Local Government Infrastructure Plan 2017

Active Transport Extrinsic Material

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Moreton Bay Regional Council

Version control

Version	Revision date	Author	Description and reason for change
1	August 2016	Wally Wight	Version 1
2	August 2016	Gen Denny	Added the project P1 as it was missing from the Schedule of Works
3	October 2016	Paul Gleeson	Amended to include revised catchment definitions and subsequent changes
4	February 2017	Gen Denny	Update guideline compliant establishment cost column

Contents

1.0 Preliminary

This report provides the background information for the Active Transport Network, to support the development of the Moreton Bay Regional Council Local Government Infrastructure Plan (LGIP). The Active Transport infrastructure network is a sub-set of the *"Transport"* infrastructure network providing essential services to development.

The report outlines:

- The service catchments **(Section 2)**;
- The demand assumptions and conversions **(Section 3)**;
- The desired standards of service **(Section 4)**;
- The definition of trunk infrastructure **(Section 5)**;
- Network planning and modelling **(Section 6)**;
- Network costing and valuation methodology **(Section 7)**;
- Schedules of work **(Section 8)**; and
- Source and supporting documents **(Section 9)**.

1.1 Active transport facilities

Moreton Bay Regional Council plans, delivers and maintains a variety of active transport infrastructure and facilities. These facilities support a variety of active transport users for a variety of trip purposes. Council-provided active transport facilities include:

Footpaths

Footpaths are located within the road corridor. They are often elevated from the traffic lanes with a kerb, and can be separated by landscaped or grass verges. Footpaths are a shared facility for any user of active transport.

On-road cycle lanes

On-road lanes provide an identified space for bicycles. These are designed to provide safe passage for cyclists, raise driver awareness and to establish priority at potential points of conflict. These are generally provided on roads with speed limits greater than 50km per hour and are identified by white bicycle symbols painted on the road, and/or green painted road surface at points of potential conflict between cyclists and motorised transport.

Shared zones

A shared zone is where pedestrians, cyclists and motorised traffic share the same road space. Special rules and speed limits apply for shared zones. Motorists and cyclists must give way to pedestrians at all times throughout the entire zone; the typical speed limit of shared zones is 10km/h.

Bicycle awareness zones

Bicycle Awareness Zones (BAZ) are used when space for bicycle lanes is restricted. They are useful in raising driver awareness of the potential presence of cyclists in constrained road environments. BAZ are indicated by yellow bicycle symbols painted on the road. Cyclists share the road with vehicles, keeping to the left as far as possible.

Off-road pathways

Off-road pathways provide links between places and are often located in open space corridors. Off-road pathways can provide improved connectivity along desire lines to major attractors including retail and commercial centres, schools, employment and recreation nodes.

Trip Facilities

Trip facilities include a combination of *"on-trip"* and *"end-of-trip"* provisions. While undertaking an active transport trip there need to be places to drink, seats to rest along with the way and shade and shelter from the weather. In some cases, lighting is required to make it safe to use at night. At destinations, there needs to be secure storage for bicycles, lockers, showers and change facilities.

The Active Transport Network

The active transport network is the combination of the above elements, providing connectivity and continuity across the region, serving destinations from their catchments, and meeting users' needs.

Trunk vs. Non-Trunk

Active transport infrastructure network elements are only identified in the LGIP where Council has also determined them to be *"trunk infrastructure".* While Council still plans for, provides and manages non-trunk active transport facilities across the region, for the purpose of this report, and the development of the LGIP, only **"***trunk infrastructure"* has been included.

1.2 Why is active transport important?

"Active Transport in Moreton Bay provides safe, comfortable and attractive movement choices for more people, more often, leading to an improved, active and healthy lifestyle."

[Vision statement MBRC Active Transport Strategy 2012 – 2031]

More people walking, cycling and taking public transport can improve amenity, significantly reduce the demand for expensive road infrastructure, and help to manage traffic congestion.

The integration and interconnectivity of active transport routes between suburbs, and the intensification and diversification of land use around mixed use centres, make the provision of walking, cycling and convenient access to high quality public transport attractive to use, and reduces demand for motorised transport.

Walking, cycling and other forms of active transport are an easy way to increase daily physical activity and social exchange. It is a healthy and rewarding form of outdoor recreation. It aids prevention of lifestyle-related conditions such as depression, obesity, diabetes and heart disease. It improves general fitness and health, and extends our expectancy for a long, active and enjoyable life.

Walking, cycling and other active modes are low cost and environmentally-friendly; emit virtually no air or noise pollution, and have minimal demand on natural or economic resources. These activities consume no fossil fuels, take up minimum space, and impose little impact on other users. The more trips taken by walking and cycling, the more our environmental footprint is reduced.

Investments in active transport support a higher quality of life, provide access and mobility and, in turn, improve the public image of the region. Considering the range of ways active transport engages with some of the most pressing challenges of our time, support for walking and bicycling has the potential to continue to significantly increase as a result of good urban planning and design.

1.3 Active Transport Strategy

Moreton Bay Regional Council has prepared an ***Active Transport Strategy 2012 – 2031*** as the primary driver for Council's planning and delivery of active transport infrastructure and programs to meet user needs to 2031.

Active Transport planning sits within a broad policy framework. The ***Active Transport Strategy 2012 – 2031*** provides the mechanism by which a range of State and Local Government policies and legislation is implemented. Council's primary policy for the preparation of the Strategy was the ***Moreton Bay Region Community Plan***.

The Community Plan, developed in 2011, was prepared in partnership with community groups, businesses, state agencies and local residents. The Community Plan identifies a number of community outcomes, themes and targets which active transport will help deliver.

The Active Transport Strategy is one of a suite of transport strategies for the Moreton Bay Region. In combination, these strategies seek to deliver an integrated and balanced transport system that responds to growth, and provides transport choice and access options for all.

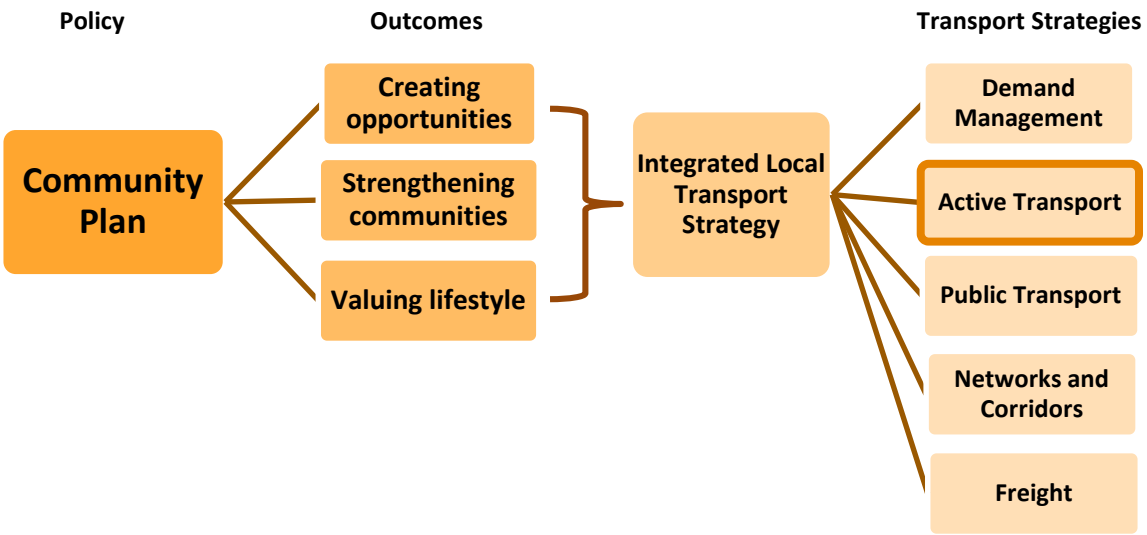

Diagram 1: Council's policy framework

1.4 Delivering the strategy

The primary objective of the ***Active Transport Strategy*** is delivering our active transport vision, and responding to the needs of users within the region. The result is intended to be an attractive, cohesive, functional and integrated active transport network.

Delivery of the Strategy will be achieved through a series of programs with measurable targets, and an ongoing monitoring and review schedule. The outcomes of this Strategy and future programs will ultimately inform Council's ***Integrated Regional Infrastructure Strategy*** (iRIS), Council's capital works program, the ***Moreton Bay Planning Scheme***, the ***Local Government Infrastructure Plan*** (LGIP) and other strategies currently in development.

The ***Active Transport Strategy*** informs the preparation of the LGIP by identifying new and upgraded facilities required to respond to growth, meet changing community needs, and by determining when and how these facilities will be provided. The outcomes guide Council's capital works program for the next 20 years.

2.0 Service catchments

For the purpose of the LGIP the region has been divided into five transport catchments. The catchments are designed to distinguish between urban and rural uses and to take account of the unique servicing patterns across the region. The catchments are identified in Figure 1 and include:

- Urban North
- Urban South
- Urban East
- Rural North
- Rural South

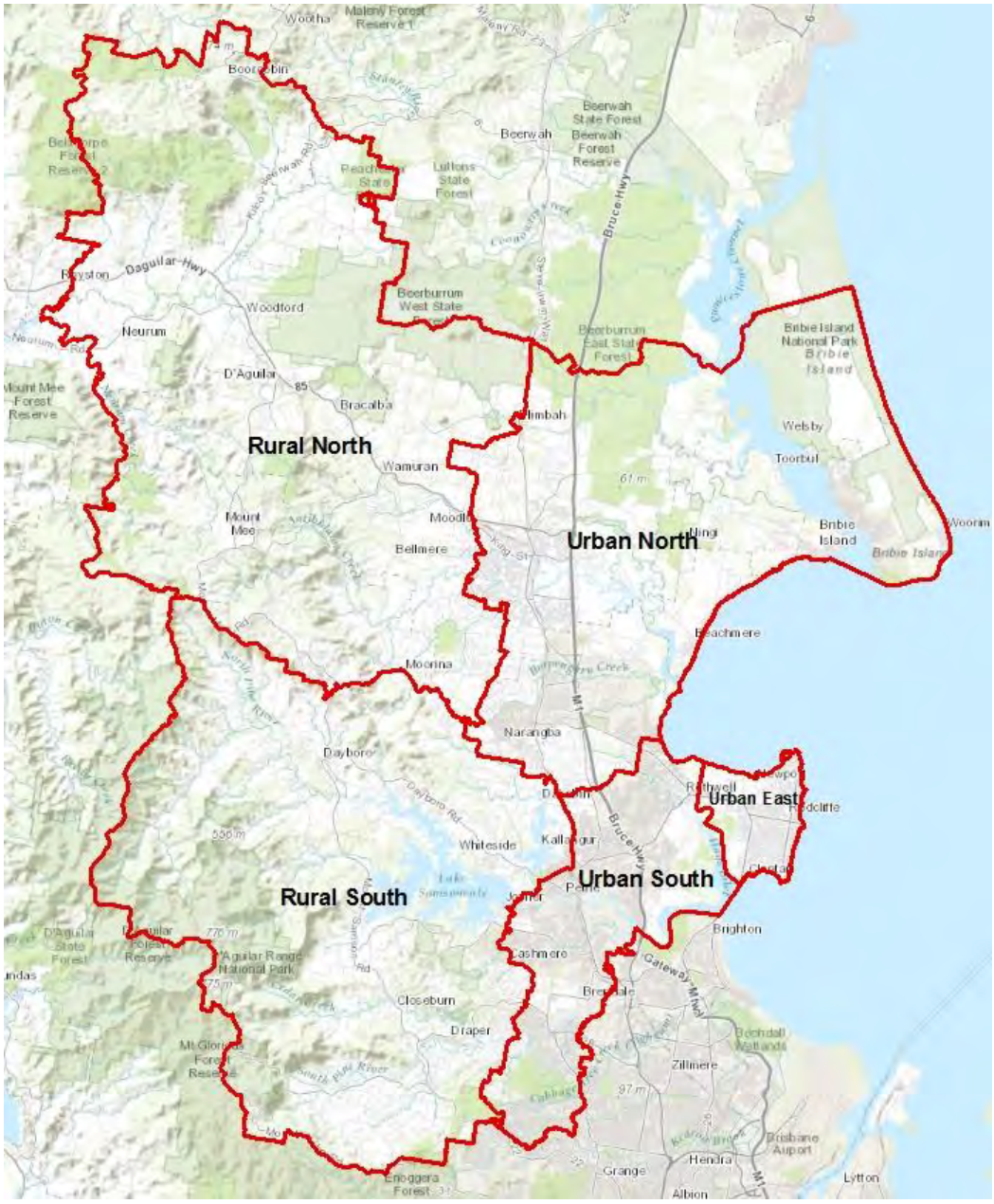

Figure 1 – LGIP active transport network service catchment

3.0 Demand assumptions and conversions

3.1 Source of active transport trips

The population assumptions used to undertake catchment planning for the active transport network, as identified in the Active Transport Strategy, were based on the Moreton Bay Regional Council Planning Assumptions (current as of April 2013). See **Table 1**, below. These population assumptions draw on a number of sources, including existing and committed development, planning intentions (the SEQ Regional Plan, strategic planning projects and the place types from the Strategic Framework), and growth forecasts.

- The base year for the planning of the network is 2011, corresponding with the latest data available from the ABS census.
- The planning horizon is 20 years to 2031 – aligning with the ABS Census years
- The base year for the costing of the network is 2013, as used by AECOM in their consultancy scoping and costing of representative Active Transport packages, and by Arup in their costing of active transport components of the Networks and Corridors Strategy Implementation Plan.

Table 1 – Population Growth – 5 year increment assumptions 2011 – 2031

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**

Population growth to 2031 – Moreton Bay Regional Council population assumptions, April 2013

The State Government has since projected amended control totals, but the results of new demographic analysis are not yet available. Updated figures will be used for subsequent reviews of the LGIP.

Trip generation has been calculated on the basis of households and employment. The transport model has been populated by the number of households and jobs in the various place types in the new MBRC Planning Scheme. See **Tables 2** and **3** below.

Table 2 - Dwelling projections by Place Type - 5 year increments 2011 to 2036

Place Type	2011	2016	2021	2026	2031	2036
	Dwellings					
Activity Centre	13,567	15,070	16,572	18,267	19,962	21,657
Enterprise/Employment	4,370	5,236	6,101	7,048	7,995	8,942
Urban	18,337	22,484	26,631	31,212	35,793	40,374
Next Gen Suburban	23,414	29,197	34,979	41,717	48,454	55,192
Suburban	67,912	69,937	71,962	74,015	76,068	78,121
Special Area	393	472	550	630	710	790
Key Resource Area	1,502	1,522	1,542	1,562	1,581	1,601
Rural / Coastal	19,695	20,620	21,545	22,555	23,564	24,574
MBRC Total	**149,190**	**164,536**	**179,882**	**197,005**	**214,127**	**231,250**

Dwelling projections to 2036 - Moreton Bay Regional Council Assumptions, August 2013

Table 3 - Employment projections by Place Type - 5 year increments 2011 to 2036

Place Type	2011	2016	2021	2026	2031	2036
	Jobs					
Activity Centre	37,562	46,659	55,756	64,919	74,081	83,244
Enterprise/Employment	19,561	23,410	27,259	31,051	34,842	38,634
Urban	7,696	9,068	10,440	11,871	13,301	14,732
Next Gen Suburban	6,370	7,512	8,654	9,718	10,782	11,846
Suburban	17,210	18,733	20,255	21,637	23,019	24,401
Special Area	723	721	718	722	726	730
Key Resource Area	805	802	798	793	788	783
Rural / Coastal	8,231	8,976	9,722	10,468	11,214	11,960
MBRC Total	**98,158**	**115,880**	**133,602**	**151,178**	**168,753**	**186,329**

Employment projections to 2036 - Moreton Bay Regional Council Assumptions, August 2013

3.2 Trip Generation

Trip generation rates have been derived from the **Moreton Bay Strategic Multi-Modal Transport Model** (MBRSTM-MM). These rates, applied to residential and employment demographics produce demands on the transport network.

Trip generation rates have been disaggregated by the origin location of the trip producer (i.e. the residential dwelling location in terms of 'Place Type') and by trip purpose. The rates were initially derived for vehicle traffic. Mode shares for active transport and public transit were then applied in relation to place type to calculate generation by each mode. The following tables indicate the rates for active transport.

A summary of residentially-based active transport trip generation rates is provided in **Table 4** below.

Table 4 - Residential Trip Generation Rates

Daily Trips Per Dwelling	2011	2016	2021	2026	2031	2036
Activity Centre	1.16	1.21	1.26	1.57	1.89	2.20
Enterprise/ Employment	0.32	0.29	0.26	0.29	0.31	0.34
Urban	0.49	0.46	0.43	0.68	0.93	1.18
Next Gen Suburban	0.45	0.41	0.37	0.51	0.65	0.79
Suburban	0.43	0.39	0.36	0.46	0.56	0.65
Special Area	0.32	0.25	0.17	0.15	0.13	0.11
Key Resource Area	0.08	0.08	0.07	0.07	0.07	0.07
Rural / Coastal	0.24	0.23	0.22	0.22	0.22	0.22
MBRC Total	**0.48**	**0.46**	**0.44**	**0.59**	**0.73**	**0.88**

Trip generation rates have been disaggregated by nature of the employment trip producer (i.e. the jobs in terms of 'Employment Type') and by trip purpose. The rates were initially derived for vehicle traffic. Mode shares for active transport and public transit were then applied in relation to employment type to calculate generation by each mode. The following tables indicate the rates for active transport. A summary of employment-based active transport trip generation rates is provided in **Table 5** below.

Table 5 - Employment Trip Generation Rates

Daily Trips Per Employee	2011	2016	2021	2026	2031	2036
Retail	0.53	0.56	0.60	0.75	0.90	1.05
Service	0.08	0.09	0.10	0.12	0.14	0.16
Professional	0.20	0.21	0.22	0.28	0.35	0.41
Industry	0.09	0.10	0.11	0.14	0.16	0.19
Other	0.10	0.10	0.10	0.14	0.18	0.23
MBRC Total	**0.19**	**0.21**	**0.23**	**0.30**	**0.37**	**0.44**

The catchment based demand summary has been derived directly from the transport model. To meet the requirement of the Local Government Infrastructure Plan. These demands are based on the transport network catchments (refer Transport Extrinsic Material October 2016). These figures reflect the total active transport modelled trips which are a combination of planning assumptions, demand generation rates and place types. These figures are provided in **Table 6**.

Table 6 - Total Daily Active Transport Demand

Catchment	2016	2021	2026	2031	Ultimate
Urban East	21,009	21,229	32,955	44,681	60,579
Urban South	42,587	47,950	72,994	98,037	131,672
Urban North	35,690	39,688	57,981	76,275	100,340
Rural South	3,853	3,773	4,200	4,626	5,096
Rural North	1,662	1,852	2,226	2,600	3,037
Total	104,800	114,493	170,356	226,219	300,724

3.3 Mode share Targets

The **Moreton Bay Strategic Multi-Modal Transport Model** (MBRSTM-MM) extrapolated current *"trends"* from 2010 to 2031. This trend model does forecast some mode shift from car travel to public transport. This is likely to be due to anticipated increased levels of public transport services provided over the projection period (e.g. the Moreton Bay Rail Link coming into service in 2016). However, it has been unable to project mode shifts to active transport.

Moreton Bay Regional Council has further developed a *"policy-based"* transport model. The mode share targets adopted for this version of the model were determined by the Council, following a review of existing mode share splits in the region, comparison with other Regions and local authorities, and growth projections relied on in ***"Connecting SEQ 2031: an Integrated Transport Plan for South East Queensland"*** (Connecting SEQ). One weakness of the Connecting SEQ targets was the *"blanket"* allocation of mode share across each region or sub-region, irrespective of variations in proximity to destinations, or in the intensity of activity in different places within each region or sub-region.

To address that limitation, the mode share between private vehicle trips, public transport trips and active transport trips from the 2031 *"trend-based"* model were analysed by trip purpose and place type to identify where mode shift could be realised in a *"policy-based"* model. The *"policy-based"* model distinguishes between different categories of *"place types".* It reflects the relevant levels of activity associated with the

proximity of higher-density development to destinations in the more intensive place types. This recognises that a greater proportion of residents of more intensive *"places"* are likely to satisfy a wider range of trip purposes within walking and cycling distances.

Table 7 below summarises the results of that analysis and shows how mode share would change depending on place type. It clearly shows that the largest mode shift away from private car travel is targeted in Activity Centres, Urban, and Next Generation Suburban place types.

Table 7: Comparison of "Trend" and "Policy" Mode shares by Place type*

	2031 Trend-Based Model			2031 Policy-Based Model		
Place Type	Car	Public Transport	Active Transport	Car	Public Transport	Active Transport
Activity Centre	75%	7%	18%	65%	10%	25%
Enterprise/Employment	87%	9%	5%	85%	9%	6%
Urban	81%	11%	8%	67%	14%	19%
Next Generation Suburban	84%	9%	7%	74%	11%	14%
Suburban	83%	11%	6%	78%	12%	10%
Special Area	91%	7%	2%	91%	7%	2%
Key resource Area	93%	6%	1%	93%	6%	1%
Rural/Coastal	90%	6%	4%	90%	6%	4%
Total	**82.8%**	**9.3%**	**8.0%**	**75.6%**	**10.8%**	**13.6%**

* From Table 10, Networks and Corridors Strategy, Appendix B - Arup Technical Note 2013

For the purpose of reflecting these policy-based mode shares in determining Desired Standards of Service, the *"place types"* of the Planning Scheme have been grouped into 3 categories from the most intensive to least intensive levels of density and activity as shown in **Table 8**:

Table 8: Place Type Categories*

Place Type 1	Place Type 2	Place Type 3
Activity centres	Urban neighbourhoods, Next generation suburban neighbourhoods, Enterprise and employment areas, Rural townships, and Coastal villages	Suburban neighbourhoods, Rural residential, Rural areas, and Mountain ranges, forests and waterways.

** From Table 2, Networks and Corridors Strategy, Appendix B - Arup Technical Note 2013.*

4.0 Desired standards of service

To develop the desired standards of service, Council used a combination of network analysis and active transport planning resources from Austroads Guidelines, Queensland Cycle Strategy, Queensland Department of Transport and Main Roads Technical Notes, advice from professional Consultants engaged to assist with preparation of the Strategy, and comparison with other local authorities.

A GIS and desktop review of the existing active transport network was undertaken to understand the types, quantity and distribution of facilities and their role, function and ability to accommodate the full range of active transport uses and users.

Standards of service for other transport modes are generally related to capacity, and the likelihood of congestion (e.g. modelled volume-to-capacity ratios). For active transport, the attractiveness and fitness-for-purpose of the facilities to meet user needs are generally more relevant than the volume of users. This demands a needs-based, rather than capacity-based, approach to active transport planning. The needs-based approach considers the various categories of users and the physical characteristics of facilities to meet their trip-making requirements. This approach ensures the community will ultimately be attracted to utilise active transport facilities, in turn providing greater community benefit and ensuring the effective and efficient use of public funds.

To this end, Council has developed desired standards addressing those physical characteristics of facilities to fulfil the intent of the Community Plan and to deliver effective active transport facilities through the planning and development framework.

For more detail, see ***Background Appendix A of*** the ***Active Transport Strategy*** and the ***Networks and Corridors Strategy Background Paper, Appendix B Arup Technical Note 2013.***

4.1 Desired Standards of Service for cycling and pathway provision

From the above analysis, Standards of service have been established, addressing:

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 than motorised traffic in most instances.

Tables 9 & 10 show standards based on research undertaken in Part A of the ***Transport Networks and Corridors Study*** carried out by Arup Consultants, including case studies of best practice, consistent with Council's policy intentions as documented in the ***Active Transport Strategy***, as well as an analysis of Council's current practice and design standards.

Table 9: Desired Standards of Service for Shared Pathways*

Desired standard of service (Pathways)		Place type category		
		1 Principal, Major and District Activity centres	2 Urban Neighbourhoods, New Generation Neighbourhoods, Enterprise and Employment areas, Rural Townships, and Coastal Communities	3 Rural Residential areas and Suburban Neighbourhoods
Hierarchy	State	**Off-road:** 2.5m (minimum) both sides		
	Arterial			
	Sub-arterial			
	District Collector			

** Based on Table 5, Networks and Corridors Strategy, Appendix B - Arup Technical Note 2013, modified 2016.*

Table 10: Desired Standards of Service for Cycling Provision*

Desired standard of service (Cycling Provision)		Place type category		
		1	2	3
Hierarchy	Arterial Sub-arterial	**On-road (cycle lanes):**# where: Speed (kph): 60, 80, 100 Cycle provision (metres): 1.5, 2.0, 3.5		
	District Collector	**On-road (cycle lanes):** # ^ 1.5m both sides (minimum)		

** Based on Table 4, Networks and Corridors Strategy, Appendix B - Arup Technical Note 2013, modified 2016.*

 # Parking and safety strips (separating parking bays from cycle lanes) are in addition to these requirements.

^ Contra-flow on-road facilities are not preferred, in exceptional circumstances with approval these should have a minimum width of 1.8 metres and should only be provided on 60kph roads or less.

4.2 Desired Standard of Service for spacing of pedestrian crossings

Table 11 shows the desired standard of spacing for pedestrian crossings of the different categories of road associated with the various categories of place types traversed.

These standards of service are based on research undertaken in ***Part A*** of the ***Transport Networks and Corridors Study*** by Arup Consultants, including case studies of best practice, consistent with Council's policy

intentions as documented in the ***Active Transport Strategy***, as well as on an analysis of Council's current provisions and practice standards.

Of particular note, the provision of adequate crossings in the network needs to be coupled with adequate provision of paths and cycle facilities leading to the crossings. The desired spacing varies from 200 metres in the more intensive *"activity centre"* place type category where a high priority is given to pedestrian movement, to up to a maximum of 800 metres in the least intensive place types category.

Each road segment performs both a *"movement"* and a *"place"* function. Generally, the *"Arterial"* roads and *"Sub-Arterial"* roads perform a predominantly *"movement"* function. The *"District Collector"* streets play a balance of *"movement"* and *"place"* functions, while *"Local Collector"* streets and *"Local Access"* streets play a predominantly *"place"* function.

The function of a road will also be conditioned by the *"place type"* through which it passes. A road will take on a lesser *"movement"* function and a greater *"place"* function within the more intensive *"place types"* where activation of frontage land uses and attraction for pedestrian movement dictates a higher priority and mode share for active transport, as discussed in **Section 3.2** above.

This influence of *"place types"* on the function of road segments is reflected in the desired spacing of pedestrian crossings, as shown in **Table 11** below.

Table 11: Desired Standard of Service for spacing of pedestrian crossings*

Desired standard of service (Crossings)		Place type category		
		1	2	3
Spacing of crossings		200 metres	400 metres	600 metres (max 800 metres)
Hierarchy	Arterial	Signalised crossing, zebra or refuge If > 2 lanes, signalized only		
	Sub-arterial	Signalised crossing, zebra or refuge, raised platform or shared zone If > 2 lanes, signalized only		
	District Collector	Zebra or refuge, raised platform or shared zone Uncontrolled crossings only where sightlines are adequate		

** Based on Table 6, Networks and Corridors Strategy, Appendix B - Arup Technical Note 2013, modified 2016.*

4.3 Trip facilities and enhancement features

A range of trip facilities and enhancements are necessary to ensure that active transport is as attractive, safe and convenient as possible, and that the quality of experience of using active transport is positive. Trip facilities include a combination of *"on-trip"* and *"end-of-trip"* provisions. The desirable trip facilities and enhancements to the active transport network include:

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

Way-finding – navigation should be legible and intuitive, assisted by signs, maps and other aids.

On-trip facilities – Rest areas, lighting, seating, water fountains and toilets are to be provided along *"critical corridors"* (primary routes). The nature and distribution of such facilities will reflect proximity to key destinations, and to anticipated intensity of use.

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

Enhancements may be included in the implementation of projects, but, in themselves, are not *"trunk infrastructure"* for the purposes of the LGIP.

Tables 12 shows standards based on the principles in ***Appendix A*** of the ***Active Transport Strategy Background Paper***.

Table 12: Desired Standard of Service for the Primary and Secondary Active Transport Network*

Trunk Item	Width (clear of obstructions)
Primary Active Transport Route	**On-road cycle lane:**[#] Minimum of 2 metres **Off-road shared pathway:** Minimum of 3 metres
Secondary Active Transport Route	**On-road cycle lane:**[#] Minimum of 1.5 metres **Off-road shared pathway:** Minimum of 2.5 metres

** Based on Appendix A of the Active Transport Strategy Background Paper, modified 2016.*

[#] On-road cycle lanes may require greater width depending on the speed environment as per Table 4.4.2.8 Desired Standard of Service for On-road Cycling Provision.

5.0 Definition of trunk infrastructure

"Trunk infrastructure" includes those elements of a strategic network necessary to service urban development at the desired standard of service in a coordinated, efficient and financially sustainable manner.

Trunk active transport infrastructure generally includes foot and cycle paths associated with the road profile of a Council road of *"District collector"* or higher category, together with other pedestrian and cycle paths which perform a strategic city-wide or district function.

The trunk pathway network comprises the strategic primary and secondary active transport network of formed, multi-function pathways serving a district or regional function intended for use by commuter and recreational cyclists, walkers and runners, as identified in the ***Infrastructure Charges Resolution 2015*** which came into effect 01 July 2015, and as subsequently amended. The primary route network provides for inter-suburban, district, and regional connections. The secondary routes provide connections at the suburban level, connecting the local streets and paths to the primary network, and to local destinations.

The Primary and Secondary Active Transport Routes are shown on the ***Active Transport Overlay Maps*** in the MBRC Planning Scheme.

The trunk network excludes those pathways designated solely as recreational trails. It also excludes development infrastructure internal to a development, or to connect a development to the external infrastructure network, irrespective of whether or not it will perform the equivalent of a primary or secondary route function within the development. Such directly development-dependent works are the responsibility of the developer.

6.0 Network planning and modelling

The active transport network planning was undertaken as part of the development of the ***Active Transport Strategy***. The active transport network has been derived from adopted network principles, and responds to potential for growth in population, employment and active transport use in growth areas and in destinations served from catchments that include growth areas. It has been designed to meet agreed standards. Projects have been prioritised by a gap analysis process.

6.1 Network principles

The Active Transport Strategy sets out fundamental principles for the planning and design of the Moreton Bay region's active transport network.

Safety

Active transport infrastructure and facilities will be designed to current best practice safety standards. Crime prevention through environmental design (CPTED) is utilised to guide design outcomes. Priority road crossings, including median refuges, zebra crossings and signalised crossings, will allow significantly improved access for pedestrians and cyclists. Active transport provision will be designed to be safe and to feel safe.

Cohesion

The active transport network links mixed use centres, schools, and other attractors. The natural catchments of these destinations provide safe, direct and attractive routes for walking and cycling.

Fit for purpose

Suitable path widths, surface treatment, along with the design and maintenance programs, ensure facilities are fit for the purpose.

Amenity

Destinations for walking and cycling will be welcoming, create a feeling of shared public ownership and provide a sense of belonging. Council identifies key destinations for cyclists which offer end-of-trip facilities such as convenient and secure cycle storage, toilets, showers and change facilities.

Directness

The active transport networks are designed to be direct in both distance and time, minimising both the need to deviate from the desired path of travel and interruptions to progress.

Optimising investments

Delivering walking and cycling improvements as part of broader infrastructure projects is the most cost effective way to deliver benefits. This includes: improved line markings, removing hazards, clutter and obstacles, installing pedestrian crossings, intersection improvements and planting shade trees. Investment in active transport facilities may attract greater mode share, avoiding or delaying greater expense in increasing capacity for other modes.

Integration

Active transport facilities and functionality are an integral part of transport and land use planning. The walking and cycling networks will integrate at all levels of planning and design.

Interconnected

Active transport networks will be planned and designed to be highly interconnected and permeable.

- avoiding cul-de-sac and three way intersections
- providing pedestrian and cyclist priority crossings in safe locations to serve desire lines
- Inter-connecting both on and off road networks and facilities.

Collaboration

Working collaboratively with the State government, private developers and other stakeholders will support active transport provision and improvements.

6.2 Opportunity for growth in active transport use

Active transport will become a much more prominent and enjoyable part of living in Moreton Bay, combining the transport and health benefits of an active community with the need for more sustainable neighbourhoods. In 2011, Moreton Bay Regional Council signed the ***"International Charter for Walking"***. However, walking is not yet the everyday activity it deserves to be.

The Caboolture Shire Council's ***Youth Needs Survey*** (November 2006) found that only 16% of males and 8% of females under 21 habitually walk to their destinations. Most walking trips are made by youth, yet most youth don't choose to walk. This shows considerable latent opportunity to increase the proportion of walking trips.

Australia Bureau of Statistics (Census 2006) identified that 85% of Moreton Bay households had bicycles. However, the participation in bike riding was much lower. The cycling mode share in 2006 was only 1.7% of all trips (Transport and Main Road household travel survey 2006). In 2011, only 2.3 % of journey to work trips were taken by walking and cycling (ABS Census 2011). With 10% of journey to work trips being less than 3km and 18% less than 5km (Connecting SEQ 2031), there is significant scope to improve both walking and cycling's share of trips. This will be achieved by enhancing the availability and attractiveness of dedicated facilities in Moreton Bay.

The Active Transport Strategy responds to existing and future needs to better connect our communities by both walking and cycling.

6.3 Structuring the active transport network

Council is responding to user needs by developing active transport programs to deliver a trunk network and subsidiary linkages providing improved connectivity, safe and accessible pedestrian crossings, and bicycle lanes. Projects to complete the trunk network are prioritised to meet community needs by addressing strategic responses under themes of:

- **Active communities –** Many places are important destinations for walking and cycling. These include mixed use activity centres, public transport stations, schools and employment nodes. It is important to establish better walking and cycling connections to and within these places. This connectivity and high level of amenity make these locations more accessible, lively and enjoyable; and
- **Connecting across the region –** The Moreton Bay region covers over 2,000 square kilometres, including a variety of rural and urban communities. Walking and cycling links between suburbs and communities will offer greater travel choice to satisfy more trip purposes.

Solutions include a combination of:

- Active centres designed for pedestrians and cyclists,
- Completing the missing links in pathways along road corridors,
- Connecting places through open space corridors and Council land,
- Making safe on-road provision for cyclists including lane markings, signage and surface treatments, and
- Installing pedestrian and cycle crossings to meet existing and future user needs.

The physical width and prominence of pathways and cycle lanes will increase in closer proximity to activity centres and key destinations. This reflects higher levels of usage where routes converge. Provision of trunk active transport facilities will need to respond to land use context, user type, trip purposes, and the role of the facility in the route hierarchy.

6.3.1 Functionality

Interconnectivity across the network

The *"primary"* active transport routes form the *"spines"* from which local active transport networks are built. These routes provide inter-suburban and district connections. They connect residential catchment areas to major trip attractors such as public transport nodes, universities, schools, shopping and commercial centres,

industrial areas and regional recreational facilities. In urban areas, they form a notional grid with spacing between parallel routes in the order of 1 km. At the regional scale, they provide key connections between activity centres or towns. These routes extend to *"latent"* opportunities in areas where significant urban growth has been identified, but where land use planning has not yet been undertaken or finalised. These *"primary"* routes are generally consistent with the State Government's ***"Principal Regional Cycle Network".***

"Secondary" active transport routes provide linkages at the suburb level between the *"primary"* routes and local pathways and access streets. These *"secondary"* routes connect catchments to local destinations such as local and neighbourhood shops, parks and the like.

Connectivity to key destinations

For everyday transport trips, active transport generally has the potential to cater for shorter trips than those suited to private vehicles or public transport. *The* ***Strategic Framework*** and the ***Active Transport Strategy*** pursue the concept of *"15 minute neighbourhoods"* in which most trip purposes can be satisfied within 15 minutes' walk or cycle from residential catchments to local destinations. This is represented by walking distances in the order of up to 1 km or cycling distances of up to 5km.

Investment in providing connectivity to key destinations has the potential to provide the greatest benefit to the greatest proportion of users. This is reflected in giving implementation priority to projects promising the strongest benefits.

Accessibility and Permeability of places

"Activity centre" place types are *"places where pedestrians dominate".* Accessibility and permeability are also important to the walkability, function, amenity and convenience of other place types. The ***Planning Scheme Policy - Neighbourhood Design*** establishes patterns of development that are highly inter-connected and walkable.

Such centres, characterised by high amenity, accessibility and permeability are also more attractive as destinations for active transport users.

6.3.2 Classifications

The classification of network elements are influenced by the relative intensity of potential active transport activity, the characteristics of typical movements, the nature and scale of the facility, and the appropriate quality of the movement experience. **Table 13** shows the *"primary"* and *"secondary"* routes in the context of other elements of the hierarchy of the total active transport *"system".*

Table 13: Active Transport Provision by Class*

Intensity	Class/ Character	Typology	Network	Description	Elements	Source
1	**Active places** (Amenity & Permeability)	*"Activity Centre"* place type. Trip origin/ destination	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. Trip origin/	Village centres, townships, and urban precincts.	Linkages to and between proximate destinations in an urban setting.	Boulevards, Activated "main streets", Priority crossings, End-of-trip	Codes, for new places, Capital & PIP for

		destination		Response to high active movement demand.	facilities.	retrofit.
3	**Critical corridors** (Mobility & connectivity) **"Primary Active Transport Routes"**	Corridors between primary destinations. **Trunk infrastructure**	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) **"Secondary Active Transport Routes"**	Network feeders. **Trunk infrastructure**	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. **Non-trunk infrastructure**	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.

** From table A3 MBRC Active Transport Background Appendix A - DSS.*

"Trunk" infrastructure elements are highlighted in green.

Active places

Activity centres at District and higher levels are primary destinations for active transport movements. Development within these centres and in their immediate catchments will be expected to accommodate high levels of pedestrian and cycle access and provide appropriate end-of-trip facilities.

Extended places

Active transport movements generally focus on *"walkable"* destinations where a range of land uses are in close proximity, and where many trip purposes can be achieved in a single visit. The active transport network is therefore structured around access to *"centres", "enterprise and employment areas"*, *"urban"* place types, *"coastal villages"* and *"rural townships".* These place types are expected to generate higher shares of active transport movements. Proximity to these places is a relevant factor in determining priorities for implementation of the network.

"Primary" routes

"Primary" routes are adapted from the State's ***"South East Queensland Principal Regional Cycle Network Plan"*** and include primary links between suburbs, connections to district and higher-order centres from their catchments, as well as providing inter-district corridors. These are *"trunk"* infrastructure.

Primary routes often coincide with or parallel arterial and sub-arterial roads, and perform an equivalent *"movement"* function for active transport.

"Secondary" routes

"Secondary" routes provide access to local destinations such as local and neighbourhood centres. They also provide access to the *"primary"* network from the local access paths and streets. These supporting corridors provide important feeders to local destinations from their immediate catchment. These are *"trunk"* infrastructure.

Secondary routes often coincide with or parallel the collector road network, and perform an equivalent balance of *"movement"* and *"place"* functions. These routes include paths along desire lines which may be through open space corridors.

Tertiary network

Local streets and open space networks provide local connectivity and permeability within neighbourhoods. They provide an important *"place"* function supporting the convenience and amenity of localities. The tertiary network does not comprise *"trunk"* infrastructure.

For *"primary"* and *"secondary"* routes, see Overlay Maps ***OM_Active Transport***.

6.3.3 Design Standards

Planning Scheme Policy – Integrated Design – Appendix A – Streets Roads and Utilities, sets out standards for pathways and on-road cycle lanes for various road types and *"place types".* For *"primary"* and *"secondary"* active transport routes, those provisions are further augmented to meet minimum standards as set out in **Section 4 – Desired Standards of Service, above**.

6.4 Gap analysis

Gap analyses review of the existing network conditions compared to the identified *"primary"* and *"secondary"* active transport routes, applying the Desired Standards of Service, enabled the identification and prioritisation of projects for implementation.

Traffic models available to Moreton Bay Regional Council do not adequately project demand for active transport. Existing levels of active transport usage are observed to be well below proposed targets, and below levels experienced in comparable localities which enjoy more extensive active transport facilities, and which are characterised by land use patterns more conducive to active transport.

Network planning is therefore predicated on capturing *"latent"* demand by making the active transport network more appealing in better serving those trips which have potential to be most conveniently taken by active transport (e.g. relatively short-distance trips including school trips and utility trips to activity centres).

6.4.1 Moreton Bay Regional Council initial spatial gap analysis

There is a wide range of factors that affect the attractiveness of routes for active transport.

The spatial attributes which provide input to the active transport project prioritisation process were documented for each road *"parcel"* across the urban districts of Moreton Bay. See ***Active Transport Strategy Technical Reference Appendix B***. These were derived from available GIS data, and used to populate the ***"Base MBRC Key Criteria"*** spreadsheet and associated mapping of relative spatial priorities. The relevant attributes are outlined below:

- **Existing spatial conditions**

- **Desired network characteristics**
- **Priority *"scoring"* criteria**
  - Corridor coincides with *"desire lines"* between concentrations of origins and destinations
  - Corridor provides the *"preferred route"* to high-order destinations (activity centres, schools, etc.)
  - Directness ratio score in relation to the difference between *"as the crow flies"* distance and the actual *"as you walk"* distance by available routes.
  - Distance to destination
  - Adequacy of shade trees
  - Crossings
- **Aggregated scores**
  The scores for closely-related attributes were aggregated under "themes" to provide a simplified assessment of relative priority on spatial criteria.
- **Cumulative Spatial Priority Score**
  The cumulative score of the aggregated criteria listed above (Proximity Total, Linkages and Connectivity Total, Desire Lines Total, Route Choice Total, and Missing Link Total) to identify relative spatial priorities of all parcels to inform recommendations for infrastructure enhancement and investment. See GIS mapping of relative scores at ***Active Transport Priority Links Combined.***

Priority project packages

The *"packages"* of parcels which scored highest by the above spatial analysis were identified as having the potential to contribute most to the future performance of the active transport network.

These priority project packages were subject of scoping and costing by consultants AECOM and provided the basis for identifying those projects for implementation included in the ***Active Transport Strategy "Appendix B"***.

6.4.2 Arup (Networks and Corridors Strategy) Gap analysis.

The GIS prioritisation described above relied primarily on spatial attributes of individual parcels and packages of parcels. The Networks and Corridors Strategy augmented that work in the context of the wider transport network.

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.

Pathways

Gap determination for pathways considered shared or separate paths, path width, off-road versus adjacent locations and provision on one or both sides. Desirable pathway standards for each road hierarchy classification and *"place type"* were used to identify pathway gaps.

Pedestrian crossings

An average density of crossings was used to determine gaps in each setting. The number of crossings, regardless of their type, was divided by the length of the road segment to determine the crossing density. The desired spacing of pedestrian crossings used to identify gaps related to the relative intensity of the adjacent *"place type"*.

Cycle provision

Shared paths were included in the pathway analysis. Only exclusive cycle lanes were assessed as part of the specific *"cycle"* network attribute. Criteria were developed to determine the desirable cycle provision standards appropriate to speed environment, relationship to parking, on-road versus off- road locations, and contra flow.

Verges/median width
Average widths and cross-slopes of verges and medians were calculated along the entire length of each segment. The average width and relative slope of the verge were used to determine where important cost factors of widening or complex construction would be necessary.

Shading
The average spacing between shade trees along a segment was used as the measure for this attribute. A designation of *"No existing plantings"* represents a significant opportunity. An average of 30 or more metres between shade trees represented an average planting density and indicated some enhancement was desirable. An average of 12-15 metres between shade trees represented abundant planting requiring no enhancement. Shade tree enhancements are not included as *"trunk infrastructure"* for the purpose of the LGIP.

Area Analysis
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.

Summary
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"***, and the ***"Schedule of Works"*** (See **Section 8**)

6.5 Network sustainability

Moreton Bay Regional Council exceeds 2000 square kilometres in area. Population has been growing at 2.7% per annum. Historically, the provision of active transport infrastructure has lagged behind population growth and potential demand, leaving a legacy requiring considerable *"catch-up"* as identified by the gap analyses.

Providing a full suite of active transport facilities that meet desired standards throughout the whole region is beyond the immediate capacity of the Council. It is therefore necessary to prioritise investment where greatest benefits are available, and where the infrastructure is designed to meet increased demand generated by growth. It is also appropriate that development projects contribute to the provision of infrastructure commensurate with the increase in potential demand generated by each development.

6.6 Existing Network

The existing network of primary and secondary active transport routes is shown on the ***"Existing Active Transport Maps"*** (76 maps). These maps depict those parts of the desired trunk network (*"primary"* and

"secondary" active transport routes) where some active transport infrastructure exists (e.g. pathways), whether or not that infrastructure meets the Desired Standards of Service.

As well as identifying projects where the existing network is incomplete, projects identified in the ***Schedule of Works*** (See **Table 15**) includes enhancements where the *"Gap Analysis"* indicated that the existing network is deficient and does not meet the desired standard of service.

7.0 Network costing and valuation methodology

7.1 Value of existing assets:

Existing active transport trunk infrastructure items were identified from Council's Geographical Information System and translated into specific assets on Council's Financial Asset Register. This did not include any active transport assets that were capture as part of a trunk road asset. Asset Values were attained by utilising asset attribute data to identify a unit rate for each individual asset which could then be utilised to estimate the cost of construction including allowances for survey, investigation, engineering design, planning and engineering supervision and project management. The unit rates were originally obtained by Council as at 30 June 2012 for financial reporting purposes from external Consultants and updated at 31 December 2014.

Table 14: Asset Valuation

Hierarchy	Amended Value December 2014
Primary Active transport facilities not associated with a Trunk Road	$9,603,526
Secondary Active transport facilities not associated with a Trunk Road	$19,971,082
Total	**$29,574,608**

Breakdowns of these valuations by segment are detailed in the ***"20150616 Active Transport Network"*** document of 16/10/2015. The valuation of existing trunk assets have been summarised by catchment in the Schedule of Work model.

7.2 Costing of new and upgraded assets:

Projects included in **Table 15 -** ***Schedule of Works*** were compiled from a number of sources as described before under Section **6.2 Gap analysis**. The costing methodologies and unit costs used by each source were broadly consistent enough in approach to be used for priority infrastructure planning purposes.

7.2.1 AECOM costing methodology

High level planning costs were prepared for each of twenty priority packages identified by Council's initial spatial gap analysis. 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-funded projects.

The intended use of the estimates is to allow for forward programming of infrastructure. Escalation was not considered at the initial costing stage. AECOM applied a standardised contingency rate based on the generally simple nature of works proposed (e.g. new footpaths, line marking). The quantities used were derived from Google Earth pro and site observation in the absence of detail survey, design drawings, field investigations or studies into aspects such as traffic impacts, PUP, geometry, lighting or geotechnical conditions. Further detail on assumptions and exclusions were noted by AECOM on each cost plan sheet (***AECOM Scoping and Costing final 21/03/2013***).

The twenty projects costed had a combined value of $65.2 million including principle's costs and contingencies as at 2013 values. For the purpose of the LGIP, the principles costs and contingencies from the original AECOM work were removed and replaced with principles, costs and contingencies in accordance with the LGIP guideline.

Items costed by AECOM are annotated as (i) in **Table 15 Schedule of Works.**

7.2.2 Arup costing methodology

Arup's estimates were prepared in accordance with the Department of Transport and Main

Roads Work Management System construction items breakdown, and the Moreton Bay Regional Council's Estimate Template (***Arup MBRC Networks and Corridors Strategy Appendix B – Arup Technical Note***). Sources used to develop the unit rates for construction items are outlined below:

- Rawlinson's Australian Construction Handbook 2013;
- Specific rates based on liaison with local manufacturers and suppliers; and
- Contractors rates based on cost comparison with other projects undertaken by Arup in the last two years.

The active transport options costed within this estimate includes:

- Footpaths, costed per metre;
- Shared Paths, costed per metre plus initial installation costs such as signs required for
  - Shared paths;
  - Pedestrian crossings:
    - Road mid-block with a pedestrian refuge;
    - Mid-block zebra crossing;
    - Mid-block signal crossing;
    - Signal crossing at existing signalised intersection; and
    - Installation of kerb ramps only.
  - Cycle lane installation on existing pavement, costed per metre plus initial installation costs such as signs required for shared paths.
  - Street trees for shade.

Construction cost estimates excluded:

- Design costs (from concept stage to detail design);
- Moreton Bay Regional Council Network and Corridor Planning;
- Technical note for Priority Infrastructure Planning for Transport;
- Principal's costs (cost of superintendent, contract administration, internal council management costs, etc.);
- Approximate cost of ground investigation;
- Services investigation (Dial Before You Dig);
- Allowances for construction management or approval/permits if required (i.e. traffic)
- Hydraulics investigation and modelling; and
- Land resumption requirements and cost.

To allow for items such as design works, minimal earthworks and utilities management, Arup applied a 15% contingency to the estimates as the risks associated with the installation of the active transport options were regarded as significantly less than that for other classes of infrastructure such as roads and bridges. Arup had excluded principle's costs from their calculations.

Arup provided detailed breakdown of unit costs (including the allowance for contingencies) associated with typical active transport facilities (2.5 metre wide footpaths, 3.0 metre wide shared paths, mid-block pedestrian refuges, mid-block zebra crossings, kerb ramps, cycle lane on existing pavement, cycle lane including new pavement, pedestrian/cyclist activated signals, etc.). These costs were then applied to network corridors where active transport facilities were found to be deficient.

To provide comparability with the AECOM costing methodology, the extra costs for street trees were excluded. For the purpose of the LGIP, the principles costs and contingencies from the original ARUP work were removed and replaced with principles, costs and contingencies in accordance with the LGIP guideline.

Items costed by Arup are annotated as (ii) in **Table 15 Schedule of Works.**

7.2.3 Normalising cost calculations across sources.

As described above, in conformance with the LGIP Guidelines, and to achieve closer compatibility of costing calculations between AECOM and Arup, the *"principle's costs"* and *"contingencies"* were removed to pare the costing back to *"raw"* construction costs, and a standard contingency applied to all projects.

7.2.4 Exclusions from LGIP cost and contribution calculations

State – controlled corridors

Some active transport facilities within state-controlled corridors are included in the Schedule of Works to ensure a complete network to service growth.

In these instances, Council may advocate for appropriate provisions by the State, or negotiate a shared arrangement outside the LGIP to realise mutually-beneficial outcomes.

Priority Development Areas and areas subject to Infrastructure Agreements

North Lakes DCP

The North Lakes development area is administered under a separate Development Control Infrastructure Plan outside the MBRC Planning Scheme. As such, it is administered separately from the *"Priority Infrastructure Area"* (PIA). As some proposed active transport facilities within the North Lakes area are designed to serve the needs of users beyond North Lakes (e.g. providing access to the major regional activity centre), they are included in the Schedule of Works to ensure a complete network to service growth.

Caboolture West

The Caboolture West area was identified in the SEQ Regional Plan 2009-2031 as an *"identified growth area"* outside the *"Urban footprint"*. Since that time, it has been subject of Master Planning to determine the extent of area affected, and the desired nature, intensity, distribution and sequence of land uses. This area is now included in the MBRC Planning Scheme in the *"Emerging community"* zone.

Caboolture West is not included in the Priority Infrastructure Area at this time, as detailed infrastructure requirements and responsibilities are still being investigated. Pending resolution of infrastructure requirements and responsibilities, and adoption of the relevant Neighbourhood Development Plan, urban development within this area would represent a *"bring-forward"* of infrastructure provision. The infrastructure required to service this area is therefore not included in the Schedule of Works.

Upon completion of a Neighbourhood Development Plan that includes land subject of a development application, Council may be prepared to negotiate a voluntary infrastructure agreement for *"bring forward"* infrastructure provision outside the LGIP.

8.0 Schedules of works

The ultimate aim is to implement the desired active transport network across the entire Moreton Bay region, the capacity to provide facilities in anticipation of need is limited. Therefore, prioritising the allocation of funding for implementing active transport projects has resulted in a short-list of priority projects which provide the greatest benefit for the available capacity to deliver.

The ***"Schedule of Works"*** describes the future infrastructure assets, the timing of their delivery, and the cost to establish each asset as set out in **Table 15** below. This table also includes a comment on the strategic role to be played by the resultant asset, justifying its priority.

Table 15 —Active transport network schedule of works

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
Item ID & Map ref.	**Future infrastructure asset location**	**Future infrastructure asset description**	**Estimated Timing**	**Catchment**	**Baseline cost ($)#**	**Guideline compliant establishment cost ($)***	**Comment**
CN2(b)	Pumicestone Road, Caboolture North	D'Aguilar Highway to Reserve Drive, as part of planned road improvements. Includes on-road bike lanes	2016	Urban North	$1,208,501 (i)	$1,681,126	Connects extensive north and western catchments to Caboolture CBD and Caboolture station (iii).
CN1(a)	Dances Road, Caboolture North	D'Aguilar Highway to Cottrill Road. Includes on-road bike lanes	2016	Urban North	$641,059 (ii)	$891,767	Serves growing residential catchment north of Pumicestone Road.
CN1(b)	Pumicestone Road Old Gympie Road intersection, Caboolture North	Upgrade Pumicestone Road/Old Gympie Road intersection, including active transport priority and crossings	2016	Urban North	$64,828 (ii)	$90,181	Continuity of active transport to sporting complex and showgrounds. Need for interconnection with local network.
Cab2(a)	Rowe and Bury Streets, Caboolture	Rowe Street Upgrade connecting McKean Street and Hayes Street, including a path along	2016	Urban North	$601,241 (i)	$836,376	Linkages between the hospital precinct/ Central Lakes neighbourhood centre and the Caboolture CBD and

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
Item ID & Map ref.	**Future infrastructure asset location**	**Future infrastructure asset description**	**Estimated Timing**	**Catchment**	**Baseline cost ($)#**	**Guideline compliant establishment cost ($)***	**Comment**
		Bury Street drain					Caboolture station.
Cab2(b)	McKean Street, Caboolture	Beerburrum Road to Manley Street. Path widening and on-street bike lanes	2016	Urban North	$221,925 (i)	$308,716	
Cab3	Matthew Terrace, Caboolture	Associated with station precinct re-development	2016	Urban North	$539,556 (i)	$750,567	Interface between station and CBD (iii).
Cab5(a)	Hasking Street/George Street, Caboolture	Hasking Street and George Street (between Hasking Street and King Street). Includes on-street bike lanes	2016	Urban North	$252,378 (i)	$351,079	Primary access to northern parts of Caboolture CBD including Hub and medical precinct.
Cab5(c)	Hasking Street to East Street, Caboolture	New midblock connection through post office site	2016	Urban North	$23,005 (i)	$32,002	
Cab6	King Street, Caboolture	Boulevard treatment between George Street and Beerburrum Road. Including mid-block connection between King Street and Elliott Street	2016	Urban North	$100,568 (i)	$139,898	Potential activated frontages, Beerburrum Road to George Street. State-controlled.
Cab7	Elliott Street, Caboolture	Elliott Street and Morayfield Rd between King Street and Caboolture River	2016	Urban North	$1,181,581 (i)	$1,643,678	Connectivity to CBD from Caboolture South via Riverview Street footbridge and Morayfield Road/Beerburrum Road.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
Item ID & Map ref.	**Future infrastructure asset location**	**Future infrastructure asset description**	**Estimated Timing**	**Catchment**	**Baseline cost ($)#**	**Guideline compliant establishment cost ($)***	**Comment**
CabS1(a)	Morayfield Road, Morayfield	Caboolture River to Market Drive. Includes on-road bike lanes	2016	Urban North	$229,752 (ii)	$319,604	Main connector between components of Principal activity Centre. State controlled.
CabS1(b)	Morayfield Road, Morayfield	Caboolture River Road to Station Road	2016	Urban North	$116,324 (ii)	$161,816	
CabS2(a)	Market Drive/Dickson Rd/William Berry Drive, Morayfield	New path and on-road bike lanes. Includes rail crossing, Visentin Road (to Morayfield Station) and Buchanan Rd to Kirkcaldy St	2016	Urban North	$1,394,593 (i)	$1,939,995	Access to Market Plaza, Peet Riverside development, Morayfield Plaza, Morayfield School and Morayfield station.
BE4	Burpengary Road, Burpengary	On-road bike lanes from Crendon Street to Henderson Road. Associated with planned road improvements	2016	Urban North	$391,610 (ii)	$544,762	Provides enhanced access to Burpengary rail station and Burpengary station village (iii).
N1	Omara Road, Narangba	Continuation of shared path along Omara Rd reserve, including crossing of New Settlement Road	2016	Urban North	$225,245 (ii)	$313,335	Provides connectivity between Jinbara School and Burpengary station from western catchments.
K1	Anzac Ave, Kallangur	Boulevard Treatment from School Rd to Duffield Rd	2016	Urban South	$360,736 (ii)	$501,814	Provides enhanced access to Kallangur district Activity Centre. State-controlled.
K2	Narangba Road/Anzac Ave, Kallangur	On-Road bike lanes from Hanlon Road to Anzac Ave, including Anzac Ave. intersection improvements.	2016	Urban South	$137,523	$191,306	Provides connectivity from north western catchments to Kallangur and Petrie.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
Item ID & Map ref.	**Future infrastructure asset location**	**Future infrastructure asset description**	**Estimated Timing**	**Catchment**	**Baseline cost ($)#**	**Guideline compliant establishment cost ($)***	**Comment**
NL2(a)	North Lakes Drive/Discovery Drive, North Lakes	New off-road path from North Lakes Drive to Discovery Drive.	2016	Urban South	$170,036 (ii)	$236,534	Provides access to Major Regional Activity centre North Lakes DCP area.
DB6	Bay Ave, Deception Bay	Boulevard treatment, path widening and crossings. Includes bus bays.	2016	Urban South	$627,320 (i)	$872,654	Major access to a District Centre with little active transport provisions or current activation of frontages.
St1	South Pine Road Rail Crossing, Brendale	Improve facilities at rail crossing and approaches	2016	Urban South	$64,420 (ii)	$89,614	Primary link between Brendale and Strathpine CBD.
St3	South Pine River Shared Path, Strathpine	Reinstate and upgrade flood-affected sections of path	2016	Urban South	$85,018 (ii)	$118,267	Reinstates a critical link between Strathpine, Pine Rivers Park and Bald Hills.
St4(a)	Samsonvale Road, Bray Park	Upgraded shared path from Rail Crossing to Bland Street, including rationalisation of road space across bridge	2016	Urban South	$56,045 (i)	$729,364	Serves Bray Park rail station and Strathpine Centre from western catchments.
St5	Bells Pocket Road, Bray Park	Gympie Road to Robel Street including intersection with Gympie Road and crossings	2016	Urban South	$148,947 (i)	$207,198	Linkage to Bray Park station and Strathpine concentration of activities from significant catchment and links with sporting fields at the Western end.
HD4	Chinook Street, Everton Hills	Provide off-road path linking existing Cabbage Tree Creek corridor with Old Northern Road	2016	Urban South	$63,208 (ii)	$87,928	Provides critical interconnection between the Hills District and Cabbage Tree Creek corridor

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
Item ID & Map ref.	**Future infrastructure asset location**	**Future infrastructure asset description**	**Estimated Timing**	**Catchment**	**Baseline cost ($)#**	**Guideline compliant establishment cost ($)***	**Comment**
		pathway					at McDowell.
Cab5(b)	George Street, Caboolture	George Street between Hasking Street and Bertha Street. Includes on street bike lanes	2016	Urban North	$59,527 (i)	$82,807	Primary access to the north side of Caboolture's CBD including the school and medical precinct.
DB2	Morris Road, Rothwell	Deception Bay Road to Gynther Road, on-road bike lanes. New and upgraded paths.	2016	Urban South	$458,918 (ii)	$638,393	Provides quality access between Deception Bay and Redcliffe peninsula, avoiding vehicular conflicts associated with the Rothwell intersection.
DB3	Gynther Road, Rothwell	New path and on-road bike lanes. Includes crossing of Anzac Avenue	2016	Urban South	$399,616 (ii)	$555,899	Provides primary access to Rothwell station from catchment north of Anzac Avenue.
Red1	Sutton Street, Redcliffe	Continuation of boulevard treatment Anzac Avenue to Mall Way	2016	Urban East	$273,463 (i)	$380,410	Expansion of Redcliffe CBD as an active urban *"place"*.
Red4	Esplanade, Redcliffe	Path upgrade and connection to cross streets between Klinger Road and Shields Street	2016	Urban East	$103,621 (i)	$144,145	Enhancement of coastal pathway.
Red5	Anzac Avenue/Boardman Road, Kippa-Ring	Boulevard treatment and upgrade of Boardman Road/Elizabeth Ave intersection between Klinger Road and Kapella	2016	Urban East	$409,579 (ii)	$569, 579	Improves amenity and connectivity between Kippa-Ring station and retail/ commercial node at Kippa-Ring.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
Item ID & Map ref.	**Future infrastructure asset location**	**Future infrastructure asset description**	**Estimated Timing**	**Catchment**	**Baseline cost ($)#**	**Guideline compliant establishment cost ($)***	**Comment**
		Street					
Red6	Nottingham Street, Kippa-Ring	New path and bicycle awareness zone between Chelsea Street and Fleet Drive	2016	Urban East	$496,469 (ii)	$690,630	Improves connectivity of approaches to Kippa-Ring station from catchments to the west.
Red8	Duffield Road, Margate	On-road bike lane marking (lanes already exist) between Margate Parade and Victoria Ave.	2016	Urban East	$145,187 (ii)	$201,967	Improves access to Margate District Activity Centre.
Cab2(c)	Bury Street, Caboolture	Lang Street to Manley Street	2021	Urban North	$296,146 (I)	$411,964	Linkages between the hospital precinct/ Central Lakes neighbourhood centre and the Caboolture CBD/rail station.
Cab8	Lynfield Dr/Warner Street, Caboolture	Lynfield Dr between Yaldara Ave and Warner Street, including Warner Street to Watt Street. including on-road bike lanes	2021	Urban North	$644,689 (ii)	$896,816	Improves permeability and connectivity at western fringe of Caboolture CBD.
Cab9	Lower King Street, Caboolture	Mewett Street to Bruce Highway. Includes on-road bike lanes	2021	Urban North	$1,046,674 (ii)	$1,456,011	Provides access to Major regional Activity Centre. State-controlled corridor.
CabS3	Caboolture River Road, Morayfield	Cresthaven Drive to Morayfield Road. Includes on-road bike lane as part of planned road improvements	2021	Urban North	$456,095 (ii)	$634,466	Critical linkage between Caboolture West and Morayfield Major Regional Activity Centre, Morayfield station and Morayfield school (iii).

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Item ID & Map ref.	**Future infrastructure asset location**	**Future infrastructure asset description**	**Estimated Timing**	**Catchment**	**Baseline cost ($)#**	**Guideline compliant establishment cost ($)***	**Comment**
CabE1	Bribie Island Road, Caboolture	Highway crossing and access to airport industrial estate. Includes access to Beachmere Rd	2021	Urban North	$322,652 (ii)	$448,836	Critical linkage to major employment area. State-controlled corridor.
N2	New Settlement Road, Narangba	New shared path between Young Road and Banyan Street, connecting to off-road facilities	2021	Urban North	$211,228 (ii)	$293,836	Convergence of corridors serving extensive catchments.
K3	Dohles Rocks Road, Murrumba Downs	Between Goodrich Road East and Wagner Road. Shared paths and on-road bike lanes, associated with planned road improvements	2021	Urban South	$429,332 (ii)	$597,237	Provides critical linkage between Griffith and Murrumba Downs/ Kallangur (iii).
K4	Ogg Road/ McCilntock Drive, Murrumba Downs	New path on eastern side from Goodfellows Road to Brays Road	2021	Urban South	$337,086 (ii)	$468,915	Provides access to schools from nearby catchments and to Murrumba Downs station.
K5	Marsden Road, Kallangur	On-road bike lanes between Narangba Road and Anne Street	2021	Urban South	$171,584 (ii)	$238,688	Provides connectivity from Dakabin and northern catchments to Kallangur and Petrie.
P1	Young Street, Petrie	Bicycle awareness marking	2021	Urban South	$55,729 (ii)	$77,524	Provides direct links from northern catchments from Narangba Road via Rue Montaigne to Petrie District Activity Centre and Petrie station.

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Item ID & Map ref.	**Future infrastructure asset location**	**Future infrastructure asset description**	**Estimated Timing**	**Catchment**	**Baseline cost ($)#**	**Guideline compliant establishment cost ($)***	**Comment**
P2	Rue Montaigne, Petrie	On-road bike lanes between Frenchs Road to Woonara Drive (connects to off-road paths)	2021	Urban South	$137,854 (ii)	$191,766	Provides direct links from northern catchments via Narangba Road and Young Street to Petrie District Activity Centre and Petrie station.
P3	Frenchs Road, Petrie	On-road bike lanes and intersection upgrades between Beeville Rd and Rue Montaigne	2021	Urban South	$228,023 (ii)	$317,199	Serves significant catchment of Petrie and provides direct access to Kurwongbah primary school.
G1	Brays Road, Griffin	Wellington Road to Cairns Road including Bruce Highway overbridge	2021	Urban South	$8,955,081 (ii)	$12,457,264	Provides connectivity between Griffin and Murrumba Downs and serves Murrumba Downs station from eastern catchments.
NL1	North Lakes Drive, North Lakes	Active transport priority and crossings from Memorial Drive to Kerr Road East	2021	Urban South	$544,000 (ii)	$756,749	Provides access to Major regional activity centre North Lakes DCP area.
NL2(b)	Discovery Drive/Halpine Drive, Mango Hill	Path upgrade and on-road bike lanes along Discovery Drive and Halpine Drive, including Anzac Ave intersection	2021	Urban South	$5,227,500 (ii)	$7,271,888	Halpine Drive section is in PIA. Discovery Drive section is in North Lakes DCP and Anzac Avenue crossing is State-controlled.
St2	Railway Avenue, Strathpine	Upgrade path and provide bicycle awareness from Samsonvale Road to Hall	2021	Urban South	$506,708 (i)	$704,873	Provides alternative to Gympie Road through Bray Park/ Strathpine and access to Strathpine station.

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Item ID & Map ref.	**Future infrastructure asset location**	**Future infrastructure asset description**	**Estimated Timing**	**Catchment**	**Baseline cost ($)#**	**Guideline compliant establishment cost ($)***	**Comment**
		Street					
St4(b)	Samsonvale Road, Bray Park	Upgrade substandard sections of path between Bland Street and Old North Road	2021	Urban South	$524,314 (i)	$729,364	Provides critical connection between suburbs of Strathpine, Bray Park, Joiner and Warner, and access to Bray Park station and Strathpine Major Regional Activity Centre.
St6	Dorothy Street Precinct, Strathpine	New link between Flynn Lane and Learmonth Street associated with a new road proposal	2021	Urban South	$229,548 (ii)	$319,320	Provides alternative to Gympie Road and serves internal movement within Strathpine Major Regional Activity Centre (iii).
St7(a)	Leitchs Road, Brendale	On-road bike lanes and new path on western side between Kremzow Road to South Pine Road, including South Pine Road Crossing	2021	Urban South	$524,346 (ii)	$729,409	Provides safer alternative to heavily-trafficked section of South Pine Road.
St7(b)	Leitchs Road, Brendale	New path and on-road bike lanes between South Pine Road and Cribb Road	2021	Urban South	$749,738 (ii)	$1,042,948	Provides part of the connecting link between Brendale/ Strathpine and Albany Creek.
AC1	Albany Creek Road, Albany Creek	Connection of off-road path on Albany Creek Road to Albany Creek Service Road (Keong Rd to Wruck Cres)	2021	Urban South	$233,425 (ii)	$324,714	Provides part of the connecting link between Brendale/ Strathpine and Albany Creek. Provides access to Albany Creek primary school and Albany

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Item ID & Map ref.	**Future infrastructure asset location**	**Future infrastructure asset description**	**Estimated Timing**	**Catchment**	**Baseline cost ($)#**	**Guideline compliant establishment cost ($)***	**Comment**
							Creek District Activity Centre.
HD3	Dawson Parade/Pimelia Street, Arana Hills	Formalise footpaths, connect to off-road links, provide on-road bike lanes and/or awareness zones between Patricks Road to South Pine Road	2021	Urban South	$232,987 (ii)	$324,104	Primary connection between suburbs of Everton Hills and Arana Hills. Provides primary access to Arana Hills District Activity Centre.
HD5	Ferny Way, Ferny Hills	Provide on-road bike lanes	2021	Urban South	$46,929 (ii)	$65,282	Primary connection between suburbs of Arana Hills, Ferny Hills and the Ferny Grove District Activity Centre and Ferny Grove station.
HD6	Cabbage Tree Creek to Bunya Road, Everton Hills	Path along the Cabbage Tree Creek corridor parallel to Collins Road from the James Street road reserve to opposite Cooloola Court, a bridge over Cabbage Tree Creek and an off-road path from Cabbage Tree Creek to Bunya Road, Everton Hills.	2021	Urban South	$408,000	$567,562	Provides local connectivity linking Hills District catchments to the Cabbage Tree Creek active transport corridor.
CabS4	Walkers Road, Morayfield	Creek Crossing upgrade and on-road bike lane between Fennell Ct and Koala Drive	2026	Urban North	$1,554,991 (ii)	$2,314,038	Critical linkage between Upper Caboolture and Morayfield in a rapidly-urbanising locality.

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Item ID & Map ref.	**Future infrastructure asset location**	**Future infrastructure asset description**	**Estimated Timing**	**Catchment**	**Baseline cost ($)#**	**Guideline compliant establishment cost ($)***	**Comment**
CabS5	Grogan Road, Morayfield	Path upgrade to Aquatic Centre. Including bicycle awareness on Grogan Road	2026	Urban North	$155,682 (ii)	$231,676	Provides critical linkage between Eastern Morayfield catchments and the aquatic centre destination.
CabS6	Wimbledon Drive, Morayfield	Provision of shared paths	2026	Urban North	$64,420 (ii)	$95,866	Part of connection from eastern Morayfield catchments to Morayfield high school and Morayfield station.
CabE2(a)	Coach Road East, Burpengary East	Path upgrade and on-road bike lanes Between North East Business Park and Eastern Service Road	2026	Urban North	$3409 (ii)	$5,073	Serves connectivity between North East Business Park and Burpengary District Activity Centre.
CabE2(b)	Buckley Road, Burpengary East		2026	Urban North	$2,550,000 (ii)	$3,794,746	
NL3	Memorial Drive/Discovery Drive, North Lakes	Formalise on-road bike lanes from North Lakes Drive to Davenport Parade, addressing conflict points	2026	Urban South	$146,653 (ii)	$218,240	These projects collectively provide primary connection between districts of Deception Bay and North Lakes. Provides access to Deception Bay District Activity Centre.
DB1	Moreton Downs Drive, Deception Bay	Path widening and on-road bike lanes between Arina Place and Deception Bay Road	2026	Urban South	$507,395 (ii)	$755,073	
HD1	Woodhill Road/Hutton Road/Caesar, Ferny Hills	Formalise footpaths, connect to off-road links, provide on-road bike lanes and/or awareness zones between Bunya Road and Patricks Road	2026	Urban South	$1,822,750 (i)	$689,226	Connects suburb of Bunya with Ferny Hills and Albany Hills.

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Item ID & Map ref.	**Future infrastructure asset location**	**Future infrastructure asset description**	**Estimated Timing**	**Catchment**	**Baseline cost ($)#**	**Guideline compliant establishment cost ($)***	**Comment**
HD2	Patricks Road, Arana Hills	Formalise footpaths, connect to off-road links, provide on-road bike lanes and/or awareness zones between Ferny Way and Dawson Parade	2026	Urban South	$507,395 (ii)	$665,744	Primary connection between suburbs of Arana Hills and Ferny Hills accessing Arana Hills District Activity Centre and Grovely primary school.
St7(c)	Leitchs Road, Albany Creek	New river crossing and approaches to Leitchs Road South	2026	Urban South	$463,147 (ii)	$11,841,431	Provides shortcut between Albany Creek and Strathpine Current low-level facility is poorly linked at either end.
Red2	John Street Precinct, Redcliffe	connecting Anzac Ave to Humpybong Creek paths	2026	Urban East	$368,398 (i)	$548,226	Improves connectivity and access to Redcliffe Major Activity Centre.
Red7(a)	Porter Street, Redcliffe	New path and on-road bike lane	2026	Urban East	$427,893 (ii)	$636,763	Provides improved linkages between Redcliffe and Kippa-Ring.
Red7(b)	Portwood Street, Redcliffe	New path on south side and on-road bike lanes	2026	Urban East	$224,043 (ii)	$333,406	Provides improved linkages between Redcliffe and Kippa-Ring.
BE3(a)	Station Road/Progress Road, Burpengary	Intersection improvements at Station Road and path across Old Gympie Road and Bruce Highway	2031	Urban North	$447,368 (ii)	$13,207,611	Primary connection between suburbs of Burpengary and deception Bay. Access to Burpengary District Activity centre from catchments east of Bruce Highway.
BE3(b)	Arthur Drewett Drive, Burpengary	Connection from Bruce Highway overbridge to Old Bay Road	2031	Urban North	$7,957,225 (ii)	$473,541	
BR1	Bestmann Road East/Bribie Island	Upgrade footpaths and provide on-road bike	2031	Urban North	$8,505,470 (i)	$77,033	Connects the southern catchments of Sandstone

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Item ID & Map ref.	**Future infrastructure asset location**	**Future infrastructure asset description**	**Estimated Timing**	**Catchment**	**Baseline cost ($)#**	**Guideline compliant establishment cost ($)***	**Comment**
	Road, Sandstone Point	lanes along Bestmann Road East from Lachlan Crescent to Bribie Island Road, and Bribie Island Road to Bribie Island Bridge approaches from Bestmann Road East					Point to Bribie Island. Becomes highly critical at such time as active transport connections across Bribie Island Bridge are improved.
Total						**$86,230,517**	

Note:

 # Baseline excludes any project owner costs or contingency

** Statutory guideline 03/14 - Local government infrastructure plans*

(i) Item costed by AECOM - Excludes "principal's costs" and "contingency"

(ii) Item costed by ARUP - "Principal's costs" already excluded. Excludes street trees and "contingency"

9.0 Source and supporting documents

The documents relied on in support of the Active Transport LGIP shown in **Table 16** below, include:

Table 16 - References

Source document	Rio Reference
Active Transport Strategy 2012 – 2031, MBRC (2013)	A8028901
Active Transport Strategy 2012 – 2031 – Appendix B – Infrastructure Requirements, MBRC (2013)	A8028850
Active Transport Strategy 2012 – 2031 – Background Paper Appendix A – Desired Standards of Service, MBRC (2013)	A8032504
Active Transport Strategy 2012 – 2031 – Background Paper, MBRC (2013)	A8037667
Active Transport Strategy 2012 – 2031 – Technical Reference Appendix B – Spatial Attributes for Prioritisation, MBRC (n.d)	A7238866
Active Transport Priority Links Combined, MBRC (2013)	A8016676
Scoping and Costing of Active Transport Packages, AECOM (2013)	A8126799
Network and Corridor Planning – Technical note for Priority Infrastructure Planning for Transport, Arup (2013)	A8063013
Transport Networks and Corridors Strategy – Technical Note, Arup (2013)	A8209944
Pedestrian & Cycle Network Gap Analysis, Arup (2013)	A8051495
Network and Corridor Recommendations Updated, MBRC (2013)	A8183546
Capital Works Program, MBRC (2015)	A10346790
Active Transport PIDs (2016, 2021), MBRC (2013)	A8784786 A8784764
South East Queensland Principal Cycle Network Plan, Queensland Government (2007)	A10330132
Infrastructure Charges Resolution, MBRC (2015)	A12045043
TOD Traffic Generation Study Report, MRC (2011)	A5188461
20150512 Transport Network – Pathways Valuation, MBRC (2015)	A12006546
Moreton Bay Active Transport Strategy – Project Analysis – Priorities for Scoping and Costing – Major Activity Centres – Caboolture Morayfield Principle Activity Centre, MBRC (2013)	A7836178
Overlay Map OM_AT_Active Transport, MBRC (2014)	A9799188
20150616 Active Transport Network	A12012043
Catchment demands and relation analysis - Arup	A14326654 A14325502