

# Principal Cycle Network Plan

## North Queensland





# Contents

<b>1</b>	<b>Introduction</b>	<b>3</b>
<b>2</b>	<b>What is a principal cycle network?</b>	<b>3</b>
2.1	<i>Types of journeys</i>	4
2.2	<i>Types of routes</i>	4
2.3	<i>What is the purpose of the plan?</i>	4
<b>3</b>	<b>How was the network identified?</b>	<b>4</b>
3.1	<i>Planning principles</i>	4
3.2	<i>Workshop and consultation</i>	4
<b>4</b>	<b>Implementation</b>	<b>5</b>
4.1	<i>Timing of delivery</i>	5
4.2	<i>Principal cycle network infrastructure</i>	5
4.3	<i>Planning and protection of cycling corridors</i>	5
4.4	<i>Delivery mechanisms</i>	6
<b>5</b>	<b>Network maps</b>	<b>6</b>
	<i>Burdekin Shire Council</i>	7
	<i>Charters Towers Regional Council</i>	10
	<i>Hinchinbrook Shire Council</i>	11
	<i>Mount Isa City Council</i>	12
	<i>Townsville City Council</i>	13
<b>6</b>	<b>Analysis of routes</b>	<b>20</b>
<b>7</b>	<b>Review of the plan</b>	<b>23</b>
<b>8</b>	<b>More resources</b>	<b>23</b>

**Creative Commons information**  
© State of Queensland (Department of Transport and Main Roads) 2016



<http://creativecommons.org/licences/by/4.0/>  
This work is licensed under a Creative Commons Attribution 4.0 Licence. You are free to copy, communicate and adapt the work, as long as you attribute the authors.



The Queensland Government supports and encourages the dissemination and exchange of information. However, copyright protects this publication. The State of Queensland has no objection to this material being reproduced, made available online or electronically but only if its recognised as the owner of the copyright and this material remains unaltered.

The Queensland Government is committed to providing accessible services to Queenslanders of all cultural and linguistic backgrounds. If you have difficulty understanding this publication and need a translator, please call the Translating and Interpreting Service (TIS National) on 13 14 50 and ask them to telephone the Queensland Department of Transport and Main Roads on 13 74 68.

Disclaimer: While every care has been taken in preparing this publication, the State of Queensland accepts no responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained within. To the best of our knowledge, the content was correct at the time of publishing.



# 1 Introduction

The *North Queensland Principal Cycle Network Plan* (NQPCNP or plan) provides a vision for the principal cycle network in North Queensland to support, guide and inform practitioners involved in the planning, design and construction of the transport network.

The principal routes shown represent cycling desire lines. They indicate the most important routes and known missing links for cycling in the region. In most instances, further planning and design will be required to determine the precise route and design of cycle facility.

The plan should not be used for navigational purposes, since the maps provided do not distinguish between existing and future cycle facilities. Rather, the maps flag the demand for location and function of cycle routes to inform planning and design and construction of cycle facilities.

As shown in Figure 1, the plan covers the Burdekin, Charters Towers, Hinchinbrook, Mount Isa, and Townsville local government areas.

## 2 What is a principal cycle network?

A principal cycle network is comprised of core routes designed to make it easy to use the bicycle as an everyday form of transport.

### 2.1 Types of journeys

The NQPCNP identifies routes primarily for cyclists within urban areas, with a particular focus on the 5 km radius around trip destinations. Most of the urban areas are within a 5 km radius of a town centre. At these distances, cycling becomes a viable mode of travel for many trip types.

The plan focuses on journeys to work, school, and social/utility trips. The principal cycle network connects residential areas with employment nodes such as town centres, industrial precincts, ports, education facilities, and shopping and entertainment destinations.

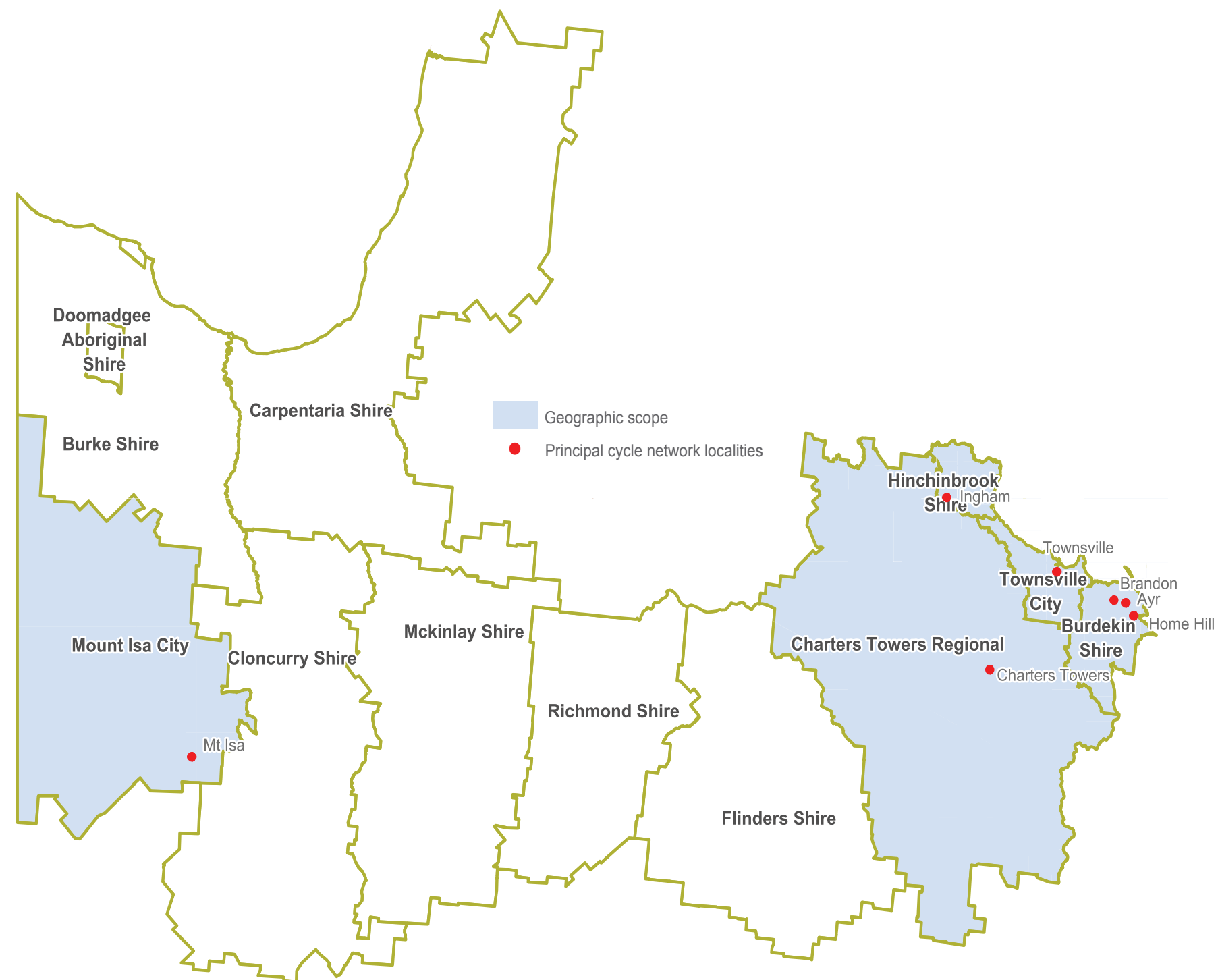


Figure 1. Local governments within North and North West Queensland.



## 2.2 Types of routes

The NQPCNP identifies the following types of principal cycle network routes:

**Principal routes** form the spine from which local cycle networks are built. Principal routes connect residential areas to major trip attractors such as public transport nodes, universities, schools, shopping and commercial centres, industrial areas, and regional recreational facilities. At the regional scale, they provide key connections between activity centres or outlying suburbs.

**Future principal routes** identify expansion opportunities for the principal cycle network in areas where significant urban growth has been identified but land use planning has not yet been undertaken or finalised. These routes are represented by an arrow in the broad direction of a future route.

**Tourism routes** cater for longer distance recreation and cycle touring, highlighting both coastal and hinterland scenic opportunities.

## 2.3 What is the purpose of the plan?

The purpose of the NQPCNP is to present agreed desire lines for principal cycle routes in the region identified using the planning principles outlined in section 3.1. The routes shown are indicative and exist to guide further planning that will determine the precise routes and design of cycle facilities.

The plan draws on existing cycle planning, data on key origins, destinations and cycling demand, as well as knowledge from councils and bicycle groups. The plan provides for a principal cycle network that will connect residential areas to major trip attractors.

The plan represents the core cycle routes needed to achieve more cycling, more often, which is the vision of the Queensland Government's *Queensland Cycle Strategy 2011-2021*. As the network is delivered, Queenslanders will have increasing opportunities to cycle to work, school, shopping precincts, and other major destinations via safe, direct, and attractive routes.

Increasing levels of cycling will help contribute to Queenslanders' fitness and health, protect the environment, and manage traffic congestion. Encouraging people to replace some car trips with cycling can also extend the life of existing transport assets and reduce the need for road capacity upgrades.

# 3 How was the network identified?

## 3.1 Planning principles

The development of the NQPCNP was guided by the following planning principles:

### Principle 1

Connect key existing and future origin and destination points, such as town centres, major shopping and commercial facilities, employment nodes and educational institutions.

### Principle 2

Focus on commuter, utility and education-related trips, with a supplementary focus on touring, recreation and sporting trips.

### Principle 3

Establish a mesh width of no more than 1000 metres between principal routes in urban areas. The mesh width is the distance between parallel routes in a network and is only applicable within built up areas.

### Principle 4

Identify a network that is connected, direct, coherent, legible and planned with safety in mind.

### Principle 5

Ensure that the network is easily accessible from residential areas.

### Principle 6

Identify the network predominantly within transport corridors, state-controlled roads, higher order local government roads and through open space areas.

### Principle 7

Adopt a 'one network' approach and consider all transport corridors as potential cycling corridors, regardless of whether they are managed by state or local government.

The plan identifies principal routes at a strategic network level that will deliver good cycling outcomes, recognising that to achieve this, further planning and design will be required. Although planned with a realistic level of feasibility in mind, the aim of the plan is not to exclude routes from the principal cycle network based entirely on their current level of feasibility.

A principal route may be identified within a corridor that is currently considered not conducive to cycling such as a priority freight route or highway. Further planning and design will consider the feasibility

of cycling within the corridor and design of cycle facilities. In some instances, this may result in a separated cycle facility within the corridor and, in others, a cycle facility on an alternative alignment in the vicinity.

## 3.2 Geographic scope

The geographic scope of the NQPCNP includes:

- Burdekin Shire Council
- Charters Towers Regional Council
- Hinchinbrook Shire Council
- Townsville City Council
- Mount Isa City Council.

These local government areas were selected based on a demographic review. Demographic characteristics such as age, vehicle ownership, education, and employment are considered good indicators for identifying areas with high cycling opportunities.

## 3.3 Consultation

To develop the principal cycle network, officers from the Department of Transport and Main Roads held meetings with stakeholders. Representing local and state government agencies and bicycle interest groups, stakeholders were presented and provided feedback on a draft network developed by the department based on the planning principles outlined in Section 3.1. Additional consultation and refinement resulted in a network supported by all parties.

The placement of the principal routes considered hazards, constraints, land tenure, and topography, the seven planning principles, existing cycle planning, and local knowledge of current and desired cycle routes.

# 4 Implementation

The NQPCNP reflects a 'one network' approach, meaning the principal cycle network contains routes on state-controlled roads, local government roads, and in open space corridors. While the department has direct control of cycle infrastructure delivered on state-controlled roads, its influence over local government roads and land is less direct.

## 4.1 Timing of delivery

The NQPCNP does not dictate specific time frames for delivery of the principal cycle network. The Department of Transport and Main Roads will collaborate with local governments to complete a rigorous



prioritisation process that will result in maps of priority routes that will be published as an addendum to the plan and will be reviewed regularly to ensure they remain an up-to-date representation of investment priorities. The maps of priority routes will guide state planning and investment decisions as well as the assessment of state grants to local governments for cycle infrastructure.

## 4.2 Principal cycle network infrastructure

The NQPCNP does not identify specific infrastructure solutions as this would require consideration of a range of factors beyond the scope of the plan such as available space, likely mix and volumes of users, surrounding land uses and trip attractors, traffic and crash data, physical constraints and hazards. Rather, the plan identifies the function of each route in general terms and leaves the detailed planning and design to those with a greater understanding of the local issues.

## 4.3 Planning and protection of cycling corridors

Further planning and design is needed to determine the precise routes and design of cycle facilities. On the state transport network, this planning will be undertaken as part of the Transport and Main Roads' Transport System Planning Program. Once completed, the future cycling corridors can be mapped and protected, and will be considered as part of the application process for any proposed developments on nearby land.

## 4.4 Delivery mechanisms

As shown in Figure 2, the NQPCNP may be implemented through a variety of delivery mechanisms.

### 4.4.1 Queensland Government delivery

Transport and Main Roads' Cycling Infrastructure Policy (CIP) is a key delivery mechanism for the principal cycle network, requiring the department to consider the needs of cyclists in state-controlled transport projects. When on a principal route or a future principal route, the department is to include explicit cycle provision such as marked bicycle lanes, separated cycleways or signage in state-controlled transport projects.

When not on a principal route or future principal route, the department is to include implicit cycle provision such as the widening of shoulders or elimination of squeeze points in state-controlled transport projects. Tourism routes are not principal cycle network routes for the purposes of the department's CIP. Tourism routes may be eligible for funding through other sources such as the Transport Infrastructure Development Scheme (TIDS) or tourism and recreation programs.

The demand for new cycle infrastructure will not always align with the delivery of other transport projects. In cases where benefits and priorities can be identified, stand-alone cycle infrastructure projects may be planned, designed, constructed, and funded through Transport and Main Roads' Queensland Transport and Roads Investment Program (QTRIP). Only the highest priority projects will be put forward as stand-alone projects.

### 4.4.2 Local government delivery

Local governments can apply for funding to deliver principal cycle network infrastructure through the Cycle Network Local Government Grant (CNLGG) program. Funding is matched by local governments (50/50). Grants are awarded to projects that contribute to transport network outcomes that improve access to major attractors including activity centres, employment nodes, schools, universities, and public transport facilities.

Regional Roads and Transport Groups (RRTGs) receive an annual allocation of Transport Infrastructure Development Scheme (TIDS) funding which can be used to fund cycling infrastructure. RRTGs are responsible for allocating TIDS funding received to the highest priority transport projects in their regions, including cycle infrastructure. Local governments can champion cycling within their respective RRTGs and prioritise investment into cycle infrastructure. Local governments can also allocate funding for cycle infrastructure in their own budgets to deliver projects independently.

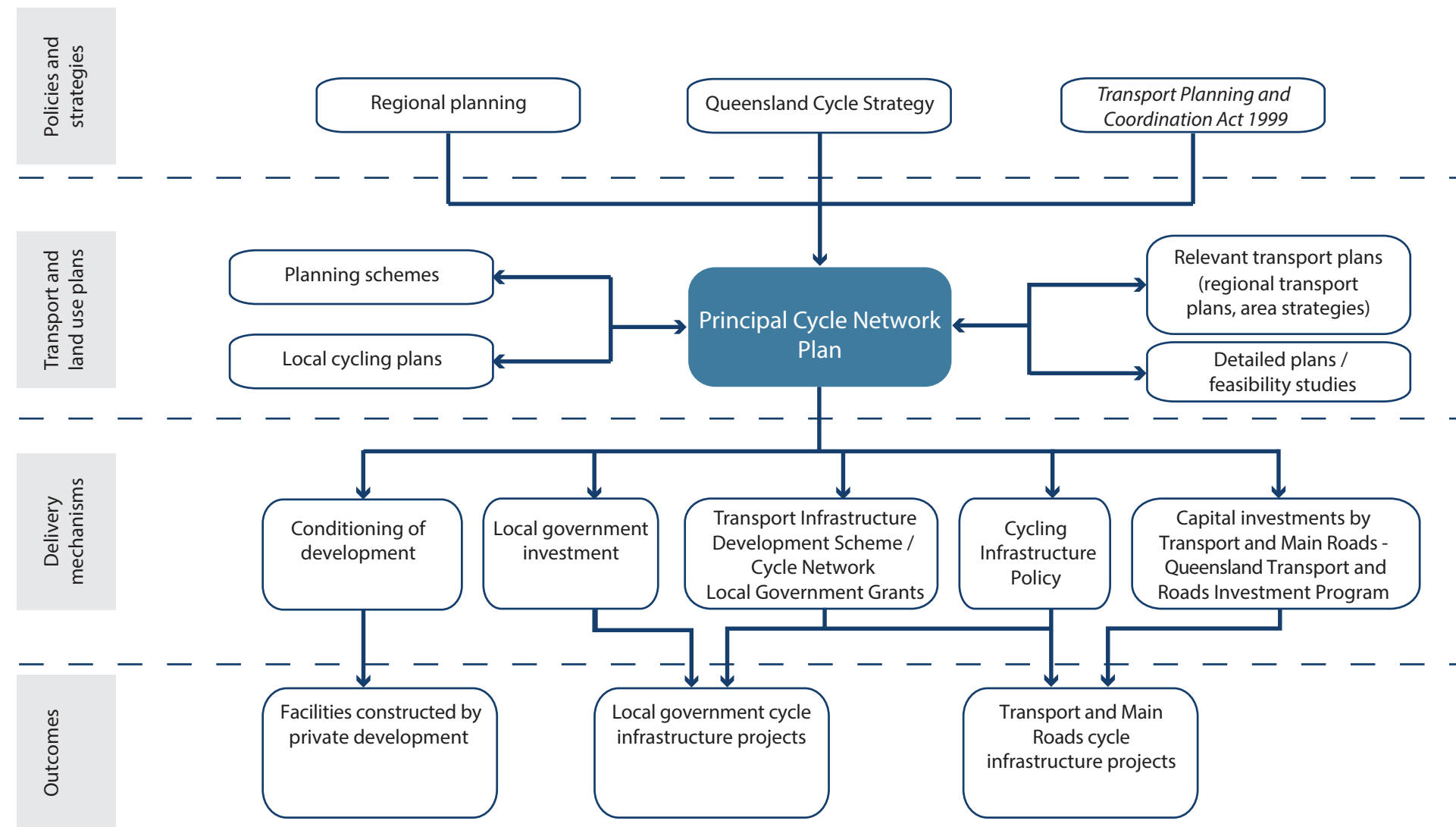


Figure 2. Policies and strategies influencing the principal cycle network.

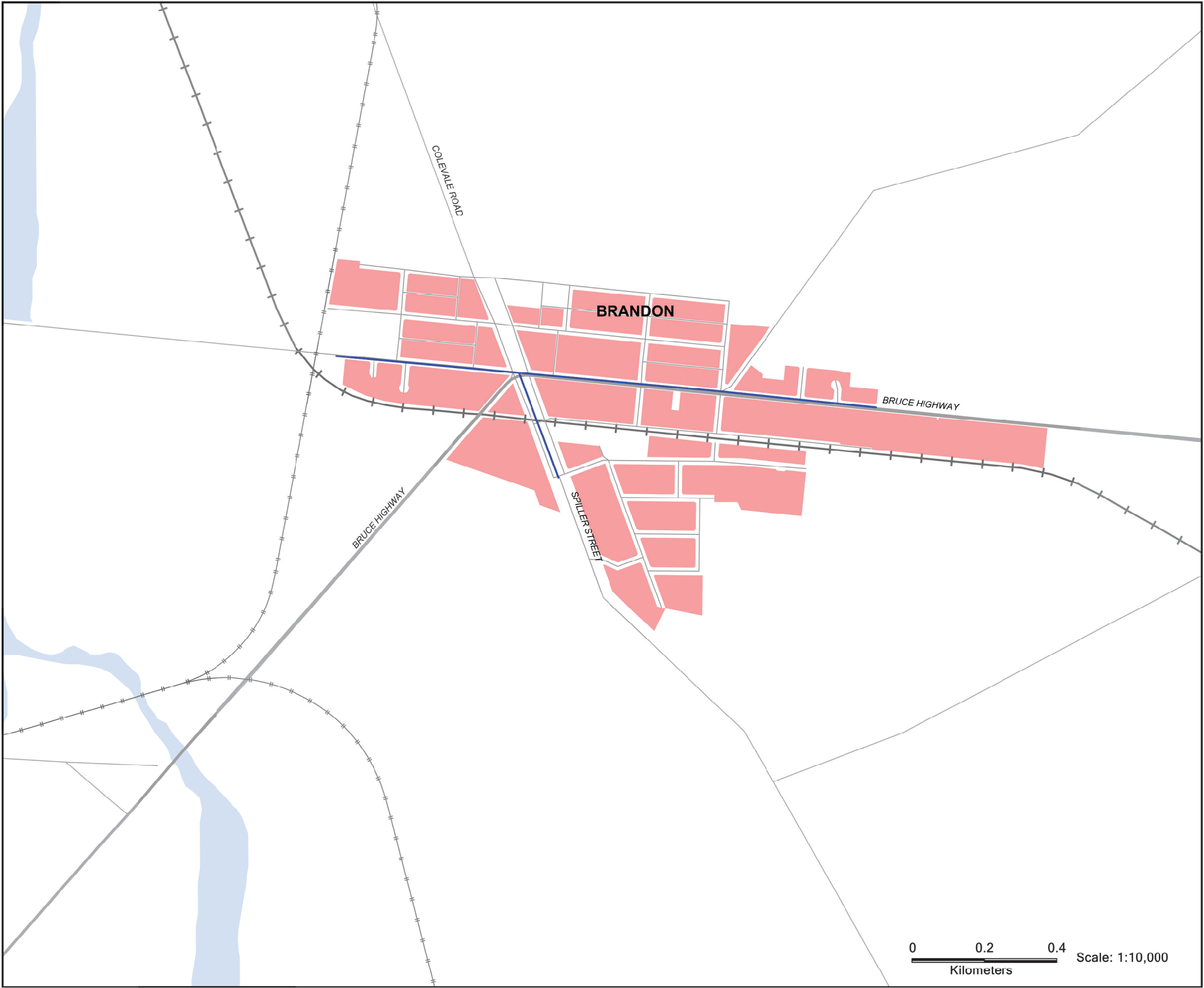


# 5 Network maps

This section presents the principal cycle network maps by local government area. The mapping scales vary across the various local government areas to better identify geographic features within the smaller urban areas. Section 6 contains an analysis of routes, with an explanation of the rationale for most routes in each local government area.





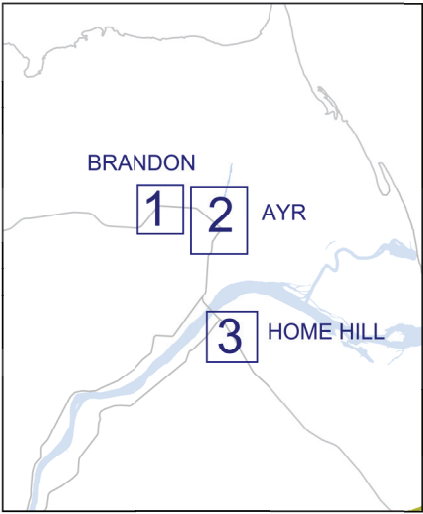


**Map 1**  
Brandon: Principal Cycle Network

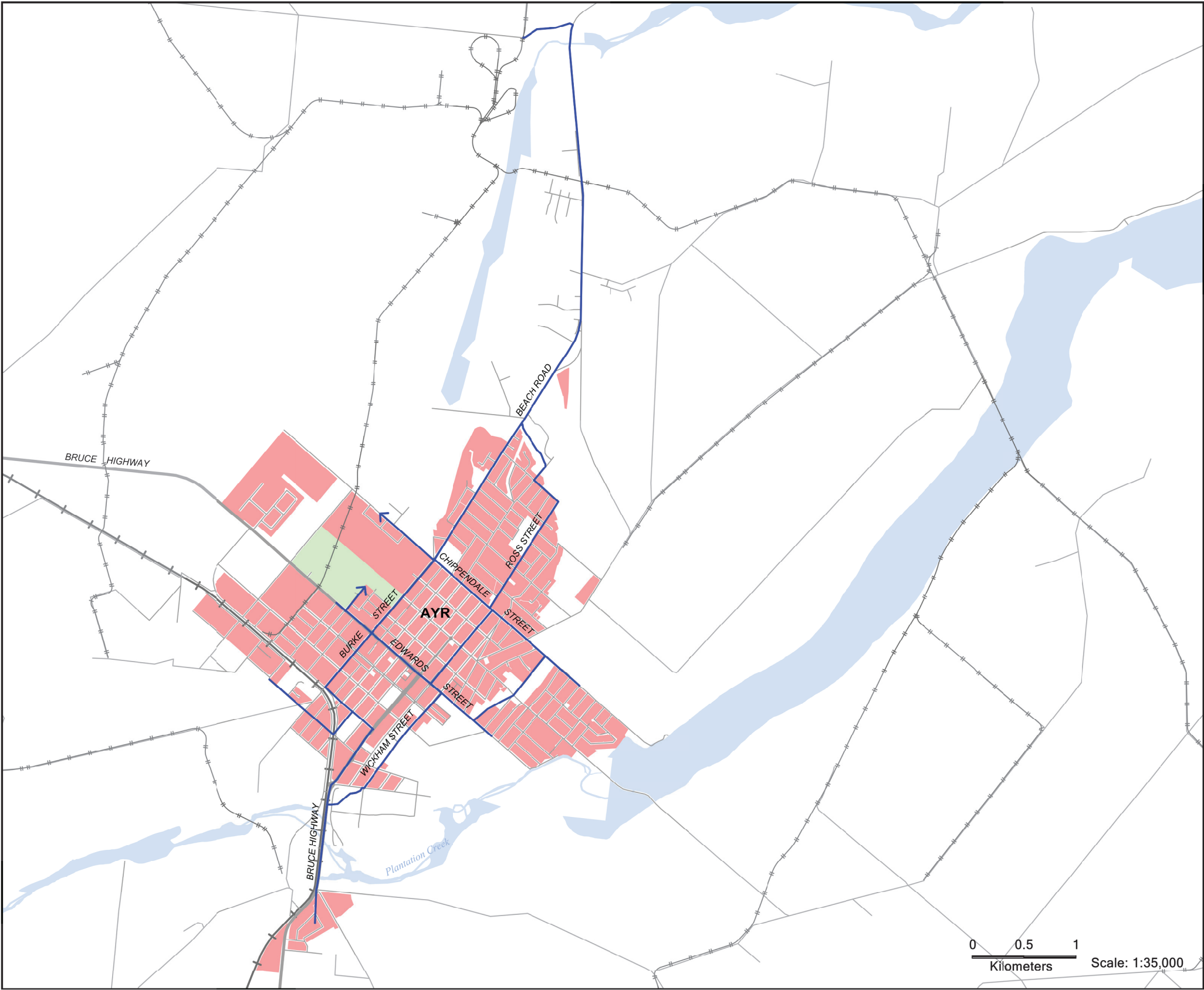
The routes shown are indicative and exist to guide further planning that will determine the precise routes and design of cycle facilities.

Disclaimer: While every care is taken to ensure the accuracy of this data, Transport and Main Roads and/or the State Government makes no representation or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.

- Tourism Route
- Principal Route
- Future Principal Route
- Roads
- Queensland Rail
- Cane Rail
- Ferry Terminal
- Waterways/watercourses
- Urban Areas
- Growth Areas





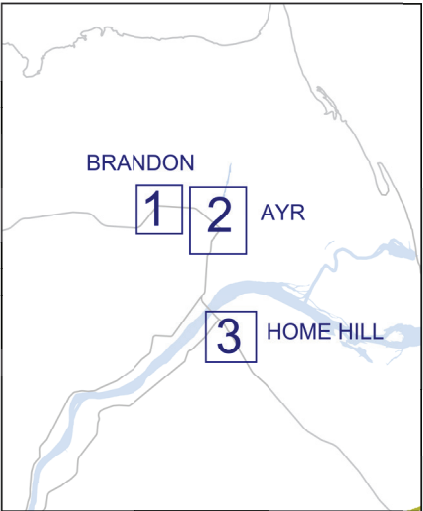


**Map 2**  
Ayr: Principal Cycle Network

The routes shown are indicative and exist to guide further planning that will determine the precise routes and design of cycle facilities.

Disclaimer: While every care is taken to ensure the accuracy of this data, Transport and Main Roads and/or the State Government makes no representation or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.

- Tourism Route
- Principal Route
- Future Principal Route
- Roads
- Queensland Rail
- Cane Rail
- Ferry Terminal
- Waterways/watercourses
- Urban Areas
- Growth Areas







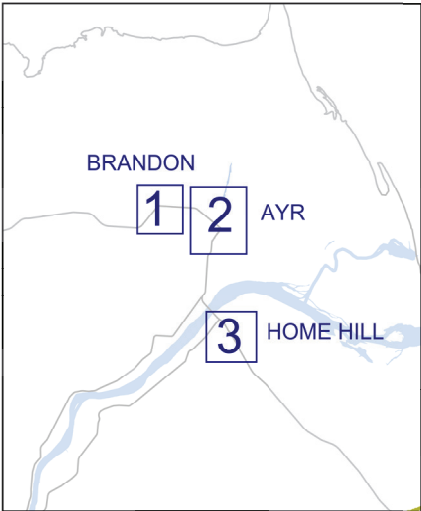
Map 3

Home Hill: Principal Cycle Network

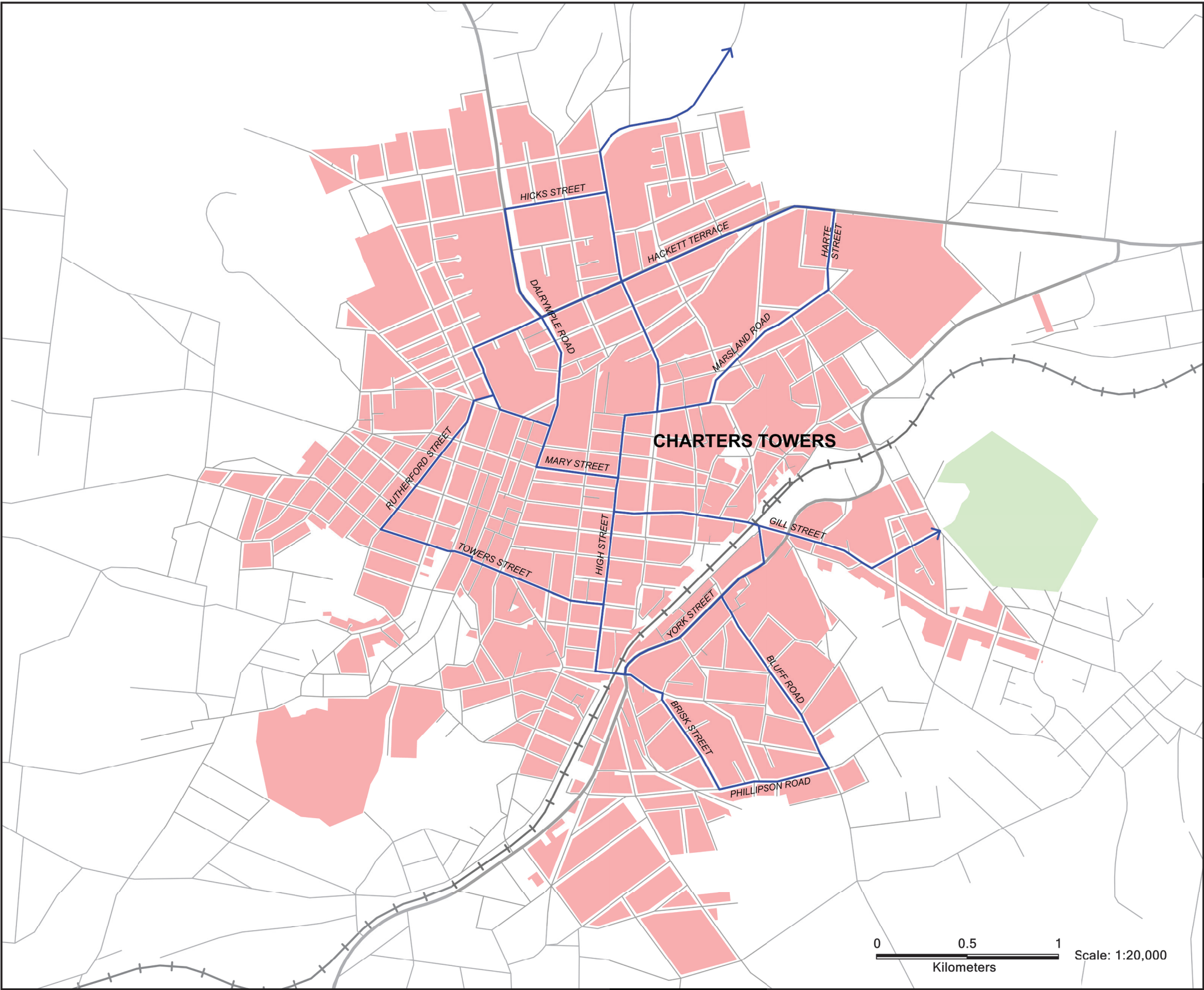
The routes shown are indicative and exist to guide further planning that will determine the precise routes and design of cycle facilities.

Disclaimer: While every care is taken to ensure the accuracy of this data, Transport and Main Roads and/or the State Government makes no representation or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.

- Tourism Route
- Principal Route
- Future Principal Route
- Roads
- Queensland Rail
- Cane Rail
- Ferry Terminal
- Waterways/watercourses
- Urban Areas
- Growth Areas







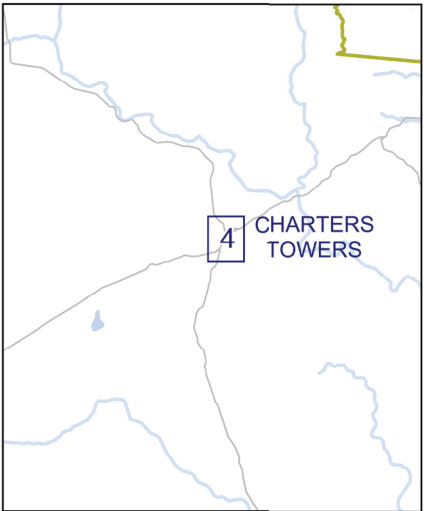
Map 4

Charters Towers: Principal Cycle Network

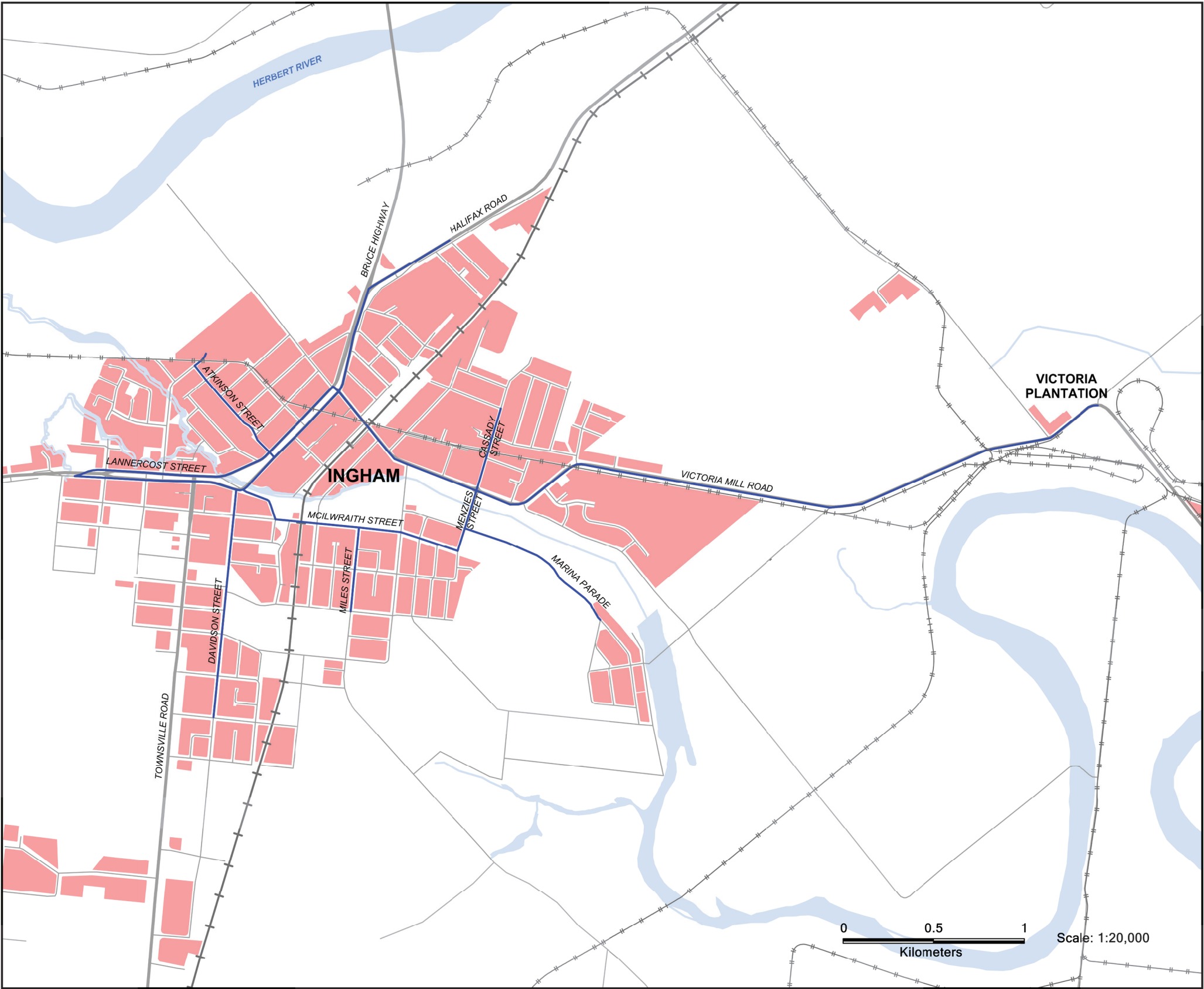
The routes shown are indicative and exist to guide further planning that will determine the precise routes and design of cycle facilities.

Disclaimer: While every care is taken to ensure the accuracy of this data, Transport and Main Roads and/or the State Government makes no representation or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.

- Tourism Route
- Principal Route
- Future Principal Route
- Roads
- Queensland Rail
- Cane Rail
- Ferry Terminal
- Waterways/watercourses
- Urban Areas
- Growth Areas





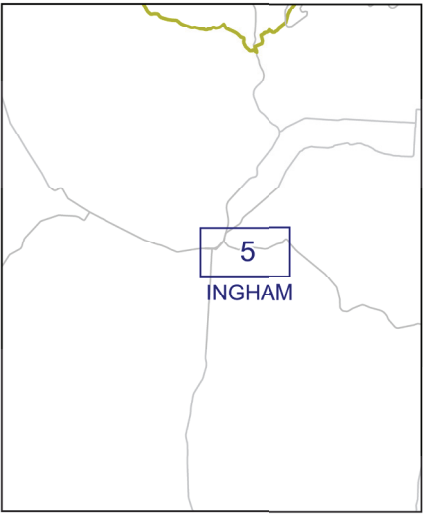


**Map 5**  
Ingham: Principal Cycle Network

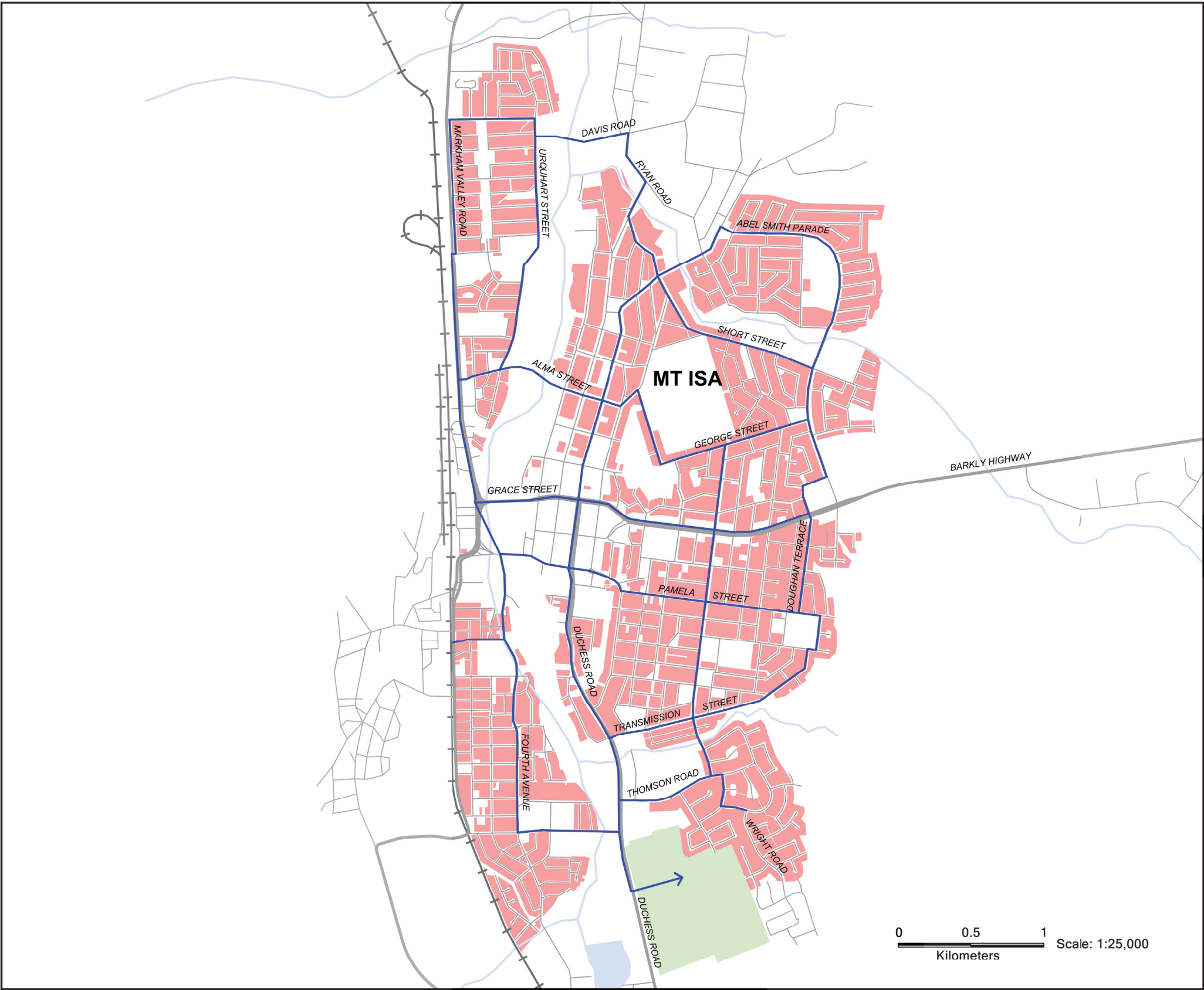
The routes shown are indicative and exist to guide further planning that will determine the precise routes and design of cycle facilities.

Disclaimer: While every care is taken to ensure the accuracy of this data, Transport and Main Roads and/or the State Government makes no representation or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.

- Tourism Route
- Principal Route
- Future Principal Route
- Roads
- Queensland Rail
- Cane Rail
- Ferry Terminal
- Waterways/watercourses
- Urban Areas
- Growth Areas







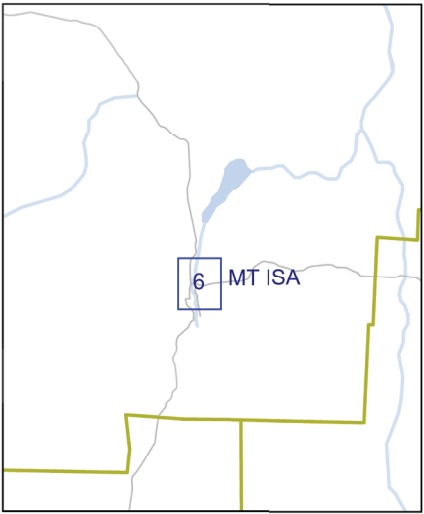
Map 6

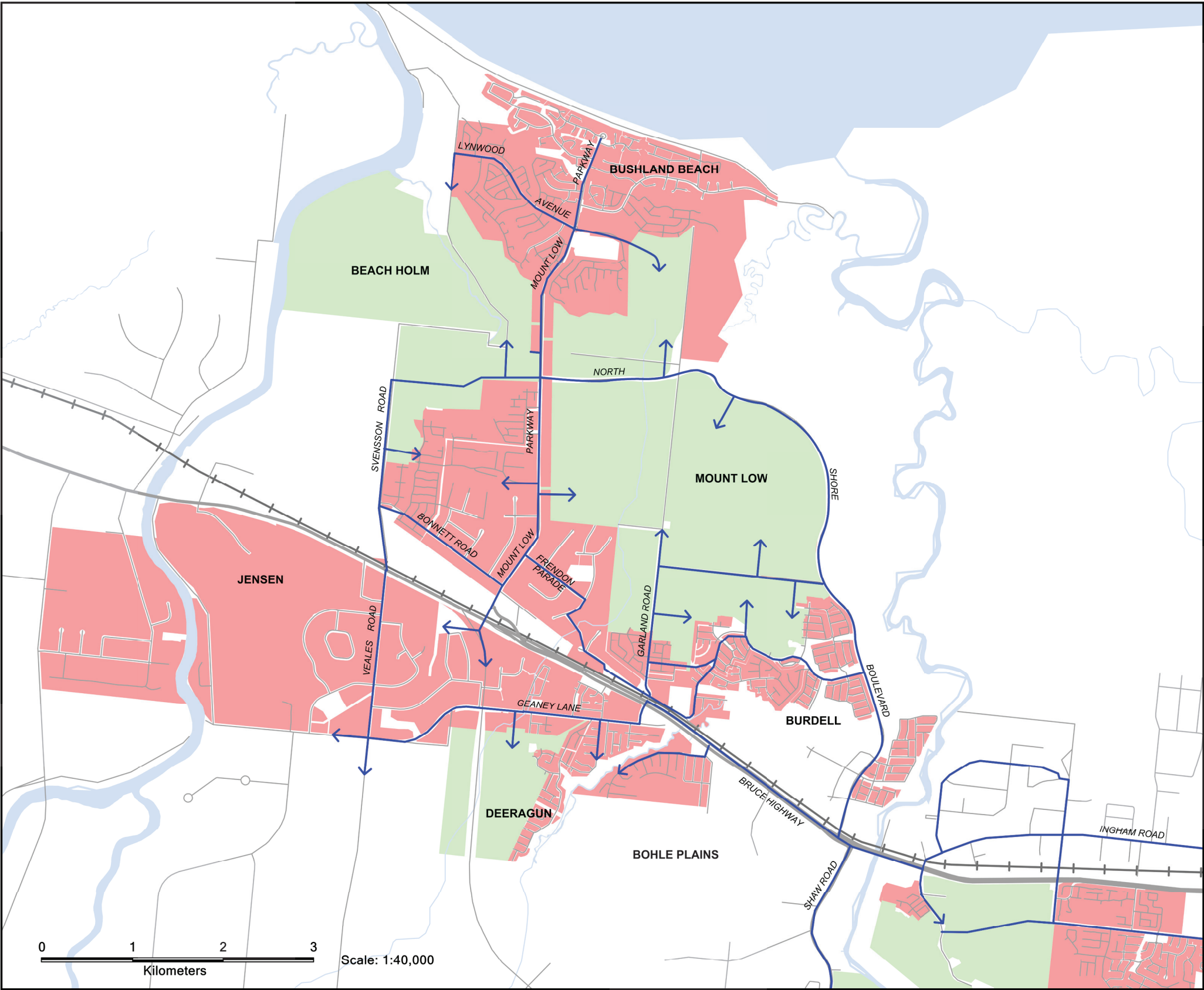
Mt Isa: Principal Cycle Network

The routes shown are indicative and exist to guide further planning that will determine the precise routes and design of cycle facilities.

Disclaimer: While every care is taken to ensure the accuracy of this data, Transport and Main Roads and/or the State Government makes no representation or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.

- Tourism Route
- Principal Route
- Future Principal Route
- Roads
- Queensland Rail
- Cane Rail
- Ferry Terminal
- Waterways/watercourses
- Urban Areas
- Growth Areas





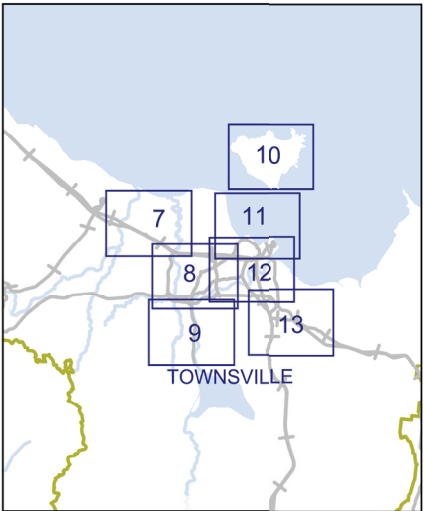
Map 7

Northern Beaches: Principal Cycle Network

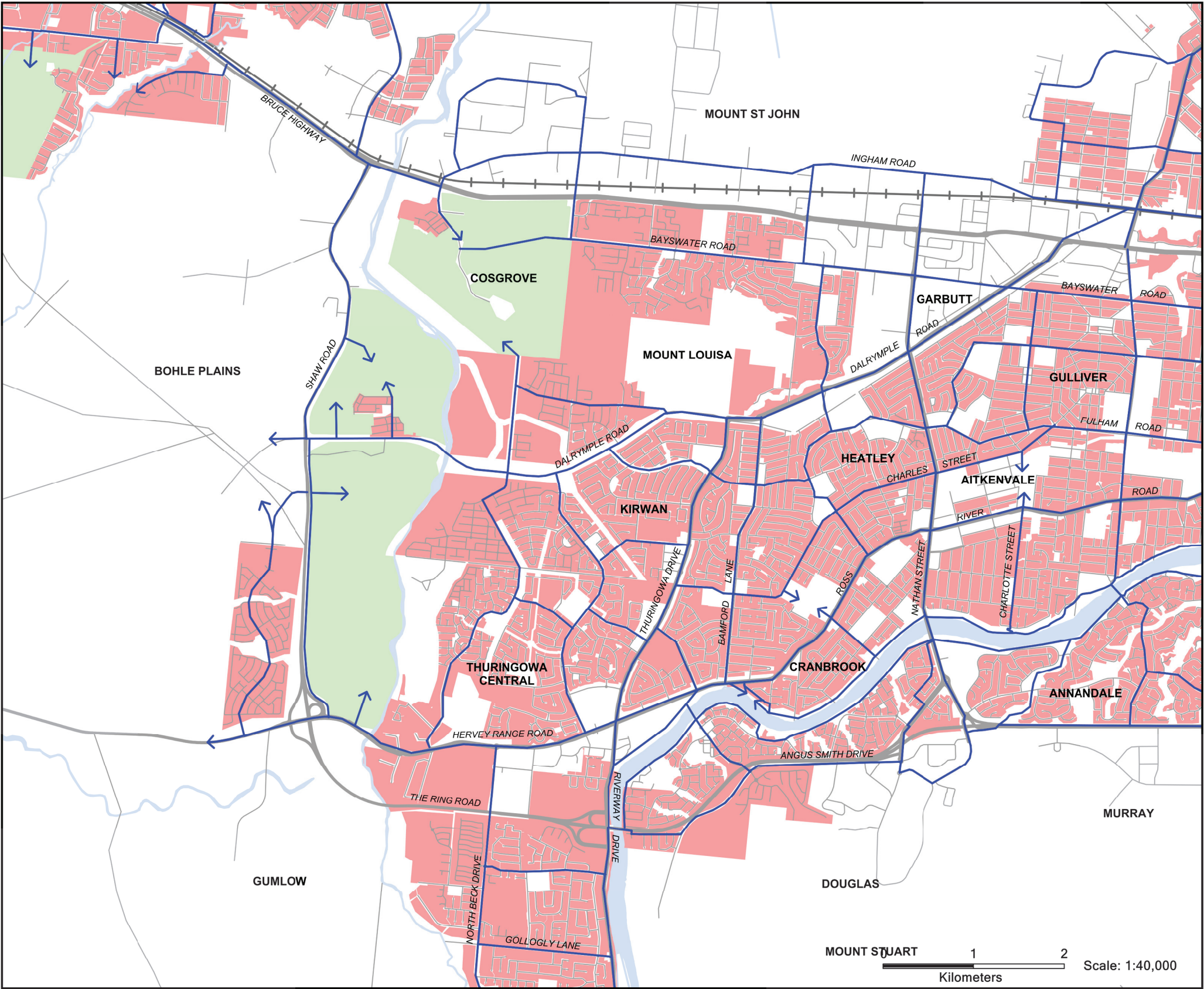
The routes shown are indicative and exist to guide further planning that will determine the precise routes and design of cycle facilities.

Disclaimer: While every care is taken to ensure the accuracy of this data, Transport and Main Roads and/or the State Government makes no representation or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.

- Tourism Route
- Principal Route
- Future Principal Route
- Roads
- Queensland Rail
- Cane Rail
- Ferry Terminal
- Waterways/watercourses
- Urban Areas
- Growth Areas





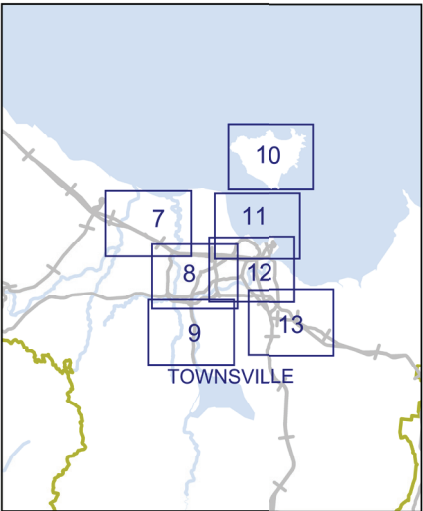


**Map 8**  
West Townsville: Principal Cycle Network

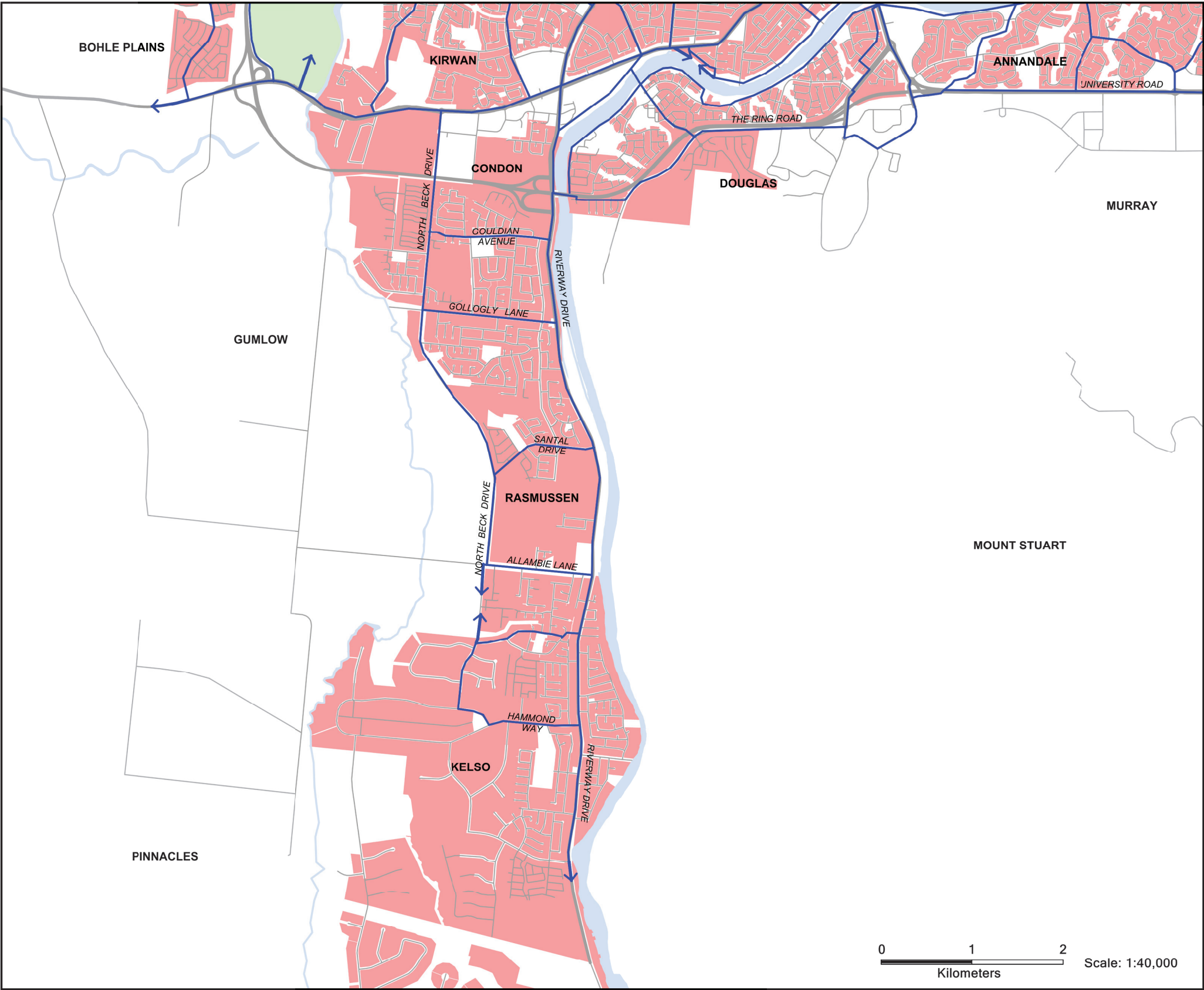
The routes shown are indicative and exist to guide further planning that will determine the precise routes and design of cycle facilities.

Disclaimer: While every care is taken to ensure the accuracy of this data, Transport and Main Roads and/or the State Government makes no representation or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.

- Tourism Route
- Principal Route
- Future Principal Route
- Roads
- Queensland Rail
- Cane Rail
- Ferry Terminal
- Waterways/watercourses
- Urban Areas
- Growth Areas







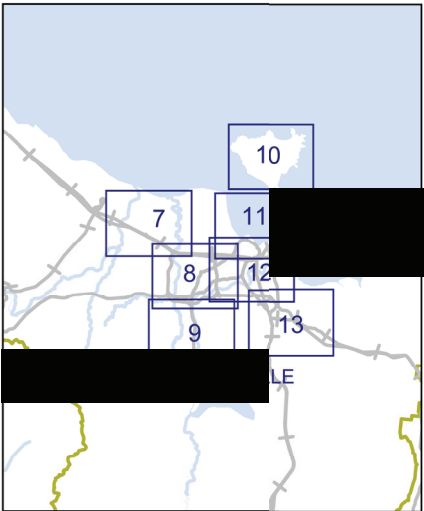
Map 9

Upper Ross: Principal Cycle Network

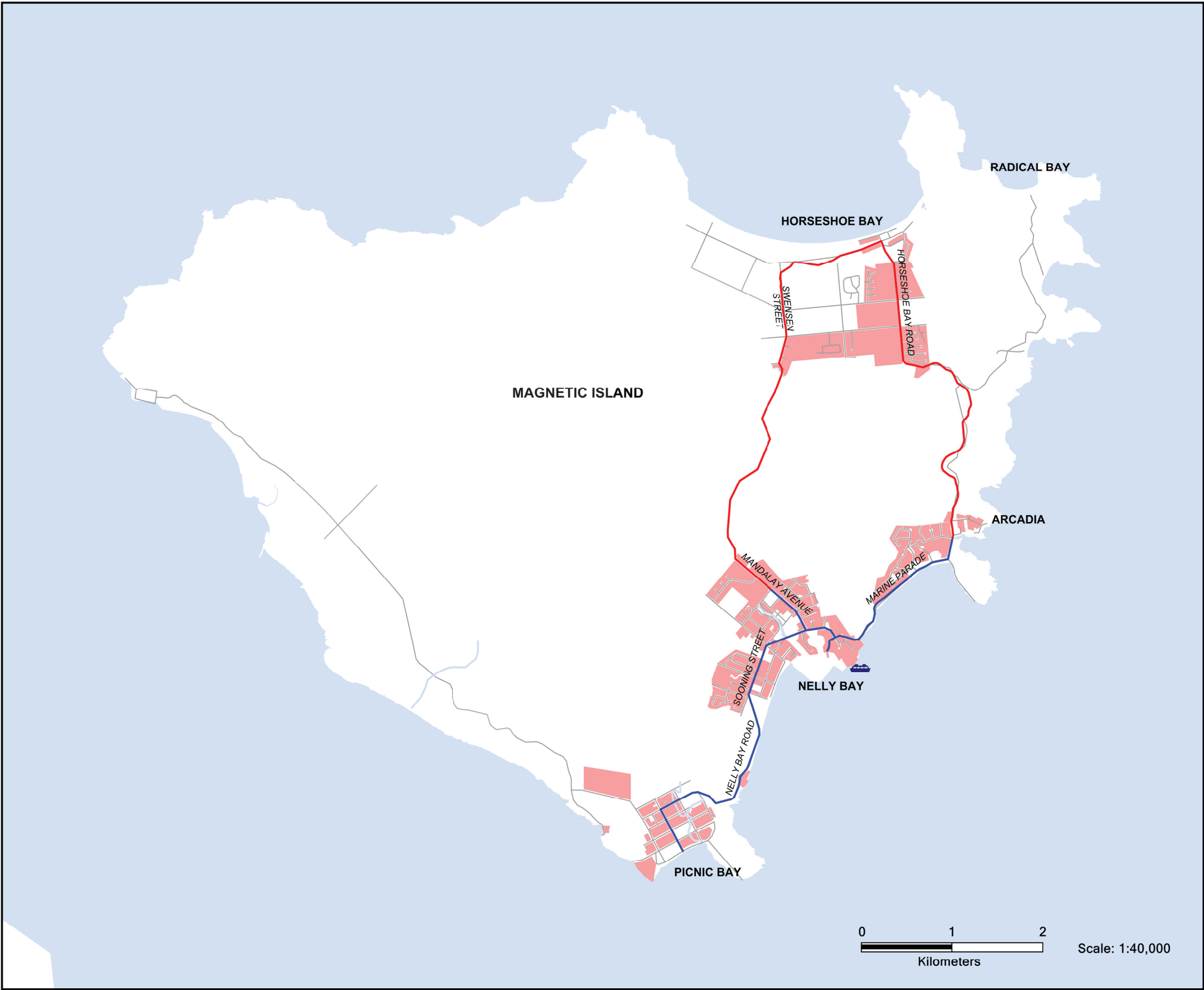
The routes shown are indicative and exist to guide further planning that will determine the precise routes and design of cycle facilities.

Disclaimer: While every care is taken to ensure the accuracy of this data, Transport and Main Roads and/or the State Government makes no representation or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.

- Tourism Route
- Principal Route
- Future Principal Route
- Roads
- Queensland Rail
- Cane Rail
- Ferry Terminal
- Waterways/watercourses
- Urban Areas
- Growth Areas







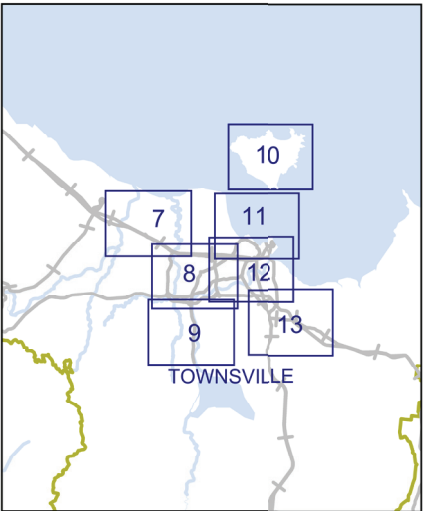
Map 10

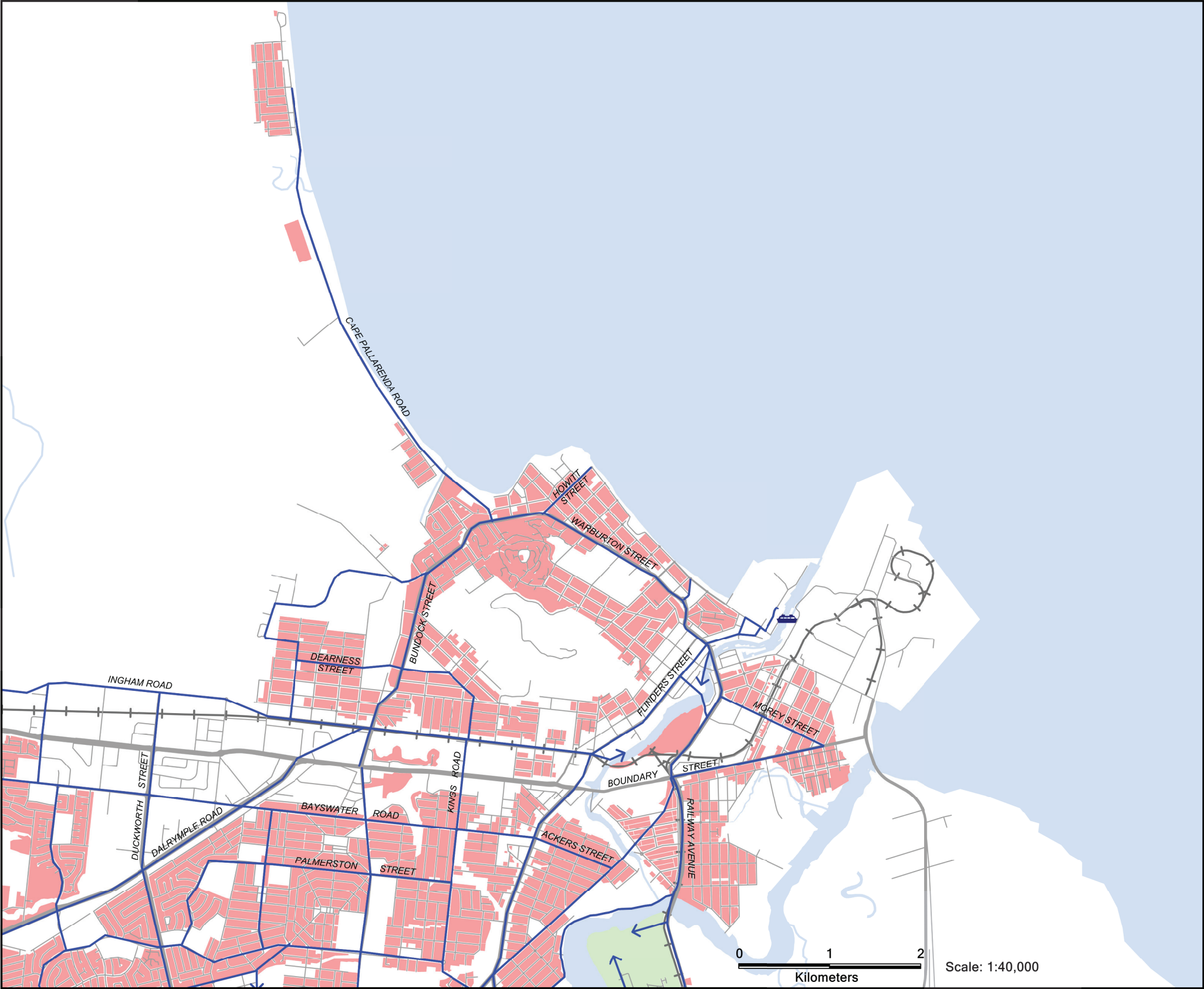
Magnetic Island: Principal Cycle Network

The routes shown are indicative and exist to guide further planning that will determine the precise routes and design of cycle facilities.

Disclaimer: While every care is taken to ensure the accuracy of this data, Transport and Main Roads and/or the State Government makes no representation or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.

- Tourism Route
- Principal Route
- Future Principal Route
- Roads
- Queensland Rail
- Cane Rail
- Ferry Terminal
- Waterways/watercourses
- Urban Areas
- Growth Areas





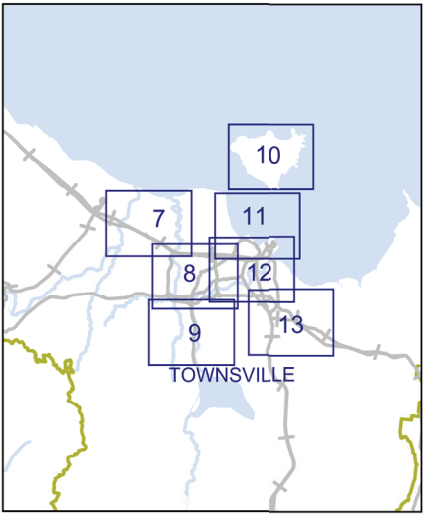
Map 11

Pallarenda: Principal Cycle Network

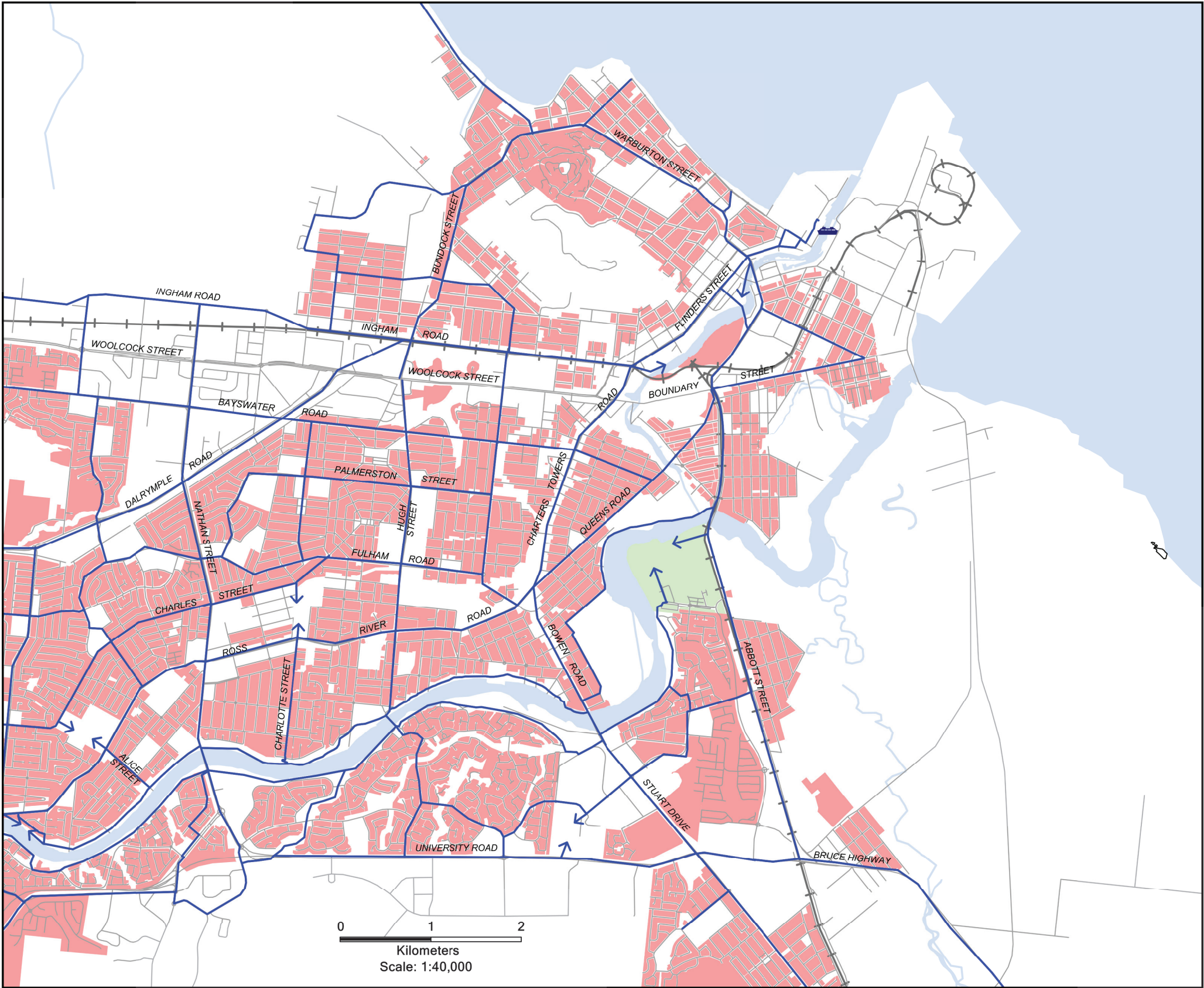
The routes shown are indicative and exist to guide further planning that will determine the precise routes and design of cycle facilities.

Disclaimer: While every care is taken to ensure the accuracy of this data, Transport and Main Roads and/or the State Government makes no representation or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.

- Tourism Route
- Principal Route
- Future Principal Route
- Roads
- Queensland Rail
- Cane Rail
- Ferry Terminal
- Waterways/watercourses
- Urban Areas
- Growth Areas







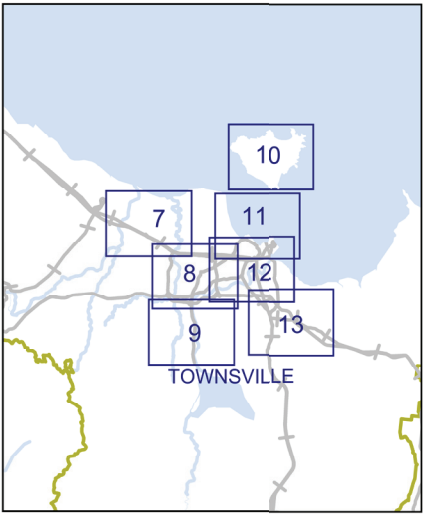
Map 12

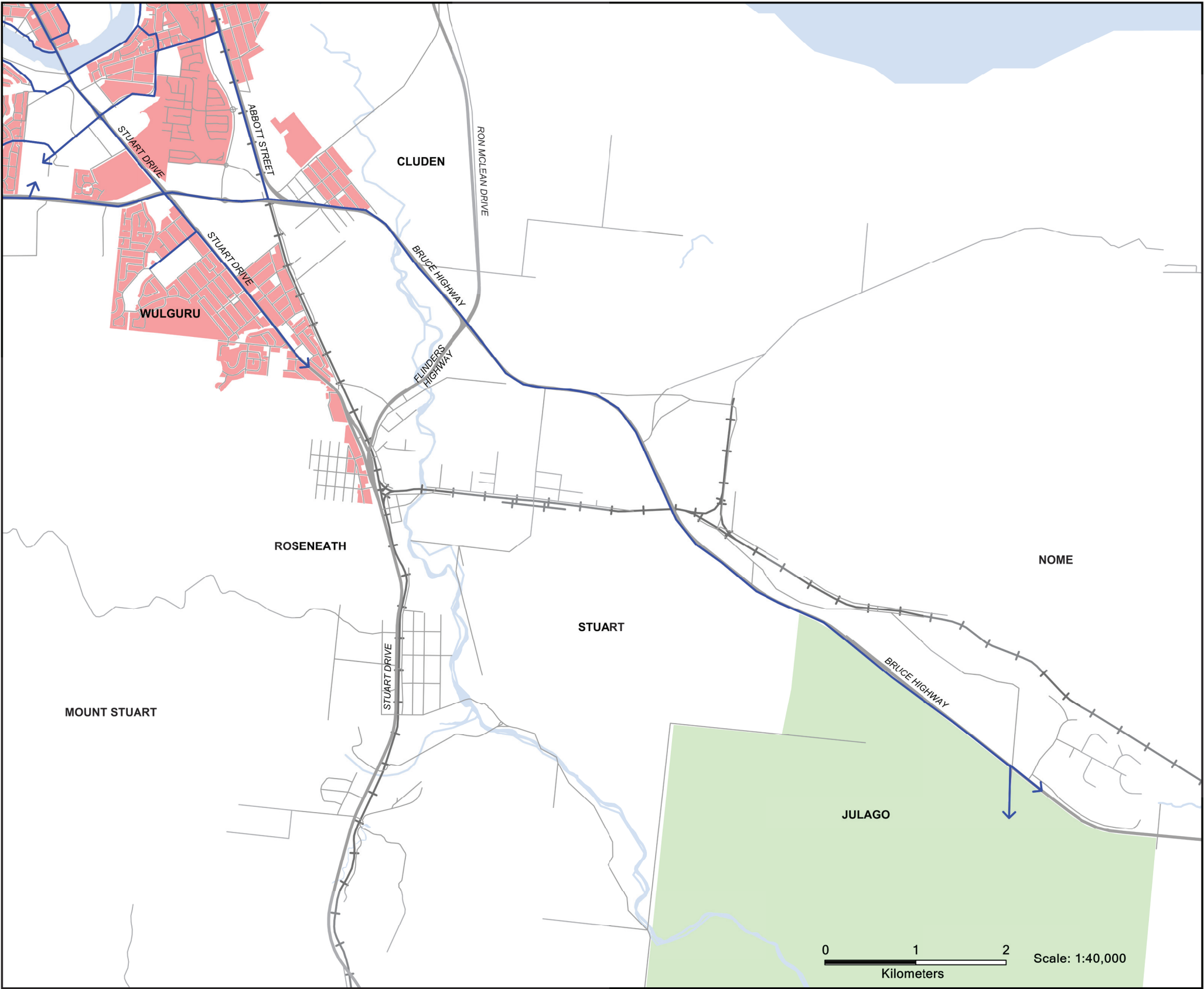
Central Townsville: Principal Cycle Network

The routes shown are indicative and exist to guide further planning that will determine the precise routes and design of cycle facilities.

Disclaimer: While every care is taken to ensure the accuracy of this data, Transport and Main Roads and/or the State Government makes no representation or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.

- Tourism Route
- Principal Route
- Future Principal Route
- Roads
- Queensland Rail
- Cane Rail
- Ferry Terminal
- Waterways/watercourses
- Urban Areas
- Growth Areas



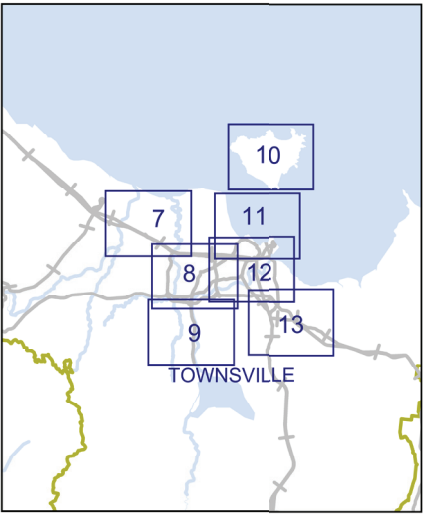


**Map 13**  
Southern Approaches: Principal Cycle Network

The routes shown are indicative and exist to guide further planning that will determine the precise routes and design of cycle facilities.

Disclaimer: While every care is taken to ensure the accuracy of this data, Transport and Main Roads and/or the State Government makes no representation or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.

- Tourism Route
- Principal Route
- Future Principal Route
- Roads
- Queensland Rail
- Cane Rail
- Ferry Terminal
- Waterways/watercourses
- Urban Areas
- Growth Areas





## 6 Analysis of routes

### Burdekin Shire Council

#### Map 1 - Brandon

The principal network in Brandon is focused around providing a safe connection to the primary school and main street. This shaped the network through the inclusion of the Bruce Highway and the provision of a safe crossing point across the North Coast Rail Line on Spiller Street.

#### Opportunities and Constraints

Consideration was given for the inclusion of the Bruce Highway between Ayr and Brandon, however it was not deemed appropriate at the present time due to lack of demand. This route should be considered in future revisions of the plan, factoring in demand and network upgrades.

#### Map 2 - Ayr

Along with Brandon and Home Hill, Ayr is an agricultural town that supports the sugar cane industry in the Burdekin. The urban area of Ayr is contained within a 2.5km radius of the town centre, resulting in a cycle friendly town.

A key priority was providing safe connections to the primary and high schools. This was relatively simple to achieve through the grid pattern of the road network. As such, each of the primary and high schools in Ayr were connected via principal routes, ensuring a safe and direct connection to the surrounding network.

Key employment nodes have been connected via a principal route on Edwards Street, providing connection to the main street and Beach Road to the sugar mill located to the north of Ayr. The main street of Queens Street was not identified as principal route as more suitable routes were identified. Residential areas have been connected by principal routes on the Bruce Highway to Rossiters Hill to the south, Chippendale and Edwards streets to the east and Ross Street and Beach Road to the north.

Future growth areas have been identified north of Gainsborough Drive and north west of Chippendale Street with future principal routes.

#### Opportunities and Constraints

The network was integrated with the Burdekin Be Active planning that council had previously undertaken. This resulted in a network supported by various cycling facilities which resulted in a fit for purpose network.

The North Coast Rail Line limits the number of crossing locations, highlighting the need for investment in the existing crossings to ensure a suitably safe network. The topography makes the town cycle friendly however flooding to the south presents potential difficulties.

As previously highlighted, consideration was given to the inclusion of the Bruce Highway between Ayr and Brandon, however it was deemed unsuitable in the current plan. Similarly the connection between Ayr and Home Hill was considered for inclusion, but was left out due the distance between Ayr and Home Hill.

#### Map 3 - Home Hill

The key priority for the Home Hill network was to provide connections to the primary and high schools supported by safe crossing points across the Bruce Highway and North Coast Rail Line. The tight urban form and grid pattern of Home Hill's road network ensured a well-spaced and direct network for cyclists.

A principal route has been provided across the North Coast Rail Line at two locations, in order to provide safe connections to the residential area on the south-west side of the Home Hill. In addition, inclusion of these principal routes provides connection to the employment node on the corner of First Avenue and Sixth Street.

#### Opportunities and Constraints

The key constraint was establishing safe connections across the North Coast Railway. This was addressed through the inclusion of two crossing locations.

### Charters Towers Regional Council

#### Map 4 - Charters Towers

The wide road reserves and flat topography make Charters Towers a cycle friendly town. All primary and high schools have been connected with principal routes to neighbouring residential areas, providing safe and direct connections for the journey to education.

Consideration was given to the suitability of Hackett Terrace, Dalrymple Road and York Street as these roads serve as heavy vehicle routes. Following consultation with the Charters Towers Regional Council, these routes were deemed appropriate for inclusion due to the wide road reserves and ample sight distances.

Two future growth areas have been identified, the first to the north east of Arthur Jones Avenue and the second to the north of Charters Towers on Macpherson Street. Future principal routes have been suitably included to reflect these growth areas.

In providing principal routes for journey to work and key attractors, the key employment area and town centre have been connected via principal routes on Gill and Rutherford Streets. One of the challenges with routes in the town centre is the on-street parking which resulted in the avoidance of Gill and Deane Streets in the town centre as principal routes.

#### Opportunities and Constraints

Low density residential development and the Mount Isa Rail Line presented difficulties in developing a direct network. Heavy vehicle movements east to west and north to south provided an additional challenge in managing conflict between the heavy vehicles and cyclists.

### Hinchinbrook Shire Council

#### Map 5 - Ingham

Ingham is an agricultural town that services the surrounding sugar cane industry. The urban footprint is largely contained within a 2 km radius of the town centre, resulting in an environment that is highly conducive to active transport. The cycle network consists of a number of north-south and east-west connections that provide a mesh width of no more than 1000 metres.

The network along Lannercost and Herbert Streets provides a connection to the main street and key business areas in Ingham.

A key priority of the cycle network was to provide safe connections to the schools in Ingham. Key connections on Halifax Road, McIlwraith Street, Marina Parade, Aitkenson Street and Menzies Street provide connections to all primary and high schools in Ingham.

The residential areas have been connected via principal routes along Davidson and Miles Streets to the south of Ingham. Additionally the principal route along Marina Parade services the residential areas to the east of Ingham.

Employment nodes have been connected by a principal route along McIlwraith Street servicing the Ingham Hospital and to Victoria Plantation providing a key employment principal route to the mill.

#### Opportunities and Constraints

The cycle network is constrained by Palm Creek, which divides Ingham north to south, and the North Coast Rail Line. In considering the provision of cycling infrastructure on Herbert and Lannercost Street, the on-street parking arrangements will need to be reviewed to ensure safety of cyclists.

The ribbon development along the Bruce Highway to the south of Ingham presents a challenge in providing suitable cycle connections as the Bruce Highway is not a desirable route for inclusion in the Principal Network at this location.

### Mount Isa City Council

#### Map 6 - Mount Isa

Mount Isa, in north western Queensland, plays an important administrative, commercial and industrial function in supporting the North East Minerals province. The urban area of Mount Isa is largely contained within a 3 km radius, providing relatively short cycling trip distances. One of the biggest challenges to active transport in Mount Isa is the climate, with an average maximum temperature of 31.8°C and an average minimum temperature of 17.2°C.

Principal routes have been identified throughout Mount Isa, connecting each of the primary and high schools to neighbouring residential areas. An important consideration in providing safe connections to the schools was ensuring adequate separation from the heavy vehicle routes which exist throughout Mount Isa.

Connections along the Barkly Highway, Markham Valley, Davis and Ryan Roads service key employment nodes in Mount Isa. Additionally a connection along Third Avenue provides a link to the major employment centre of Mount Isa Mines.

The Leichhardt River transects Mount Isa north to south ensuring the need to establish suitable connections across the river. These connections have been established via Davis Road, Alma, Grace and Isa Streets and Twenty-Third Avenue. The residential areas have been connected with principal routes on Fourth and Transfield Avenue, Doughan Terrace, Pamela & Short Streets with a connection through the centre of Mount Isa on East Street.

A future principal route has been identified to the south of Mount Isa with a future connection identified off Duchess Road.

#### Opportunities and Constraints

It was important to provide adequate separation between the principal network and the approved heavy vehicle network where possible. As Mount Isa has a largely industrial focus in support of the mining industry, this was a challenge. However, the principal network that was achieved ensured a safe, direct and coherent network. Furthermore safe connections across the Leichhardt River needed to be achieved along with suitable connections around the hill.

### Townsville City Council

#### Map 7 – Northern Beaches

Townsville is the largest Queensland city outside of South East Queensland. Townsville is the major economic and service centre for North Queensland, serving as a key freight and port hub for the surrounding mineral and agricultural industries. Population predictions estimate the city to grow from 190,000 in 2011, to between 270,000 and 300,000 by 2030.

The Townsville CBD is undergoing a revitalisation unparalleled to that seen in the city's history, which will see the CBD reaffirmed as the heart of the city through increased investment in commercial and residential development. Townsville is a multi-nodal city with key activity centres at Aitkenvale, Thuringowa Central and Hyde Park and new centres developing at Rocky Springs and North Shore in Burdell. As Townsville continues to grow and develop the principal cycle network will help provide a viable and sustainable travel alternative through the city with support of the passenger transport network.

The vision for the Townsville principal cycle network is a highly connected network between the three key nodes of, the northern suburbs of Townsville (including Burdell, Deeragun, Jensen, Mount Low and Bushland Beach), the CBD and the Townsville Hospital and James Cook University in Douglas (see Figure 3). The northern suburbs of Townsville represent a key growth area with a number development sites existing, approved and under construction. The CBD represents a key employment node of the city and the Townsville Hospital, James Cook University in Douglas represents a key employment and education node.

In supporting this vision, principal routes have been identified within the key residential growth areas providing connections to the regional centre at the town centre within Burdell and to the employment nodes within Garbutt, Bohle and the CBD. To increase the cycling mode share, particularly between these origin and destinations, infrastructure facilitating high and reliable cycle speeds are required, reducing travel time.

A key attractor exists in the form of an employment and commercial node at the North Shore town centre located on North Shore Boulevard as well as at the Northside Square located on the corner of Deeragun Road and the Bruce Highway. As the population increases in this area of Townsville, additional services will co-locate to this area of the city.

Principal routes have been identified on Veales Road, Geaney Lane and as previously mentioned, North Shore Boulevard servicing the primary and high schools.

#### Opportunities and Constraints

The large number of new housing estates and development sites located within this area presents a key opportunity for the integration of cycling infrastructure and cycle friendly urban design. Similarly as Townsville grows, it is important to establish the city wide cycle connections, particularly as mentioned between the CBD, suburbs of the Northern Beaches and the Townsville Hospital and James Cook University.

#### Map 8 – West Townsville

Connections have been provided to a number of key employment and education nodes in Townsville. These include the Bohle and Garbutt commercial and industrial areas, Thuringowa Central, Aitkenvale, the Townsville Hospital and James Cook University. The key nodes of Willows and Stockland Shopping Centres have also been connected via principal routes.

In supporting the provision of a cycle network between the Northern Beaches and the CBD, Ingham Road has been identified as part of the principal network along with connections within Kirwan and Douglas supporting the connection to the Townsville Hospital and James Cook University.

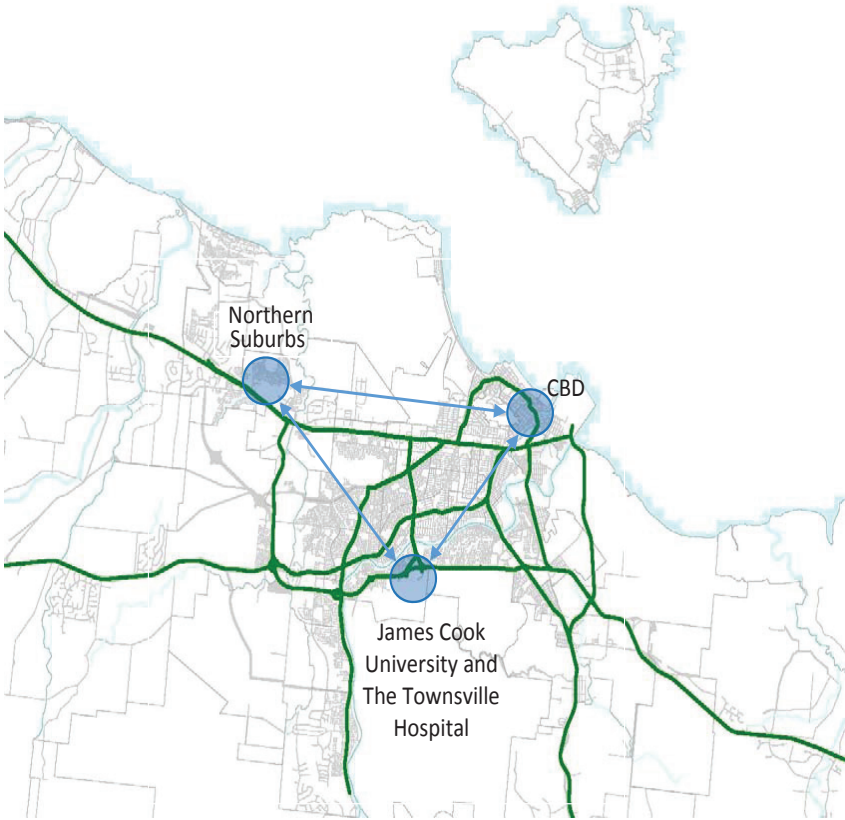


Figure 3. Townsville city wide cycle network vision.



Woolcock Street was not included as safer and more direct parallel routes were identified on Bayswater and Ingham Roads. Future development sites of Cosgrove, Greater Ascot and Kalynda Chase in Shaw and the Bohle Plains have been identified and future principal connections have been included.

**Opportunities and Constraints**

Providing a suitably spaced network was a challenge in this part of Townsville due to the existing road network. As Townsville has developed, the varying developments have established different road hierarchies with pockets of residential areas divided by major arterial roads.

**Map 9 - Upper Ross**

The Upper Ross is primarily a residential area serviced by the key shopping node just north of Allambie Lane on Riverway Drive. Principal routes on Riverway Drive and North and South Beck Drive provide a connection between the Upper Ross and the key employment and commercial attractor of Thuringowa Central.

The two primary schools and one high school are connected via principal routes ensuring that safe and direct connections exist to the neighbouring residential areas. Connections across Ross River were identified at Vickers Bridge and Federation Bridge at Blacks Weir, providing an important multipurpose route.

Future principal routes have been identified for Shetland Place and to the south of Dunlop Street, which will be reviewed for inclusion as principal route in the future updates of the plan.

**Opportunities and Constraints**

The spacing of the collector roads between Riverway Drive and Beck Drive in part dictated the shape of the network in the Upper Ross. Notwithstanding this, a suitably spaced and coherent network was achieved. The rural residential areas in the southern portion of Kelso were not included as principal network.

**Map 10 - Magnetic Island**

The principal cycle network on Magnetic Island seeks to provide a connection to the ferry terminal at Nelly Bay and the primary school nearby. This has been achieved via principal routes connecting Nelly Bay, Picnic Bay and Arcadia.

Tourism routes were identified between Nelly Bay and Horseshoe Bay and Arcadia.

**Opportunities and Constraints**

The key challenge in providing a safe connection on Magnetic Island is the topography and existing road network. Council has undertaken works to provide a safe off road facility between Nelly Bay and Arcadia.

A tourism route has been identified providing a loop connection between Arcadia, Horseshoe Bay and Nelly Bay.

**Maps 11 and 12 - Pallarenda and Central Townsville**

The network seeks to provide a safe and direct connection into the CBD, supporting the city wide connections to the CBD from the Douglas node and the Northern Beaches. Principal routes on Warburton, Eyre, Flinders and Dean Streets were included to provide connections to the CBD.

The key shopping node of Castletown is connected by a principal route on Kings Road.

A priority will be providing a suitable connection across the North Coast Rail Line and between Charters Towers Road (Causeway) and Flinders Street (West) as this serves as a key access for cyclists into the CBD. A future connection to the CBD has been identified along Ross Creek providing an option for a potential off road connection.

The airport is serviced by north and south connections via Dearness, Meenan Street and Halifax Street along with John Melton Black Drive. Ron Mclean Drive was not included as part of the principal route as it currently does not serve a journey to work, education or key attractor purpose. When this plan is reviewed, it may be included as part of a principal network linking to the development of Rocky Springs to the south of Townsville. Similarly Woolcock Street was not included as safer and more parallel routes were identified.

**Opportunities and Constraints**

In supporting Townsville City Council’s CBD Master Plan and growth target of having 30,000 people living and working in the CBD by 2030, the proposed network seeks to improve connections between the CBD and surrounding areas with enhanced cycle network access and integration.

Ross River presented difficulties in providing a suitably spaced network and direct network. This was overcome by the inclusion of the existing off-road facilities located around the river. Additionally the spacing of the existing road network constrained the overall shape of the network.

Future principal network has been included servicing the future growth area of the ‘The Village’ located off Abbott Street.

**Map 13 - Southern Approaches**

When developed, Rocky Springs will serve as a key residential and employment node of Townsville. In providing a suitable connection to this future development, a principal route has been identified along the Bruce Highway providing a journey to work connection to the CBD and Lavarack Barracks.

The key node at Fairfield shopping precinct in Idalia has also been connected by principal routes.

In connecting Wulguru, principal routes have been identified on Stuart Drive and Edison Street, providing connections to the primary school and residential areas.

**Opportunities and Constraints**

The greenfield development of Rocky Springs presents an opportunity to provide a high standard of connection to the key employment areas of Lavarack Barracks and the CBD. In future review of this plan, the internal cycle network of Rocky Springs will be reviewed to determine appropriate principal routes. As previously mentioned, Ron Mclean Drive will be reviewed for consideration as part of the principal route following the development of Rocky Springs.





## 7 Review of the plan

As shown in Figure 4, the NQPCNP will be regularly reviewed. On an annual basis, Transport and Main Roads will send an update form to all local governments and the department's regional offices seeking details on proposed planning-led alterations to the principal cycle network and details on routes that have been delivered in the past year. Information received will be included as input in future reviews of the plan.

Information requested will include:

- description of affected route(s)
- type of and description of change (alteration, removal, addition or delivery)
- description of basis for change (planning document or construction project)
- detailed justification for change against the planning principles outlined in section 3
- description of delivered cycle infrastructure and adherence to applicable standards
- maps and photos of change
- contact person for required additional information.

## 8 More resources

There are a number of resources and guides covering the development of cycle networks in Queensland, ranging from statewide target setting to technical specifications for infrastructure. Practitioners are encouraged to review the following:

- *Queensland Cycle Strategy 2011-2021*
- AUSTROADS Guides
- *Traffic and Road Use Management Manual*
- Transport and Main Roads' *A Guide to Signing Cycle Networks*, July 2009
- *Manual of Uniform Traffic Control Devices*
- Transport and Main Roads' *Cycling Infrastructure Policy*
- Transport and Main Roads' *Technical Note 128, Selection and Design of Cycle Tracks*, May 2015
- *Queensland Development Code*.

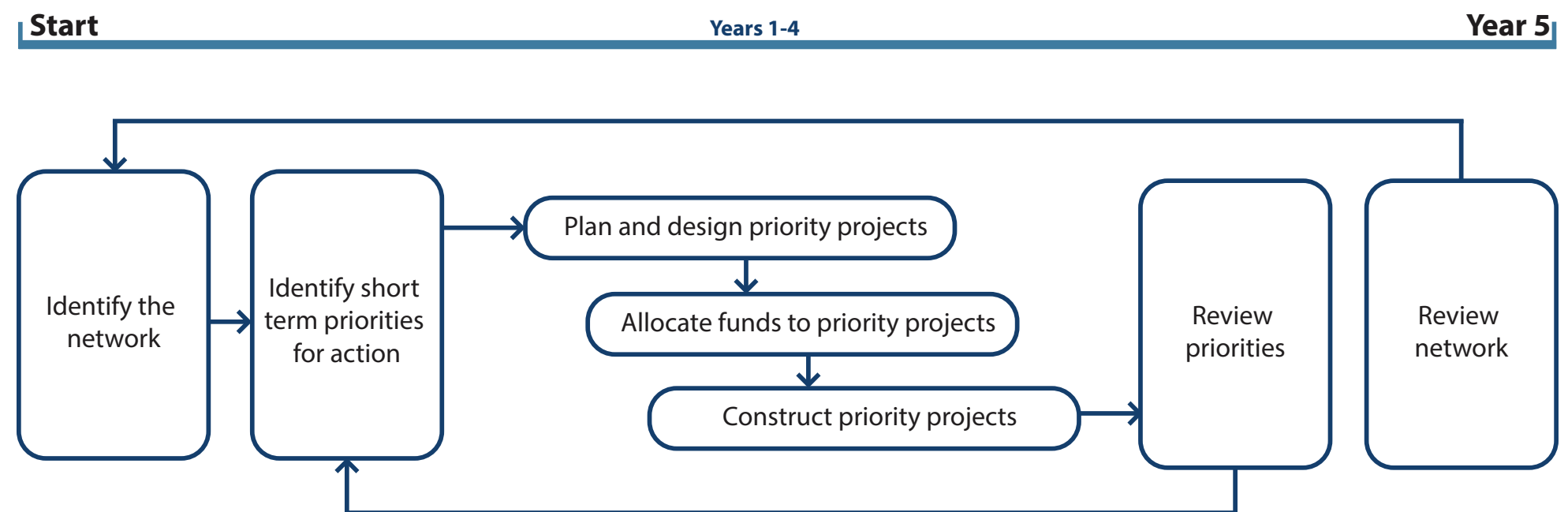


Figure 4. Indicative planning and prioritisation cycle.





