

Active Transport Strategy 2012-2031

Background Paper



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1 Introduction

This paper outlines the process undertaken by Moreton Bay Regional Council (Council) to review the region's active transport infrastructure network and determine future requirements and infrastructure provision. This paper provides a background on the detailed analysis used to determine the outputs for sections 2, "Defining User Needs" and 3 "Implementation", of the Active Transport Strategy 2012-2031.

2 Purpose

Through the Active Transport Strategy, Council has developed a series of principals and strategic outcomes that drive the provision of walking and cycling infrastructure at local, district and regional levels. These principals and outcomes direct everything from upgrading existing paths and allocating cycle lanes on roadway s, to delivering new active transport paths, providing safe road crossings at intersections and in activity centres, and influencing travel behaviour.

Vision

Active Transport in Moreton Bay provides safe, comfortable and attractive movement choices for more people more often, integral to an active, healthy, vibrant, amenable and sustainable lifestyle

This paper outlines the research and analysis that Council has undertaken to inform future active transport demand and guide investment in on and off-road paths and on-road lanes as well as support facilities and amenities along the corridors and at destination places throughout the Moreton Bay Region until 2031.

The Active Transport Strategy primarily focuses on facilities required to serve major destinations such as schools and activity centres from their catchments and to connect districts by safe and convenient linkages. This is predominantly in the form of formed paths and on-road lanes. Informal tracks and recreational trails have been considered in the catchment analysis, but do not specifically form part of the recommendations.

The primary objective of the Active Transport Strategy is to identify a prioritised list of programs and projects to be implemented by the Council over the next 20 years. The prioritised list will inform –

- The Integrated Regional Infrastructure Strategy;
- The Priority Infrastructure Plan;
- The Moreton Bay Regional Planning Scheme;
- Council's future Strategic Active Transport Program.

3 Methodology

The following methodology was used to assess the region's current active transport provision, determine desired future provision of active transport infrastructure, and prepare the recommendations of section 2 and 3 of the Active Transport Strategy.

Step 1:

Review the current strategic context, existing internal studies and best practice guidelines for active transport infrastructure provision to inform Council's vision and identify active transport principles and desired outcomes for the region.

Step 2:

Develop locally appropriate active transport infrastructure desired standards of service based on existing studies and relevant best practice guidelines to assist Council in achieving the vision and desired outcomes.

Step 3:

Develop a profile of existing Council provided active transport facilities using information available from Council databases, site inspections and through interviews with local Councillors and operational staff. Review committed projects and opportunities to incorporate active transport features in other committed works (e.g. incorporating cycle lane marking in road rehabilitation, or including paths in open space embellishment) for future active transport infrastructure in the region.

Step 4:

Apply the desired standards of service to existing Council provided active transport and committed development to identify shortfalls, constraints and opportunities in active transport facility provision on a catchment basis (regional, district and local catchment levels).

Step 5:

Identify, prioritise and estimate the cost of future active transport infrastructure programs and prepare the Active Transport Strategy.

4 Reviewing the strategic context

The Active Transport Strategy tells us how, where and when a local government will provide active transport infrastructure. The determination of the how, where and when is, in part, influenced by other Council policies and State government policies.

The Active Transport Strategy 2012-2031, is the initial review of Council's active transport network since the amalgamation of the three former local governments in March 2008. The Active Transport Strategy incorporates new Moreton Bay Regional Council policy, such as the Corporate and Community Plans and Strategic Framework, as well as significant changes to State Government policy such as the South East Queensland Regional Plan.

4.1 South East Queensland Regional Plan 2009-2031

The South East Queensland Regional Plan 2009-2031 provides the framework for a coordinated and sustainable approach to planning, development and infrastructure provision in South East Queensland. A key theme in this document is the creation of strong communities, and the need promote more sustainable travel, and to plan and co-ordinate the effective and timely provision of active transport infrastructure.

4.2 Moreton Bay Regional Council Corporate Plan

Demand for transport needs to be managed effectively into the future. This will require significant changes to land use, public transport infrastructure and services, walking and cycling (active transport) infrastructure, as well as continued investment in the major road network

"Council will plan, deliver and maintain Council owned infrastructure...in response to community needs."

4.3 Moreton Bay Region Community Plan 2011-2021

Moreton Bay Region's Community Plan was developed in 2011 and was prepared in partnership with community groups, businesses, state agencies and local residents. The Community Plan identifies a series of key themes that drive Council's future strategic direction. The key themes and targets specific to developing the Active Transport Strategy are:

Theme

By 2021 the region will consist of well-connected places and residents will embrace more sustainable travel choices and behaviour.

Target 24

Increase walking and cycling as methods of transport

Taraet 28

Increase the number of Moreton Bay residents undertaking physical activity

4.4 Moreton Bay Region Strategic Framework

Council released the Moreton Bay Region Strategic Framework in September 2012. As part of the region's new planning scheme, this document provides a vision and strategy for the Moreton Bay Region to accommodate growth and development to 2031.

The Strategic Framework considers our growing population, residential and economic precincts, as well as their influence on infrastructure such as open space, transport, water, community services and the environment.

A key component of the strategic framework is place types – the different locations where we work, live and play. The place types are a future land use model which establishes the specific planning and design outcomes expected in a variety of locations throughout the region.

The Strategic Framework identifies active transport planning as integral to achieving strong communities. The integrated Transport Theme of the Strategic Framework specifies that:

The transport system will...provide for safe and convenient pedestrian and cyclist mobility in walkable neighbourhoods..."

Under that theme, the Strategic Framework identifies 3 specific strategic outcomes relevant to the development of the active transport network:

- "Plan for a more compact urban settlement pattern and urban form to encourage sustainable travel patterns reducing the need to make trips by any motorised form...";
- 2. "Ensure all people in the region have access to a range of travel options that reflect their budget, their needs and their lifestyle."
- 3. Influence sustainable travel behaviour by creating attractive places to walk and cycle

The Strategic Framework has been a key consideration in the analysis that supports the conclusions of the Active Transport Strategy.

5 Determining desired standards of services

The desired standard of service establishes Council's expectations for the regions active transport network. The DSS provides the standards which compromise the infrastructure network and have been developed to be appropriate to the local context. These standards have been developed to align with the vision and policy objectives of the Active Transport Strategy.

5.1 Methodology

To develop the desired standards of service, Council used a combination of network analyses and active transport planning resources.

A desktop review of the existing active transport network was undertaken to understand the types, quantity and distribution of active transport facilities and their role, functional relationship with the places they served, and conformance with desired facility and amenity standards appropriate to functions and settings.

Through the desktop analysis, collaboration with internal stakeholders and research of contemporary active transport planning practice, a gap analysis was undertaken, This approach ensures that paths, cycle lanes and active transport destinations provide the facilities and amenities which the community will ultimately desire and utilise, in turn providing greater community benefit and ensuring the effective and efficient use of public funds.

The traditional approach to active transport planning in the region has been to require a minimum standard of facility through conditions imposed on land development, and through inclusion of active transport facilities as part of major capital works in transport and/or open space corridors. While leading to generally positive outcomes, this approach has not focused on the distinct needs of each community, nor on the existing and future opportunities for more people to use active transport more often. Consequently, there are considerable gaps in the open space network, especially in relation to connectivity between districts, and the safe and convenient access to significant destinations from their catchments.

The types and configurations of appropriate active transport facilities vary with the purposes of active transport trips, with the category of user, and the nature of the setting through which it passes.

As the region faces increasing population growth, economic focus (toward greater localisation of employment and access to services) and changing demographics, the role of active transport will become increasingly important, especially in areas of high levels of activity. To ensure that Council continues to provide high quality active transport opportunities and amenity, flexible standards are required so that facilities can continue to change and adapt over time to meet user needs.

A number of active transport planning resources informed the standards appropriate to the network. These include reviewing standards from other Local Governments, the "Complete Streets" guideline, and AustRoads Standards. The standards adopted were also designed to balance a reasonable expectation for active transport provision with sustainable financial planning for infrastructure delivery.

5.2 Desired standards of service rationale

The service level hierarchy for the active transport network recognises the diverse role of active transport linkages throughout the region, as well as the settings, experiences and opportunities that are required to service the needs of the community. This includes identifying a range of facility types and their representative service catchments.

Council required a range of facility attributes to meet the diverse active transport commuting, utility, sporting and leisure needs of the community until 2031. The active transport facility types must also support the vision of the Strategic Framework, reflecting the different categories of "place types". This is important as there is a distinct relationship between the role, function and amenity of active transport facilities and the nature and intensity of the destination places they serve.

5.3 User needs

Every user of the active transport network comes with different skill levels and seeks to undertake different trip purposes. Understanding ability and trip purpose provides a framework for creating a variety of appropriate active transport infrastructure and facilities. Our approach to network development and planning needs to ensure that the community has access to a range of experiences reflective of the full range of their transport needs.

5.4 User types

All active transport users are not the same. They have different expectations of experience and different levels of awareness of their surroundings and therefore require different movement environments. These differences also give rise to potential conflict when incompatible users share constrained facilities.

- Restricted/Limited The least independent users comprise a range from the very young (babies and toddlers) to the elderly. The group includes people with infirmities or disabilities, and those requiring supervision or mobility aids. They are generally limited in the distances they are prepared to travel.
- Social Social users tend to travel in pairs or small groups. They move at a pace allowing conversation. They share experiences and enjoy group activity. They are likely to makes stops along the journey to relax, enjoy the view, or partake of complementary activities such as picnicking or visiting a café.
- Active/Leisure The physically active and leisure users comprise the able-bodied. It
 may include a large pool of latent active transport users who may be inhibited from
 regularly walking and cycling by a range of factors. This category is sometimes
 described as "interested but not engaged". They represent the greatest opportunity
 for growth in user numbers, and in increase in levels of participation.
- Elite/Experienced This category includes the most fit, competent and confident users. They are capable of high speeds and longer distances. They are often willing to share road space with general traffic. While smaller in number than other potential user categories, they are often the most visible and influential.

The characteristics of facilities required to cater for each user type and to address incompatibilities between different types help to define the desirable functionality and level of service of the network.

5.4.1 Trip purposes

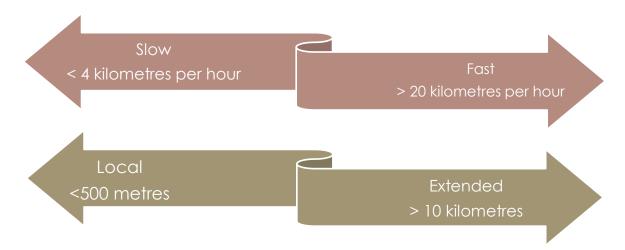
Active transport is undertaken for a variety of purposes. These purposes influence the type of experience the users seek.

- Utility Utility trips include short trips to local shops, visiting friends and running errands.
 Walking distances are usually less than 1 km, and cycling distances less than 2.5 km,
 but may be longer. These trips tend to be around residential neighbourhoods as well as to and within activity centres.
- **Educational** These comprise trips to schools. These can include parents with children. Walking trips are typically within 1.2 km. Cycling trips are typically within 2.5 km from primary schools, but may be 5 km or more for secondary schools.
- Commuter This category includes adults travelling to work and trips to tertiary education. These include walking trips to public transport that are typically less than 800 metres to a stop or station. Walk only trips may be 1.2 km in length or greater, and cycling trips may cover distances of 10 km or more.
- Sports This category includes hiking, jogging and cycling over long distances, for sports events, training or exercise. These trips may include challenging terrain and higher speeds.
- Recreational These trips are taken for enjoyment and social exercise. Time is less
 important, and visually attractive routes with low traffic volumes are often preferred.
 Popular routes follow coasts, rivers, reserves and parklands. Recreational cycling trips
 may cover long distances between townships.

Ability + Purpose + People = Experience

			4	Spectrum o	f Ability	
4	<u> </u>		Restricted / Limited	Social	Active/ Leisure	Elite/ Experiences
		Utility (shopping, recreation, visiting)	Popping to the corner shop for bread or milk	Meeting at the local café with a group of friends		Alternative transport to meetings and appointments
ses		Educational		Travelling as a group to school		Cycling to a tertiary education facility
Variety of Trip Purposes		Commuter	Accessing the nearest bus stop		Accessing the rail station or activity centre from the suburbs	Cycle journey can beat private cars in congested conditions
		Sports			A lunch time short run	Training for the Brisbane to the Bay cycle event
		Recreational	Getting outdoors for some fresh air	Family/group picnic	Sight-seeing on the way to the skate park	Exploring a new and more challenging route

Range and Speed



5.5 Active transport facility and network requirements

The characteristics of facilities required to cater for each user type and trip purpose, to address incompatibilities between different user types and trip purposes, and to respond to potential growth in demand, help to define the desirable functionality, connectivity and level of service of the network.

5.5.1 Functionality

The walking and cycling networks are functional and connected, reflecting desire lines, accessing key destinations, and meeting appropriate standards of convenience, comfort and amenity.

Functionality for walking - Each street is designed to provide for walking, with footpaths and intersection treatments consistent with its role and function in the movement hierarchy. Pedestrians generally have priority over both cycles and vehicles. The network serves 100% of walking journeys.

Functionality for cycling - On and off-road cycling facilities are planned to enable cyclists to traverse their neighbourhoods and access key destinations. Facilities are designed to be consistent with their role and function in each corridor and route segment of the movement hierarchy. The network can serve 100% of cycling journeys.

Connectivity - Provision for walking and cycling is planned to be continuous and interconnected, providing increased permeability and a choice of routes reflecting desire lines between residential areas and a variety of attractions and destinations.

Complete 5 – Principle and feeder routes reflecting desire lines from catchments to the Principal and Major Regional Activity Centres (Caboolture/ Morayfield, Strathpine, North Lakes, and Redcliffe/Kippa-Ring) are planned to be established and reinforced. Highest priority is allocated to connections within 5 kilometres of those centres. On the approach to, and within the centres, both walkers and cyclists will have appropriate high priority.

Educated ways – Principal and feeder routes reflecting desire lines to schools are to be established and reinforced. Connections within 2.5 km of primary schools and 5 km of

secondary schools are given highest priority. Young people are relatively vulnerability. Particular care must be taken to avoid conflict with heavy traffic and to address other personal safety issues.

Connect to – Walking and cycling routes connecting to major public transport stops and stations are planned with particular attention given to permeability of the catchments of each, connectivity between stations and other destination attractors, and the quality of end-of-trip facilities, especially secure and convenient cycle storage at transit nodes. This enhances active transport as a much more attractive mode for accessing public transport, reducing reliance on private vehicles.

Cycling Over Longer Distances - Safe cycle facilities are planned be integrated in association with any upgrade of narrow, high-speed vehicle routes. Where width is constrained, safe off-road facilities or diversions to available, practicable and less -trafficked alternatives may be sought. The long distances between settlements, especially in the rural coastal and western parts of the region, are too often characterised by narrow, high-speed vehicle routes inhospitable to pedestrians and quite hazardous to cycling.

Penetrating Disconnected Suburbs – Greater permeability and more direct linkages and connections are planned within and between suburbs and precincts. This will widen the choice of routes reflecting desire lines, and make travel from one neighbourhood to the next easier and safer. Suburbs, typical of many parts of the Moreton Bay region, often comprise disconnected cul-de-sacs and impenetrable perimeters, which deter active transport accessibility.

Exploring the Coast and Hinterland – Hiking trails, equestrian trails and mountain bike tracks provide access for recreation, and for appreciation of Moreton Bay's landscape qualities. Trails are classified in accordance with the class of user, and with the recreational setting, ranging from highly-occupied to relatively pristine wilderness. While the recreation trails are outside the scope of the Active transport Strategy, the active transport network provides access to these trails from catchment areas.

5.5.2 Facility types

Through analysis of user needs, and the application of best-practise active transport planning principles, a number of facility types were identified. These include:

- Shared pathways within road corridors
- Shared pathways through open space corridors (often providing shortcuts where road corridors are discontinuous or indirect).
- Segregated walking and cycling paths
- On-road cycle lanes
- Shared zones
- Bicycle awareness zones
- Intersection treatments (e.g. cycle "stop boxes", signal activation)
- Priority crossings (e.g. signal activation, zebra crossings, refuges)
- On-route facilities and amenities
- End-of-trip facilities

Appendix A provides planning and design standards and guidance for the various facility types appropriate to the various settings.

5.5.3 Functional network

The catchment areas vary in extent depending on the trip purpose and on the characteristics of the mode and of the user. As a general principle, priority is given to serving those parts of a catchment within 15-minutes' travel by walking or cycling.

The following functional network elements have been identified:

5.5.3.1 SEQ Principal Regional Cycle Network

The South East Queensland Principal Regional Cycle Network Plan proposed by the State Government provides a high level function and serves the entire region, linking the various districts and regional catchments, as well as providing connectivity across local authority boundaries. These network elements serve important regional destinations for the community, and generally follow State-controlled corridors.

5.5.3.2 Primary MBRC routes

The SEQ Principal Regional Cycle Network is supplemented by other primary routes linking district catchments and providing direct access to major destinations such as District and Regional centres. These network elements follow Council controlled roads, usually of collector or higher standard, and/or open space corridors.

5.5.3.3 Secondary routes

Secondary routes provide connectivity and permeability within districts, and link local catchments and sub-catchments. They are conveniently accessible from the local streets and paths and interconnect with primary routes to provide access to further destinations. They offer users a choice of routes to move comfortably about, catering for the purpose of the trip and the ambience desired by the user.

5.5.3.4 Local access and walkable places

Local pathways and local access streets are to be designed to be safe for pedestrians and cyclists, characterised by low vehicle speeds. These facilities provide convenient access to the secondary and primary network corridors.

Active transport destinations are generally characterised as "people places" encouraging pedestrians and cyclists to stop, socialise, and carry out their business in a walkable and amenable setting. Major destinations will include appropriate end-of-trip facilities.

5.6 Accessibility and Distribution

Shorter trips are more readily taken by active transport modes than are longer trips which depend on motorised modes. The closer and more convenient and legible the relationship between where people live and the destinations they seek, the more feasible and attractive walking or cycling will be. The setting is also important. The attractiveness of active modes is influenced by the amenity of the travel experience, and by the degree to which the mix of

uses at the destination enables many trip purposes to be achieved within easy walking distance.

Synergies between the characteristics of open space and active transport resulted in consistent catchments definitions for both networks. Creating walkable and cycle-friendly neighbourhoods with destinations, including activity centres and recreation opportunities such as local parks, became a determining feature of establishing catchment boundaries.

5.6.1 Regional catchments

Regional and inter-district level facilities were assessed against the Moreton Bay Regional Council area.

5.6.2 District catchments

The boundaries of the five district catchments were based on the urban, coastal and rural districts addressed in the Strategic Framework

Active transport catchments at the district level in urban areas are dominated by the Principal Regional Activity Centre, and the Major Regional Activity Centres. These centres are the major focus of activity in each urban district and the major attractor of active transport trips for most purposes. Active transport catchments at the district level in the rural and coastal areas are dominated by the villages, townships, or recreational attractions of each district.

5.6.3 Local area catchments

In total 32 local area catchments were created, which provided the basis for detailed active transport planning at a local level.

Active transport catchments at the local area level are dominated by the major centres as for the District level catchments, as well as by the respective District level centres, villages, townships or recreational attractions specific to each local area. Typically, the focus of activity for each local catchment will be within 5 kilometres or 15-minutes cycling distance of the majority of the population in that local area.

5.6.4 Facility catchments

Each attractor, ranging from major, district or local centre, to primary, secondary and tertiary education facility, to concentrations of employment, and to community or recreational facilities, will generate trips attracted from its own catchment of likely users. Proximity to each attractor from its catchment will influence the proportion of users who are likely to choose active transport.

Many of these facility-based catchments coincide with each other. Where concentrations of attractors are reasonably well integrated or co-located, such as at activity centres, townships and villages, catchments approximated by the centroid of the activity centre will provide a reasonable guide to the aggregate catchment of those integrated or co-located facilities.

5.6.5 Place type settings

To implement a needs-based approach to active transport facilities planning, Council adopted a flexible approach responsive to the context of each place. The nature of facilities to be provided in each place has been based on the "Place Type" settings as identified in Council's Strategic Framework. The "place types" identify the vision for future planning and development in the Moreton Bay Region. Thirteen place types are identified, with each including a combination of elements including location, liveability, local population and employment targets, as well as infrastructure and environmental values.

The standards for the varying active transport facilities across the region have been applied against the place type in which they are located. This ensures that provision of facilities is commensurate with the vision and setting of the place, and with the role of active transport within that community. For example, the "Activity centre", "urban", "next generation suburban", coastal village" and "rural township" place types are characterised as "walkable" neighbourhoods.

5.6.6 Catchment profiles

A summary of each catchment is included in the district profiles and local area descriptions provided in **Appendix B**.

The Caboolture West Investigation Area identified within the Strategic Framework is not included in the analysis and assumptions.

5.7 Design Standards

The design standards for active transport were developed on the basis of best practice models for infrastructure provision to achieve the vision of the Active Transport Strategy. The design standards have been adopted to accommodate walking and cycling as a preferred travel choice where possible. The standards also seek to achieve the necessary quality of network to attract potential users, and to provide a basis for promotion of walking and cycling as a genuine travel choice.

Appendix A provides planning and design standards and guidance for the various facility types appropriate to the various settings and proximity to major destination types.

5.8 Support facilities and amenities

5.8.1 Shade Cover

Within activity centre place types, it is desirable to have relatively continuous shade cover to protect from harsh sun and shelter from rain. This may take the form of shade trees, shelters or awnings of buildings fronting activated streets.

Along corridors outside centres, shade trees with a spacing of 15 metres will provide a degree of sun protection and reduce the urban "heat island" effect where heat absorption and re-radiation from paved surfaces often increase temperatures several degrees above ambient.

5.8.2 On-route amenities

To make active transport as comfortable and attractive as possible, it is desirable to provide support facilities appropriate to the various categories of user, to the anticipated level of use, and to the "place type" traversed by the route. These facilities include seating, water bubblers, lighting and toilets.

In "activity centre", "urban", coastal village" and "rural township" place types, it is anticipated that there will be a higher proportion of "utility" and "social" users, and a relatively high level of active transport usage. This means that these place types will have a higher level of provision of on-route facilities than is applicable to less-intensive places, or along corridors primarily used by "commuters" or "sports" users less likely to pause along their journey.

5.8.3 Way-finding

The legibility and navigability of active transport routes is a significant factor in users' choice of mode and route, and in boosting confidence, especially in the case of new users and visitors.

5.9 End-of-trip facilities

Key cycle destinations, including activity centres, schools and transit nodes, are to be planned to accommodate appropriate end of trip facilities including secure cycle storage and, where associated with high intensity of the destination's use, shower and change facilities.

6 Assessing the active transport infrastructure network

The Desired Standards of Service (DSS) has been applied to Council's existing active transport infrastructure network to identify gaps in provision and future requirements for new and upgraded active transport facilities. This has revealed a significant disparity between the characteristics of the existing network and the desired future network. A gap analysis has been undertaken to identify the scope of that disparity.

6.1 Methodology

To ensure an effective distribution of paths, lanes, crossings and other infrastructure to deliver the greatest benefit to the most potential users, a GIS model was developed to evaluate the existing network and to identify existing and future network gaps. The model was then used to prioritise the packages of projects necessary to address those gaps and to guide investment in delivering a future network to meet user needs by 2031.

6.2 Assessing the existing network

Movement corridors within Moreton Bay have been described in Council's spatial data as land parcels including road segments, intersections, and open spaces. Of these, the majority are in "urban" and "suburban" parts of the Council area. These parcels are interrogated for their contribution to the existing active transport network and their potential contribution and priority in enhancing the network.

These "parcels" have been assessed in terms of the potential and priority for implementing active transport facilities. The priority attributes for active transport projects have been used to populate a spread-sheet and associated mapping of relative spatial priorities

The GIS model uses the design standards and spatial asset layer data relevant to each road reserve and open space parcel as an input. This model was used to analyse the shortfalls in active transport provisions based on a range of physical attributes and functional parameters.

6.2.1 Existing spatial attributes

A spread-sheet and associated mapping was prepared to document relevant spatial attributes of road reserve and open space parcels as well as the existence and characteristics of pathways and lanes. Parameters addressed included:

6.2.1.1 Road characteristics

Status in road hierarchy, reserve, formation, seal and verge width, number of lanes, lane widths, on-road parking, intersection or crossing spacing.

6.2.1.2 Active transport characteristics

Existence of paths, path width, designated cycle lanes, priority crossings, tree planting, onroute facilities and amenities.

This has enabled an assessment of whether facilities already provided were adequate and what spatial opportunities exist to accommodate upgrades or new facilities that may be

identified as being required. The location of major destinations including activity centres, educational establishments, employment concentrations, and population concentrations were mapped.

6.2.2 Assessment of facilities against desired network characteristics

By applying the recommended design standards appropriate to the context of each parcel, it was possible to determine shortfalls in existing facilities. As well as determining the physical attributes, other performance parameters such as proximity to major destinations, conformance with "desire lines" to those destinations, connectivity between communities, directness of path, and choice of routes were taken into account.

6.2.3 Gap analysis

The above assessment was mapped to highlight missing or substandard facilities, and scored to indicate the extent to which the existing provision falls short of the desired standards or performance parameters.

6.3 Potential growth in user numbers

The potential increase in active transport participation is based on a combination of latent demand by those who are currently choosing other modes or deferring travel, changes to land use and travel patterns through "place-based" planning, and the underlying population growth.

6.3.1 Latent demand

Most trips of a short enough length to be traversed in 15 minutes by walking or cycling have potential to be taken by active transport. Modelling will indicate that the proportion of trips of less than 1.2 km (5 minutes' walk) and less than 5 km (5 minutes' cycle) are a significant proportion of trips.

6.3.2 Land use changes

The "place-based" pattern of future development proposed by the Strategic Framework will result in greater self-containment of employment and of access to goods and services. This concentration, co-location and greater localisation of activities will, in turn, increase the proportion of trip purposes that can be satisfied within walking or cycling distance.

Increasing the level of self-containment of employment within the Moreton Bay Region from current levels to a target of 70% will reinforce this localisation of trips.

Modelling indicates that, by 2031, these changes will result in the proportion of trips of less than 1.2 km (5 minutes' walk) and less than 5 km (5 minutes' cycle) increasing. Over time, this will attract more people to walk and cycle to meet their daily needs.

6.3.3 Population growth

The predicted population growth for the region is an additional 147,740 persons by 2031. Table 1 shows the growth by district catchment in 5 year increments from 2011-2031.

Table 1 – Population Growth – 5 year increments 2011-2031

Population Assumptions					
Strategic Framework districts	2011	2016	2021	2026	2031
Caboolture City	68,901	82,510	90,263	95,828	109,892
Bribie and Coastal Villages	31,238	32,895	34,054	34,173	34,333
MBRL Corridor	163,184	192,076	214,760	230,474	237,468
Western Rural and Mountains	31,620	34,340	35,578	36,536	38,088
Strathpine City	86,709	94,627	100,466	105,115	108,990
Total	381,651	436,448	475,122	502,125	528,770

Table 1 - Population growth to 2031 – Moreton Bay Regional Council population assumptions

6.4 Determining priority elements

The characteristics of each parcel making up desired active transport corridors was scored against relevant criteria to inform the scope of potential project packages. The relative scoring was mapped to guide the prioritisation of projects for facility planning and investment.

6.4.1 Proximity analysis -

The on-route distance from each parcel to critical destinations was recorded and scores given for relative proximity to those destinations.

6.4.2 Linkage and connectivity analysis –

The degree to which each parcel potentially provides a direct connection between catchment origins to significant destinations was recorded and scores given for relative connectivity.

6.4.3 Desire lines analysis -

A ratio was calculated between the actual path length and the "as-the-crow-flies" distance between origins and destinations, with highest scores given to parcels on routes with ratios closest to 1, indicating the most direct routes.

6.4.4 Route choice analysis –

The existence of alternative routes was recorded and scores given for parcels on routes that offered the greater choice, reflecting higher degrees of permeability and connectivity.

6.4.5 Missing link analysis –

The opportunity for infrastructure provision in any parcel to address critical gaps in the continuity of the overall active transport network has been recorded, and scores given for the most strategic opportunity.

6.4.6 Cumulative spatial priority score -

For each parcel making up desired active transport corridors throughout the network, the cumulative scores of from the above analyses were compiled, giving an indication of the

relative priority of undertaking packages of projects which promise to make the greatest contribution to achieving the active transport vision.

The cumulative priority assessment maps for each district are illustrated in **Appendix B Community Profiles**

6.5 Project scoping and costing

6.5.1 Initial project identification

From the cumulative spatial analysis and priority scoring, a representative sample of high priority project packages were selected for more detailed examination. These selected project packages were provided to a specialist consultant for scoping and costing. The consultant described each package in terms of the existing conditions and issues to be addressed, the nature of intervention proposed, and illustrations of the possible recommended solutions. The documentation of project scoping is included as **Appendix C – Project Scoping**.

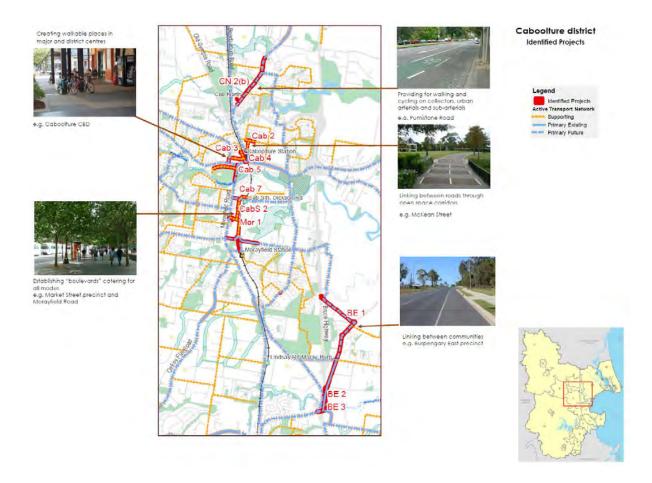
The scoped and costed projects are identified by locality and illustrated by district mapping.

The scoping and costing of these selected project packages provide a guide to the standard of facility envisaged by the Strategy, and act as a guide to the budget implications for the Capital Works Program and the Priority Infrastructure Plan. The findings of the consultancy can also be extrapolated to inform the inclusion of other projects and packages in the delivery program over the next 20 years.

These projects have been selected to provide significant strategic benefits toward the strategic vision for active transport. However, by themselves, they will not result in a fully cohesive and connected network across the whole of the Moreton Bay Region. In addition to these selected projects, it is the intention of the Strategy to progressively deliver new or upgraded facilities in respect of other primary and secondary routes to complete the network to the desired standard of service.

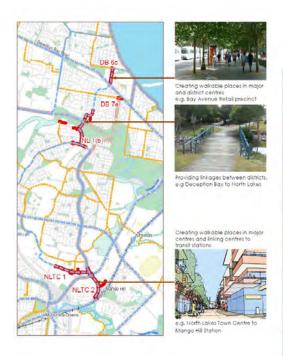
6.5.1.1 Example 1 – Caboolture district

Location	Map reference	Future infrastructure description	Estimated year of completion	Trunk/non- trunk	
Caboolture District					
Caboolture North	CabN 2(b)	Pumicestone Road corridor	2014/15	Trunk	
Caboolture	Cab 2	McKean Street precinct	2014/15	Non-trunk	
Central	Cab 3	Station precinct west		Trunk	
	Cab 4	James Street precinct		Trunk	
	Cab 5	Hasking Street precinct		Trunk	
	Cab 7	Elliott Street corridor	2016/17	Non-trunk	
Caboolture	CabS 2	Market Street precinct	2018/19	Trunk	
South/ Morayfield	Mor 1	Buchanan Road rail overpass	2021/22	Trunk	



6.5.1.2 Example 2 – North Lakes, Redcliffe and Moreton Bay Rail Line district

Location	Map reference	Future infrastructure description	Estimated year of completion	Trunk/non- trunk			
North Lakes, Redo	North Lakes, Redcliffe and Moreton Bay Rail Corridor District						
Burpengary	BE 1	Coach Road, Burpengary East		Trunk			
	BE 2	Buckley Road, Burpengary East		Trunk			
	BE 3	Bruce Highway crossing, Burpengary east		Trunk			
North Lakes/ Mango Hill	NL 1(b)	Linkage North Lakes to Deception Bay		Trunk			
	NLTC 1	North Lakes Drive precinct		Trunk			
	NLTC 2	North Lakes to Mango Hill station link		Trunk			
Deception Bay/ Rothwell	DB 6(c)	Bay Avenue Retail precinct, Deception Bay		Trunk			
Redcliffe	Red 1	Sutton Street precinct		Non-trunk			
Peninsula	Red 2	John Street precinct		Non-trunk			
	Red 4	Queens Beach South precinct		Trunk			

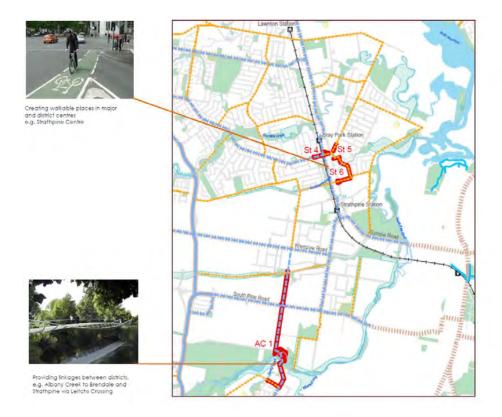




North Lakes, Redcliffe, Moreton Bay Rail Corridor district

6.5.1.3 Example 3 – Strathpine district

Location	Map reference	Future infrastructure description	Estimated year of completion	Trunk/ non-trunk	
Strathpine District					
Strathpine North	St 4	Samsonvale Road corridor, Bray Park		Trunk	
	St 5	Bells Pocket Road precinct, Bray Park		Trunk	
	St 6	Raynbird Park precinct Bray Park to Westfield Strathpine		Trunk	
Albany Creek	AC 1	Leitchs Crossing Albany Creek to Brendale link		trunk	







6.5.2 Projects identified in Networks and Corridors deficiency analysis

The **Networks and Corridors Strategy** augmented that work in the context of the wider transport network, identifying deficiencies of pathways, pedestrian crossings, cycle provisions, median widths, shading, etc..

In the **Networks and Corridors Strategy** investigations, consultant Arup used GIS data and aerial photography to the greatest extent possible. To keep the level of detail of the analysis relatively simple, relevant assumptions were made for many attributes.

After identifying gaps across the entire Council area, two additional analyses were conducted for the areas within one and five kilometres of activity centres, respectively. A separate set of gaps were identified for each of these catchment areas. In addition, catchments for walking to schools, bus stations and rail stations were evaluated to identify potential accessibility gaps. In contrast to the activity centre gap analyses which were conducted within "as-the-crow-flies" radii of the centre, this analysis was based on actual "as you walk" distances across the network. This analysis used 400 metres as a reasonable walking distance from bus stations and 800 metres as a reasonable walking distance from rail stations to identify active transport gaps.

The gaps were assessed in terms of the number of segments, and where possible, also in terms of the total length of segments. Pedestrian crossings were evaluated based on their density or number of crossings per length of segment. (See **Table 7**, Networks and Corridors Strategy, Appendix B - Arup Technical Note 2013)

Data analysed by Arup in the Networks and Corridors Study was summarised as a function of the entire Council area, as a function of a five kilometre catchment around activity centres, and as a function of a one kilometre catchment around activity centres. The gaps noted indicate the relative lack of historical investment in active transport compared to the priority historically placed on roadway investment. (See Table 23, Networks and Corridors Strategy, Appendix B - Arup Technical Note 2013)

From this gap analysis, priority projects were identified and cost estimates calculated for implementation. In addition to the projects assessed by AECOM, these projects identified by Arup were also included in the **Active Transport Strategy - Appendix B**,

7 Determining future programs and actions

The Program and Action Plan which forms Appendix B to the Active Transport Strategy, is a prioritised list of projects that Council will undertake to deliver the open space vision. The "Program Action Plan" is Council's direct response in meeting the strategic objectives ("we will") identified in the strategy's themes for meeting user needs.

A range of programs will be undertaken, bringing together policy direction and planning contained in the Strategy. These programs build on the current projects and programs undertaken by Council and the community and direct future priorities in open space infrastructure planning and management.

With the completion of this background paper and the appendices within, many of the actions identified will be complete.

7.1 Cost Factors

Cost factors for various priority elements assist in establishing value propositions for prioritisation and for informing budget processes. In turn, these value propositions underpin subsequent priority infrastructure planning, capital works programs, grants submissions and operational programs.

Such factors include:

- Existing surfaces (sound pavement, pavement due for re-surfacing, sound formation, un-formed with minimal constraint, unformed with slope, geotechnical, vegetation, utility or other constraints)
- Width (where formation and/or surfacing is required)
- Traffic loadings (active transport only, maintenance access, or vehicle traffic)
- Embellishments (furniture, signage, lighting, tree-planting, etc.)

The work by the consultants to scope and cost selected projects has provided a basis for extrapolating cost factors across comparable projects and packages.

7.2 Funding Sources

Funding for Active Transport elements is derived from a range of sources, depending on role in the network, responsibilities, and governance arrangements. These include:

- Developer-provided facilities integral to standard obligations, through mutual agreements, or imposed as development approval conditions, in accordance with scheme codes,
- Defined trunk facilities subject of Priority Infrastructure Plans funded through mandatory developer contributions,
- Local area enhancement (potentially subject of "benefitted area" levy)
- Council capital and operational works programs
- Grants or special purpose programs of State or Commonwealth (these often incorporate Council co-funding)
- Facilities provided by State or Commonwealth as part of other programs (Road improvement programs on State-controlled roads, Nation-building investments e.g. associated with the Moreton Bay Rail Link, etc.)

Historically, funding for active transport has generally been insufficient to provide the nominated "level of service" (or desired functionality) of pathways and cycle provisions, nor of the associated amenity and enhancements, to meet desired standards or community expectations.

The degree to which active transport can reduce car-dependence will support business cases for increasing investment in active transport. Increased investment in active transport will defer or avoid significantly greater levels of cost, which would otherwise be incurred in alternative car-based initiatives.

The degree to which active transport provides enhances social, health and economic outcomes will justify increased investment to secure community benefits not otherwise available.

8 Prioritisation

The methodology for the prioritisation of projects for the active transport network is based on a 3 stage process involving demand analysis, opportunities for cost savings through bundling like projects project and readiness (ie; the time it takes for Council to progress with the relevant phase of the facility development).

Diagram 1 Prioritisation Methodology (Active Transport)



Packaging Opportunities

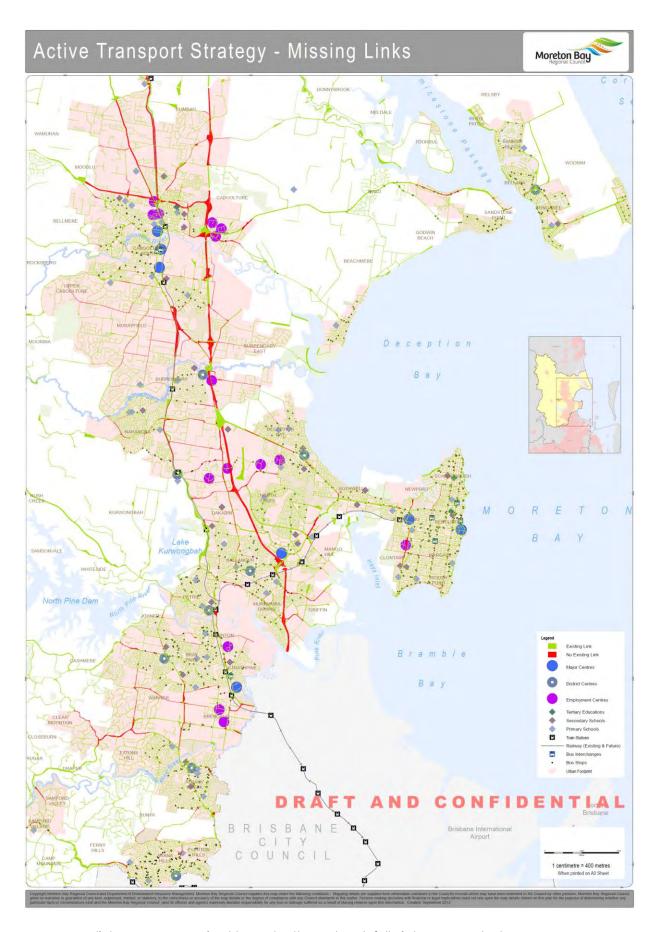
Project Rediness

Integration with other network outcomes through the Integrated Regional Infrastructure Strategy (iRIS) will incorporate other relevant considerations such as financial sustainability and broader strategic outcomes when considered against Council's long –term financial forecasting.

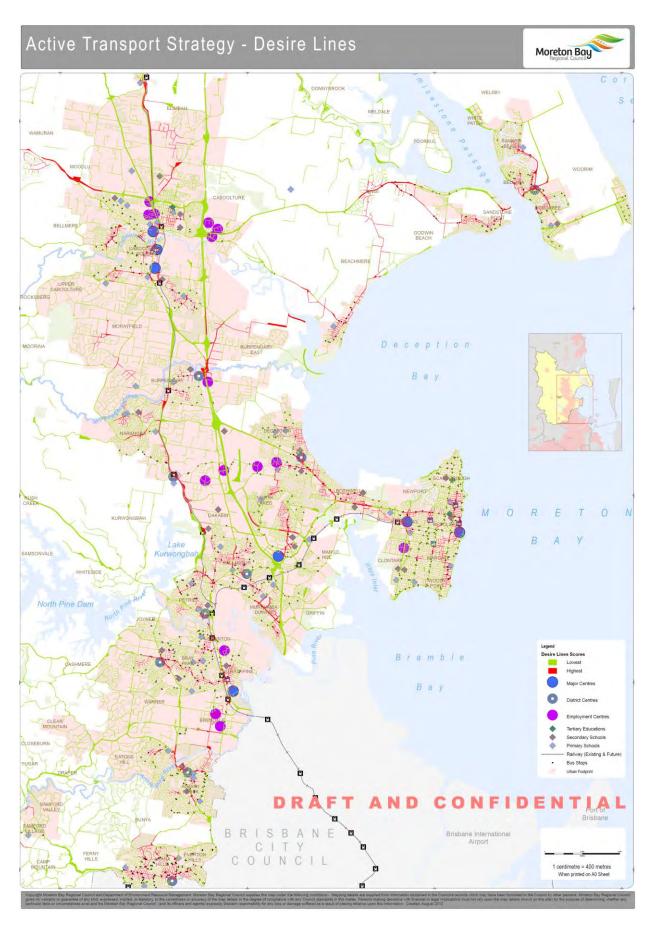
8.1 Phase 1 - Gap Analysis

The catchment analysis determines whether a project is to cater for an established shortfall or required as new development progressed within the catchment. The expected rate of development within the catchment, as prescribed by the Urban Growth Model, supported the prioritisation of new facilities, whereas upgrades to existing facilities were generally guided by a combination of Master plans and discussions with the local Councillor and key staff.

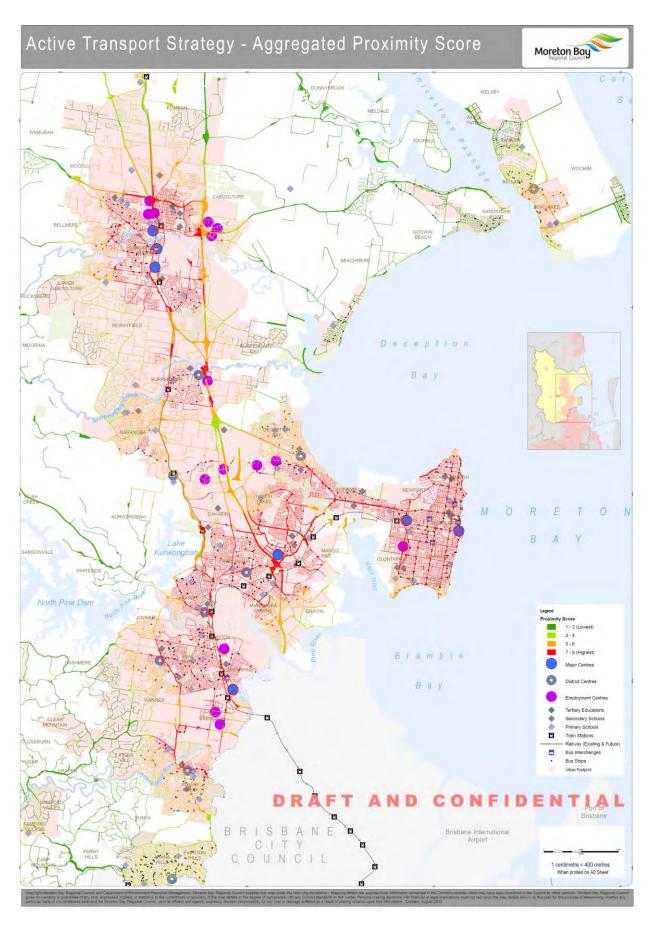
There is a significant disparity between the characteristics of the existing network and the desired future network. A gap analysis has been undertaken to identify the scope of that disparity. To inform the Gap Analysis, Council had mapped the desired standards of facility provision overlaid on Council's road and open space networks to identify instances where the key linkages in the active transport network are missing.



Many new linkages are required to make the network fully interconnected.



Critical network links will more directly reflect routes where people want to travel.



Priority is given to facilities that are close to destinations where usage will be highest.

It is noted that the desire lines and the proximity to destinations are consistent with the concepts of State Government strategies promoted as "complete 5" (which prioritises network facilities within 5 kilometres of significant active transport destinations), "educated ways" (which prioritises facilities providing access to schools from their active transport catchments, and "connect to" (which prioritises active transport access to public transport stops, stations and interchanges).

In order to address other factors inhibiting people from walking and cycling, Council, in association with user groups, will identify key barriers or locations where perceptions of fear and trepidation also need to be addressed through passive surveillance, activation of frontages, and through route and design enhancements.

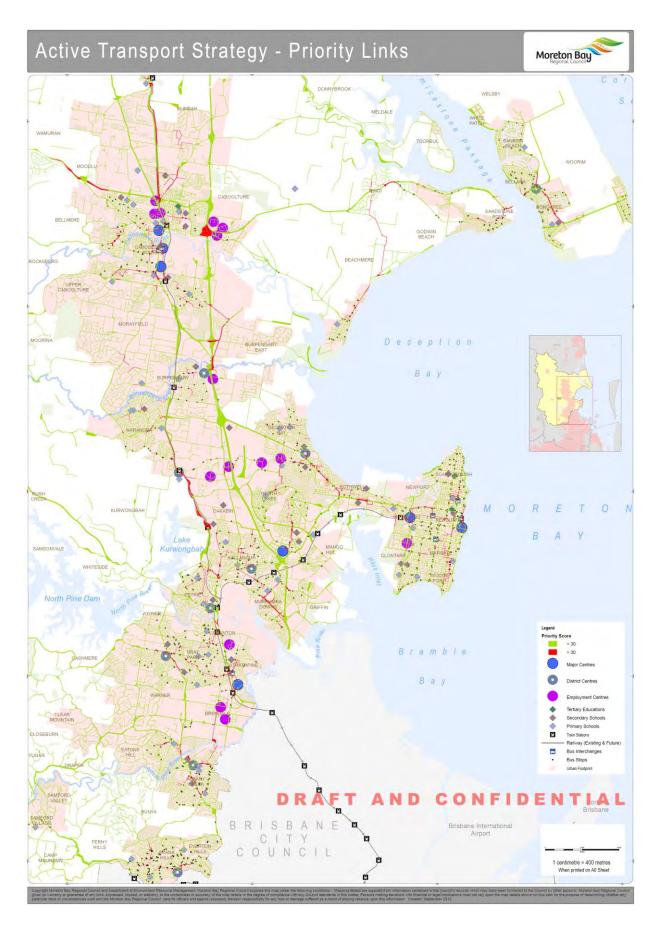
8.1.1 Spatial Analysis

Movement corridors within Moreton Bay have been described in Council's spatial data as land parcels including road segments, intersections, and open spaces. Of these, the majority are in "urban" and "suburban" parts of the Council area. These parcels are interrogated for their contribution to the existing active transport network and their potential contribution and priority in enhancing the network.

These "parcels" have been assessed in terms of the potential and priority for implementing active transport facilities. The priority attributes for active transport projects have been used to populate a spreadsheet and associated mapping of relative spatial priorities. The dominant "themes" of this assessment include:

- Proximity to significant destinations (centres, schools, employment nodes, etc)
- Linkages and connectivity
- Degree of alignment with travel desire lines
- Availability of route choice
- Missing link of the Principle Cycle Network Plan, and
- Other missing links.

The active transport infrastructure proposal priorities under these themes are derived from a combination of criteria The cumulative score of the aggregated criteria identify relative spatial priorities of all land parcels on existing and potential transport corridors to inform recommendations for infrastructure enhancement and investment.



The spatial analysis informs the selection of priority packages for project scoping.

Arup consultants have also undertaken a parallel **Gap Analysis** as part of their background investigations for Stage 1 of the MBRC Corridor and Network Strategy.

This analysis shows that vehicle capacity on roads is very well catered for. However, pathways, cycle provision, and pedestrian crossings, as well as opportunities for shade trees, are relatively poorly provided for. This indicates a need to re-direct infrastructure investment into greater support for active transport facilities.

	As Function of # of Segments			As Function of Total Length		
Attribute	Standard	Below Standard	Deficient	Standard	Below Standard	Deficient
Pathways	0%	2%	98%	7%	34%	59%
Pedestrian Crossings	25%	17%	58%	not calculated		
Cycle provision	1%	3%	96%	N/A	N/A	97%
Verges	95%	5%	N/A		not calculated	
Medians	12%	13%	N/A		not calculated	
Shade Trees	4%	29%	66%		not calculated	
Capacity	96%	3%	1%	96%	3%	1%

Arup's work also included identification of Opportunities for additional facilities and enhancements (e.g. verge widths sufficient for pathways, pedestrian crossings, median space for shade planting, etc.) with respect to segments of collector and higher status road corridors.

This work complements Council's spatial analysis. The combination of these investigations informs the prioritisation of interventions, and helps guide future investment in effective active transport facilities.

Condition Aspect	Criteria and Coding	
Pathway availability and condition	0 – none available 1 – available – partially available 2 – available – available along whole length	
Nature strip/highway verge condition	0 – none available 1 – available – limited opportunities for embellishment 2 – available - provides some opportunities for embellishment	
Provision of shade tree planting	0 - none 1 - yes - average amount of plantings (more than 30 metres apart) 2 - yes - abundant plantings (12-15 metres apart)	
Provision of marked on-street cycle lanes	0 – none 1 – yes – one side of the street only 2 – yes – both sides of the street	
Central medians and intersections	0 – none 1 – has normal width central median 2 – has exceptionally wide central median	
Shoulders	1 - none 2 - existing gravel or very poor condition 3 - existing sealed - on-street parking legally allowed 4 - existing sealed non parking (e.g., redundant, unnecessarily hatched)	
Number of lanes	1S - one in each direction 1A - one lane (one way street) 2S - two lanes each direction 2A - two lanes in one direction, one lane in the other direction 3S - three lanes in each direction 3A - three lanes in one direction, two lanes in the other direction 4S - four lanes in each direction 4A - four lanes in one direction, three lanes in the other direction	
Intersections	 Number of Signalised intersections per segment Number of Roundabouts per segment Number of priority intersections per segment (where link in question is the major movement) Number of priority intersections per segment (where link in question is the minor movement) 	
Pedestrian crossings	Signal crossing count Zebra crossing count Uncontrolled crossing count Refuge crossing count Side street crossing count	
Freight routes	0 – No 1 - Yes	

8.1.2 Land Use and Accessibility Mapping (LUPTAI)

Accessibility is one of the critical issues of transport and land use planning. It reflects the ease of reaching needed/desired activities. It is becoming increasingly important in making sound and sustainable land use and transport decisions.

Accessibility indexing is an important tool in evaluating land use patterns and transportation services, in predicting travel demands, and in allocating transportation investments. LUPTAI is a GIS-based land use and transport accessibility indexing model, measuring and mapping levels of accessibility to basic community services (e.g. health, education, retail, banking, employment) by walking and/or public transport. The LUPTAI accessibility mapping for major centres is attached as **Appendix D**.

Moreton Bay has partnered with the Department of Transport and Main Roads to undertake LUPTAI assessment of the existing active transport network, and to assess the likely improvement in accessibility resulting from recommended packages of priority packages of active transport infrastructure packages.

8.1.3 Strategic Modelling

The MBRC Strategic Transport Model 2031³, now being developed, will identify those trips which are short enough to be realistically undertaken as walking or cycling trips. The proportional assignment of active modes to these trips, in comparison to longer trips which are more car-dependent, will generate a gradation of mode share between localities.

This process will provide a guide to the expected mode share targets necessary in localities characterised by these short trips (e.g. near major and district centres, and in proximity to more "urban" place types) to achieve the global mode share across the Moreton Bay Region sought by the Connecting SEQ and the Moreton Bay Integrated Transport Strategy⁵ (MITS) strategies. This will also enable calculations to be made of potential trip volumes by walking and cycling in critical locations, and assess the capacity of proposed facilities to accommodate potential volumes

8.2 Phase 2 – Packaging

The packaging of like projects, such as the introduction of cycle lanes in conjunction with road re-sealing or rehabilitation projects, provides opportunities for Council to save considerable expenditure over time. Through phase 2 these projects are identified where they generally fall within a 5 year increment as defined by the gap analysis.

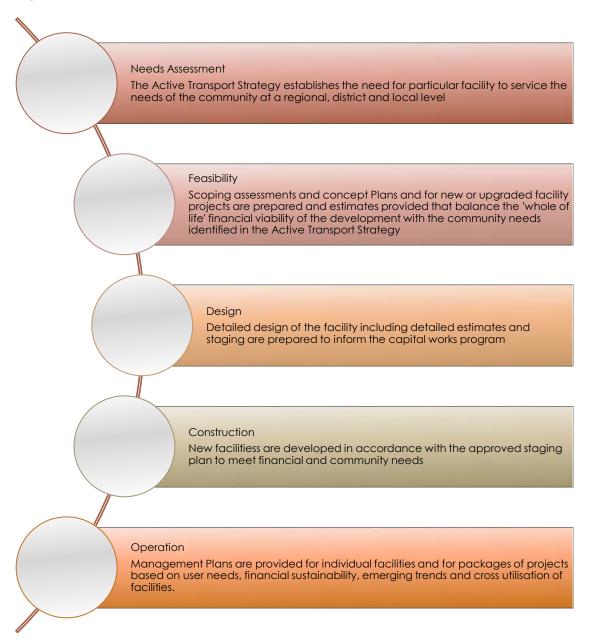
These individual projects were then considered as an integrated package and that package prioritised, (i.e.; 5 year program established for cycle lane and bicycle awareness zone marking as part of the road rehabilitation program).

8.3 Phase 3 - Project Readiness

Once packaging opportunities are prioritised, the project readiness of a the packages are considered. The purpose of this phase is to ensure that the prioritisation schedule is appropriate and able to inform future detailed planning processes and budget discussions. Project readiness will consider any possible impediments which may set a project back or

opportunities in bringing a project forward. Awareness of the 5 key phases of facility development is necessary to determine timelines to delivery.

Diagram 2 5 Key Phases of Facility Development



9 References

Queensland Government, South East Queensland Regional Plan 2009-2031 (2009)

Queensland Government, Statutory Guideline 01/11 – Priority Infrastructure Plans (2011)

Queensland Government, PIP practice note 2 – desired standards of service (2011)

Queensland Government, PIP practice note 3 – plans for trunk infrastructure (2011)

Urban Land Development Authority, Neighbourhood Planning & Design - ULDA guideline no. 5 (2012)

Australian Bureau of Statistics, Census of Population and Housing 2011

Profile.id, Moreton Bay Region Community Profile, http://profile.id.com.au/moreton-bay/home, 2013

Moreton Bay Regional Council, Moreton Bay Region Strategic Framework (2015);

Background Paper Appendix A

Desired Standard of Service Active Transport Strategy 2012 - 2031 The Desired Standards of Service are derived from a combination of functionality, facility classifications, design standards and facility features appropriate to each function and setting.

Functionality

Connectivity to key destinations – 5km, 2.5km and 1.0km catchments

Interconnectivity across the network – the "Principal Regional Cycle Network" provides the "backbone" plus secondary corridors.

Accessibility and Permeability of places – "Activity centre" place types are "places where pedestrians dominate"

Classifications

Extended places – "urban" place types, "coastal villages" and "rural townships"

Critical corridors – adapted from the "*Principal Regional Cycle Network Plan*" and includes primary connections between centres, and inter-district corridors

Supporting corridors – adapted from the collector road network, and also including paths along desire lines which may be through open space corridors. The supporting corridors provide important local feeders to key destinations.

Tertiary network – adapted from the local streets and open space networks, providing local connectivity and permeability

Active places – "Activity centre" place types

Design standards

Widths (relating to purpose and context) – Widths reflect proximity to key destinations, and to anticipated intensity of use.

Gradients - Generally less than 1 on 16 suitable for disability access and comfortable cycling

Crossings – Type and spacing of priority crossings reflect intensity of use and degree of potential conflict

Operating priority – Active modes are to be given higher priority in most instances.

Features

Shade – Desirable shade tree spacing < 15metres. Awnings desirable in activity centres

Way-finding and signage – navigation should be legible and intuitive, with signs, maps and other navigational aids to further assist

Mid-trip facilities – Rest areas, lighting, seating, water fountains and toilets are to be provided to "critical corridors", reflecting proximity to key destinations, and to anticipated intensity of use.

End-of-trip facilities – Public places for congregation, refreshment outlets, cycle storage, toilets, user showers and change rooms, cycle maintenance facilities, etc. to be provided at key destinations. The balance between public and private facilities will depend on the nature of each destination.

Table A1: Ability Levels for Active Transport Participants

Туре	Description	Needs
Youth	The shorter height of children limits their ability to see over the top of objects, such as parked cars. Young children have reduced peripheral vision. This affects their ability to scan their walking environment and can impact on sight lines, sign legibility, crossing locations and trip hazards. Typically, children also have a limited attention span and limited cognitive abilities. They are less accurate in judging speed and distance and have difficulty localising the direction of sounds. Children's lack of familiarity with traffic patterns and expectations can result in unpredictable or impulsive actions.	 prefer signalised or grade separated crossings sign legibility kerb detection smooth surface to reduce trip hazards minimisation of threat of collision with other users, especially with faster cyclists
Active adult	Able-bodied adults are able to walk and run, and to cycle at higher speeds. Any cognitive or perceptual limitations are adequately catered for in standard design of facilities for pedestrians and cyclists.	paved pathwaymanagement of potential user type conflicts
Seniors, mobility impaired and/or sensory impaired	Seniors often experience reduced joint mobility, slower reflexes and less stamina than that of middle-aged and younger adults. This can result in a slower walking and cycling speeds, and a reduced ability to avoid dangerous situations. Older participants also have less tolerance for high temperatures and other adverse environmental conditions. Agility, eyesight, hearing and mobility may be limited leaving senior pedestrians and cyclists potentially more vulnerable. Mobility-impaired pedestrians are commonly thought of as using devices to help them to walk, ranging from canes, sticks and crutches to wheelchairs, walkers and prosthetic limbs. However, a significant proportion of those with mobility impairments do not use any visually identifiable device. Sensory impaired pedestrians are those that have partial or complete loss of at least one sense. These mostly include impairments to vision and hearing. These pedestrians may have less ability to scan the environment, respond to audible cues of traffic, and distinguish objects. Mobility, sensory or cognitively-impaired cyclists may not use any identifiable device, but may have less ability to scan the environment, respond to audible cues of traffic, or distinguish objects and hazards.	 clear and unobstructed path positive direction signage Minimisation of threat of collision with faster cyclists rest stops along walking and cycling routes and adequate shade and shelter from the elements smooth, level, quality pathway surfaces safe signalised crossing locations provision of steps/ramps with handrails lighting and surveillance tactile paving
On wheels	These include people in a wheeled vehicle (other than a bicycle) who can legally use a pathway. They include wheelchairs, motorised scooters, walkers with a pram, in-line skaters, skateboards and kick scooters. User abilities are very diverse as they could include any of the three different classes of user. They are classed separately as they have specific needs.	 smooth, level surface. Ramps and signalised intersections consistency in minimum pathway widths (including across roads) passing places on narrow paths

Source: Adapted from 'Pedestrian Planning and Design Guide' Land Transport NZ and Action Plan for Walking 2008.

Table A2: Active Trip Types

Trip type	Description	Specific needs
Utility	Utility trips include short trips to local shops, visiting friends and running errands. Walking distances are usually less than 1 km, and cycling distances are usually less than 2.5 km, but may also include trips of 5 km or longer. These trips are made by all types of walkers and cyclists, and	 direct and coherent routes
	tend to be made around residential neighbourhoods as well as to and within centres of activity.	
Educational	Educational trips include trips to local schools. They also include the trips made by persons accompanying or ferrying children to and from school or childcare. Trips to tertiary education institutions are not included in this category since trip distance and user needs have more in common with commuter trips.	 direct and coherent routes with minimal risk
	These trips are made mostly by children and adult walkers or cyclists (accompanying children) and may also include seniors or otherwise vulnerable users.	
	Walking trips are typically within 1 km. Cycling trips are typically within 2.5 km for primary school, but may be 5 km or longer for secondary schools.	
Commuter	Commuter trips include adults commuting to work and trips for tertiary education, and include access to public transport. Walking trips to public transport are typically less than 800 m but may be much further. Commuters tend to be adult walkers. Cycling trips may cover relatively long distances of 10 km or further. Depending on skill and experience, some commuters will ride at speed and are often willing to assert themselves as road users.	 direct and coherent routes with minimal delays good lighting for evening trips end of trip facilities for cyclists
Sports	These include hikers or joggers training over long distances, for sports events or exercise. These users may seek challenging terrain. Sports cyclists are generally elite cyclists training over long distances, for sports events or exercise, including challenging terrain. They may cycle as individuals or in groups. They generally ride at speed and are often willing to assert themselves as road users.	 generous road widths continuous training circuits sports cyclists will seek minimal contact with pedestrians or slower cyclists
Recreation	Recreation walkers, runners and cyclists do so mostly for enjoyment and social exercise. Time is less important, and attractive routes with low traffic volumes are often preferred. Popular destinations are along coasts and rivers and through reserves and parkland as well as attractive routes with low traffic volumes and speeds. Recreational cyclists may cover long distances between townships. The skill and experience of recreation walkers and cyclists varies widely, and the speed (especially of cyclists) varies accordingly.	 safety and personal security appropriate to settings pleasant, attractive and interesting routes a choice of settings for different users

Adapted from 'The Principles of Cyclist Network Planning' Land Transport NZ

Table A3: Active Transport Provision by Class

Intensity	Class/ Character	Typology	Network	Description	Elements	Source
1	Active places (Amenity & Permeability)	"Activity Centre" place type.	Transit nodes and town centre precincts	Pedestrian/ cycle dominant "destination".	Civic squares and parks, Boulevards, Activated "main streets", Priority crossings, End-of-trip facilities	Codes for new places, Capital & PIP for retrofit
2	Extended places (Accessibility & permeability)	"Urban" place types and closely-linked/ contiguous destinations.	Village centres, townships, and urban precincts	Linkages to and between proximate destinations in an urban setting. Response to high active movement demand.	Boulevards, Activated "main streets", Priority crossings, End-of-trip facilities	Codes, for new places, Capital & PIP for retrofit
3	Critical corridors (Mobility & connectivity)	Corridors between primary destinations.	PCNP (State) corridors, coastal pathway	Primary network including State's principle cycle network plan adapted to local features.	Existing PCNP facilities, Proposed PCNP facilities, Re-alignment of proposed PCNP, Additional Primary links	PIP & State/JV for new works, Capital & PIP for retrofit
4	Supporting corridors (Connectivity & continuity)	Network feeders.	Collector and above road network, district open space linkages, district "shortcuts"	Local and district feeders. Linkages between critical corridors.	Existing Pathways, Pathway Upgrades and enhancements, New pathways Existing On-road lanes, Proposed on-road lanes, Priority crossings,	Codes & PIP for new places, Capital & PIP for retrofit
5	Tertiary network (Local mobility & connectivity)	Local connections and neighbourhood permeability.	Sub- collector road network, local open space linkages, local "shortcuts"	Low-key facilities and sharing between compatible modes.	Existing pathways, Pathway upgrades and enhancements, Proposed new pathways, Bicycle awareness zones,	Codes, for new places, Capital for retrofit

Table A4: Design Standards for Walking and Cycling Infrastructure

Facility	Environment	Width	Geometry
		Clear of obstructions	As per Austroads Part 6A
On-Road	60kph	1.5m	
Lane/shoulder	80kph	2.0m	
	100kph	3.5m	
On-Road	60kph	4.0m	
Parking /cycle	80kph	4.5m	
On-Road contra-flow	60kph or less	1.8m	
Off-Road	Arterial/sub-arterial	3.0m both sides	
shared path	Collector	2.5m both sides	
	Minor collector	2.0m both sides	
	Residential access	1.5m one side	
	Residential access/Rural residential within 2.5 km of primary school or District activity centre, or within 5 km of Major activity centre or high school.	2.0m one side	
Off-Road separated	Cycle	2.0m	
paths	Footpath	2.5m	
(generally not	Total	4.5m	
preferred)	Exclusive cycle path	Local access 2.5m Main path 3.0m	20 km cyclist speed
Principal and district cycle route	>5km from major or principal centre	On-road facility as above plus off-road path as above, or, if shared off-road pathway only, >3.0m	20 km cyclist speed
	<5km from centre	On-road facility as above plus off-road path as above, widened by an additional 0.3m, or if shared off-road pathway only, >3.5 m, or separated cycle and pedestrian pathways	20 km cyclist speed

Table A5– Active Transport Crossings

Street Category	"Place" Category		
	Principal, Major and District Activity Centres	"Urban" Neighbourhoods "New Generation Neighbourhoods, Enterprise and Employment areas, Rural Townships, and Coastal Villages	Suburban Neighbourhoods and Rural Residential areas
Arterial > 2 lanes	200 metres spacing	400 metres spacing	800 metres spacing
	Signalised crossing	Signalised crossing	Signalised crossing
Arterial 2 Iane	200 metres spacing Signalised crossing, Zebra or refuge	400 metres spacing Signalised crossing, Zebra or refuge	800 metres spacing, Signalised crossing, Zebra or refuge
Sub-Arterial > 2 lanes	200 metres spacing Signalised crossing	400 metres spacing Signalised crossing	800 metres spacing Signalised crossing
Sub-Arterial 2 Iane	200 metres spacing Signalised crossing, Zebra or refuge, raised platform or shared zone	400 metres spacing Signalised crossing, Zebra or refuge, raised platform or shared zone	800 metres spacing, Signalised crossing, Zebra or refuge, raised platform or shared zone
Collector	200 metres spacing Signalised crossing, Zebra or refuge, raised platform or shared zone	400 metres spacing Signalised crossing, Zebra or refuge, raised platform or shared zone	800 metres spacing, Signalised crossing, Zebra or refuge raised platform or shared zone,
Sub-collector	200 metres spacing, Zebra or refuge, raised platform or shared zone, Uncontrolled crossing where sightlines are adequate	400 metres spacing, Zebra or refuge, raised platform or shared zone, Uncontrolled crossing where sightlines are adequate	800 metres spacing, Zebra or refuge, raised platform or shared zone, Uncontrolled crossing where sightlines are adequate

Background Paper Appendix B

Planning Profiles
Active Transport Strategy 2012 - 2031

Regional Planning Profile

Assessing the Active Transport Infrastructure Network

The Desired Standards of Service (DSS) have been applied to Council's existing active transport infrastructure network to identify gaps in provision and future requirements for active transport facilities.

Methodology

To complete a thorough assessment of the existing and future active transport network in the Moreton Bay Region, the following steps were undertaken:

- 1. Determine regional and district catchments for planning within scope of walking and cycling activity.
- 2. Assess the existing provision of active transport infrastructure on a catchment basis based on the desired standards.
- Develop future infrastructure recommendations based on opportunities for shifts to more sustainable modes as well as growth assumptions, the desired standards of service, committed development, and principles of active transport planning as identified in the Active Transport Strategy.
- 4. Identify future programs and actions.

The region has been divided into a series of district level catchments which reflect the district catchments identified in Council's Draft Strategic Framework. The intent of the regional planning area profile is to identify the current and future active transport infrastructure needs for across our region and to identify elements that link the various geographical contexts.

The regional profile determines the future trunk requirements for higher-order active transport linkages to major destinations, and between districts and sub-districts. The analysis considers the influence both local and regional destinations have on the demand for new and upgraded facilities. The profile will inform a program of infrastructure requirements over a twenty year planning horizon.

Assessing the Existing Active Transport Network

To assess the existing provision and quality of active transport infrastructure within each catchment, a 5 stage process was established:

- 1. Demographic Analysis A brief demographic analysis was used to identify the key attractors, the extent of growth and the spread of that growth across the catchment.
- 2. Existing Facility Analysis The analysis of local active transport facilities was undertaken to identify potential shortfalls in the distribution of linkages and movement opportunities. The analysis identifies where the desired connectivity and functionality fall short of the desired active transport standards. The shortfalls are more critical within proximity of major active transport destinations where usage would be potentially higher than other parts of the catchment.
- 3. Solutions A series of solution sets for each catchment were identified which demonstrated the desired standards of service. Of the total scope of new or

upgraded facilities necessary to meet standards throughout the district, some representative projects were selected as high priorities for implementation. These selected projects were subject of scoping and costing to inform the subsequent consideration for delivery.

Profile Summary

The Moreton Bay Region regional catchment includes the entire Moreton Bay Regional Council area. The catchment is bounded by the Sunshine Coast Council area in the north, the Coral Sea and Moreton Bay in the east, Brisbane City in the south, and the Somerset Region in the west.

The Moreton Bay Region contains growing residential areas, with substantial rural, rural-residential, commercial and industrial areas. The region has a total land area of over 2,000 square kilometres, and includes mountain ranges, coastal wetlands, national parks, state forests, rural townships, coastal villages and urban centres.

Communities within the region vary considerably, from residential suburbs in the south and east to rural communities in the north and west, key activity centres at Redcliffe, Caboolture, Strathpine and North Lakes to coastal communities on the shores of Moreton Bay. The region has some of the fastest growing suburbs in Australia and new residential areas are emerging in previously rural residential communities. In some circumstances the growth has occurred so rapidly that infrastructure has failed to keep pace.

Strategic Planning Directions

Council's Draft Strategic Framework states how Council intends to respond to growth and changing community trends across the region.

Growth is expected to occur predominantly along the region's urban corridor, in close proximity to activity centres and along existing and future rail lines. These existing and proposed places are clustered together to form neighbourhoods and districts. Some established places will remain largely unchanged in the foreseeable future, while other neighbourhoods such as those along the Moreton Bay Rail Link (MBRL) will be targeted for growth and change.

The rural areas together with their rural townships will also be encouraged to become more self-contained while retaining environmental and scenic landscape values.

Demographics

The population assumptions for the Moreton Bay Region planning area reflect the planning directions outlined in Council's Strategic Framework. The table below identifies that the Moreton Bay Region is projected to have an additional 147,119 residents by 2031.

Estimated Population Growth – MBR			
Regional Planning Catchment	2011	2031	Growth
Moreton Bay Region	381,651	528,770	147,119

Moreton Bay Regional Planning Area Population Assumptions

Active transport facilities assessment

The combination of these factors has been compiled and the results are illustrated at the
district catchment levels as exhibited in the "District profiles" below.

Caboolture District Profile

Assessing the Active Transport Infrastructure Network

The Desired Standards of Service (DSS) have been applied to Council's existing active transport infrastructure network to identify gaps in provision and future requirements for active transport facilities.

Methodology

To complete a thorough assessment of the existing and future active transport network in the Moreton Bay Region, the following steps were undertaken:

- 1. Determine district catchments for planning within scope of walking and cycling activity.
- 2. Assess the existing provision of active transport infrastructure on a catchment basis based on the desired standards.
- Develop future infrastructure recommendations based on opportunities for shifts to more sustainable modes as well as growth assumptions, the desired standards of service, committed development, and principles of active transport planning as identified in the Active Transport Strategy.
- 4. Identify future programs and actions.

The region has been divided into a series of district level catchments which reflect the district catchments identified in Council's Draft Strategic Framework. The intent of the district planning area profiles is to identify the current and future active transport infrastructure needs for parts of our region that share a similar geographical context.

The district area profiles determine the future trunk requirements for district level active transport linkages to major destinations, and between districts and sub-districts. The analysis considers the influence both local and regional destinations have on the demand for new and upgraded facilities. The profile will inform a program of infrastructure requirements over a twenty year planning horizon.

Assessing the Existing Active Transport Network

To assess the existing provision and quality of active transport infrastructure within each catchment, a 3 stage process was established:

- 1. Demographic Analysis A brief demographic analysis was used to identify the key attractors, the extent of growth and the spread of that growth across the catchment.
- 2. Existing Facility Analysis The analysis of local active transport facilities was undertaken to identify potential shortfalls in the distribution of linkages and movement opportunities. The analysis identifies where the desired connectivity and functionality fall short of the desired active transport standards. The shortfalls are more critical within proximity of major active transport destinations where usage would be potentially higher than other parts of the catchment.
- 3. Solutions A series of solution sets for each catchment were identified which demonstrated the desired standards of service. Of the total scope of new or

upgraded facilities necessary to meet standards throughout the district, some representative projects were selected as high priorities for implementation. These selected projects were subject of scoping and costing to inform the subsequent consideration for delivery.

Profile Summary

The Caboolture district covers a large area, from Narangba in the south to Elimbah in the north and east to Deception Bay, all focused around the principal activity centre of Caboolture-Morayfield. The district includes a range of urban, suburban, rural and rural residential communities. The district includes key industry and employment opportunities along the Bruce Highway at Narangba, Caboolture and Elimbah.

Strategic Planning Directions

In the next 20 years considerable change will occur throughout this district as more people decide to live, work and play within and in close proximity to the Caboolture-Morayfield Activity Centre. New residents will be accommodated in a mix of higher density living close to Morayfield, Caboolture, Burpengary and Deception Bay and in new Next Generation residential neighbourhoods on the fringe of the urban areas.

Demographics

The population assumptions for the Caboolture district reflect the planning directions outlined in Council's Draft Strategic Framework. The table below identifies that the district is projected to have an additional 40,992 residents up to 2031. This represents the second highest growth district in the region and 27% of the region's growth.

Estimated Population Growth – MBRC I			
District Planning Catchment	2011	2031	Growth
Caboolture Planning Area	68,901	109,892	40,992
Moreton Bay Region	381,651	528,770	147,119

Caboolture District Planning Area Population Assumptions

Based on trends, the majority of these new residents will be families moving into more affordable housing options on the urban fringe of the Brisbane metropolitan area.

Active Transport Facilities Assessment

Active transport facilities were analysed to evaluate the existing network. The analysis included:

- **Proximity** –on-route distance from each parcel to critical destinations was considered. Scores were given for relative proximity to those destinations.
- **Linkage and connectivity** the degree to which each parcel potentially provides a direct connection between catchment origins to significant destinations was recorded and scores given for relative connectivity.
- **Desire lines** a ratio was calculated between the actual path length and the "asthe-crow-flies" distance between origins and destinations. The highest scores were given to the most direct routes.

- Route choice the existence of alternative routes was recorded and scores given for
 parcels on routes that offered the greater choice. The highest scores reflected higher
 degrees of permeability and connectivity.
- **Missing links** the opportunity for infrastructure provision in any parcel to address critical gaps in continuity of the overall active transport network was recorded. The highest scores were given for the most strategic opportunities.

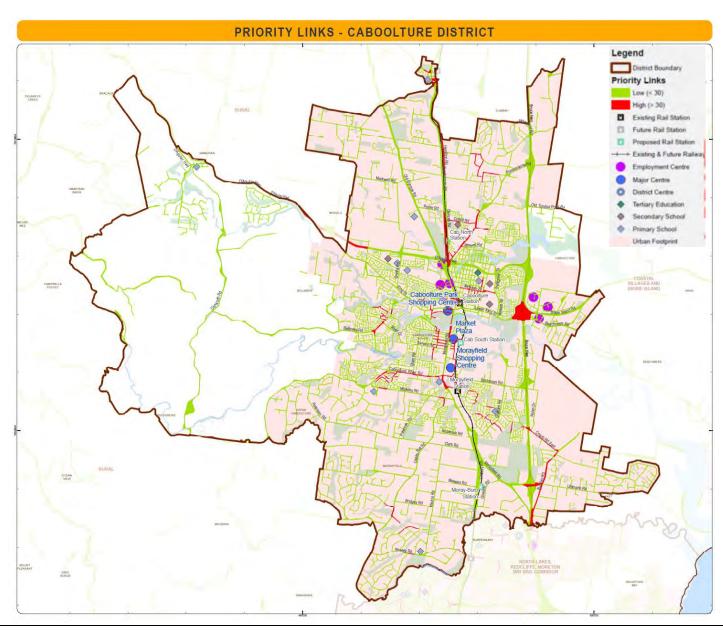
The scores of these five analyses were accumulated into a single "cumulative spatial priority" score. This score provided input to determining the relative priority of facility provision in comparison to one another. The output of this element is illustrated in the Map on the following page. The map illustrates land parcels identified as:

- Red reflected where demand was anticipated to be greatest, and the gap between existing facilities and what was required (Desired Standards of Service) was the greatest. This provided input to determining the highest priority.
- Green represented where the demand was anticipated to be more moderate, and/or the facilities more closely matched what was required. This influenced the determination of relative priorities for potential active transport projects.

This analysis was then combined with the determination of "trunk" primary and secondary active transport routes as identified in the **Overlay Maps - Active Transport** in the Moreton Bay Planning Scheme. The potential project priorities were also assessed against opportunities to incorporate active transport facilities with other projects (road construction, renewal and rehabilitation), and with development in response to growth.

Active Transport Solutions

The Active Transport network recommendations are identified in **Active Transport Strategy Appendix B - Infrastructure Requirements**, and in the **Priority Infrastructure Plan Maps - Active Transport**, which can be accessed from the Council website.



Coastal Villages & Bribie Island District Profile

Assessing the Active Transport Infrastructure Network

The Desired Standards of Service (DSS) have been applied to Council's existing active transport infrastructure network to identify gaps in provision and future requirements for active transport facilities.

Methodology

To complete a thorough assessment of the existing and future active transport network in the Moreton Bay Region, the following steps were undertaken:

- 1. Determine district catchments for planning within scope of walking and cycling activity.
- 2. Assess the existing provision of active transport infrastructure on a catchment basis based on the desired standards.
- 3. Develop future infrastructure recommendations based on opportunities for shifts to more sustainable modes as well as growth assumptions, the desired standards of service, committed development, and principles of active transport planning as identified in the Active Transport Strategy.
- 4. Identify future programs and actions.

The region has been divided into a series of district level catchments which reflect the district catchments identified in Council's Draft Strategic Framework. The intent of the district planning area profiles is to identify the current and future active transport infrastructure needs for parts of our region that share a similar geographical context.

The district area profiles determine the future trunk requirements for district level active transport linkages to major destinations, and between districts and sub-districts. The analysis considers the influence both local and regional destinations have on the demand for new and upgraded facilities. The profile will inform a program of infrastructure requirements over a twenty year planning horizon.

Assessing the Existing Active Transport Network

To assess the existing provision and quality of active transport infrastructure within each catchment, a 5 stage process was established:

- 1. Demographic Analysis A brief demographic analysis was used to identify the key attractors, the extent of growth and the spread of that growth across the catchment.
- 2. Existing Facility Analysis The analysis of local active transport facilities was undertaken to identify potential shortfalls in the distribution of linkages and movement opportunities. The analysis identifies where the desired connectivity and functionality fall short of the desired active transport standards. The shortfalls are more critical within proximity of major active transport destinations where usage would be potentially higher than other parts of the catchment.
- 3. Solutions A series of solution sets for each catchment were identified which demonstrated the desired standards of service. Of the total scope of new or

upgraded facilities necessary to meet standards throughout the district, some representative projects were selected as high priorities for implementation. These selected projects were subject of scoping and costing to inform the subsequent consideration for delivery.

Profile Summary

The Coastal Villages and Bribie Island district forms the north-eastern boundary of the Moreton Bay Region. The district includes a range of coastal, rural, rural residential and suburban communities, natural features including the wetlands and aquatic habitats of the Pumicestone Passage and the coastal foreshores of Bribie Island, Godwin Beach, Sandstone Point, Ningi, Toorbul, Meldale, Donnybrook and Beachmere.

Strategic Planning Directions

In the next 20 years little change is expected due to planning challenges associated with coastal hazard and the close proximity to the Moreton Bay Marine Park and the iconic Pumicestone Passage.

Demographics

The population assumptions for the Coastal Villages and Bribie Island district reflect the planning directions outlined in Council's Draft Strategic Framework. The table below identifies that the district is projected to have an additional 3,095 residents up to 2031. This represents the lowest growth district in the region with less than 1% of the region's growth.

Estimated Population Growth – MBRC I			
District Planning Catchment	2011	2031	Growth
Coastal Villages and Bribie Island	31,238	34,333	3,095
Planning Area			
Moreton Bay Region	381,651	528,770	147,119

Coastal Villages and Bribie Island District Planning Area Population Assumptions

Active Transport Facilities Assessment

Active transport facilities were analysed to evaluate the existing network. The analysis included:

- **Proximity** –on-route distance from each parcel to critical destinations was considered. Scores were given for relative proximity to those destinations.
- **Linkage and connectivity** the degree to which each parcel potentially provides a direct connection between catchment origins to significant destinations was recorded and scores given for relative connectivity.
- **Desire lines** a ratio was calculated between the actual path length and the "asthe-crow-flies" distance between origins and destinations. The highest scores were given to the most direct routes.
- Route choice the existence of alternative routes was recorded and scores given for
 parcels on routes that offered the greater choice. The highest scores reflected higher
 degrees of permeability and connectivity.

Missing links – the opportunity for infrastructure provision in any parcel to address
critical gaps in continuity of the overall active transport network was recorded. The
highest scores were given for the most strategic opportunities.

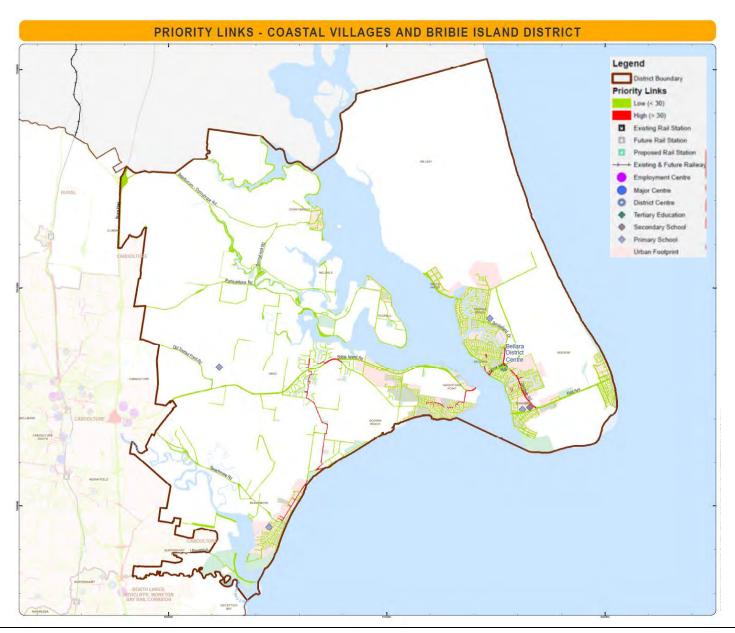
The scores of these five analyses were accumulated into a single "cumulative spatial priority" score. This score provided input to determining the relative priority of facility provision in comparison to one another. The output of this element is illustrated in the Map on the following page. The map illustrates land parcels identified as:

- Red reflected where demand was anticipated to be greatest, and the gap between existing facilities and what was required (Desired Standards of Service) was the greatest. This provided input to determining the highest priority.
- Green represented where the demand was anticipated to be more moderate, and/or the facilities more closely matched what was required. This influenced the determination of relative priorities for potential active transport projects.

This analysis was then combined with the determination of "trunk" primary and secondary active transport routes as identified in the **Overlay Maps - Active Transport** in the Moreton Bay Planning Scheme. The potential project priorities were also assessed against opportunities to incorporate active transport facilities with other projects (road construction, renewal and rehabilitation), and with development in response to growth.

Active Transport Solutions

The Active Transport network recommendations are identified in **Active Transport Strategy Appendix B - Infrastructure Requirements**, and in the **Priority Infrastructure Plan Maps - Active Transport**, which can be accessed from the Council website.



North Lakes-Redcliffe-Moreton Bay Rail Corridor District Profile

Assessing the Active Transport Infrastructure Network

The Desired Standards of Service (DSS) have been applied to Council's existing active transport infrastructure network to identify gaps in provision and future requirements for active transport facilities.

Methodology

To complete a thorough assessment of the existing and future active transport network in the Moreton Bay Region, the following steps were undertaken:

- 1. Determine district catchments for planning within scope of walking and cycling activity.
- 2. Assess the existing provision of active transport infrastructure on a catchment basis based on the desired standards.
- 3. Develop future infrastructure recommendations based on opportunities for shifts to more sustainable modes as well as growth assumptions, the desired standards of service, committed development, and principles of active transport planning as identified in the Active Transport Strategy.
- 4. Identify future programs and actions.

The region has been divided into a series of district level catchments which reflect the district catchments identified in Council's Draft Strategic Framework. The intent of the district planning area profiles is to identify the current and future active transport infrastructure needs for parts of our region that share a similar geographical context.

The district area profiles determine the future trunk requirements for district level active transport linkages to major destinations, and between districts and sub-districts. The analysis considers the influence both local and regional destinations have on the demand for new and upgraded facilities. The profile will inform a program of infrastructure requirements over a twenty year planning horizon.

Assessing the Existing Active Transport Network

To assess the existing provision and quality of active transport infrastructure within each catchment, a 3 stage process was established:

- 1. Demographic Analysis A brief demographic analysis was used to identify the key attractors, the extent of growth and the spread of that growth across the catchment.
- 2. Existing Facility Analysis The analysis of local active transport facilities was undertaken to identify potential shortfalls in the distribution of linkages and movement opportunities. The analysis identifies where the desired connectivity and functionality fall short of the desired active transport standards. The shortfalls are more critical within proximity of major active transport destinations where usage would be potentially higher than other parts of the catchment.

3. Solutions – A series of solution sets for each catchment were identified which demonstrated the desired standards of service. Of the total scope of new or upgraded facilities necessary to meet standards throughout the district, some representative projects were selected as high priorities for implementation. These selected projects were subject of scoping and costing to inform the subsequent consideration for delivery.

Profile Summary

The North Lakes, Redcliffe, Moreton Bay Rail Corridor district includes the suburbs of Redcliffe, Rothwell, Mango Hill, North Lakes, Griffin, Deception Bay, Murrumba Downs, and Kallangur & Dakabin. The district is large, predominantly urban, and consists of a broad mix of distinct communities. Over the past 10 to 15 years this catchment has seen the greatest quantum of growth in the region.

The communities within the district vary considerably, from the residential suburbs of Murrumba Downs and Kallangur in the west to Redcliffe, an established coastal centre with great quality recreation and sporting facilities, in the east. The large wedge of suburbs between Kallangur and Redcliffe are dominated by broad scale residential land subdivision and the commercial centre of North Lakes/Mango Hill. These suburbs have been some of the fastest growing suburbs in Australia. In some circumstances that growth has occurred so rapidly, infrastructure has failed to keep pace.

To the north new residential areas are emerging from the rural and rural residential patchwork of communities that previously separated the former local government areas.

With the introduction of the Moreton Bay Rail Link (MBRL), this catchment will continue to grow rapidly well beyond the development of the broad scale residential land subdivisions that will dominate development in this catchment over the next 10 years.

Strategic Planning Directions

This catchment is expected to contain the greatest amount of growth in the region over the next 20 years. Greenfield residential and employment areas around the MBRL and residential areas adjacent the existing north coast rail line at Dakabin will continue to grow rapidly over the next 10 years, after which as greenfield sites become scarce, pressure is expected to turn to infill and higher density development around activity centres and rail stations.

Demographics

The population assumptions for a district reflect the planning directions outlined in Council's Draft Strategic Framework. The table below identifies that the North Lakes, Redcliffe, Moreton Bay Rail Corridor District is projected to have an additional 74,285 residents up to 2031. This represents half of the total growth for the Moreton Bay Region.

Estimated Population Growth – MBRC I			
District Planning Catchment	2011	2031	Growth
North Lakes, Redcliffe, Moreton Bay	163,184	237,468	74,285
Rail Corridor District			
Moreton Bay Region	381,651	528,770	147,119

North Lakes, Redcliffe, Moreton Bay Rail Corridor District Planning Area Population Assumptions

Active Transport Facilities Assessment

Active transport facilities were analysed to evaluate the existing network. The analysis included:

- Proximity on-route distance from each parcel to critical destinations was considered. Scores were given for relative proximity to those destinations.
- **Linkage and connectivity** the degree to which each parcel potentially provides a direct connection between catchment origins to significant destinations was recorded and scores given for relative connectivity.
- **Desire lines** a ratio was calculated between the actual path length and the "asthe-crow-flies" distance between origins and destinations. The highest scores were given to the most direct routes.
- Route choice the existence of alternative routes was recorded and scores given for
 parcels on routes that offered the greater choice. The highest scores reflected higher
 degrees of permeability and connectivity.
- **Missing links** the opportunity for infrastructure provision in any parcel to address critical gaps in continuity of the overall active transport network was recorded. The highest scores were given for the most strategic opportunities.

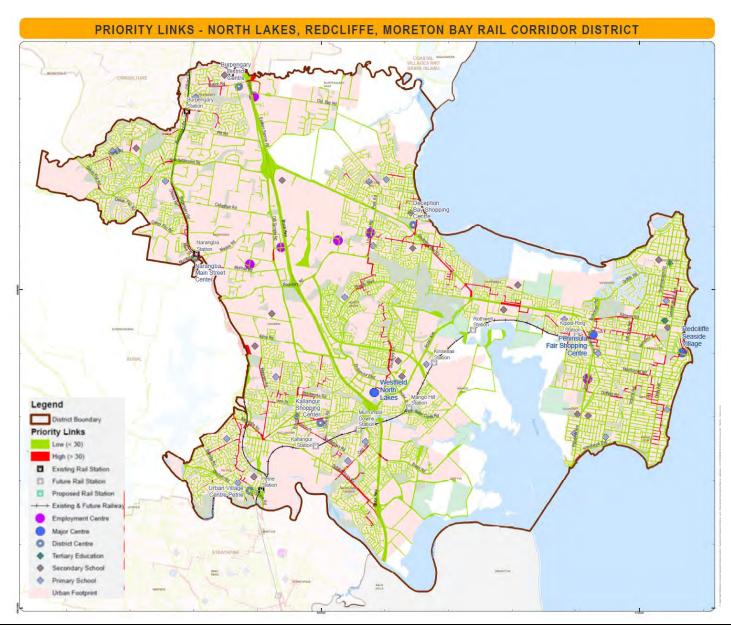
The scores of these five analyses were accumulated into a single "cumulative spatial priority" score. This score provided input to determining the relative priority of facility provision in comparison to one another. The output of this element is illustrated in the Map on the following page. The map illustrates land parcels identified as:

- Red reflected where demand was anticipated to be greatest, and the gap between existing facilities and what was required (Desired Standards of Service) was the greatest. This provided input to determining the highest priority.
- Green represented where the demand was anticipated to be more moderate, and/or the facilities more closely matched what was required. This influenced the determination of relative priorities for potential active transport projects.

This analysis was then combined with the determination of "trunk" primary and secondary active transport routes as identified in the **Overlay Maps - Active Transport** in the Moreton Bay Planning Scheme. The potential project priorities were also assessed against opportunities to incorporate active transport facilities with other projects (road construction, renewal and rehabilitation), and with development in response to growth.

Active Transport Solutions

The Active Transport network recommendations are identified in **Active Transport Strategy Appendix B - Infrastructure Requirements**, and in the **Priority Infrastructure Plan Maps - Active Transport** which can be accessed from the Council website.



Rural District Profile

Assessing the Active Transport Infrastructure Network

The Desired Standards of Service (DSS) have been applied to Council's existing active transport infrastructure network to identify gaps in provision and future requirements for active transport facilities.

Methodology

To complete a thorough assessment of the existing and future active transport network in the Moreton Bay Region, the following steps were undertaken:

- 1. Determine district catchments for planning within scope of walking and cycling activity.
- 2. Assess the existing provision of active transport infrastructure on a catchment basis based on the desired standards.
- 3. Develop future infrastructure recommendations based on opportunities for shifts to more sustainable modes as well as growth assumptions, the desired standards of service, committed development, and principles of active transport planning as identified in the Active Transport Strategy.
- 4. Identify future programs and actions.

The region has been divided into a series of district level catchments which reflect the district catchments identified in Council's Draft Strategic Framework. The intent of the district planning area profiles is to identify the current and future active transport infrastructure needs for parts of our region that share a similar geographical context.

The district area profiles determine the future trunk requirements for district level active transport linkages to major destinations, and between districts and sub-districts. The analysis considers the influence both local and regional destinations have on the demand for new and upgraded facilities. The profile will inform a program of infrastructure requirements over a twenty year planning horizon.

Assessing the Existing Active Transport Network

To assess the existing provision and quality of active transport infrastructure within each catchment, a 5 stage process was established:

- 1. Demographic Analysis A brief demographic analysis was used to identify the key attractors, the extent of growth and the spread of that growth across the catchment.
- 2. Existing Facility Analysis The analysis of local active transport facilities was undertaken to identify potential shortfalls in the distribution of linkages and movement opportunities. The analysis identifies where the desired connectivity and functionality fall short of the desired active transport standards. The shortfalls are more critical within proximity of major active transport destinations where usage would be potentially higher than other parts of the catchment.
- 3. Solutions A series of solution sets for each catchment were identified which demonstrated the desired standards of service. Of the total scope of new or

upgraded facilities necessary to meet standards throughout the district, some representative projects were selected as high priorities for implementation. These selected projects were subject of scoping and costing to inform the subsequent consideration for delivery.

Profile Summary

The Rural district forms the western portion of the region and represents the largest geographical area. The district can be broken into three distinct portions, north, central and south. The district includes large expanses of rural and agricultural land in the north and water supply catchments and natural mountainous landscapes in the southern and central portions. The rural townships of Woodford, D'Aguilar and Wamuran service the agricultural landscape to the north with Samford Village and Dayboro in the south surrounded by mountain ranges. The central portion of the district is serviced from established urban areas.

Strategic Planning Directions

In the next 20 years only small incremental changes are planned in this district, with the notable exception of the Caboolture West investigation area to the south of Wamuran. The expected growth in Caboolture West is not considered through this assessment as master planning has not been determined.

Small areas of Suburban and Next Generation Suburban Neighbourhoods are planned along the eastern edge of this district on the urban fringes of Narangba, Bellmere, Morayfield and Caboolture.

Demographics

The population assumptions for the Rural district reflect the planning directions outlined in Council's Draft Strategic Framework. The table below identifies that the local area is projected to have an additional 6,467 residents by 2031. This represents approximately 4% of the growth within the region.

Estimated Population Growth – MBRC I			
District Planning Catchment	2011	2031	Growth
Rural	31,620	38,088	6,467
Moreton Bay Region	381,651	528,770	147,119

Rural District Planning Area Population Assumptions

Active Transport Facilities Assessment

Active transport facilities were analysed to evaluate the existing network. The analysis included:

- **Proximity**–on-route distance from each parcel to critical destinations was considered. Scores were given for relative proximity to those destinations.
- **Linkage and connectivity** the degree to which each parcel potentially provides a direct connection between catchment origins to significant destinations was recorded and scores given for relative connectivity.

- **Desire lines** a ratio was calculated between the actual path length and the "asthe-crow-flies" distance between origins and destinations. The highest scores were given to the most direct routes.
- Route choice the existence of alternative routes was recorded and scores given for
 parcels on routes that offered the greater choice. The highest scores reflected higher
 degrees of permeability and connectivity.
- **Missing links** the opportunity for infrastructure provision in any parcel to address critical gaps in continuity of the overall active transport network was recorded. The highest scores were given for the most strategic opportunities.

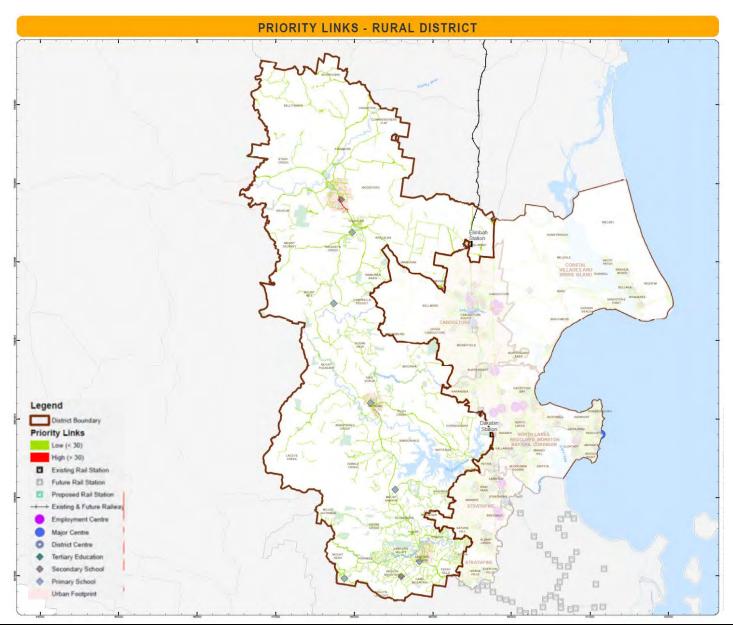
The scores of these five analyses were accumulated into a single score: the Cumulative spatial priority score. This score gives an indication of the relative priority of facility provision in comparison to one another. The output of this is illustrated in the Map on the following page. The map illustrates those land parcels identified as:

- Red reflected where the need was greatest and the gap between existing facilities
 and what was required (Desired Standards of Service) was the greatest. This
 indicates the highest priority.
- Green represented where the demand was moderate and / or the facilities more closely matched what was required, reflecting a lesser priority

These priority parcels were then grouped together to provide the basis for identifying priority projects.

Active Transport Solutions

The Active Transport network recommendations are identified in **Active Transport Strategy Appendix B - Infrastructure Requirements**, and in the **Priority Infrastructure Plan Maps - Active Transport** which can be accessed from the Council website.



Strathpine District Profile

Assessing the Active Transport Infrastructure Network

The Desired Standards of Service (DSS) have been applied to Council's existing active transport infrastructure network to identify gaps in provision and future requirements for active transport facilities.

Methodology

To complete a thorough assessment of the existing and future active transport network in the Moreton Bay Region, the following steps were undertaken:

- 1. Determine district catchments for planning within scope of walking and cycling activity.
- 2. Assess the existing provision of active transport infrastructure on a catchment basis based on the desired standards.
- Develop future infrastructure recommendations based on opportunities for shifts to more sustainable modes as well as growth assumptions, the desired standards of service, committed development, and principles of active transport planning as identified in the Active Transport Strategy.
- 4. Identify future programs and actions.

The region has been divided into a series of district level catchments which reflect the district catchments identified in Council's Draft Strategic Framework. The intent of the district planning area profiles is to identify the current and future active transport infrastructure needs for parts of our region that share a similar geographical context.

The district area profiles determine the future trunk requirements for district level active transport linkages to major destinations, and between districts and sub-districts. The analysis considers the influence both local and regional destinations have on the demand for new and upgraded facilities. The profile will inform a program of infrastructure requirements over a twenty year planning horizon.

Assessing the Existing Active Transport Network

To assess the existing provision and quality of active transport infrastructure within each catchment, a 3 stage process was established:

- 1. Demographic Analysis A brief demographic analysis was used to identify the key attractors, the extent of growth and the spread of that growth across the catchment.
- 2. Existing Facility Analysis The analysis of local active transport facilities was undertaken to identify potential shortfalls in the distribution of linkages and movement opportunities. The analysis identifies where the desired connectivity and functionality fall short of the desired active transport standards. The shortfalls are more critical within proximity of major active transport destinations where usage would be potentially higher than other parts of the catchment.
- 3. Solutions A series of solution sets for each catchment were identified which demonstrated the desired standards of service. Of the total scope of new or

upgraded facilities necessary to meet standards throughout the district, some representative projects were selected as high priorities for implementation. These selected projects were subject of scoping and costing to inform the subsequent consideration for delivery.

Profile Summary

The Strathpine district includes the regional activity centre of Strathpine and district level activity centres at Arana Hills, Albany Creek and Warner. It also includes employment areas in the Hills District, Brendale and Lawnton. A diversity of open space is included within the catchment from natural experiences in conservation area and linkages along riparian corridors to large scale regional sporting facilities at South Pine Sports Reserve.

Strategic Planning Directions

The future direction for the Strathpine district is predominantly one of consolidation. Large areas of the catchment are already developed and over time new growth will come from redevelopment of sites in proximity to activity centres and rail stations. In the next 10 years, the majority of residential growth will come in areas like Warner, Joyner and Bray Park where Next Generation Neighbourhoods will continue to be developed. Over time, higher densities in and around the activity centres of Strathpine Arana Hills, Albany Creek and the Lawnton Rail Station will provide a diversity of housing.

The activity centres at Arana Hills and Albany Creek will continue to grow, with a focus on Strathpine as one of the region's premier centres for employment.

Demographics

The population assumptions for the Strathpine district reflect the planning directions outlined in Council's Draft Strategic Framework. The table below identifies that the catchment is projected to have an additional 22,281 residents up to 2031. This represents approximately 15% of the total growth for the Moreton Bay Region.

Estimated Population Growth – MBRC I			
District Planning Catchment	2011	2031	Growth
Strathpine Planning Area	86,709	108,990	22,281
Moreton Bay Region	381,651	528,770	147,119

Strathpine District Planning Area Population Assumptions

Active Transport Facilities Assessment

Active transport facilities were analysed to evaluate the existing network. The analysis included:

- **Proximity**–on-route distance from each parcel to critical destinations was considered. Scores were given for relative proximity to those destinations.
- Linkage and connectivity the degree to which each parcel potentially provides a
 direct connection between catchment origins to significant destinations was
 recorded and scores given for relative connectivity.

- **Desire lines** a ratio was calculated between the actual path length and the "asthe-crow-flies" distance between origins and destinations. The highest scores were given to the most direct routes.
- Route choice the existence of alternative routes was recorded and scores given for
 parcels on routes that offered the greater choice. The highest scores reflected higher
 degrees of permeability and connectivity.
- **Missing links** the opportunity for infrastructure provision in any parcel to address critical gaps in continuity of the overall active transport network was recorded. The highest scores were given for the most strategic opportunities.

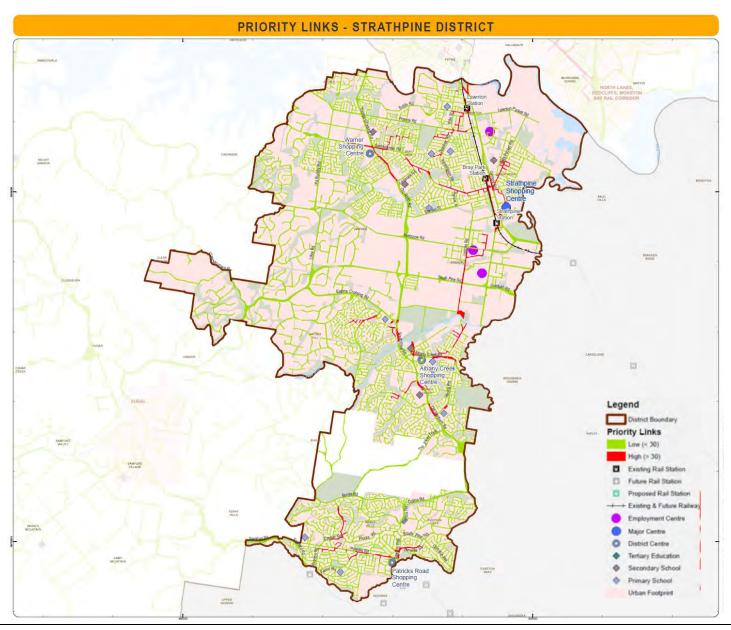
The scores of these five analyses were accumulated into a single score: the Cumulative spatial priority score. This score gives an indication of the relative priority of facility provision in comparison to one another. The output of this is illustrated in the Map on the following page. The map illustrates those land parcels identified as:

- Red reflected where the need was greatest and the gap between existing facilities and what was required (Desired Standards of Service) was the greatest. This indicates the highest priority.
- Green represented where the demand was moderate and / or the facilities more closely matched what was required, reflecting a lesser priority

These priority parcels were then grouped together to provide the basis for identifying priority projects.

Active Transport Solutions

The Active Transport network recommendations are identified in **Active Transport Strategy Appendix B - Infrastructure Requirements**, and in the **Priority Infrastructure Plan Maps - Active Transport** which can be accessed from the Council website.



Background Paper Appendix C

Selected Project Scoping Active Transport Strategy 2012 - 2031

1.0 Introduction

AECOM has been commissioned by Moreton Bay Regional Council (MBRC) to contribute to the progression of the MBRC Active Transport Strategy by developing the scope and cost of bicycle and pedestrian improvement projects already identified and prioritised through the strategy Part 2 Analysis phase. The scopes and high level cost estimates developed are to be used in the refinement of strategic transport planning and infrastructure programming.

2.0 Methodology

MBRC transport planning initially developed a list of over 100 work packages for active transport (i.e. cycling and walking) infrastructure improvements across the various council wards. These intervention packages were prioritised according to how they addressed demand; safety; centre and station accessibility; would potentially encourage modal shift and connected communities. This list was refined further through consideration of value and geographic spread to produce a list of 43 packages for scoping categorised as high, low or medium priority. Of these projects all 14 high priority, six selected medium priority and 2 selected low priority packages were identified for costing. The nominated projects seek to improve access to and the liveability of activity centres, provide strategic missing links between communities and improve user amenity.

The combined MBRC and AECOM project team of transport planners and engineers visited key package sites to gain a common understanding of issues and potential solutions. Subsequently the AECOM team visited all package sites by drive and walk through to confirm issues and features that would impact on proposed treatment works such as topography, property boundaries, expected operating conditions, and key spatial constraints.

Scoping sheets were prepared for each package site using the previous work by Council planners, site observations and summarised existing and intended conditions, operation and function. After discussion and agreement of treatments with MBRC planners, the scoping sheets were expanded to allow for internal and political consultation to include photographs of the sites and exemplar photographs of treatments from around Australia and globally. The scoping sheets produced for the identified sites are included as **Appendices A, B and C** for the high, medium and low priority packages respectively.

High level planning costs were then developed from the descriptive scope of works using a standardised schedule of rates assuming delivery of the packages as individual projects by a general contractor. In the absence of drawings or field investigations, quantities were taken from Google Earth Pro and site observations of critical features and recent changes. Further detail of the high level cost planning is included in section 7.0 of this report. The cost plans for each of the twenty selected packages are attached as **Appendices D**, **E and F** for the high (all), medium (selected) and low (selected) packages respectively.

3.0 Active Transport User Groups

The users are the most important consideration when planning and designing active transport infrastructure. The market for active transport encompasses walkers and bike riders of all different ages, physical abilities, cycling experience and road safety awareness.

Well-designed facilities attract people to walk and cycle on a regular basis. For example, research by the City of Sydney found that 84% of non-regular bike riders in Sydney say they would start riding a bike or ride more often if they could use separated cycleways.

Pedestrian activity across Moreton Bay is low, with the exception of the major activity centres and beachfront destinations, due to generally low density car orientated land use patterns with long distances between origins and destinations.

Existing bikeways in Moreton Bay are predominantly used by male cyclists for longer distance commuting trips with the majority of cycling trips made during the morning and afternoon peaks. For example, research by TMR (May 2009) on the South East Freeway Bikeway revealed that male cyclists accounted for 78% of weekday and 68% of weekend trips, while school aged children accounted for less than 1% of weekday and 8% of weekend trips.

3.1 Pedestrians

The Austroads Guide to Traffic Engineering Practice, states that pedestrian facilities are often designed to cater for the 'average' or 'normal' pedestrian. In order to meet the needs of different users the Austroads guide identifies ten broad groups of pedestrians:

- 1) Commuters
- 2) Children walking to school
- 3) Utility activities (e.g. shopping)
- 4) Parents/carers with prams
- 5) Wheelchair users and people with disabilities
- 6) Seniors
- 7) People with mobility aids
- 8) Recreational pedestrians
- 9) Runners/joggers
- 10) Dog walkers.

Other technical guides identify two groups; pedestrians and vulnerable pedestrians (people who are vulnerable in traffic environments such as children, senior and people with disabilities or mobility impairments).

The Austroads pedestrian classifications do not take into account distance. Distance and the subsequent journey time is a key attribute in determining how far a person is prepared to walk. As an example it is possible for most adults of a moderate physical ability to be able to cycle 10km, such as from Deception Bay or North Lakes to Redcliffe (assuming infrastructure conditions are appropriate). However, it is very unlikely that a pedestrian would walk the same distance in one trip especially during the hot summer months. For the purposes of this study pedestrians have been split into three groups:

3.1.1 Longer Movements

This group are enthusiastic pedestrians who are prepared to make longer trips as part of a fitness regime or for leisure purposes for example walking their dog. Some people may make long trips to destinations in the area such as employment areas. It is likely that such trips would exceed 1km or 2km in length and given the distance it is highly unlikely that many pedestrians will make these trips frequently due to the time needed to walk the distance.

3.1.2 Access to Public Transport Movements

This group of pedestrian is a 'target' audience for regular trips by foot. An example of an access to public transport movement would be a pedestrian walking from the residential suburb of Mango Hill to the proposed Mango Hill rail station as part of a multi modal transport trip or as part of a utility trip. These trips are typically between 800m and 1km in length.

3.1.3 Local Movements

This group of pedestrian is another 'target' audience for regular trips by foot. These pedestrians are making relatively short distance trips to access local facilities and services such as the school, shops and open spaces. These trips are typically between 800m and 1km in length. An example of a local movement would be a child walking to North Lakes High School.

3.2 Bicycle Riders

Bicycle infrastructure attracts a variety of different users ranging from experienced commuter and sports training cyclists to young children riding bikes to school through to families riding at the weekends for fun. For this reason, it is critical to understand the differing requirements for each type of bicycle rider. The Austroads Guide to Traffic Engineering Practice identifies seven typical groups of cyclists:

- Commuters trips made between home and the workplace, including access to local transport hubs for onward travel
- Primary school children –trips to and from school both supervised and unsupervised children (depending on their age and ability)
- 3) High school children
- 4) Utility trips for shopping and utility purposes such as medical appointments
- Recreational trips made for leisure purposes for example cycling on cycling infrastructure in a suburb as well as trips to leisure and recreational sites such as cycling to a local swimming pool or sports centre
- 6) Sports cyclists in training or otherwise exercising
- 7) Long distance touring cyclists.

For the purposes of this study bike riders have been categorised into four groups:

3.2.1 Bold and Fearless

This group are typically highly confident road cyclists who seek out the fastest and most direct route and who will cycle without fear in almost all road traffic environments. Research in Portland (USA) showed that this group accounts for only one per cent of the cyclist population (Geller 2010).

3.2.2 Enthused and Confident

This group are enthused and are encouraged to ride a bike when cycle infrastructure such as on-road cycle lanes is provided. This group have been the key success story in the UK Cycle Demonstration Towns (pilot project to demonstrate modal shift when infrastructure and behaviour change initiatives have been established). For example in Exeter (UK), the provision of on-road cycle lanes and travel behaviour change programs has encouraged many people to become regular bike riders. As a result 9% of journeys to work and 20% of journeys to high schools are now made by bicycle (Devon County Council 2010).

In the context of Australia, research carried out with regular cyclists in the City of Sydney (people who had cycled in the last month) about how 'safe' the roads in Sydney are for cycling revealed that 46% thought the roads were 'unsafe', 35% gave a neutral response and only 19% said the roads were 'safe'.

3.2.3 Interested but concerned

For many cities around the world this is the main 'target' audience to achieve mode share targets. This group of 'potential' cyclists would like to ride bikes for transport, for utility trips and for recreation but want safe, direct, comfortable, attractive and connected cycle infrastructure to enable them to ride bikes on a regular basis. It is estimated that the 'interested but concerned' group represents 60% (latent demand) of the population and so new infrastructure must appeal to 'new' cyclists and 'return to cycling' cyclists and in particular women, children and seniors, who in South East Queensland are currently minority user groups.

'Potential cyclists' in Sydney were asked what would encourage them to cycle and the three main requirements were:

- 1) Physically separated bicycle paths
- 2) Dedicated on-road cycle lanes
- 3) Driver awareness programs.

3.2.4 Non cyclists

There are a number of people in our cities who could not be encouraged to ride a bike despite the provision of infrastructure or initiatives. Travel demand management research undertaken by the UK Department for Transport has shown that there is little value in trying to encourage this group.



Figure 1 Attitudes to cycling (Source: Portland USA)

4.0 Minimum Design Standards

Active transport infrastructure attracts a variety of different users ranging from experienced commuter and sports training cyclists to young children walking to school. For this reason all likely users need to be considered in the planning of active transport facilities and it is critical to understand the differing requirements for different types of cyclists. A number of factors determine transport decisions and mode choices. These include, but are not limited to:

trip purposetravel timeweathersafety

the level of fitness and age of the person/user
 condition of the available infrastructure

The Austroads Guide to Road Design, Part 6A: Pedestrian and Cyclists Paths, details the basic requirements as:

- space to walk/ride - appropriate sight lines

smooth surface
 speed maintenance (minimal impediments)
 information

Austroads states that where data is available (for example census data and jurisdictional surveys) the space required for new major active transport paths should be based on an estimation of the likely demand on the proposed facility, When data is not available adequate space should be provided because not all bicycle riders can steer a straight line and when riding uphill experienced riders work the bicycle from side to side whilst the inexperienced cyclists may wobble to allow for this.

The Austroads Guide to Road Design states the following design standards:

Table 4.1 Austroads Part 6A design standards

FacilityTtype	Desired Width (metres)
Off-road - Bicycle path - local access path	2.5 – 3.0 metres (2.5 metres desired minimum width)
Off-road - Bicycle path - major bicycle path	2.5 – 4.0 metres (3.0 metres desired minimum width)
Footpath – general low demand	1.0 - 1.2 metres absolute minimum
Footpath – high pedestrian volumes	2.4 metres minimum (based on demand)
Footpaths – wheelchairs able to pass	1.5 – 1.8 metres (desired minimum)
Off-road - Shared path – local access path	2.5 – 3.0 metres (2.5 metre desired minimum width)
Off- road - Shared path - commuter path	2.5 – 4.0 metres (3.0 metre desired minimum width)
Off-road - Shared path - recreational path	3.0 – 4.0 metres (3.5 metre desired minimum width)
Separated two-way path	4.5 metre desired minimum total width 2.0 – 3.0 metres (2.5 metre desired minimum bicycle path width) 2.0 metre desired minimum footpath width
Separated one-way path	3.0 metre desired minimum total width 1.2 - 2.0 metres (1.5 metre desired minimum bicycle path width) 1.5 metre desired minimum footpath width
Parallel on-road – exclusive bicycle lane	1.5 – 2.5 metres wide 1.5 metre desire, 1.2–2.5 metre acceptable 60 km/h speed zone 2.0 metre desire, 1.8–2.7 metre acceptable 80 km/h speed zone 2.5 metre desire, 2.0–3.0 metre acceptable in 100 km/h speeds
Parallel on-road – sealed shoulder	2.0 – 3.0 metres wide depending on traffic speeds and volumes
Parallel on-road – Shared bicycle/car parking lane	3.7 – 4.7 metres wide with 1.6 – 2.5 metre wide bicycle lane including safety strip of 0.4 – 1.0 metres wide. (4.0 metre desired minimum width)

FacilityTtype	Desired Width (metres)
Parallel on-road – Wide kerbside lane	3.7 – 4.5 metres wide (4.2 metre desired minimum width)

5.0 Active Transport Infrastructure Typologies

5.1 Glossary of Terminology

Active transport is any form of transport that involves some kind of physical activity, in particular, cycling and

Bicycle Awareness Zone (BAZ). Bicycle Awareness Zones comprise of yellow bicycle symbols which are marked on the road to increase awareness of the presence of bicycles and to advise cyclists they must share the road with vehicular traffic. The treatments are advisory only. BAZ are not a dedicated cycle facility (see Figure 2).

Bicycle focussed infrastructure. Bicycle focussed infrastructure is infrastructure planned and designed especially for cyclists (see Figure 3).





Figure 2 Example of a Bicycle Awareness Zone

Figure 3 Example of bicycle focussed infrastructure

Cycle Street

'Cycle Streets' are lightly-trafficked streets that prioritise bicycles. Typically Cycle Streets do not have cycle lanes and cyclists use the middle of the street, sharing road space with cars. Motorists expect to see cyclists and therefore travel with caution. Cycle Streets are typically distinguished by coloured signs, bold pavement markings or material selection. (see Figure 4)

Cvclist

Any person travelling on a bicycle, including people using electric cycles or battery assisted bicycles.

Pathway or Footpath

A pathway or footpath is the facility provided for pedestrians in a suburban area or urban centre (see Figure 5).







Example of a Cycle Street in the Netherlands

Figure 5 Example of an urban footpath

Pedestrian

Any person on foot, including people in wheelchairs, on wheeled recreational devices and people using mobility aids

Pedestrian Focussed Infrastructure

Pedestrian focussed infrastructure is infrastructure planned and designed for pedestrians (see Figure 6)

Off-road Cycleway

An off road bi-directional (two way) cycleway is a path for exclusive use by cyclists (see Figure 7).





Figure 6 Example of pedestrian focussed infrastructure

Figure 7 Example of an off-road cycleway

One-way Pair Cycle Infrastructure

One-way paired infrastructure is a single one way or one direction cycle lane along each side of a street (see Figure 8)

On-road Bidirectional Cycle Infrastructure

Bidirectional is two collocated paths with a centre line in each direction exclusively for the use of cyclists within the road reserve (see **Figure 9**).





Figure 8 Example of one-way pair cycle infrastructure

Figure 9 Example of on-road bidirectional

On-road Cycle Lane

An on-road cycle lane is a lane marked on a road and exclusive to cyclists. An on-road cycle way provides travel for cyclists in one direction (see **Figure 10**).

On-road Separated Cycle Way

A separated cycle facility physically separates cyclists from pedestrians and motorised vehicles by either raised or low kerbs (see **Figure 11**).





Figure 10 Example of an on-road cycle lane

Figure 11 Example of an on-road separated cycle way

Shared Path

A path provided for both pedestrians and cyclists to use (see Figure 12).

Shared Space

A shared space is a corridor, road or public space where the environment is shared by both motorised and non-motorised modes (see **Figure 13**).





Figure 12 Example of a shared path

Figure 13 Example of a shared space

Transport Trips

All types of cycle trips (trips to school, commuting and utility trips) rather than just recreational cycling trips.

5.2 Bicycle Infrastructure Typologies

Three typologies are generally recommended: bi-directional cycleway, one way pair cycleway and shared path.

5.2.1 Bi-directional Cycleway

There two styles of bi-directional cycleway which can be utilised:

- 1) Separated bi-directional cycleway in the road reserve (see **Figure 14**).
- 2) Bi-directional cycleway on the pedestrian verge or through public open space (see Figure 15).

Each style is adapted to the current road and verge conditions depending on the adjacent land use and the road and verge condition/space available. In many cases the two styles transition from one to the other to suit the local environment.





Figure 14 Separated bi-directional cycleway in the road reserve

Figure 15 Bi-directional cycleway through public open space

5.2.2 One Way Pair Cycleway

In contrast to the bi-directional facility, the one-way pair infrastructure is a single one way or one direction cycle lane along each side of a street or road corridor (see **Figure 16**). This typology has been termed in Australia the "Copenhagen model" and for urban streets is exclusively recommended by experts in the most successful and emerging cycle cities around the world including Copenhagen, Amsterdam and Berlin. Treatments such as raised or low kerbs are used to physically separate bike riders from pedestrians, parked cars and motorised vehicles (see **Figure 17**)



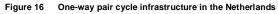




Figure 17 Raised kerbs provide separation from parked cars

On-road cycle lanes; a lane marked on a road and exclusive to bike riders, provides travel for bike riders in one direction. On-road facilities provide minimal separation from parked and moving motorised vehicles and are therefore considered the lowest Level of Service for 'interested but concerned' bike riders (see **Figure 18**).





Figure 18 On-road cycle lane with line marking delineation

Figure 19 Shared path shared by pedestrians and bike riders

5.2.3 Shared Paths

A shared path is a facility provided for both pedestrians and bike riders to use (see **Figure 19**). Shared paths provide minimal separation between pedestrians and bike riders and are therefore considered to have a low Level of Service for bike riders regardless of their physical abilities and cycling experience.

6.0 Scoping Criteria

In the context of Moreton Bay Regional Council the active transport network is fragmented. The number of people on foot is high in local centres such as Redcliffe Esplanade, Caboolture CBD and around Deception Bay shopping centre. As a result of the long distances between origins and destinations and the low density and acreage residential developments very few people travel by bicycle on a day to day basis. MBRC aspire to have a reasonable network of active transport infrastructure in order to establish a critical mass of people on foot and people on bicycles.

The scoping of each work package includes immediate, short term and long term engineering works and solutions. In terms of infrastructure solutions in relation to active transport users the following applies:

Table 2 Scoping criteria and target audience

Scoping Timeframe	People on Foot	People on Bicyclces
Immediate or short term	Existing users	Existing users
Medium term	Latent demand	Enthused and confident
Longer term and 'signature projects'	Vulnerable users groups including children, seniors, and users of wheelchairs and prams	Latent demand Interested but concerned

The project scopes and treatments proposed seek to be practical, affordable and realistic to minimise or entirely avoid impacts on property and PUP. In developing the approaches nominated by MBRC for each site, opportunities for coordination with other council initiatives, upgrades and regular maintenance (i.e. changes to road marking as part of scheduled re-sealing works) were sought to improve the economy of each package.

7.0 Costs

High level planning costs were prepared for each of the twenty priority packages identified. The cost estimates were prepared using a standardised schedule of cost rates including standard percentages applied for development costs, contractor establishment and contractual costs and contingency. The cost estimates assumed the packages would be implemented as individual projects with the result that cost savings may be achievable for those packages that could be delivered as additions to planned maintenance activity or other council or developer projects.

The intended use of the estimates is to allow for forward programming of infrastructure and as such escalation was not considered at this stage. A standardised contingency rate of 50% was agreed with MBRC officers, after initial consideration of strategic estimate contingency of 63% was derived using Schedule E of TMR's project estimation manual. This contingency was selected in part due to the generally simple nature of works proposed (e.g. new footpath, line marking).

The quantities used were derived from Google Earth pro and site observation in the absence of survey, design drawings or field investigations or studies into aspects such as traffic impacts, PUP, geometry, lighting or geotechnical conditions. Further detail on assumptions and exclusions is noted on each cost plan sheet as contained in Appendices E, F and G.

The twenty projects costed had a combined value of \$65.2 million in 2013 with the 14 high priority projects accounting for approximately \$48.8 million, the six selected medium priority projects \$6.1 million, and the two low priority projects \$9.3 projects.

Appendix A

High Priority Package Scopes

- Four traffic lanes
- Two traffic lanes further south
- Wide shoulders
- Wide grass verges
- Discontinuous sections of on-road painted bike lane
- Drainage ditches
- Two major culverts







MBRC Code AC 1

Location Albany Creek

Street/Road Leitchs Crossing, Albany Creek

Average Package score High

Context – Provides shortcut between Albany Creek and Strathpine. Current low-level facility is poorly linked at either end

Nature of projects – More substantial path with some degree of flood immunity. Connectivity to Albany Creek via Leitchs Road corridor. Leitchs Road is better than South Pine Road because it has less intersections and so is a 'cleaner route'. Observations suggest that three drainage pipes are not suitable to support active transport infrastructure, new structure piers will need to shadow pipe supports to minimise flood afflux impacts.

Scoping – Actual infrastructure and Possible Solutions

Immediate	Medium Term
Move bee hives away from existing shared path	 Albany Creek Road to Stewart Rd Remove parking on one side of Leitchs Road On-road cycle lanes on both sides of the road Add cycle lanterns to Albany Creek Rd / Leitchs Rd i/s 2 ex crossings Stewart Rd to end of Leitchs Road South BAZ markings and signs at 100m spacing New bridge / broadwalk between two halves of Leitchs Road in lee of pipes with solar lighting (SUBJECT TO HYDRAULIC ANALYSIS TO ASSESS IMPACT ON AFFLUX AND FLOOD PATHS) Cribb Road to halfway between Davis Lane & South Pine Rd Widen the formation by 3 metres including realigning drainage swale and street lights, includes widening 30m wide culvert by 3m 3.0m wide shared path with pram ramp at Cribb Rd incl signs and symbols at 100m centres each direction Halfway between Davis Lane & South Pine Rd to Kremzow Road Widen existing footpath by 2m to make an off-road shared path, incl signs and symbols at 100m centres each direction Add ped/cycle crossing to northern approach to South Pine / Leitchs i/s Add cycle lanterns to 5x existing ped crossings at 2 signalised intersections



- 9.0m wide road
- 3.5m wide grass verge (westbound)
- 7.5m wide grass verge (eastbound)
- Church Road East an alternative access route to the Bruce Highway





MBRC Code BE1

Location Burpengary East

Street/Road Church Road East, Burpengary East

Average Package score High

Examples of suggested solutions

Context - Extremely narrow provision for pedestrians and cyclists. Serves extensive catchment

Nature of projects – Provide pathway on at least one side. Widen shoulder for future cycle lanes. Provide active transport priority at intersections

Scoping – Actual infrastructure and Possible Solutions

Medium Term

- Remove shoulder painted line and reprioritise the road space (remove street parking)
- Install on-road cycle lanes on either side of the road including yellow lines,& prodot edgeline
- Widen road by 3m for 150m north of Buckley Road, northern side
- Provide a 2m wide shared pedestrian and off-road cycle path on one side of the road
- Install solar powered street lighting along the shared path
- Green panels (5m long each) at Church / Buckley intersection



- 12.5m wide road (including shoulder/parking lane)
- 7.5m wide grass verge (southbound)
- Advanced Stop Lines for cyclists at the Buckley Road/Uhlmann Road intersection
- Drainage channels at frequent intervals







MBRC Code BE2

Location Burpengary East

Street/Road Buckley Road, Burpengary East

Average Package score High

Context - Extremely narrow provision for pedestrians and cyclists. Serves extensive catchment

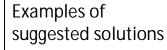
Nature of projects – Widen shoulder for future cycle lanes. Provide active transport priority at intersections (Advanced stop boxes already provided at Buckley/Uhlmann intersection)

Scoping – Actual infrastructure and Possible Solutions

Medium Term

- Ensure consistent standard throughout the corridor
- Seal shoulders (Ridgewood to Coach Road East)
- Remove shoulder/parking painted line and reprioritise the road space (working around exiting utility poles which would be too expensive to relocate)
- Install on-road cycle lanes on either side of the road with prodot separator line
- Green panels to be at side roads (10m, both sides)

- Widen the existing path to create a 3m wide shared pedestrian and off-road cycle path (eastern side of the road)
- Plant shade trees every 30 metres where practical
- Widen road by 3m for 400m north of Uhlmann Rd







- Two through traffic lanes on bridge
- Narrow shoulders on either side of bridge (less than 1m)
- Shoulders on roundabout periphery
- No footpaths or pram ramps on roundabout
- 1m footpath, 3.5m verge and wide shoulders on either side of Station Road





MBRC Code BE3

Location Burpengary East

Street/Road Bruce Highway Crossing Burpengary East

Average Package score High

Examples of suggested solutions

Context – Minimal pathways. Lack of active transport priority at intersections and slip-lanes

Nature of projects – Incorporate on-road cycle lanes at such time as over-bridge may be duplicated. Provide active transport priority at ramps, intersections and slip lanes.

Scoping – Actual infrastructure and Possible Solutions

Medium Term Longer term

• Signalise the roundabout as a crossroads (realign and rebuild 70m on each approach) and realign Progress Road to join Morayfield Road include bicycle lanterns & 3.0m footpaths on all approaches

Bruce Highway Crossing, Burpengary East

- Build 3.0m off-road shared path on southern side of Arthur Drewett Drive including active transport bridge across motorway and service road (three span)
- Install street lighting, 70m on-road cycle lanes and bicycle boxes at intersection

 Replace and widen motorway overbridge to include on-road cycle lanes (and allow lengthening of approach lanes to signals)





- Rowe Street provides access to small number of residential houses and one education centre
- 5 metre wide grass verges
- 1 metre wide footpath
- No through traffic
- Large park and area of open space
- McKean Street is 20 metres wide from boundary to boundary







MBRC Code CAB 2

Location Caboolture

Street/Road McKean Street precinct, Cabooluture

Average Package score High

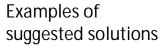
Context – Linkages between the hospital precinct/Central Lakes neighbourhood centre and the Caboolture CBD/Rail station

Nature of projects – Active transport provision in association with Rowe Street intersection upgrades and provide pathway in association with Rowe Street open drain renewal (replace drain)

Scoping – Actual infrastructure and Possible Solutions

Medium Term

- 3.0 metre wide shared path between McKean Street and Hayes Street (eastern side) and alongside drain to Bury Street (could be provided on western side instead in Lang St 'paper road' reserve
- Install solar lighting and way-finding signage
- Provide on-road cycle lanes on McKean Street (Wallace Street South to Rarity Street) and Hayes Street (Bend to Walter Street)
- Green panels across side roads (10m, each side)







- Two through traffic lanes
- Turning lanes
- 3.6 metre footpaths (boundary to kerb)
- Four car park driveways





MBRC Code CAB 4

Location Caboolture

Street/Road James Street, Cabooluture Context – Primary link from rail station to core of CBD activities and Town Square

Nature of projects – Rationalisation of car park driveway crossings in association with proposed footpath renewal, road diet to provide cycle lanes, priority crossings of James Street, active transport priority at Beerburrum Road signals

Scoping – Actual infrastructure and Possible Solutions

Average Package score High/Medium

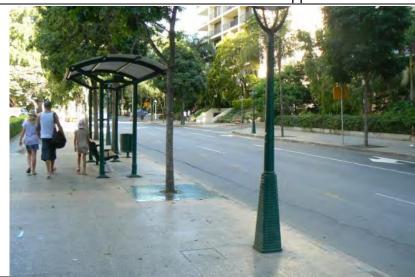
- core | Reii
- Remove the two driveways on southern side of the road
 Install on road cycle lanes with green surface treatments
 - Install on-road cycle lanes with green surface treatments at and near car park/driveway entrances
 Peplace the existing footpaths to create 3.6 metre clear pedestrian paths, plant shade trees with green.
 - Replace the existing footpaths to create 3.6 metre clear pedestrian paths, plant shade trees with grates and install wayfinding and seating

Medium Term

• Reduce intersection approaches at both ends of James St to single lane, widen footpath both sides by 1.5m, redistribute green time to Beerburrum Rd & Matthew Terrace approaches

- Longer Term
- Northern side of the road Land ownership to be confirmed.
 Depending on land ownership and business requirements, reduce the number of driveways
- Wide footpaths could form part of redevelopment of area (eg apartments and street dining?) such as mini cycle centre to promote AT access to rail station

Examples of suggested solutions





- Two traffic lanes
- Sealed shoulders on both sides of the road
- Un-metered onstreet car parking
- 1 metre wide footpath, but not continuous
- Wide grass verges





MBRC Code CN 2b

Location Caboolture

Street/Road Pumicestone Road, Caboolture

Average Package score High

Examples of suggested solutions

Context - No paths north of Jensen Road. No line marking. Shoulder for much of the length

Medium Term

• Install replacement new 3 metre wide off-road shared path on the northern side of Pumicestone Road

Nature of projects –Extend pathway. Widen shoulder to provide for future cycle lane.

Scoping – Actual infrastructure and Possible Solutions

At intersec	tion with Dances Road add bicycle signalised crossing to western approach of existing signals



Consider signalisation of Jensen Road intersection and Ardrossan Road intersection to include pedestrian and bicycle crossings



Existing conditions Typically

- Two traffic lanes
- Road widths range from 6.8 – 9 metres wide
- Some turning lanes
- Multiple car park driveways
- 3.7 5.5 metre wide verges (boundary to kerb)
- 1 2 metre wide footpaths but not continuous
- Many locations with no footpaths







MBRC Code CABS 2

Location

Context – Access to Market Plaza and Peet Riverside development

Nature of projects – Road diet, cycle lanes and paths to market Street and paths to Dickson Road/William Berry Drive in association with Dickson Road footpath renewal

Caboolture			
Street/Road Market Street, Caboolture	Immediate and/or Short Term	Medium Term	Longer term or "Signature Projects"
Average Package score High	Cut back overhanging vegetation & maintain on a regular basis	 Ensure all footpaths are of a consistent standard and quality and are continuous through the activity centre - widen all footpaths to 3.0m wide on both sides of road depending on available space boundary to kerb space Plant street/shade trees Install on-road cycle lanes on either side of the road with vibra lines or painted separators – green panels (10m long) across major driveways / development entries Convert William Berry Drive left turn slip lanes into shopping centres to verge and footpath to provide continuous pedestrian facility. Remove safety railings that are a pedestrian and bicycle hazard for example the motorway barrier on the footpath adjacent to Harris Scarfe (visible at bottom of photo above left) – should be redundant with widening of verge 	 Appropriate planning for the proposed future Caboolture South transport hub Rebuild road bridge across rail line to remove guard rail and street lights from obstructing footpath and causing potential snag or strike hazards (i.e. remove guard rail and hand rail and replace with edge mounted crash barrier with integral streetlights) – see photo above
Examples of suggested solutions			

Existing conditions Buchanan Road

- 5 metre wide grass and gravel verge on the northern side
- 3.5 metre wide verge with 1 metre footpath on the eastern side
- 10 metre road with two traffic lanes
- 2 metre wide bike path parallel to the rail line
- Limited lighting









Context – Connects Caboolture West to Morayfield East and the Bruce Highway via Caboolture River Road

Location Morayfield	Nature of projects – Proposed development to incorporate high quality active transport provisions Scoping – Actual infrastructure and Possible Solutions			
Street/Road Buchanan Road rail	Immediate and/or Short Term	Medium Term	Longer Term	
overpass, Caboolture	Cut all overgrown vegetation	Widen the existing shared path to 3.5 metres minimum width	To inform the design process and as part of the proposal for a	
Average Package score	Maintain the vegetation adjacent to path parallel to rail line	 with way-finding and signage to Morayfield rail station Reprioritise the road space on Buchanan Road by sealing and 	proposed new rail flyover and new road: • Install a new bridge	
High Long-Term	Repair all broken fences	then utilising the shoulders to provide protected on-road bike	Install a new bridge Install a new roundabout	
	·	lanes	Install pedestrian footpaths	
		 Widen the existing footpaths to 2.5 metres wide (eastern side) Install solar powered lighting along the path 	 Install street lighting Extend the Buchanan Road bike facilities to William Berry Drive 	
Examples of suggested solutions		Install solal powered lighting along the path	Exterio the Bucharlan Road bike facilities to William Berry Drive	

Buchanan Road rail overpass, Morayfield

- Two traffic lanes
- 13 metres kerb to kerb including two car parking lanes and 8.4 metre of moving traffic space
- Un-metered onstreet car parking
- Brand new and wide footpaths being constructed
- New pavement seating and active frontages







MBRC Code RED 1

Location Redcliffe

Street/Road Sutton Street precinct, Redcliffe

Average Package score High

Context – Extension of 'Urban' treatment from Anzac Avenue to Mall Way

Nature of projects – Cycle lanes, shade trees, intersection treatments in conjunction with programmed road rehabilitation. This is a critical link and important 'urban place' in the Redcliffe

Scoping – Actual infrastructure and Possible Solutions

Medium Term

Baker Street to Anzac Avenue

- Remove one line of on-street car parking and associated signage
- Realign traffic lanes and install kerbside painted cycle lanes
- Install way-finding signage to adjacent car parks
- Priority pedestrian crossing including side island across parking lane
- Street trees with grates at 15m intervals
- Miscellaneous amenity improvements e.g. seating & public art

Examples of suggested solutions







Existing conditions Typically

- Two traffic lanes
- No line markings
- No formal footpaths
- Wide grass verges John Street
- 33.8 metre kerb to kerb
- 3.8 metre wide central median
- 8.8 metres on either side of the median comprising car parking, bike lanes and traffic lane







MBRC Code RED 2

Location Redcliffe

Street/Road John Street precinct, Redcliffe

Average Package score High

Context – Desire line access to Redcliffe CBD from southern catchments

Nature of projects – Continuity of paths, on-road lanes, and priority crossings to John, Henry and Hutchison Streets associated with programmed rehabilitation of John Street

Scoping – Actual infrastructure and Possible Solutions

	Short Term as part of programmed works	Medium Term	Longer Term and "Signature Projects"
re	 Henry Street Bicycle Awareness Zone bicycle symbol markings John Street On-road painted bike lanes with kerb cut as required with intersection with Anzac Avenue (above two items costed with medium term works) 	Zebra crossings at all intersections with side islands across car parking lanes	If RED 5 progresses substitute this project (RED2) for active transport crossing of western leg of Anzac/John signals, shared path on south side of Anzac Avenue from John Street to Hutchinson Street and on-road painted bike lanes on Hutchinson Street to recreational path connection and pedestrian refugee island on Hutchinson Street.

Examples of suggested solutions





- Two traffic lanes
- Multiple turning lanes
- Extended left turn lane
- Central median
- Narrow rail overpass bridge
- Verges wider than 3 metre on approach to bridge/overpass
- Southern footpath 1. 2 metres wide
- Northern footpath2.5 metres wide

MBRC Code ST 4

Location Strathpine

Street/Road Samsonvale Road corridor, Strathpine

Average Package score Medium







Context – Serves Bray Park rail station and Strathpine Centre from western catchments

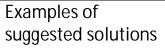
Nature of projects – Redistribution of lane widths to provide for continuous on-road cycle path, widening of rail overbridge to provide for wider paths, provision of priority crossings including all legs of signalised intersections

Scoping – Actual infrastructure and Possible Solutions

Medium Term

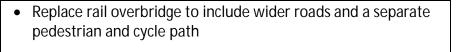
Samsonvale Road corridor, Strathpine

- Westbound paint on-road cycle lane with green surface treatment between Gympie Road and Comino Street
- Eastbound Remove median-island between Gympie Road and Comino Street. Shift traffic lanes across to accommodate on-road painted cycle lane including removal of median traffic signal pole and relocation of lanterns to overhead mast arm on western approach
- Reduce underpass roadway to one lane(bi-directional) of traffic with 'give way' at underpass approaches to provide space for onroad cycle lanes between ramps each side of Samsonvale Road (may need to signalise subject to RSA of sight lines). Complete footpath down to Railway Ave on southern side of road
- Intersection See ST3









"Signature Projects"



- Very wide road
- Two traffic lanes
- Unlimited unmetered on-street car parking
- 1 metre wide footpaths
- 2.5 3 metre wide grass verges
- On-road bus stops
- Multiple destinations e.g. school, shops and sports facilities





MBRC Code ST 5

Location Strathpine

Street/Road Bells Pocket Road precinct, Strathpine

Average Package score High

Context – Linkage to Bray Park station and Strathpine concentration of activities from significant catchment and links from sporting fields at the western end

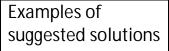
Nature of projects – Continuity of paths, on-road cycle lanes and priority crossings. This package serves a large residential catchment and many destinations including sports fields. Potential for high active transport usage in the future

Scoping – Actual infrastructure and Possible Solutions

Medium Term	"Signature Projects"
Gympie Road to Robel Street	For the entire length of Bells Pocket Road

- Painted on-road cycle lane on either side of the road (eastbound between Gympie Rd and Robel Street). In westbound direction the carriageway is too narrow on approach to Gympie Road so widen footpath full width, install kerb ramp to act as shared path bypass of pinch point.
- Widen footpaths by 1 metre each

- Protected bicycle lanes one way paired
- Widen footpaths to 2 metres wides with street trees and other boulevard treatments







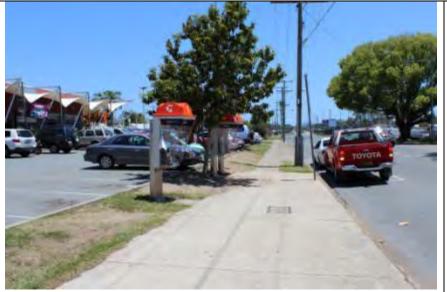
- 13.8 metre wide road
- Combination of unmetred on-street parking and restricted time parking spaces
- 4 metre wide grass (northbound) and
 5.4 metre wide verge (southbound)
- Footpaths vary in width and not continuous

MBRC Code CAB 3

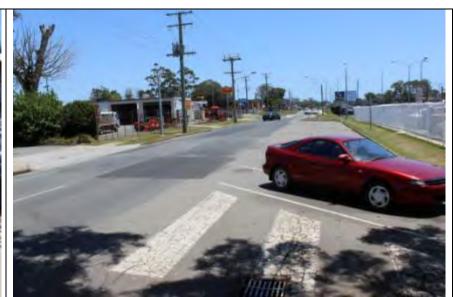
Location Caboolture

Street/Road Station precinct West, Caboolture

Average Package score Medium







Context – Interface between station and CBD

Nature of projects –Line markings, paths and priority crossings associated with the programmed rehabilitation of Matthew Terrace

Scoping – Actual infrastructure and Possible Solutions

	Immediate and/or Short Term	Medium Term	Longer Term and "Signature Projects"
е	Update the pedestrian crossings with 'quick call up' facilities (operational signal control change – no cost)	 Create 2.5 metre minimum width footpaths on either side of the road between Armstrong Way and the Bertha St signals Repave degraded footpath opposite station at 4m wide Install street/shade trees at 20m centres on western side of street, with grates and seating area Remove parallel parking and retain angle parking Remove right turn pocket at James Street signals Narrow driveway entrances to single lane width Install on-road cycle lanes and bicycle lanterns at James / Bertha St 	'Cycle Centre' including secure covered cycle parking, showers, storage, bicycle shop and café.

Examples of suggested solutions







- Two through traffic lanes
- Turning lanes
- 3.6 metre verges (boundary to kerb)
- Footpath widths range from 1 metre to 3 metres wide
- Several car park driveways
- One zebra crossing
- Some 2 hour car parking spaces



Location Caboolture

Street/Road Hasking Street, Cabooluture

Average Package score Medium

Examples of suggested solutions







Context - Primary access to CBD north including Hub and medical precinct

Nature of projects – Pathway continuity to reflect desire lines. On-road cycle lanes and priority active transport crossings

Scoping – Actual infrastructure and Possible Solutions

Medium Term 1 - Safety Medium Term 2 - Amenity

- Relocate the bus stop (east) which obstructs the footpath especially for those with prams, with mobility impediments and seniors. Move to east of Annie Street Intersection & bus stop
- Relocate zebra crossing to improve visibility (CSD). Move to location near current bus stop location
- Upgrade footpaths to 2.5m west of The Hub to provide consistent and continuous 2.5 metre wide footpath for the entire length of the street
- Install street/shade streets with grates
- Remove on-street parking and mid-block turning lanes to install on-street bicycle lanes, including minor road widening at Geroge St intersection





- Two traffic lanes
- Turning lanes
- Central medians
- Zebra crossings at some intersections
- Wide grass verges. (5.2 metres wide)
- 1 metre wide footpath (northern side of Elliott Street) but not continuous
- Inconsistent facilities

MBRC Code CAB 7

Location Caboolture

Street/Road Elliott Street Corridor, Caboolture

Average Package score Medium







Context – Connectivity to CBD from Caboolture South via Riverview Street footbridge and Morayfield Road/Beerburrum Road

Nature of projects – Connect and upgrade paths, cycle lanes, priority crossings at intersections and possible mid-block crossing from King Street opposite Town Square

Elliott Street Corridor, Caboolture

Scoping – Actual infrastructure and Possible Solutions

Medium Term	"Signature Projects"
 Provide a continuous 2.0 metre wide footpath for the full length of the southern side of Elliot Street & the northern side from 	If CAB 6 progresses and a pedestrian boulevard and shopping
Morayfield Rd to past he park entry, including way finding signage	arcade is provided on the vacant land between King Street and
 Remove parking lanes and reprioritise the road space to provide on-road cycle lanes on both sides of Elliot Street (including minor 	Elliot Street a mid-block crossing should be provided to link the
road widening at Morayfield Rd as required)	site with Riverview Park coordinated with the Morayfield Rd
 Install pedestrian and bicycle facilities and phases on all arms of the Elliott Street/Morayfield Road intersection 	signals
Improve street lighting	

Examples of suggested solutions





- Two traffic lanes
- Turning lanes (not continuous)

Northbound

- Approximately 4 8 metre wide grass verge
- 1m wide footpath Southbound
- Approximately 3 metre wide grass verge but reduced to nothing at intersection
- 1m wide footpath (not continuous)

MBRC Code DB 6C

Location **Deception Bay**

Street/Road Bay Avenue Retail **Precinct - Deception** Bay District Centre, **Deception Bay**

Average Package score Medium/Immediate

Examples of suggested solutions





Context – Major access to a District Centre with little active transport provisions or activation of frontages. No lack of room within the road reserve

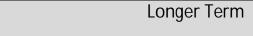
Bay Avenue Retail Precinct - Deception Bay District Centre, Deception Bay

Nature of projects - To include on-road cycle lanes and to provide pedestrian priority at driveway crossings and the roundabout. Align pedestrian crossing with activities on opposite sides.

Scoping – Actual infrastructure and Possible Solutions

Medium Term

- Widen the existing footpath on both sides of the road to be a 3.0 metres wide shared path including pram ramps and provide street / shade trees at 20m centres
- Improve pedestrian priority across the shopping centre entrances by providing a contrasting paving type extension of the footpath across the road with bolt on judder bars each side.
- Remove the northern left turn slip lane into the shopping centre & hatch shoulder; and install a large side island, pedestrian refuge islands and zebra crossing. Convert the existing pedestrian refuge to a zebra crossing to raise ped priority. Improve crossing lighting



- Signalise the roundabout to include on-road cycle lanes, an off-road shared pedestrian and cycle path and if required pedestrian signals
- Remove all left turn slip lane and shoulder markings and widen Bay Avenue to accommodate on-road cycle lanes OR provide local road widening for the LT slip lanes







- Two traffic lanes
- On-road painted bicycle lanes shared with on-street car parking
- 1.5 metre wide footpaths - wider footpaths at the front of shops
- Approximately 3 metre wide grass verge
- Un-metered onstreet car parking
- Street trees, lighting and seating



Location North Lakes

Street/Road North Lakes Drive precinct

Average Package score Medium





Context – Primary pedestrian street fronting the retail core

Nature of projects – Provision of on-road cycle lanes and priority crossings associated with the programmed road resurfacing

North Lakes Drive Precinct, North Lakes

Scoping – Actual infrastructure and Possible Solutions

Medium Term

- Encourage developers and business owners to activate the streets with more active frontages and pavement dining
- Install kerb-side on-road bike lanes to increase driver awareness and reduce bicycle riders being 'doored' by the on-street retail car parking including minor road widening at the intersection with Lakeside Dr (eastern approach)
- Enhance the two existing pedestrian refuges to zebra crossings with side islands across parking lanes to improve the mid-block active transport crossings between The Corso and Little Burke Street
- Install traffic calming (contrasting pavement at two midblock pedestrian crossings with 10-20mm reveal (like miniature speed tables) to reduce traffic speeds, increase crossing prominence and to enhance pedestrian and cyclist amenity. Include installation of additional lighting to crossings and warning signage

Examples of suggested solutions





- Two traffic lanes
- 5.8 metre wide road
- Unmetered marked and unmarked onstreet car parking (not continuous)
- 1 metre wide footpath
- Wide grass verge (not continuous)
- Multiple driveways and entrances to car parks







MBRC Code ST 2

Location Strathpine

Street/Road Rail station precinct north, Strathpine

Average Package score High

Examples of suggested solutions

Context –Linkage between rail station and core admin (Morton Bay Regional Council) and retail (Westfield) concentrations

Nature of projects -On-road cycle provisions, continuity of paths, priority active crossings of Gympie Road

Scoping – Actual infrastructure and Possible Solutions

Scoping Metadi initastractare ana i ossible solations		
Immediate and/or Short Term	Longer Term Projects	
 Install Bicycle Awareness Zone (BAZ) markings and warning signage at 70m spacing (Samsonvale St to Hall St) Install way-finding signage on approaches and along route Increase street lighting Install 2.5m footpath (Samsonvale St to Stanley St East) & widen remaining existing footpath where possible to 2.5m (subject to property boundaries and major structures 	No other projects as road corridor is too narrow especially considering adjacent land-uses, rail corridor and culverts. Also likely to be a redundant facility with the implementation of the Gympie Road 'road diet' scheme The Strathpine Master Plan report (May 2011) identifies this road as a high frequency bus corridor	
	0000-7000000000000000000000000000000000	





- 4 traffic lanes
- Pedestrian refuges
- Signalised intersections
- 800mm 1m wide footpaths
- Wide grass verges
- Good passive surveillance





MBRC Code BP 4

Location

Street/Road Samsonvale Road, Warner, Bray Park

Average Package score Medium

Bray Park

• Widen shared path in area of open space adjacent to Fir Place • Provide 2 metre wide shared path on the northern side of Samsonvale Road between Kurrajong Drive and

• Widen existing off-road shared paths to 2 metres wide on each side for the duration of the road length

Medium Term

Gum Street

Context – Serves station and Strathpine Centre from western catchments. Poor active facilities west of Kurrajong Drive (between Kurrajong Drive and Versace Drive)

Samsonvale Road, Warner, Bray Park

Nature of projects –Off-road path(s). Widening to accommodate on-road cycle lanes

Scoping – Actual infrastructure and Possible Solutions

• Install bicycle lanterns and quick call up pedestrian phasing at the signalised intersection of Samsonvale Road and Old North Road and Young's Crossing Road

Longer Term and "Signature Projects"

• Widen existing road by 1.5metres on each side (requires property resumption) or where feasible seal shoulders to create on-road cycle lanes on both sides of the road



Examples of suggested solutions

- 1m wide path on the bridge
- Un-metered onstreet car parking
- On-road bus stops
- Sandstone Point 2m wide footpath (northern side) 12m wide verges both sides of road
- Bribie 1m wide footpaths on a 3.5m verge and 3.5m parking lane







MBRC Code BRI 1

Location Bribie Island

Street/Road Bribie Island Bridge from Sandstone Point to Benabrow Avenue

Average Package score Medium Context - Extremely narrow provision for pedestrians and cyclists

Nature of projects – Widening or duplication to accommodate pathways and on-road bike lanes

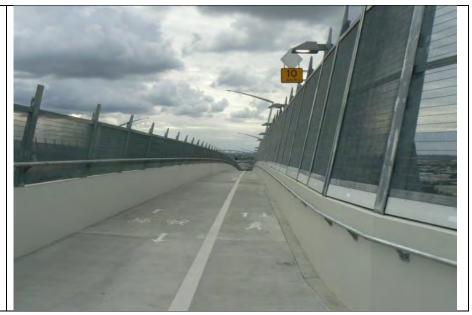
Scoping – Actual infrastructure and Possible Solutions

	Immediate and/or Short Term	Medium Term	"Longer Term Project"
ıt :	Bribie Island footpaths • Maintain/resurface all footpaths	Bribie Island Reprioritise the shoulders into on-road bicycle lanes with either green paint, double width line and/or vibra lines for protection/separation Concrete path from boundary to kerb to achieve 3m effective space Install street trees Include way finding Approach to Bribie Island bridge Extend the shoulders to create 2.5 metre wide cycle lanes Provide vibra lines or kerbs for protection/separation Signalised cycle crossing at southern end of bridge	TMR looking to preserve a corridor to the south Possible options could include making the existing bridge an active transport bridge Bribie Island Bridge New or widened bridge to include a 4m wide shared bicycle and pedestrian path on one side of the bridge
		Alternative solution off-road shared path on northern side of the road	

Examples of suggested solutions







- Two through traffic lanes
- Shoulders on either side of the road (less than 1m)
- No footpaths
- Wide grass verges
- Drainage channels in the grass verge





MBRC Code BE4

Location **Burpengary East** Context – Provides a link to Deception Bay. No active transport provision on the over-bridge

Nature of projects – Provide pathways and widen shoulders to accommodate cycle lanes. Incorporate on-road cycle lanes at such time as over-bridge may be duplicated.

Scoping – Actual infrastructure and Possible Solutions

Street/Road Arthur Drewett Drive,

Burpengary East

Average Package score Medium

Examples of suggested solutions Medium Term

- Improve street lighting
- Build off-road shared path on southern side of Arthur Drewett Drive
- Install street lighting and bicycle boxes at intersection

Longer term

Widen Arthur Drewett Drive to include on-road cycle lanes





King Street

'Road diet' by remove tuning lanes

Install on-road cycle lanes

Existing conditions King Street

- Four traffic lanes
- Turning lanes
- Central median
- 31 metre boundary to boundary
- 3.8 metre wide footpaths

George Street

- Wide verges (3.8 4.5 metres wide)
- Some parking restrictions



Location Caboolture

Street/Road King Street retail precinct, Caboolture

Average Package score Medium

Examples of suggested solutions



Medium Term

• Install at least one new signalised pedestrian crossing





Context – Potential activated frontages, Beerburrum Road and George Street

Nature of projects – Road diet, cycle lanes, protected crossings(s), shared zones. Possible mid-block crossing from Town Square to Elliott Street and Centenary Lakes

Scoping – Actual infrastructure and Possible Solutions

"Signature Project 1"

Install new street/shade trees
ENCENCIACIÓN DE LA CONTRACTION

King Street

- Create a 'low traffic zone' with raised tables
- Install new signalised pedestrian crossings
- Create a pedestrian boulevard and retail arcade on the vacant land between King Street and Elliott Street

George Street

 Create a School Safety Zone with various active transport priority and traffic calming measures including a road diet, wide footpaths, cycle lanes, raised table pedestrian crossing outside the school, build outs, flashing lights and reduced speed limit

"Signature Project 2"





Existing conditions Beerburrum Road

- Two traffic lanes
- 1 metre wide footpath (western side of the road)
- Wide grass and vegetated verges
- Unsealed shoulders Dances Road
- Two traffic lanes
- Wide grass verges
- Unsealed shoulders
- Small section of new footpath





MBRC Code CN 1

Location Caboolture

Street/Road
Alexander Barr
sporting complex and
Caboolture
Showgrounds,
Caboolture

Average Package score Medium

Examples of suggested solutions

Context – Continuity of active transport to sporting complex and showgrounds. Need for interconnection with local network.

Nature of projects – Off-road path on western side. Link from Kirsty Court.

Scoping – Actual infrastructure and Possible Solutions

Medium Term

- Upgrade the existing off-road shared path to 3 metres wide
- Install lighting (solar) along the shared path
- Seal existing shoulders to create on-road cycle lanes (some shoulder widening required)





Existing conditions Typically Four traffic lanes • Multiple turning lanes Central median • Multiple car park driveways • 4.5 metre verges (boundary to kerb) • 1 – 1.8 metre wide footpaths Footpaths are an inconsistent width and quality • High frequency of light poles, sign columns and advertising boards MBRC Code Context – Main connector between components of Principal Activity Centre CABS 1 Nature of projects – Boulevard transformation including continuous cycle lanes Location Caboolture Scoping – Actual infrastructure and Possible Solutions Street/Road Medium Term "Signature Project" Morayfield Road, Caboolture • Ensure all footpaths are of a consistent standard and quality For the entire length of Morayfield Road Average Package score • Road diet including narrowing the central median and removing some of the turning lanes is • Widen all footpaths to 2.5m wide depending on available space boundary to kerb space Medium space for active transport required • Plant street/shade trees Protected bicycle lanes - one way paired Priority crossing at entrances Examples of suggested solutions

- Two traffic lanes
- No or limited and fragmented footpaths
- Wide vegetated verges
- No lighting
- No passive surveillance





MBRC Code E 1

Location Elimbah

Street/Road Elimbah station and Beerburrum corridor, Elimbah

Average Package score Medium/Low

Examples of suggested solutions

Context – Connectivity of paths on approach to station unresolved. Active transport facilities along Beerburrum corridor discontinuous

Nature of projects – Provide priority crossings to link pathways. Provide off-road paths where discontinuous

Scoping – Actual infrastructure and Possible Solutions

Medium Term

• For the whole length of the road provide a 3 metre wide off-road shared path (large and tree loss required but no more than for widening to provide for on-road cycle lanes)





- Two traffic lanes (4 metres wide each)
- Vegetated central median
- Wide landscaped verges on either side of the road
- 1 1.8 metre wide footpaths
- New residential development
- No cross corridor crossings points
- No active frontages
- No passive surveillance





MBRC Code N 2

Location Narangba Context – Major access to schools and shops

Nature of projects –On-road cycle lanes. Priority at intersections. Mid-block crossing at Maidenhair Drive desire line.

Scoping – Actual infrastructure and Possible Solutions

Street/Road Young Road, Narangba

Medium Term

- Install a 1.5 metre wide painted on-road cycle lane on each side of the road
- Provide on-road cycle lanes through each roundabout
- Install a mid-block pedestrian and bicycle crossing to connect the shared path parallel to Tuckeroo Street with Maidenhair Drive

Average Package score Medium

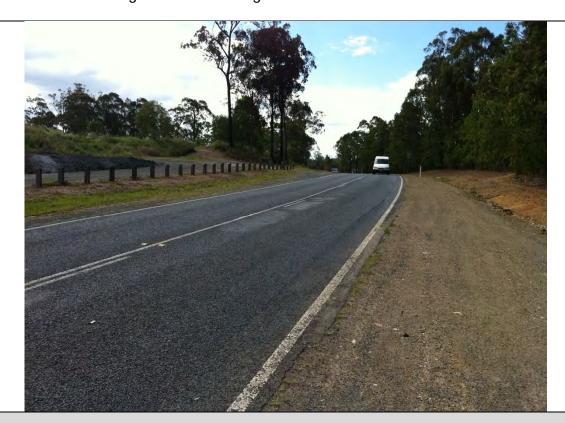
Examples of suggested solutions





- Two traffic lanes
- Wide unsealed/ gravel/vegetated verges on either side of the road
- No footpaths
- No street lighting
- No active frontages
- No passive surveillance





MBRC Code N 3

Location Narangba

Street/Road Oakey Flat Road, Narangba

Average Package score Medium

Examples of suggested solutions

Context – Connector for extensive western catchment

Nature of projects –Off-road path(s). Future widening to accommodate cycle lanes

Scoping – Actual infrastructure and Possible Solutions

Medium Term

- Seal the existing verges to create 2.0 metre wide sealed shoulder on either side of the road with physical separation for vehicles
- Provide a 2m wide off road shared path on the northern side
- Install solar lighting along the cycle lane





- Two through traffic lanes
- Narrow sealed shoulders on either side of the road with uneven surfacing (less than 1m)
- Off-road bike path on the northern side of New Settlement Road
- Vegetated grass verges on both sides of the road







MBRC Code N 4

Location Narangba

Street/Road **New Settlement Road** and Young Road, Narangba

Average Package score Medium

Examples of suggested solutions Context – Convergence of corridors serving extensive catchments

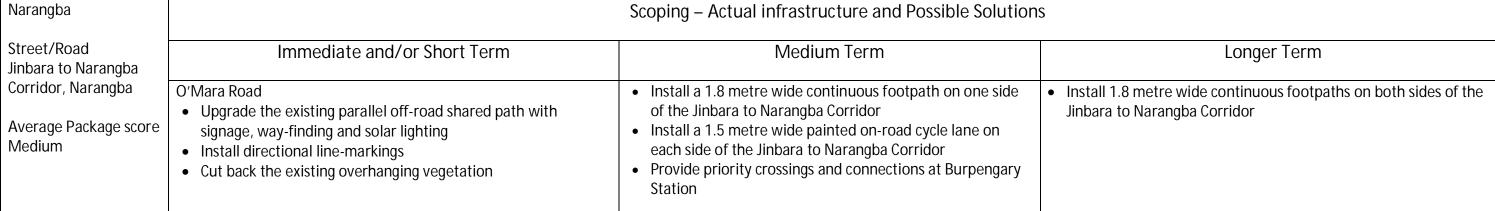
Nature of projects – Provide cycle lanes on approaches. Improve pedestrian priority at crossing of each leg.

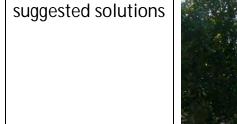
New Settlement Road and Young Road, Narangba

Scoping – Actual infrastructure and Possible Solutions

	Immediate and/or Short Term	Medium Term	Longer Term and "Signature Projects"	
e	 Upgrade the existing parallel off-road shared path with signage, way-finding and solar lighting Cut back the existing overhanging vegetation 	 Upgrade existing roundabout to include pedestrian and bicycle priority and priority across side streets Seal one of the verges to create an off-road/physically separated shared pedestrian and bicycle path 	N/A	
S				

Moreton Bay Regional Council Active Transport Jinbara to Narangba Corridor, Narangba **Existing conditions** O'Mara Road • 20kmph shared zone **Burpengary Road** Two traffic lanes and turning lanes • 10.5m wide road Very narrow shoulders Footpath (eastern side) ends at Settlement Road • 3m wide grass verges MBRC Code Context – Poor connectivity along the rail line N 6 Nature of projects – Pathways to either side of corridor (O'Mara Road and Burpengary Road) Location Narangba Street/Road Immediate and/or Short Term Jinbara to Narangba Corridor, Narangba O'Mara Road • Upgrade the existing parallel off-road shared path with





Examples of





- Four traffic lanes plus turning lanes
- Unmetered marked and unmarked onstreet car parking (not continuous)
- On-road bus stops
- 1.5m off-road shared pedestrian and cyclist paths (not continuous)
- On-road bike lanes (painted markings and not continuous)
- Typically 28m
 Boundary to
 Boundary and 21m
 Kerb to Kerb







MBRC Code RED 5

Location Redcliffe

Street/Road Anzac Avenue corridor Redcliffe

Average Package score Medium/Low

Context – Elizabeth Avenue and Boardman Road to Redcliffe Parade

Nature of projects – Boulevard transformation to be undertaken in association with approved kerb renewal, continuity of paths, road diet, on-road cycle lanes, priority active crossings, shade trees and street furniture. Opportunity to move through=-traffic onto Klingner Road and to transform Anzac Avenue into an urban boulevard

	Scoping – Actual infrastructure and Possible Solutions					
or,	Immediate and/or Short Term	Medium Term	Longer Term and "Signature Projects"			
ore	3.0 – 4.0 m wide off-road shared paths (remove the existing grass from existing verge and concrete the paths from boundary to kerb line to create an amenable walking and cycling environment, retaining existing shade trees and seating where practical	 1.5m wide painted bikeway (one-way-pair) on each side of Anzac Avenue Inclusion of Advanced Stop Boxes at intersections for cyclists Green paint treatments at 'conflict points/zones' Narrow existing through traffic lanes to 3.1metres where applicable Pedestrian crossing points at key desire lines e.g. opposite the entrance to Kippa-Ring Village NB: This option would require the removal of un-metered car parking 	 This signature project to link Kippa-Ring MBRL Rail station with Redcliffe would include: 'Road Diet' to optimise the space available for active and public transport modes linking Kippa-Ring station and key Redcliffe destinations e.g. Redcliffe Parade 'Boulevard' treatments including new street/shade trees, legible signage and way finding, drinking water fountains and seating Signalised pedestrian crossings every 400m along the corridor Protected bikeways completely/physically separated from parked and moving cars (either bi-directional or one-way-paired) 			

Examples of suggested solutions







Existing conditions Typically

- Two traffic lanes
- Unmetered marked and unmarked onstreet car parking (not continuous)
- On-road bus stops
- 1.5m off-road shared paths
- 3 metre wide grass verges
- Multiple driveways and entrances to car parks





Rail station precinct south, Strathpine



MBRC Code ST 1

Location Strathp

Context –South Pine Road, railway level crossing, Station Road

Nature of projects –See major proposal for Strathpine Hub to incorporate active transport priority

Strathpine	Scoping – Actual infrastructure and Possible Solutions				
Street/Road Rail station precinct	Immediate	Medium Term	"Signature Projects"		
Rail station precinct south, Strathpine Average Package score High	South Pine Road - Gympie Road to Mott Street Remove redundant sign posts and poles without signs (x2) Cut back/maintain vegetation – both sides	 South Pine Road - Gympie Road to Mott Street Widen path in the area of open space adjacent to no. 21 from 2.3m to 4m wide - northern side Move white rail crossing fence forward and chain link fence back (approx) 1.5m to create more space for people on foot and people on bicycles and then widen path at level crossing from 1.2 – 3m wide – northern side Concrete entire verge to 4m wide Install pedestrian crossing of road parallel to level crossing and extend footpath on south side to meet existing path Install green advanced stop line boxes on both sides of the level crossing Install street/shade trees throughout the area 	 Project for consideration - South Pine Road - Gympie Road to Kremzow Road Remove un-metered on-street car parking (western side) 3m wide bi-directional protected cycleway (Western side) with priority across driveways plus 1.5m wide urban footpath Bridge rehabilitation or new bridge (opposite Mott Street) Enhancements to include street trees and way finding 		
Examples of suggested solutions					

- Six traffic lanes
- Some turning lanes
- Central median
- 8 metre wide road
- 1 metre wide footpaths
- Wide verges
- Street trees and seating
- Multiple driveways and entrances to car parks
- Shared zone (near Samsonvale Road intersection)





Gympie Road corridor, Strathpine



MBRC Code ST3

Context – Primary corridor through Strathpine and Bray Park, including Dickson Street roundabout

Nature of projects – Boulevard transformation, remove barriers, continuity of paths, road diet, on-road cycle lanes and priority active transport crossings. Opportunities for a future urban boulevard.

Location Strathpine		Scoping – Actual infrastructure and Possible Solutions	3 11
Street/Road Gympie Road corridor,	Immediate	Medium Term	Possible Longer Term
Strathpine Average Package score Medium – Staged	 Cut back overgrown vegetation Remove sign boards and advertising that is a potential trip hazard (undefined cost) Parking enforcement campaign to prevent car parking on footpath 	 Remove a traffic lane in either direction and convert to a protected cycle lane on each side of the road (one way paired) NB: Median not required to be widened Signalise the Dickson Street roundabout and relocate existing pedestrian crossing 100m to the north Remove redundant table crossing in service road Remove hedges/low level walls which impeded the movement of vulnerable persons e.g. people with prams and in wheelchairs for example remove hedges on the steep path parallel to the shared zone Gympie Road / Bells Pocket Road intersection - install bicycle lanterns (signal activation for bicycles) on every arm of the intersection On-road cycle lane southbound from Buckley Road to Bells Pocket Road utilising shoulders and parking lanes and kerb lane on approach to intersection (includes widening the verge). On-road cycle lane northbound utilising the service road including the removal of speed bumps at slow point constrictions 	 Remove 'urban designed' footpath on western side of Gympie Road and replace with 3m effective width footpath (similar design to Sutton Street in Redcliffe) Establish 'landing spots' in the median to make uncontrolled crossing safer
Examples of suggested solutions			





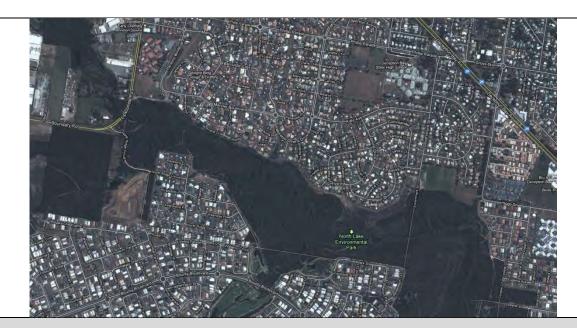


and cycling facilities

Existing conditions

- Fire trail
- Clearance width approximately 6 -10 metres wide
- No lighting
- Wooden creek crossings





MBRC Code NL 1 (b)

Location North Lakes

Street/Road Linkage - Deception Bay to North Lakes

Average Package score Medium/Low

Examples of suggested solutions Context – Option B North Ridge Road to Nellie Court/Admiral Drive

Nature of projects – Off-road path with upgraded connections into North Lakes and Deception Bay. Alternative "Green Corridor" accommodating active transport and buses

Scoping – Actual infrastructure and Possible Solutions

Medium Term "Signature Projects"

- 4m wide shared pedestrian and bicycle path
- New bridge to cross the creek and two culverts at drainage lines
- Solar lighting
- Way-finding and signage





• Explore the opportunity for a bus corridor with separate walking



Existing conditions Typically

- Two traffic lanes
- 1.5m wide on-road painted bike lanes
- 2metre wide footpaths
- Approximately 3 metre wide grass verges
- Un-metered onstreet car parking
- Street trees and lighting







MBRC Code NL 2

Location North Lakes

Street/Road Mango Hill Link

Average Package score Low

Context – Need to overcome the severance of Anzac Avenue to provide a legible 'line of sight' link from the North lakes Town Centre to Mango Hill Rail Station

Nature of projects – Priority active transport link from North Lakes Drive to Mango Hill. Priority direct active transport connection from North Lakes Drive to Discovery Drive and a priority crossing of Anzac Avenue to Halpin Drive and directly in line to Mango Hill rail station.

Scoping – Actual infrastructure and Possible Solutions

Immediate / Medium - As part of the current construction

• Create a 'legacy' high quality active transport corridor with pedestrian and separate bicycle facilities to connect North Lakes community, Discovery Drive and North Lakes Town Centre with the new Mango Hill rail station

- Upgrade the existing Anzac Avenue signalised crossing to provide priority crossing for pedestrians and cyclists at peak times
- Signalise the new intersection at the mid-point of Halpine Dr to include active transport signals

Long Term

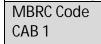
"Cycle Hub" at Mango Hill rail station including end of trip facilities, café, bicycle repair/maintenance workshop and road safety/cycle training centre. Similar to the facilities in Melbourne and the proposal for Burke Street in Sydney.

Examples of suggested solutions





- 4 metre wide grass verges
- 1 metre wide footpaths (not continuous)
- 12 metre wide roads without line, lane and car parking markings
- Un-metred onstreet car parking
- Cul-de-sac developments with parks/open spaces linking the streets.
- No through traffic



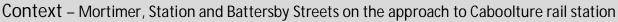
Location Caboolture

Street/Road Mortimer, Station and Battersby Streets, Cabooluture

Average Package score Low

Examples of suggested solutions





Nature of projects - Lane markings in association with programmed resurfacing. Upgrade path links between Station and Dennis Streets, and between Battersby Street and Lower King Street

Scoping – Actual infrastructure and Possible Solutions

Medium Term

Remove one line of on-street car parking, install line marking for on-road cycle lanes and one line of on-street car parking (no centre line) on Mortimer Street (3 white lines) Construct 4.0 metre wide shared path in area of open space between Dennis Street and Station Street including vehicle separation treatment to prevent traffic Provide missing links as necessary to ensure there are 1.5

• Provide missing links as necessary to ensure there are 1.5 metre wide continuous footpaths on each side of the road on Mortimer and on one side on Station and Dennis.

Longer Term "Acquisition Project"

 Acquire property to provide 4.0 metre wide active transport connection between Battersby Street and Lower King Street including street lighting



Part of programmed resurfacing





- Multiple lane signalised intersection with overpass
- Multiple crossing points for pedestrians/cyclists
- Pedestrian signals on some arms
- 1 metre wide footpath
- Wide grass verges





MBRC Code CN 2a

Location Caboolture

Street/Road D'Aguiler/Beerburrum Roads Interchange, Caboolture

Average Package score Low

Examples of suggested solutions Context – Dual signalised intersections connecting major road corridors. Lack of active transport interconnectivity.

Nature of projects – New path to west side of Old Gympie Road. On-road cycle provisions. Bicycle boxes to stop lines in intersection.

D'Aguiler/Beerburrum Roads Interchange, Caboolture

Scoping – Actual infrastructure and Possible Solutions

Medium Term

- Widen existing off-road shared paths from 2 metres to 3 metres wide
- North of showground boundary install 3 metre wide off-road shared path (significant vegetation removal required)
- At intersections install bicycle lanterns and pedestrian quick call up on all approaches at the intersection of Old Gympie Road and Industry Drive and also Old Gympie Road and Pumicestone Road





- Two traffic lanes
- Discontinuous sealed shoulders
- Shared off-road path on either side of the road but not continuous on either side
- Wide grass verges



Medium Term





Longer Term

MBRC Code MB 6

Location Murrumba Downs

Street/Road Brays Road, Murrumba Downs

Average Package score Medium

Examples of suggested solutions

Context – Will serve Murrumba Downs station

Nature of projects – Provide priority active transport crossings at desire lines. At such times as the road is widened, provide on-road cycle lanes. Active transport at intersections.

Brays Road, Murrumba Downs

Scoping – Actual infrastructure and Possible Solutions

ore	 Continuous 3 metre wide off-road shared path on one side of the road. Preferably on the western side so joins the bridge crossing 	 Create a School Safety Zone with various active transport priority and traffic calming measures including a road diet, wide footpaths, cycle lanes, raised table pedestrian crossing outside the school, build outs, flashing lights and reduced speed limit
ns		Give way 10 senticles

- Two through traffic lanes
- Sealed shoulders on either side of the road with uneven surfacing (less than 1m)
- No footpaths
- Wide grass verges on the eastbound side of the road
- Vegetated steep slopes on the westbound side of the road.



New Settlement Road and Burpengary Road, Narangba



MBRC Code N 5

Location Narangha

Context – Convergence of corridors serving extensive catchments

Nature of projects – Provide cycle lanes on approaches. Improve pedestrian priority at crossing of each leg.

Scoping - Actual infrastructure and Possible Solutions

Narangba	Scoping – Actual infrastructure and Possible Solutions				
Street/Road New Settlement Road	Immediate and/or Short Term	Medium Term	Longer Term and "Signature Projects"		
and Burpengary Road, Narangba Average Package score	N/A	 Seal the existing verges to create 2.0 metre wide sealed shoulder on either side of the road with physical separation for vehicles Install solar lighting along the cycle lane 	N/A		
Examples of suggested solutions					

Existing conditions Typically

- Two traffic lanes
- 10 metres kerb to kerb
- No line markings
- No formal footpaths
- Wide grass verges
- Typically grass verges are 3 – 3.7 metres wide
- Some on road bike lanes
- Bike lane markings are faded
- No consistency



Location Redcliffe

Street/Road Humpybong precinct, Redcliffe

Average Package score Low







Context - CBD fringe

Nature of projects – Paths and lane markings associated with programmed resurfacing of Fisher Drive, Mall Way, Humpybong Esplanade, Downs, Jeffrey, Manley, Irene Streets & Bowling Green Lane.

Scoping – Actual infrastructure and Possible Solutions

•	Line marking and BAZ symbols on Manly, Jerrfey,
	McNorton, Meredith and Downs
•	Widen crossings islands cut throughs on the northe

As part of programmed resurfacing

ern approach of the Humpybong Esplanade/Redcliffe Parade/Prince Edward Parade roundabout

• 2m wide footpath on both sides of every street

Medium Term

- Allowance for street tree planting
- 3.5m wide (including kerb separator) bi-directional protected cycleway on Humpybong Esplanade - on the park side of the road between Anzac Avenue and McNorton Street
- 3.5m wide (including kerb separator) bi-directional protected cycleway on Creek Street between McNorton Street footbridge and Irene Street
- Signalise Anzac Avenue/Humpybong Esplanade intersection

Longer Term and "Signature Projects"

- Signalise Irene street/Humpybong Esplanade roundabout
- Signalise Humpybong Esplanade/Redcliffe Parade/Prince Edward Parade roundabout

Examples of suggested solutions







- Two traffic lanes
- 1.8 metre wide footpaths
- 3 metre wide grass verges
- Large areas of public open space and unutilised open space
- Extensive on-street car parking around the hospital and shopping centre
- Limited street lighting







MBRC Code ST 7

Location Strathpine

Street/Road
Strathpine to Bald Hills
bike link

Average Package score Low

Context – Linkage from Strathpine to Pine Rivers Park and to Brisbane

Nature of projects – Continuity of appropriate standard of paths. This work package provides the opportunity for interconnectivity from Learmouth Street to Brisbane City Council boundary at South Pine River. Parts of the bikeway were washed away in the January 2011 floods. A less vulnerable alternative is needed.

Scoping – Actual infrastructure and Possible Solutions

S	Immediate and/or Short Term	Medium Term	Longer Term and "Signature Projects"
е	Reinstate the connection from Learmouth Street to Pine Rivers Park on a less flood vulnerable environment	 Widen all existing paths to an effective 3m width New 3m wide shared path to fill gaps (including changes to flood barrage) Street lighting (solar) Priority active transport crossing across Gympie Road linking the Pine Rivers Park and the train station together especially for major events 	Install bicycle parking in the car park area
S			

Examples of suggested solutions







Background Paper Appendix D

Land Use and Transport Accessibility Index Active Transport Strategy 2012 - 2031



Transport and Main Roads

Policy and Planning

Planning Analysis

Moreton Bay Regional Council – Active Transport Plan

MBRC – Active Transport Plan

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Report contents

- 1. PT & Walk Accessibility Composite
- 2. Cycle Accessibility Composite
- 3. Walk Accessibility Composite
- 4. PT & Walk Accessibility to Major Centres
- 5. Cycle Accessibility to Major Centres
- 6. Walk Accessibility to Major Centres

Note to the user:

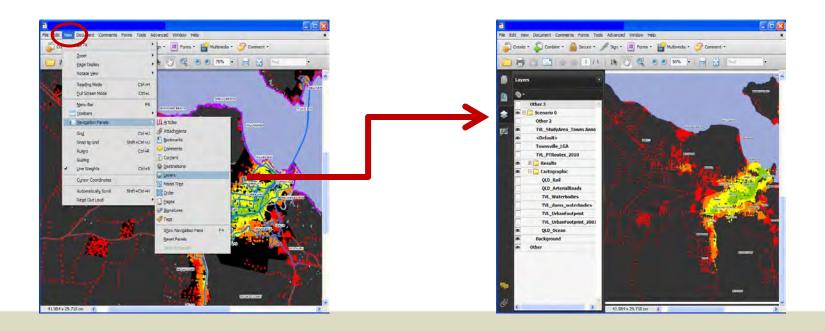
The following maps have been created as "layered" PDFs which allows the data layers to be turned off and on at the user's discretion.

A layer is visible when the eye icon is present, and hidden when the icon is absent.

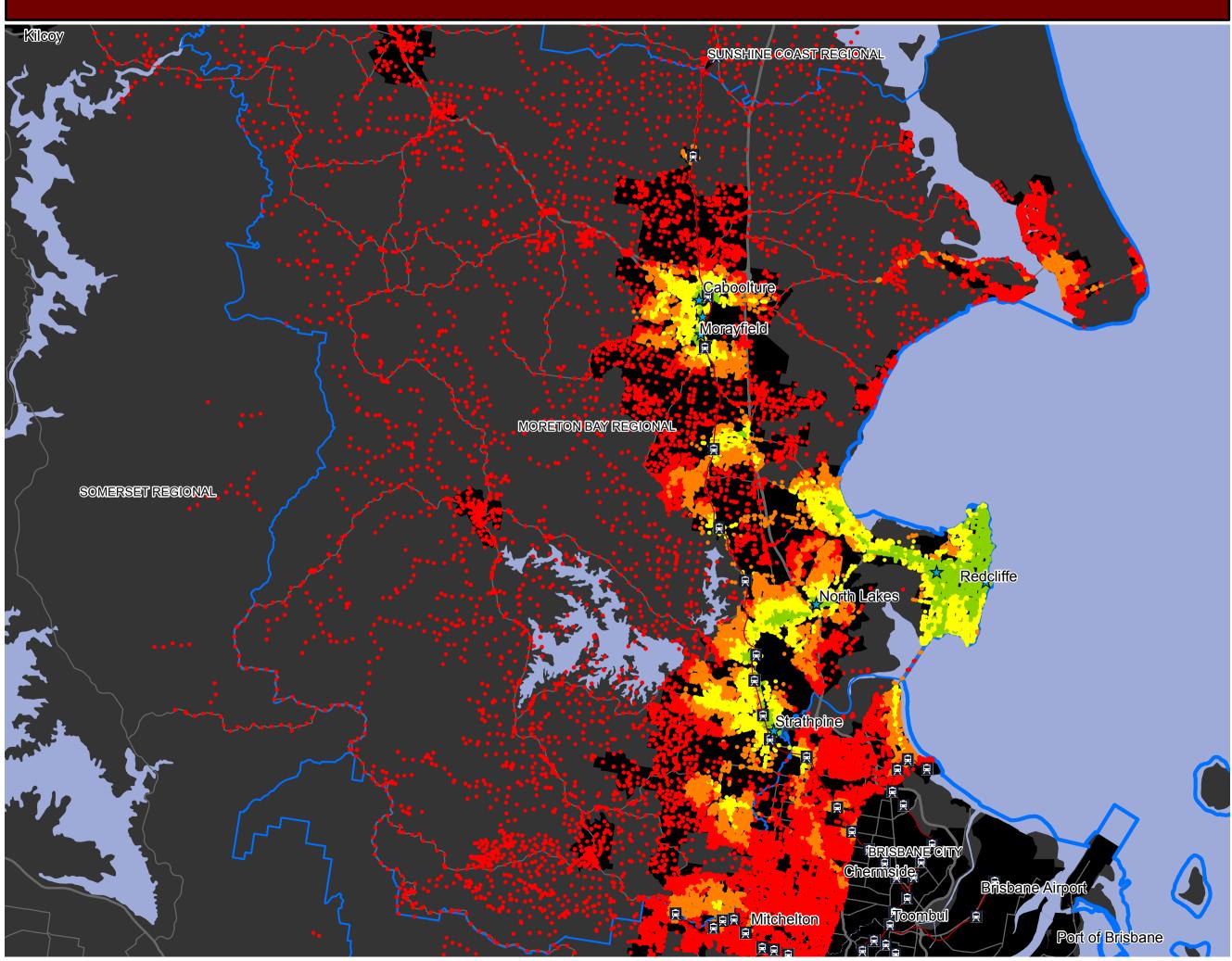
To hide a layer click the eye icon, to show a hidden layer click the empty box.

Refer to the following graphics for help utilising the layers toolbar.

• (Turning layers on and off will alter the contents of the map but not the map's legend.)



PT & Walk Accessibility Composite



2011 PT and Walk

AM peak period

Accessibility

< 15 mins

15 - 30 mins

30 - 45 mins

45 - 60 mins

> 60 mins

Legend

MBRC Major Centres

Rail Stations

— Rail

— Major Arterial

— Minor Arterial



SEQ Boundary



Urban Footprint



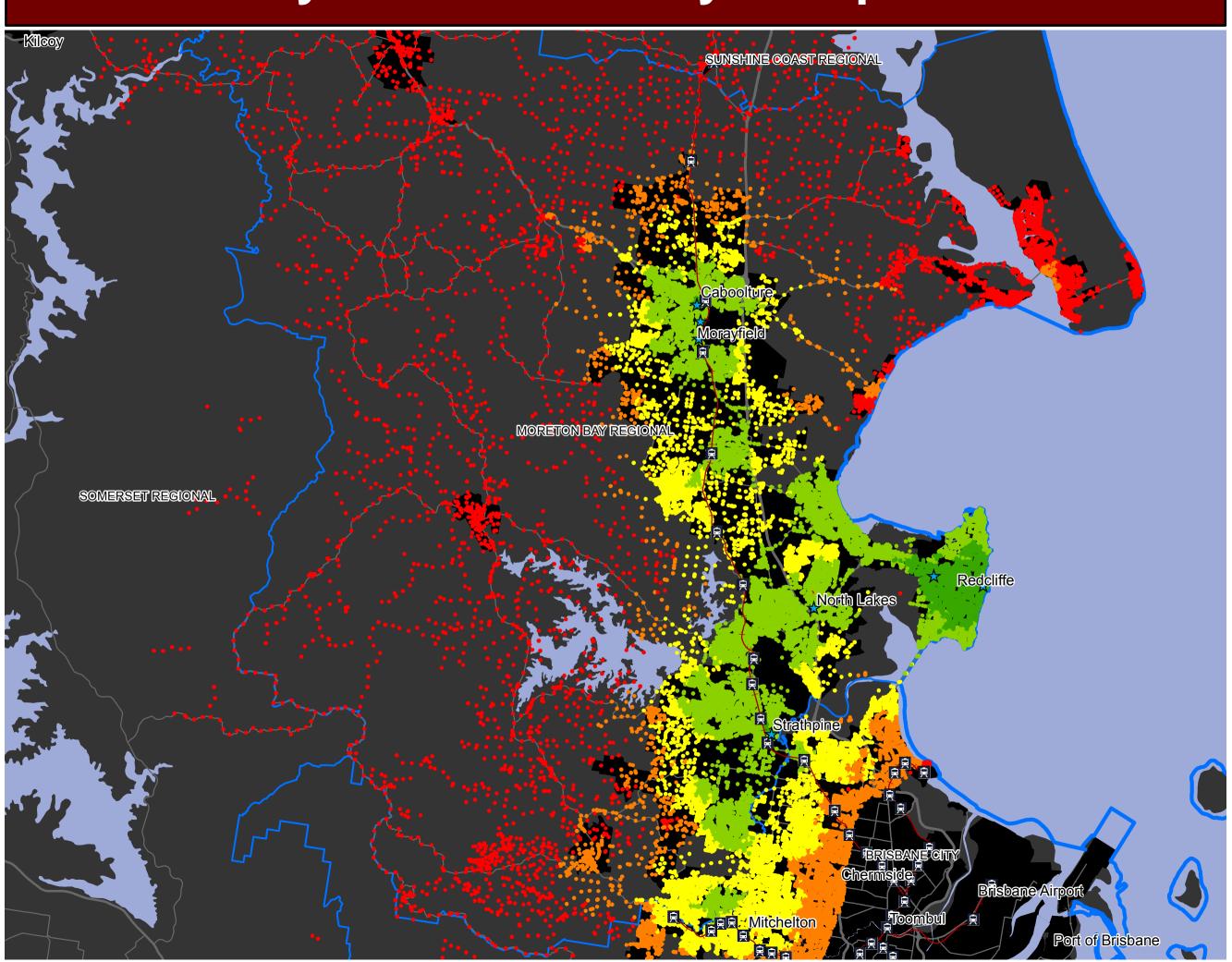
Datum..... GDA Projection... MGA Zone

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Cycle Accessibility Composite



2011 Cycle Only mode

AM peak period

Accessibility

< 15 mins

15 - 30 mins

30 - 45 mins

45 - 60 mins

> 60 mins

Legend

MBRC Major Centres

Rail Stations

⊢ Rail

ı talı

Major Arterial

—— Minor Arterial



SEQ Boundary



Urban Footprint



Datum...... GDA! Projection... MGA Zone !

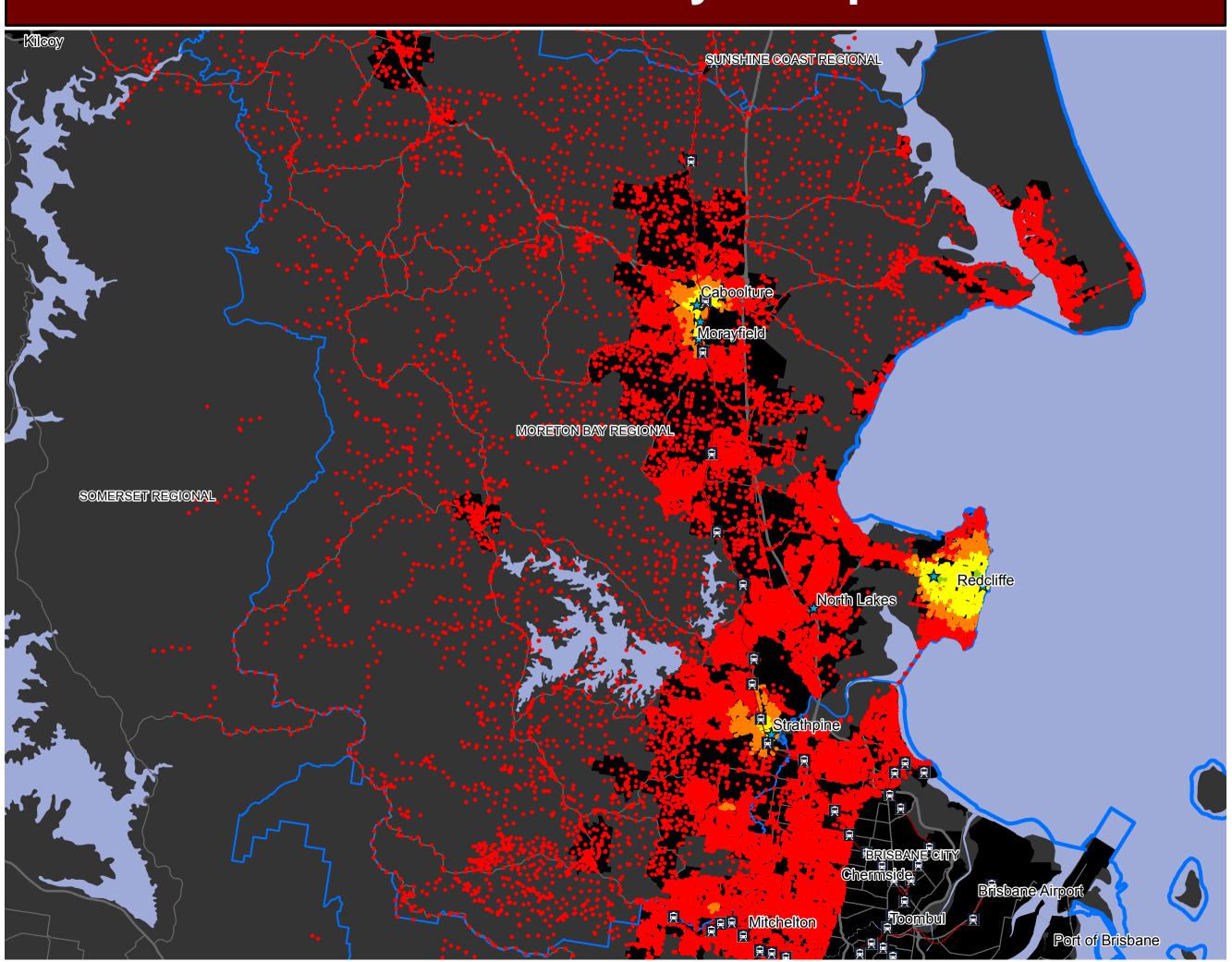
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Walk Accessibility Composite



2011 Walk Only mode

AM peak period

Accessibility

< 15 mins

15 - 30 mins

30 - 45 mins

45 - 60 mins

> 60 mins

Legend

MBRC Major Centres

Rail Stations

— Rail

— Major Arterial

— Minor Arterial

SEQ Boundary



Urban Footprint



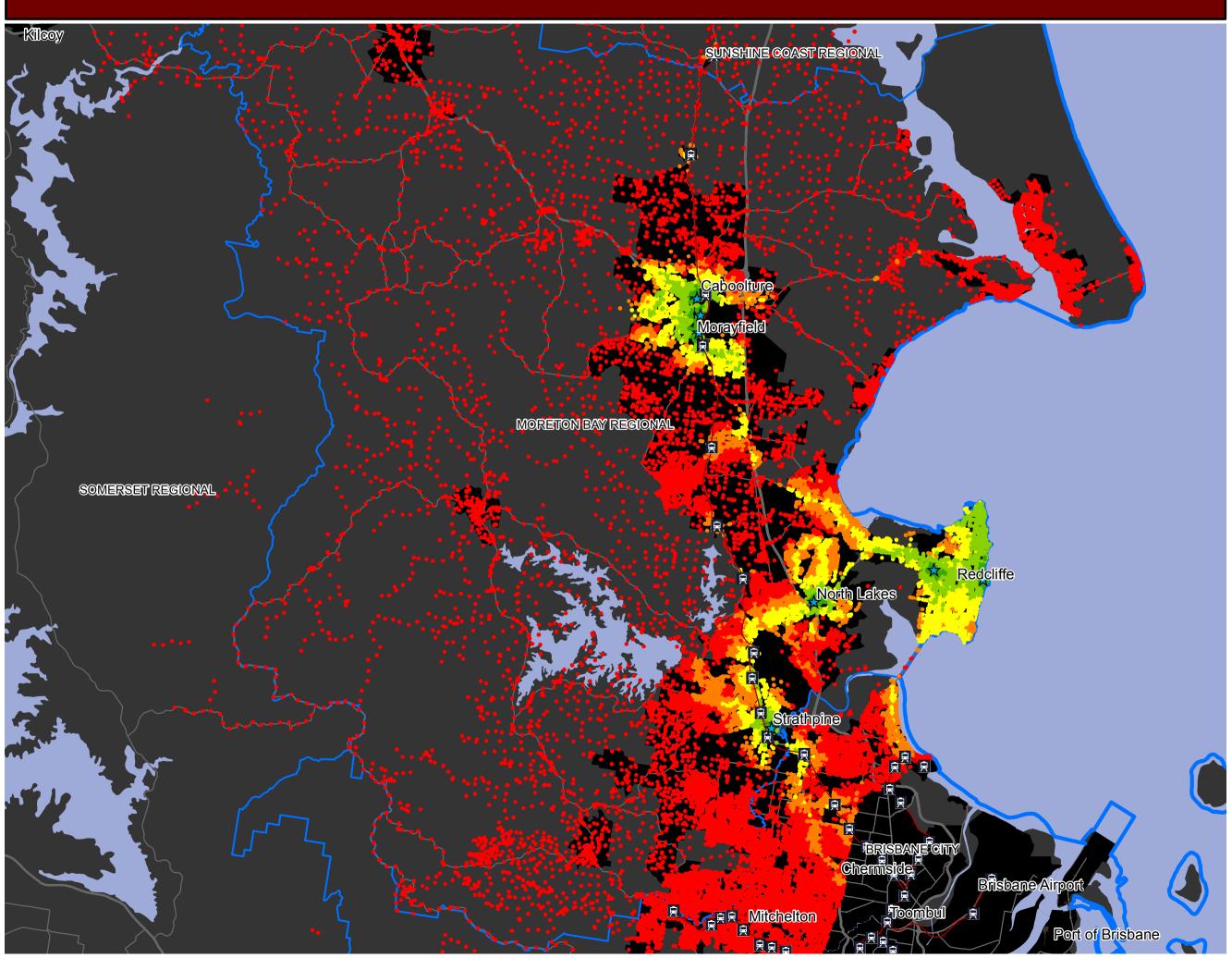
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PT and Walk Accessibility to Major Centres



2011 PT and Walk

AM peak period

Accessibility

< 15 mins

15 - 30 mins

30 - 45 mins

45 - 60 mins

> 60 mins

Legend

MBRC Major Centres

Rail Stations

⊢ Rail

— Major Arterial

—— Minor Arterial



SEQ Boundary

Urban Footprint



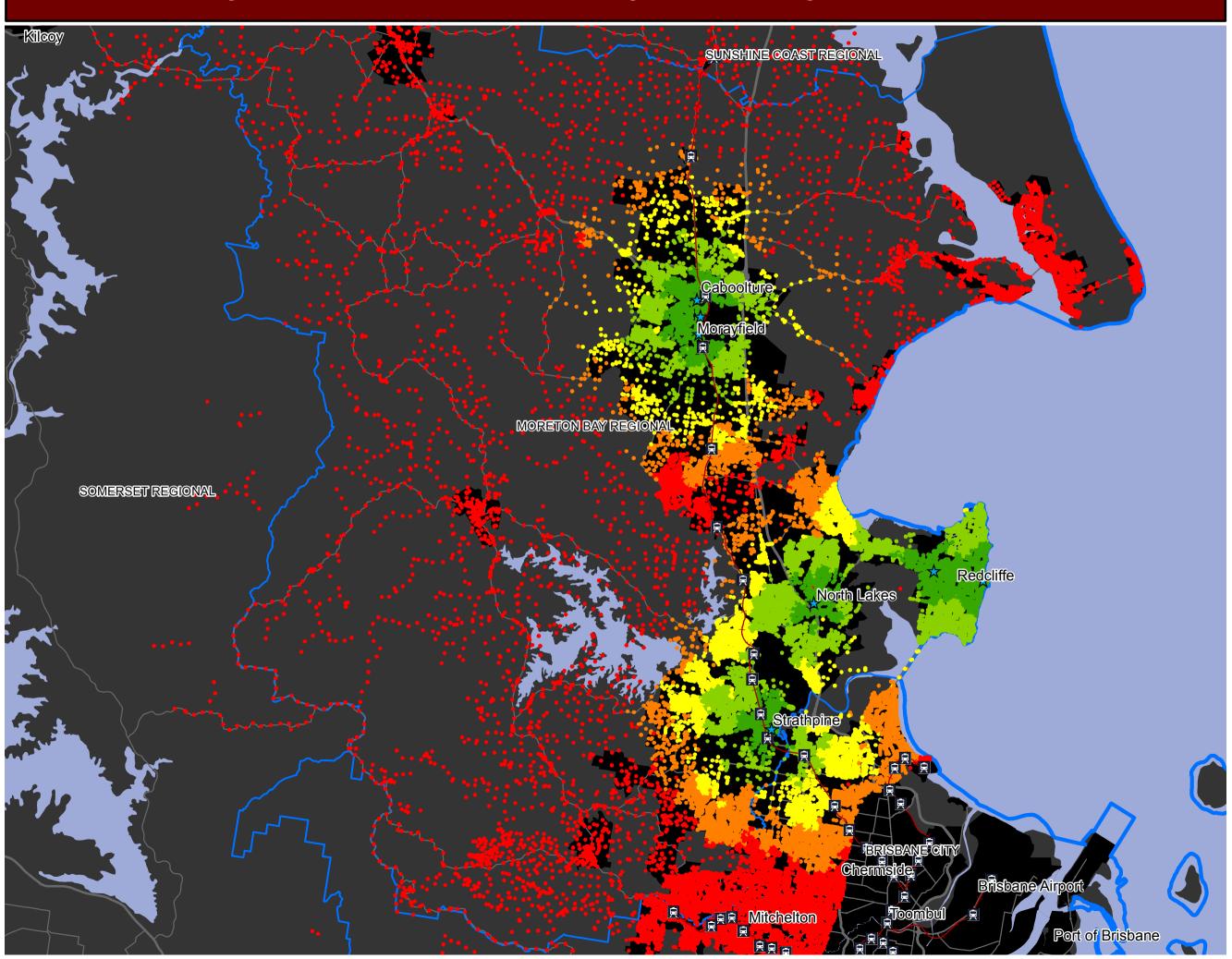
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Projection... MGA Zone 56

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Cycle Accessibility to Major Centres



2011 Cycle Only mode

AM peak period

Accessibility

< 15 mins

15 - 30 mins

30 - 45 mins

45 - 60 mins

> 60 mins

Legend

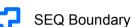
MBRC Major Centres

Rail Stations

⊢ Rail

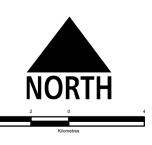
—— Major Arterial

—— Minor Arterial



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Urban Footprint

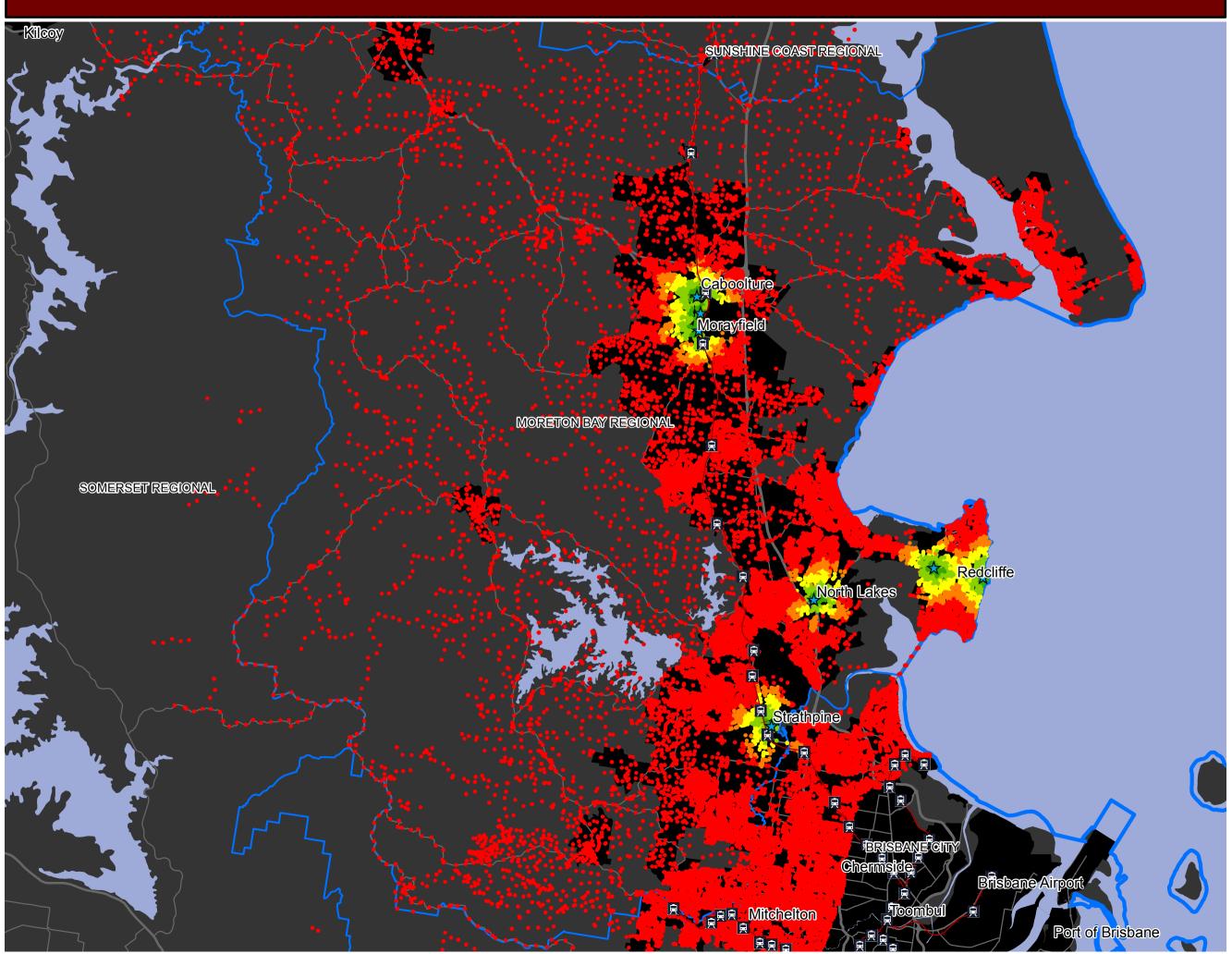


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Walk Accessibility to Major Centres



2011 Walk Only mode

AM peak period

Accessibility

< 15 mins

15 - 30 mins

30 - 45 mins

45 - 60 mins

> 60 mins

Legend

MBRC Major Centres

Rail Stations

⊢ Rail

—— Major Arterial

— Minor Arterial



SEQ Boundary



Urban Footprint



Datum...... GDA! Projection... MGA Zone !

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MBRC – Active Transport Plan

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