are critical in managing the freight task for the Fitzroy region. Supporting productivity with legible and consistent networks will underpin the region's economy. Productive supply chains, which are able to meet current and future demand, help attract business and improve profitability for industry.

At the centre of Queensland, the Fitzroy region plays a significant role in the movement of Queensland's freight, with origins and key destinations in the region.

Providing for the movement of tourists to destinations throughout the region will support the growth of the self-drive tourism market. The benefits of self-drive tourism to rural and regional businesses include expenditure on leisure activities and attractions, overnight stopovers and basic travel necessities (such as fuel and food).

Priority 2 aligns to:

- the *Transport Coordination Plan's* objective for transport that facilitates the efficient movement of people and freight to grow Queensland's economy
- the *State Infrastructure Plan's* focus on integrated transport infrastructure that improves the efficiency of freight and unlocks the potential of critical supply chains
- the *Central Queensland Regional Plan's* outcome for agriculture and resources industries within the Central Queensland region continue to grow with certainty and investor confidence.

Transport objectives and measures of success

Objective 2.1: An integrated transport network that increases the productivity and efficiency of supply chains.

The efficient movement of goods between producers, manufacturers and customers is vital to support economic growth in the region. Improvements to transport infrastructure that increase the efficiency of the freight network will foster a more productive supply chain. The optimisation of industry supply chains, through holistic long-term planning for freight movements, will improve network connectivity and productivity.

Objective 2.2: A transport system that provides safe and reliable access to the region's natural assets and tourism destinations.

A well-integrated and safe transport network is required to support the tourism industry and attract more tourists to the region. The ease of access and supply of wayfinding signage, clear and legible route choices, adequate rest stops and scenic lookouts enhance the region's appeal to potential tourists. Well-maintained and enhanced transport infrastructure also promotes access to the region via bus, coach, rail, air and sea.

Measures of success

Measure of success	Proposed indicator	Source	Objectives	
			2.1	2.2
Maintain or improve road network reliability.	Reliability of strategic freight routes.	To be confirmed	✓	✓
Freight productivity improves.	Proportion of high productivity vehicles used on key road freight routes.	Transport and Main Roads	✓	
	Number of preapproved heavy vehicle routes.	National Heavy Vehicle Regulator	✓	
Transport supports the region's tourism economy.	Emerging indicator.	To be confirmed		✓

Alumina refinery, Gladstone

Actions

PRIORITY 2: ECONOMIC DEVELOPMENT

OBJECTIVES

Objective 2.1: An integrated transport network that increases the productivity and efficiency of supply chains.

Objective 2.2: A transport system that provides safe and reliable access to the region's natural assets and tourism destinations.

Actions – short-term	2.1	2.2
A2.01 Freight strategy Develop a multi-modal freight strategy to identify and prioritise productivity and safety improvements throughout the region in response to statewide freight and heavy vehicle network strategies. The Fitzroy region's multi-modal freight strategy will consider: ▪ long term competitiveness of rail freight ▪ supply chain coordination models ▪ the efficiency of agricultural supply chains ▪ intermodal terminal requirements ▪ future freight requirements of the resources sector ▪ strategic locations for truck stops and decoupling facilities.	✓	
A2.02 Freight model Build and progressively update a strategic freight model that can be used to identify, forecast and analyse multi-modal freight flows across the state.	✓	
A2.03 Freight data Develop strategies to improve the capture, storage, usability and application of freight data by working with the National Heavy Vehicle Regulator, industry and other sources of data to enhance its extent and depth.	✓	
A2.04 Corridor, route and link planning Update corridor, route and link planning for the State Strategic and State Regional road network in the region, identifying important corridors and links which require inter and intra-regional planning and coordination. Planning projects will include: Gladstone-Benaraby Road, Gladstone–Mt Larcom Road, Rockhampton–Yeppoon Road, Gavial–Gracemere Road and the Dawson Highway between Gladstone and Biloela.	✓	✓
A2.05 Tourism In partnership with state and local tourism agencies, undertake a regional transport needs analysis to identify the travel needs of tourists and visitors traveling to the region's key tourism destinations including: the gem fields around Emerald, Carnarvon Gorge, Agnes Water and 1770, Southern Great Barrier Reef Islands, Yeppoon and Great Keppel Island Group.		✓
A2.06 North Coast Rail line Develop a North Coast Line Action Plan to prioritise planning that will support rail freight and passenger efficiency improvements. This may include opportunities to reduce the number of level crossings, increase the length of passing loops, improve flood resilience, and re-align low speed sections of the North Coast line.	✓	✓
A2.07 Port access Work with stakeholders to identify multi-modal access requirements for freight to the region's ports, including Gladstone Port and Port Alma.	✓	

PRIORITY 2: ECONOMIC DEVELOPMENT

	OBJECTIVES
Objective 2.1: An integrated transport network that increases the productivity and efficiency of supply chains.	
Objective 2.2: A transport system that provides safe and reliable access to the region's natural assets and tourism destinations.	

Actions – short-term	2.1	2.2
A2.08 Oversize overmass and high productivity vehicles Improve access for oversize overmass (OSOM) and High Productivity Vehicles (HPVs) across the region by developing a strategy which defines an affordable and value for money vision for OSOM and HPV access, identifies network constraints, and develops a high level program of prioritised upgrade projects for potential inclusion in transport infrastructure programs. An example of where this is being implemented is on the Gregory Highway between Emerald and Clermont to provide access for higher productivity vehicles.	✓	
Actions – medium/long-term	**2.1**	**2.2**
A2.09 Defence Undertake long-term planning to ensure that the transport network is appropriate to meet the requirements of the Defence industry in the Fitzroy region. Planning should consider the role and capacity of strategic infrastructure such as the Shoalwater Bay Training Area, Rockhampton Airport, Port Alma and Gladstone Port.	✓	
A2.10 Access to industrial areas Work with local government, the private sector and the Department of State Development, Manufacturing, Infrastructure and Planning to plan for safe and appropriate levels of access to industrial areas in the region, particularly the industrial areas at Yamala, Gracemere, Parkhurst and the Gladstone State Development Area.	✓	
A2.11 Resource and agriculture sectors Consider the strategic opportunities for supporting future development and diversification in the resources and agricultural sectors when undertaking transport network planning.	✓	
A2.12 Cycle tourism Work with local government, other state government agencies and tourism bodies to identify and undertake planning to progress active transport projects that also have recreational values and contribute to the region's tourism industry. This includes projects such as iconic cycle touring routes and rail trails throughout the region, for example Yeppoon to Rockhampton (extension of the Capricorn Coast Pineapple Rail Trail) and Emu Park to Yeppoon.		✓

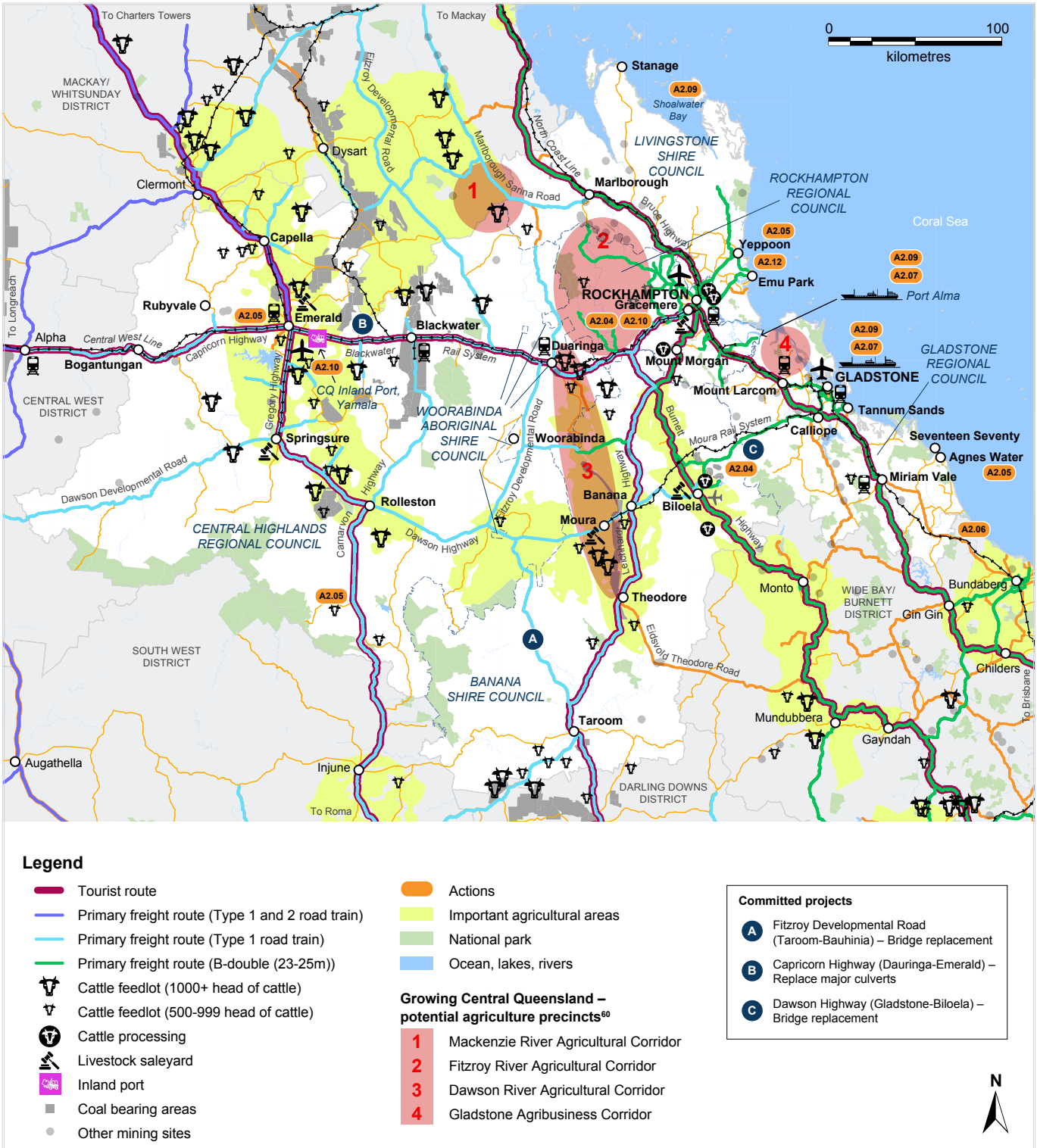


Figure 9: Priority 2 region map

This map is indicative to illustrate proposed strategies for the region and is not intended to be accurate in terms of exact geographic extent.

60 Regional Development Australia Fitzroy and Central West Inc. (2014). *Growing Central Queensland www.rdafcw.com.au/growing-central-queensland/*

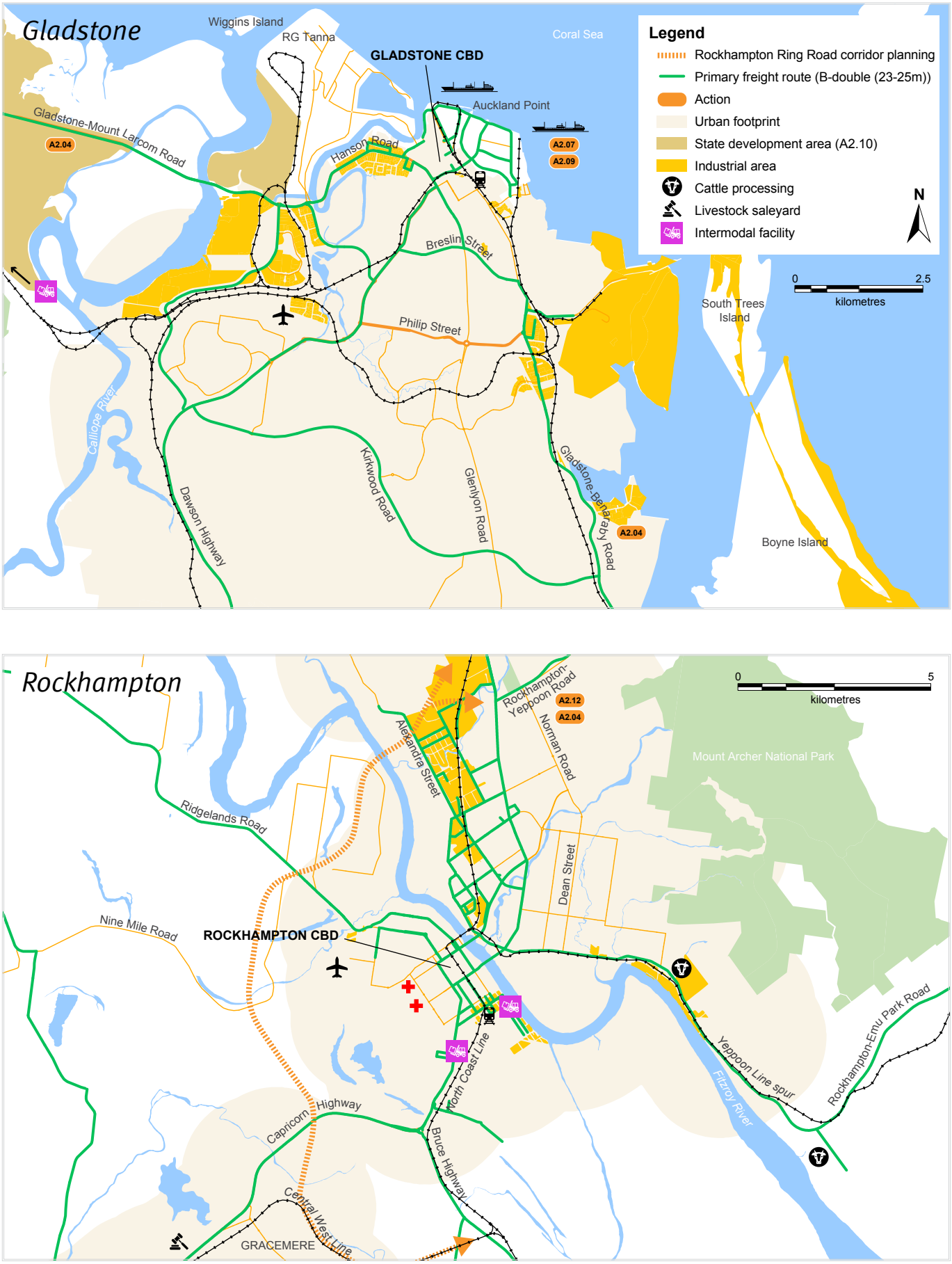


Figure 10: Priority 2 Gladstone and Rockhampton maps

This map is indicative to illustrate proposed strategies for the region and is not intended to be accurate in terms of exact geographic extent.

CASE STUDY: Improving cattle supply chains

Moving cattle from the farm gate to market is a key factor affecting the profitability of the cattle industry. Transport impacts on animal condition and profitability especially in Northern Australia where there are long distances from production to market. Sufficient access to truck stops on freight corridors is essential to manage driver fatigue and animal welfare. Disruptions to the transport network are also common during wet seasons, preventing stock reaching ports or abattoirs.

The inefficient movement of cattle impacts economic viability and reduces the industry's profitability and resilience and can erode the geographic advantage of the north's proximity to Asian-pacific markets.

To understand and assess the efficiency of agricultural supply chains, CSIRO developed the Transport Network Strategic Investment Tool (TraNSIT). The tool is used to understand the benefits of infrastructure and policy changes have on agricultural supply chains. The tool has been used to assess infrastructure improvement scenarios linked to the Federal Government's Northern Australia Beef Roads Programme.

In the Fitzroy region, the Federal Government has committed funding to provide HPV access between Gracemere and Rockhampton. This project will remove the requirement for road trains travelling between Gracemere saleyards and the Rockhampton abattoirs to breakdown prior to entering Rockhampton from the Capricorn Highway. The project, based on TraNSIT analysis is expected to deliver a saving of $1.63 per head of cattle utilising the upgraded link.[61]

Cattle property, Cooper Downs

61 CSIRO. (2016). *Transport Network Strategic Investment Tool (TraNSIT) Application to Northern Australia Beef Roads Program.*

4.3 Priority 3: Safety

Heavy vehicle passing through road works

Priority 3 aligns to:

- the *Transport Coordination Plan's* objectives for transport that is safe and secure for customers and goods
- the *State Infrastructure Plan's* focus on infrastructure that improves the capacity, safety and security of the transport network
- the *Central Queensland Regional Plan's* priority outcome to achieve community benefits through improving accessibility to destinations and improved safety and amenity.

A safe transport network that meets the demands of all users and manages interactions between incompatible network users.

Transport infrastructure that provides for safe travel is only one element of transport network safety; transport user behaviour and vehicles are also significant contributors. Customers should feel safe using the transport system and understand their role in ensuring the safety of themselves and other travellers. The safety of all transport users is fundamental to the planning and management of the transport network. Arriving at a destination safely and without incident is often assumed but each day crashes occur. Fortunately, not all these are serious but even those crashes that only result in vehicle damage and minor injury have personal and economic implications.

Improving transport network safety can be achieved through a combination of improved infrastructure, information, communication technology and education. Examples of initiatives that support and encourage safety include rest areas to mitigate driver fatigue and improved education on the unique characteristics of driving on remote roads such as interaction with road trains and driving on unsealed roads.

Transport objectives and measures of success

Objective 3.1: A transport network that is safe and reliable for all users.

Enhancing and managing transport infrastructure is essential in creating a reliable transport network, particularly for road users. The standard of road infrastructure must support all road users—including cyclists and pedestrians—to travel safely with reduced rates of crashes, injuries and fatalities. Transport infrastructure can improve safety by separating incompatible road users (for example, cyclists and trucks). A safe transport network also provides a better travel experience for residents and visitors due to an increased perception of personal safety and security.

Objective 3.2: All transport users understand safe travel behaviour.

Education and awareness programs that target both residents and travelling visitors have the ability to create a sense of accountability and responsibility for all road users. Specifically, these programs encourage road users to adhere to road and transport rules while making smart decisions about how they travel and how to be proactive about safety.

Measures of success

Measure of success	Proposed indicator	Source	Objectives	
			3.1	3.2
Reduction in transport-related incidents, crashes, injuries and fatalities.	Number of road fatalities and hospitalised casualties (state-controlled roads – Queensland).	Transport and Main Roads	✓	✓
	Number of road fatalities and hospitalised casualties per 100 million vehicle kilometres travelled (state-controlled roads – Queensland).		✓	✓
	Number of fatalities or seriously injured in marine incidents per 10,000 registered vessels.		✓	✓
Improvements in safety of the National Land Transport Network.	Percentage of state-controlled road network in the region with a medium of lower risk score.	To be confirmed	✓	

Cyclist using on-road cycle lanes

Actions

PRIORITY 3: SAFETY	OBJECTIVES	
Objective 3.1: A transport network that is safe and reliable for all users.		
Objective 3.2: All transport users understand safe travel behaviour.		

Actions – short-term	3.1	3.2
A3.01 Intelligent transport systems Identify opportunities for increasing the use of technology for signage, communicating real-time information and road condition monitoring to improve the accuracy and timeliness of information on network closures, weather and safety events, including on the Bruce Highway and the northern end of the Bundaberg–Miriam Vale Road.	✓	✓
A3.02 Education Continue to develop region specific education, promotion and communication campaigns in partnership with community, industry and other authorities to encourage safe travel behaviour on roads, public transport and active transport pathways in the region.	✓	✓
A3.03 Road safety treatments Continue to identify, prioritise and nominate locations, links and networks for road safety treatments, such as additional overtaking lanes and audio-tactile line markings, as part of Safer Roads Sooner and Black Spot programs, and through other opportunities such as planned upgrades. Road safety treatments for consideration include wide centre-lines on sections of Gladstone–Benaraby Road and the Capricorn Highway to reduce the risk of head-on collisions, traffic operation plans for managing incidents on sections of the Bruce Highway, intersection treatments which prioritise emergency vehicle access and signage indicating sections of road with a high crash history.	✓	✓
A3.04 Boating safety Undertake boating safety initiatives for coastal and inland waterways and waterbodies.	✓	✓
Actions – medium/long-term		
A3.05 Rest stops Determine investment priorities for new or upgraded rest areas to address driver fatigue risks, encourage safe travel, and to provide sufficient capacity and amenities to enhance customer experiences and safety. Ensure planning and provision of rest areas addresses safety risks associated with potential for incompatibility or conflicts between trucks and recreation vehicles.	✓	✓

Legend

- Rest area
- Actions
- National park

Crash data 2011-2016*

- 1-20 crashes requiring hospitalisation
- 21-40 crashes requiring hospitalisation
- 41+ crashes requiring hospitalisation
- Fatal crashes

* Crash data only relates to roads within region

Committed projects

- A Bruce Highway (Benaraby – Rockhampton) – Various sections, rehabilitate and widen
- B Leichhardt Highway (Westwood – Taroom) – Intersection improvements
- C Capricorn Highway (Rockhampton – Emerald) – Construct overtaking lanes
- D Dawson Developmental Road (Springsure – Tambo) – Pave and seal
- E Gregory Highway (Emerald – Clermont) – Miscellaneous works
- F Dawson Highway (Gladstone – Biloela) – Improve intersections
- G Gladstone – Benaraby Road – Construct auxiliary lanes
- H Rockhampton – Yeppoon Road – Improve intersections in various locations
- I Bajool – Port Alma Road – Widen pavement
- J Capricorn Highway (Rockhampton – Duaringa) – Highway duplication to four lanes
- K Fitzroy Development Road (Taroom – Bauhinia) – Pave and seal
- L Gladstone – Benaraby Road – Transport planning
- M Gavial – Gracemere Road – Safety and capacity upgrade planning

N

Figure 11: Priority 3 region map

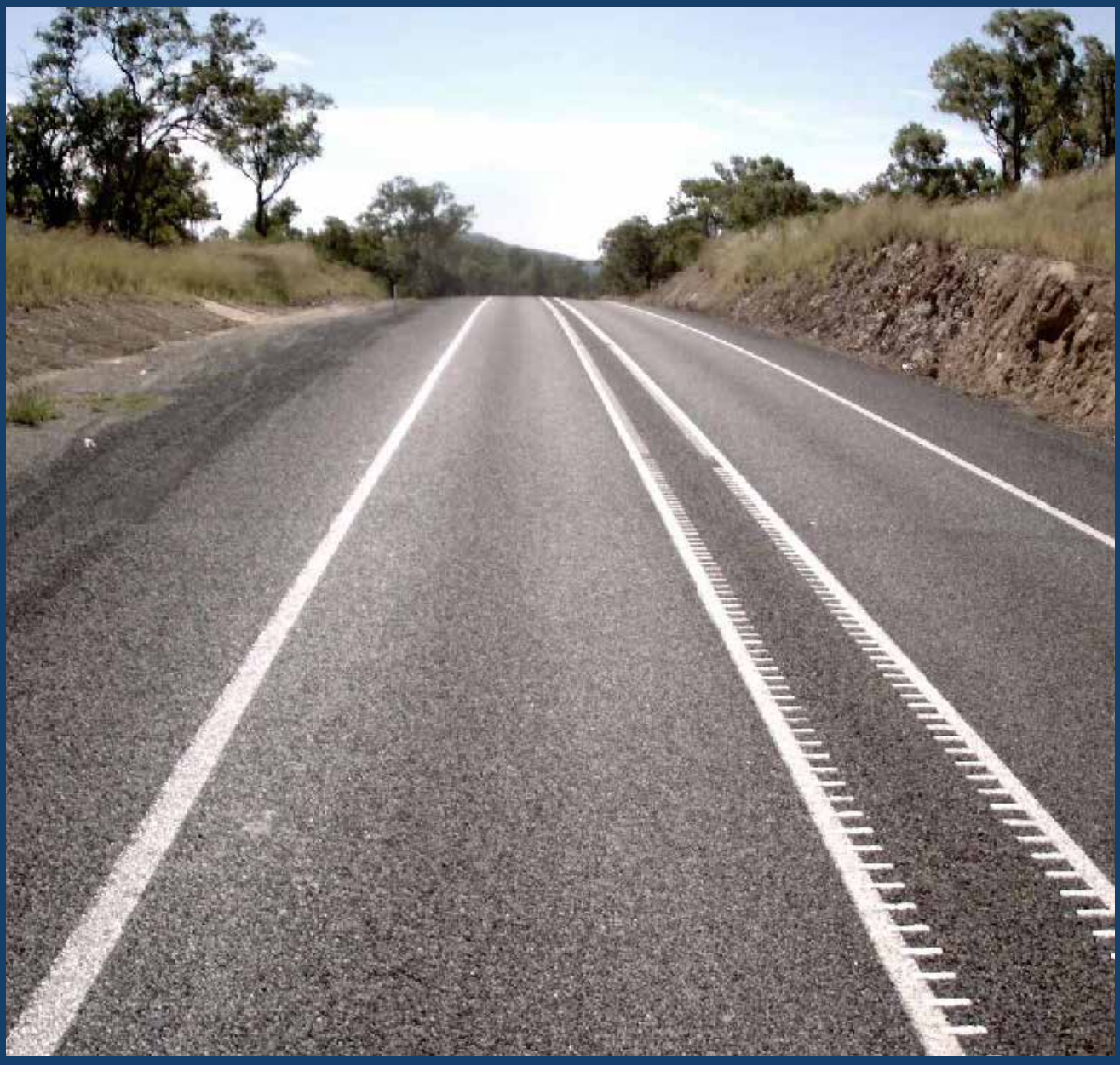
This map is indicative to illustrate proposed strategies for the region and is not intended to be accurate in terms of exact geographic extent.

CASE STUDY: Wide centreline treatment

Crashes involving vehicles crossing over the centreline, causing head-on collisions, are one of the most severe types of crashes. The Department of Transport and Main Roads is committed to improving safety along Queensland roads, particularly on long stretches of highways where driver fatigue and unsafe overtaking can contribute to these head-on crashes. In recent years wide centreline treatments have become internationally recognised as an effective and relatively low-cost measure to reduce head-on collisions.

Wide centreline treatments replace the existing dividing centreline/s on a road with two new lines approximately one metre apart, which creates a greater distance between opposing directions of traffic. This extra distance between opposing directions of traffic provides additional reaction time if a driver unintentionally drifts across the centreline towards oncoming traffic.

Wide centreline treatments also increase road safety by providing additional space when motorists are passing cyclists or vehicles that are stopped on the side of the road, as well as when they are overtaking, as it allows for better visibility of oncoming traffic. The treatment is often applied to heavily trafficked, high speed roads and highways and usually require widening of the road shoulder to accommodate the wider centreline.



Wide centreline treatment, Bruce Highway, Gin Gin

4.4 Priority 4: Environment and sustainability

Flooded road, Rockhampton floods, 2011

A sustainable and resilient transport network that provides access to and within the region.

Sustainable development and operation of the transport system supports both liveability and the economy. The effective prioritisation, coordination and management of transport infrastructure and operations contribute to achieving a sustainable, efficient and connected transport network.

Resilience is the ability of the transport system to retain performance during a disaster, or return to a normal state of operation (or a desired level of functioning) quickly following a disaster. The resilience of the transport network is critical in emergency response immediately after a disaster with first responders requiring safe access to address damage and community impacts.

Extreme weather can lead to road closures, infrastructure damage and delays across the region. The impacts cover not only the period which the road is closed due to inundation or damage, but the time it takes for road or bridge inspection prior to reopening, restrictions until damage is addressed and then delays associated with road works to repair damage. Resilience is also important in improving the reliability of the transport network, as well as decreasing repeat maintenance costs.

Priority 3 aligns to:

- the *Transport Coordination Plan's* objectives for transport that meets the needs of all Queenslanders, now and into the future and is resilient to Queensland's weather extremes
- the *State Infrastructure Plan's* focus on reliable transport infrastructure that is resilient and adaptive to weather events and climate change
- the *Central Queensland Regional Plan's* priority outcome to improving the reliability and condition of transport networks affected by population and resource sector growth and the networks' resilience during natural disasters.

Sustainability is an important consideration when meeting the region's transport needs, to ensure future generations or the region's historical and natural values are not compromised. Protecting natural values is important to the community and the ongoing success of the region's tourism industry particularly those which affect the southern Great Barrier Reef World Heritage Area.

Transport objectives and measures of success

Objective 4.1: A resilient transport network that keeps the Fitzroy region open and moving following weather events, and provides the emergency connections needed to keep the region safe.

The closure of major roads, ports, airports and rail tracks has significant impacts on freight transport, local businesses, visitors and residents in the region.

Network closures are often inconvenient and can significantly increase travel time and cost. Importantly, closures can also be unsafe and reliable access is required to support emergency connections (including access for first responders following incidents and emergencies) and enable safe network use. Improving the resilience of the transport network increases the safety of the region.

Measures of success

Measure of success	Proposed indicator	Source	Objectives
			4.1
Reduced frequency and duration of unplanned closures	Frequency and total duration of road closures on the transport network (state-controlled roads) during flooding events.	Transport and Main Roads	✓
	Total frequency and duration of unplanned closures on the transport network (state-controlled roads).		✓

Actions

PRIORITY 4: ENVIRONMENT AND SUSTAINABILITY	OBJECTIVES
Objective 4.1 A resilient transport network that keeps the Fitzroy region open and moving following weather events, and provides the emergency connections needed to keep the region safe.	

Actions – short-term	4.1
A4.01 Flooding investigations Undertake transport network flooding investigations across the region to identify key flooding locations, such as low lying areas within the Fitzroy River catchment, and understand requirements and improvements needed to reduce the impact of flooding and improve the resilience of the network.	✓
Actions – medium/long-term	
A4.02 Disaster management Undertake critical transport network response planning and support local and district disaster management groups to improve accessibility and safety during extreme weather events, including the resilience and reliability of communication systems and processes.	✓
A4.03 Climate change Consider the impact of climate change in the planning of the transport network in the Fitzroy region.	✓

CASE STUDY: Flinders Highway Flood Study – a route approach to addressing flood immunity

Northern Queensland's Flinders Highway runs east–west across 770 kilometres connecting Cloncurry, and towns along its route, to Townsville. The Flinders Highway has a history of poor flood performance with long and frequent road closures during the wet season. Although previous studies and infrastructure projects had addressed a handful of individual crossings, there was no means of assessing overall flood immunity or impacts for the overall route.

The Flinders Highway Flood Study assessed the entire route in terms of flood immunity and impacts on the efficient movement of goods and services and providing more reliable access for tourists and the community. [62] A tool was developed to inform decision making through a holistic assessment of highway flooding and its impacts by combining hydrologic, hydraulic and economic assessments and accounting for simultaneous closures at multiple crossings during storm events. The tool allows Transport and Main Roads to prioritise investment in structures that provide the greatest economic benefit by improving the overall flood immunity with a consistent comparison of upgrade options.

Water level marker indicating flooding depth on the Flinders Highway

CASE STUDY: Foamed bitumen pavements thwart Tropical Cyclone Debbie

Tropical Cyclone Debbie crossed the Queensland coast near Airlie Beach in late March 2017 unleashing damaging winds and torrential rail. It then tracked south to deliver wide spread flooding in several regions including Rockhampton and areas in south-east Queensland and northern New South Wales.

Innovations in pavement technology have provided for a more resilient transport network. The flooding aftermath of Cyclone Debbie tested the practical effectiveness of foamed bitumen pavement when three-metre floodwaters inundated Camp Cable Road on the Mt Lindesay Highway. There were concerns with the extent of the flooding, road condition would be compromised. When waters receded, the foamed bitumen pavement was found completely intact.

Recent heavy rainfall has demonstrated the resilience of the pavement on the Bruce Highway near Bowen, in Warrill View, south of Ipswich and on the Yeppen floodway in Rockhampton.

Foamed bitumen pavements are an innovation of the Department of Transport and Main Roads and when constructed in the right environment with appropriate stabilisation are more resilient to flooding. They have survived unscathed in some of the worst-hit parts of the state and display impressive strength in the face of catastrophic weather. While some conventional thin asphalt/granular pavements suffered catastrophic damage from flooding, foamed bitumen pavements in similar circumstances have shown to be highly resilient.

By utilising foamed bitumen, Transport and Main Roads is not only saving on the cost of construction—foamed bitumen costs less per cubic metre than asphalt—but also on the cost of maintaining and rehabilitating roads after natural disasters like ex-Tropical Cyclone Debbie.

Flooding on Mt Lindesay Highway, March 2017

62 Department of Transport and Main Roads (2016). *Flinders Highway Flood Study*.

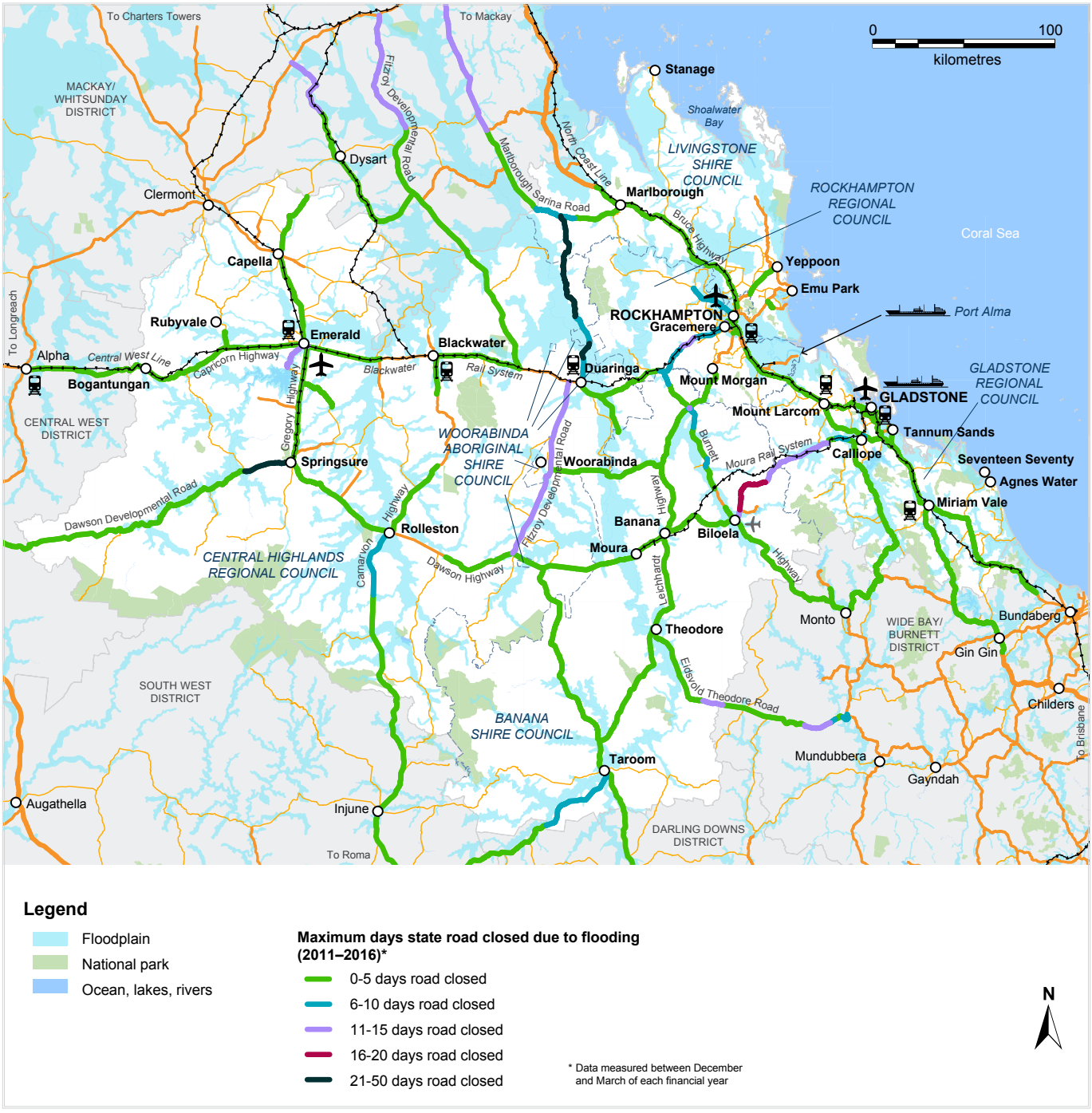


Figure 12: Priority 4 region map

This map is indicative to illustrate proposed strategies for the region and is not intended to be accurate in terms of exact geographic extent.

Cotton field at Kiely's Farm, Emerald

Snorkelling, Heron Island

5. Implementation

5.1 Taking action

Delivering the *Fitzroy Regional Transport Plan* will require:

- further integration with the strategic direction of the region's local governments
- continued engagement with our stakeholders and customers
- collaborative and considered decision making
- a drive from all partners to deliver a safer, more efficient, reliable and integrated transport network.

This Plan will be used to inform transport planning priorities and investment decision making for the region. The Plan will ensure that future investments address priorities that matter to customers, stakeholders and the community.

Figure 13 shows the importance of the Regional Transport Plans in the Transport and Main Roads investment lifecycle.

Transport and Main Roads provides opportunities for customers to provide input into planning actions outlined in this plan via the department's website. Information on our projects including planning, studies and construction projects can be found at **www.tmr.qld.gov.au/projects**.

Transport and Main Roads and its planning partners are responsible for ensuring the priorities and actions in the Plan are realised. They will be delivered by:

- **Informing the *Queensland Transport and Roads Investment Program (QTRIP)***
  QTRIP is released annually. It is a funded program of work that will be delivered over the upcoming four years. Projects are listed on *QTRIP* after having gone through an investment prioritisation process that will be informed by this Plan.
- **Aligning with the *State Infrastructure Plan***
  Regional Transport Plans will inform the programs of work within the *State Infrastructure Plan*. QTRIP informs the *State Infrastructure Plan*'s construction pipeline. Regional Transport Plans align planning and investment frameworks with the region's challenges and opportunities.
- **Being considered in local and federal government investment decisions and plans**
  This Plan has been prepared in consultation with other levels of government and considers their strategic planning and policy documents.

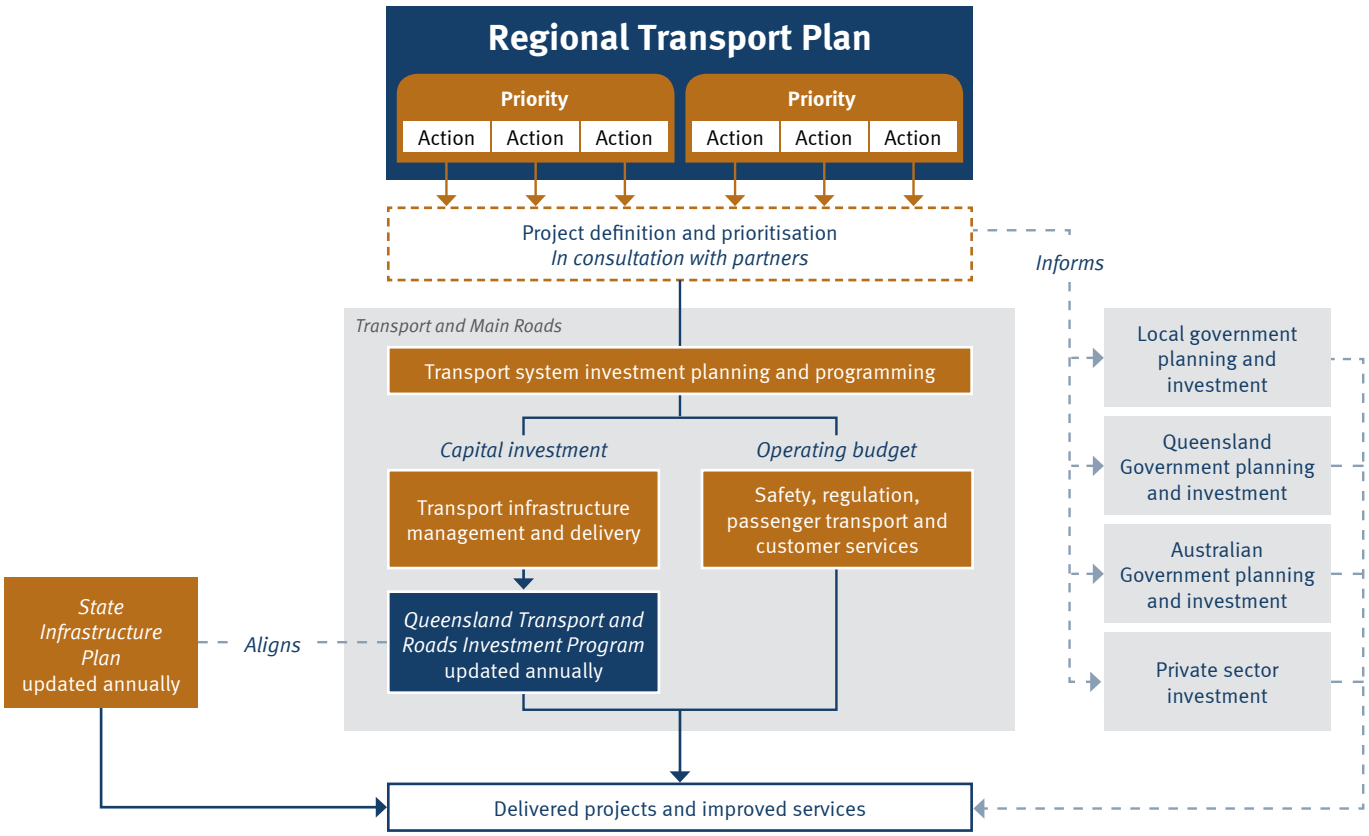


Figure 13: Regional Transport Plans are a critical step in Transport and Main Roads investment lifecycle

5.2 Delivering in partnership

More can be achieved when partnering with stakeholders to deliver shared goals using collective expertise and resources. Throughout the development of the *Fitzroy Regional Transport Plan*, Transport and Main Roads has built relationships with stakeholders from all levels of government, business and industry. These relationships will be further developed in delivering the actions outlined in this plan. Opportunities for partnering include:

- collaborative planning leveraging knowledge from researchers, universities and education providers
- inviting project development support from individuals or organisations with an interest in implementing an initiative or action
- establishing funding partnerships to accelerate action delivery and realise economic or commercial benefits, for example, through market-led proposals or public-private partnerships
- providing resource support such as human resources, equipment or material.

Cooperative transport planning is the foundation for delivery of Regional Transport Plans. Each Plan will be delivered with a focus on cooperation, coordination and collaboration. This approach builds on the framework for inter-agency cooperation established within the Roads and Transport Alliance (RTA). The RTA is a partnership between Transport and Main Roads and the Local Government Association of Queensland, on behalf of local governments, for the stewardship of Queensland's regional road and transport network.

Local governments together with Transport and Main Roads form Regional Roads and Transport Groups (RRTGs). RRTGs work collaboratively to prioritise investment on road and transport infrastructure and should evolve further to influence the strategic planning and management of regional transport networks.

The priorities and actions outlined in this Regional Transport Plan will help focus the RRTG in their approach to strategic transport planning and local transport infrastructure investments.

Gem Gallery, Deparado Mine, Rubyvale

5.3 Monitoring and review

This Plan will be monitored, periodically reviewed and updated to ensure it remains current and relevant.

In the short term, monitoring will focus on ensuring that the actions put forward are prioritised and progressed through departmental and local planning programs. As the Plan matures and planning and delivery is completed, monitoring will focus on tracking progress against objectives and measures of success (Figure 14).

It is intended that a review of the Plan will be carried out every three-to-five years to maintain its alignment with other government and non-government plans, programs and initiatives.

This review will also consider changes to land use, the region's economy, environmental considerations, demography, technological innovations, the progress of significant infrastructure projects and any other factors which may require a shift in the priorities or objectives for the region.

Overall, the effectiveness of this Plan within the region will be measured against the measures of success outlined for each priority. These align to Transport and Main Roads' *Transport Coordination Plan* 2017–2027 and will allow the department to track if Regional Transport Plans are meeting transport system objectives.

It is important to note that some of the measures of success may be updated as required to ensure that they continue to provide an effective measurement of performance.

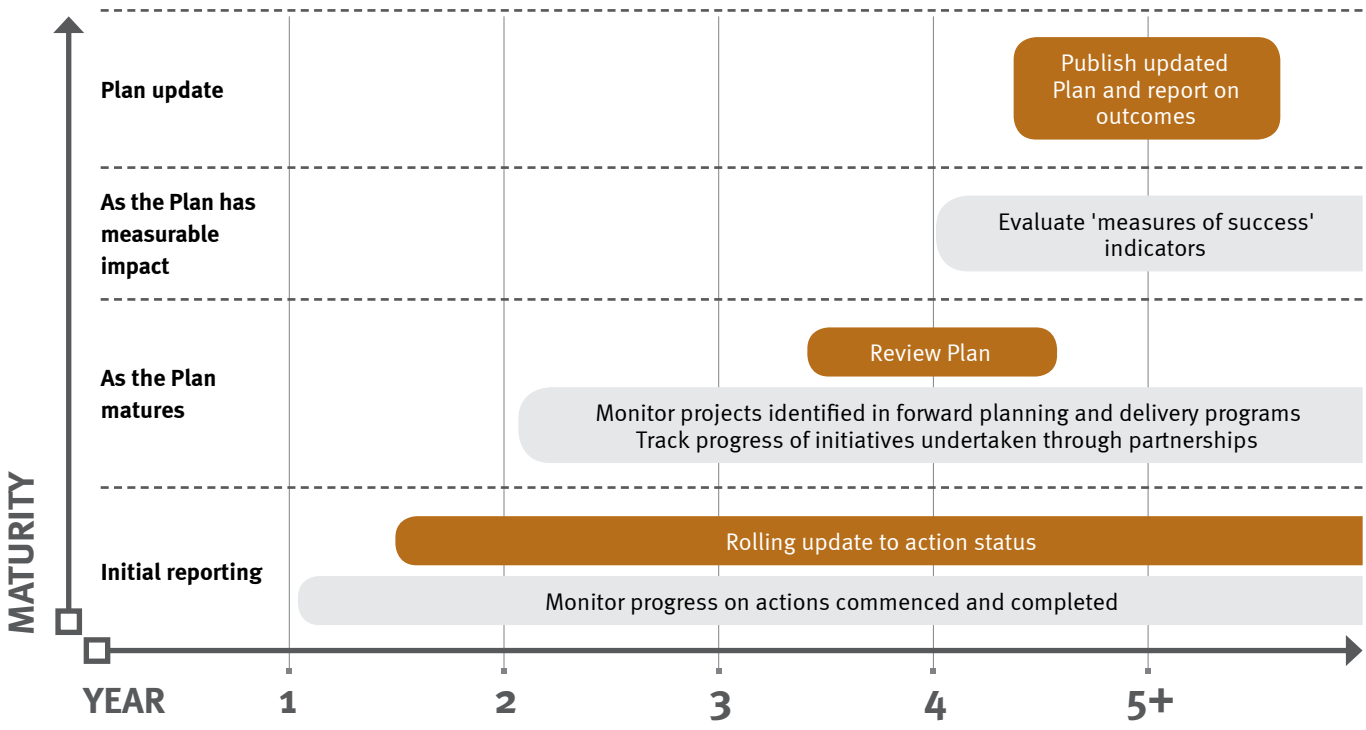


Figure 14: Monitoring, reporting and review as the Plan matures

Further information

Please email TMR_Regional_Transport_Plans@tmr.qld.gov.au for further details on this or other Regional Transport Plans.

Warumbah Creek Gorge, Carnarvon National Park

PHOTO CREDITS

Front cover, Fisherman's Landing, Port of Gladstone (background), Gladstone Ports Corporation.

Inside front cover, Pineapples on sale at Farmer's Market, Yeppoon, Tourism and Events Queensland.

Page 4, Farm near Biloela, Tourism and Events Queensland.

Page 16, Walking on Wreck Beach, Great Keppel Island, Tourism and Events Queensland.

Page 19, Biloela Railway Station, Tourism and Events Queensland; Rural landscape, Capella, Tourism and Events Queensland.

Page 20, Auckland Port Wharf, Tourism and Events Queensland; Yeppoon Marina, Tourism and Events Queensland.

Page 21, Parkland, Woorabinda Aboriginal Council.

Page 26, Rockhampton Airport, Rockhampton Regional Council.

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