Local Government Infrastructure Plan 2017
Transport Extrinsic Material

Version control

Version	Revision date	Author	Description and reason for change
1	August 2016	Tom Goodhand	Version 1
2	October 2016	Paul Gleeson	Amended to include revised catchment definitions and subsequent changes

Contents

1.0 Preliminary

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

The report outlines:

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

1.1 Road network facilities

Moreton Bay Regional Council plans, delivers and maintains a variety of road infrastructure and facilities. These facilities support a variety of transport users for a variety of trip purposes. The road network includes the road carriageway and associated infrastructure, including footpaths, lighting, drainage and vegetation.

1.2 Trunk vs. Non-Trunk

Road 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 road facilities across the region, for the purpose of this report, and the development of the LGIP, only **"***trunk infrastructure"* has been included.

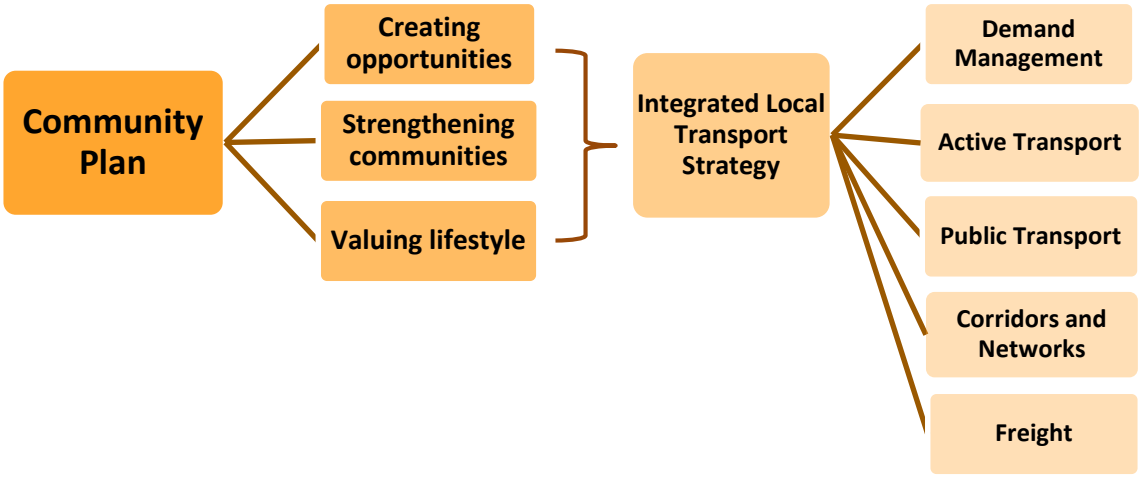
1.3 Transport Networks and Corridors Strategy

Moreton Bay Regional Council has prepared a ***Transport Networks and Corridors Strategy 2012 - 2031*** as the primary driver for Council's planning and delivery of road infrastructure and programs across the region to meet user needs to 2031.

Road planning sits within a broad policy framework. The ***Transport Networks and Corridors 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 the transport network will help deliver.

The Network and Corridor 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.



1.4 Delivering the strategy

The primary objective of the ***Transport Networks and Corridors Strategy 2012 - 2031*** is delivering our transport vision, and responding to the needs of users within the region. The result is intended to be an attractive, cohesive, functional and integrated 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 ***Transport Networks and Corridors Strategy 2012 - 2031*** 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

In addition to understanding the configuration of catchments it is also important to understand the unique relationship between the catchments. The **Moreton Bay Strategic Multi-Modal Transport Model** (MBRSTM-MM) has been analysed to identify origins and destinations of all trips based on catchments. This analysis provides a bases for understanding the relationship between catchments and a platform on which to apportion infrastructure costs to catchments. The catchment relationship analysis outcomes are provided in Table 1.

Table 1 –Catchment Relationship Analysis

		Catchment of Destination				
Catchment of Origin		Urban East	Urban South	Urban North	Rural South	Rural North
	Urban East	0.64	0.26	0.09	0.00	0.01
	Urban South	0.08	0.78	0.11	0.03	0.00
	Urban North	0.03	0.10	0.81	0.01	0.05
	Rural South	0.02	0.33	0.09	0.55	0.01
	Rural North	0.02	0.03	0.59	0.01	0.35

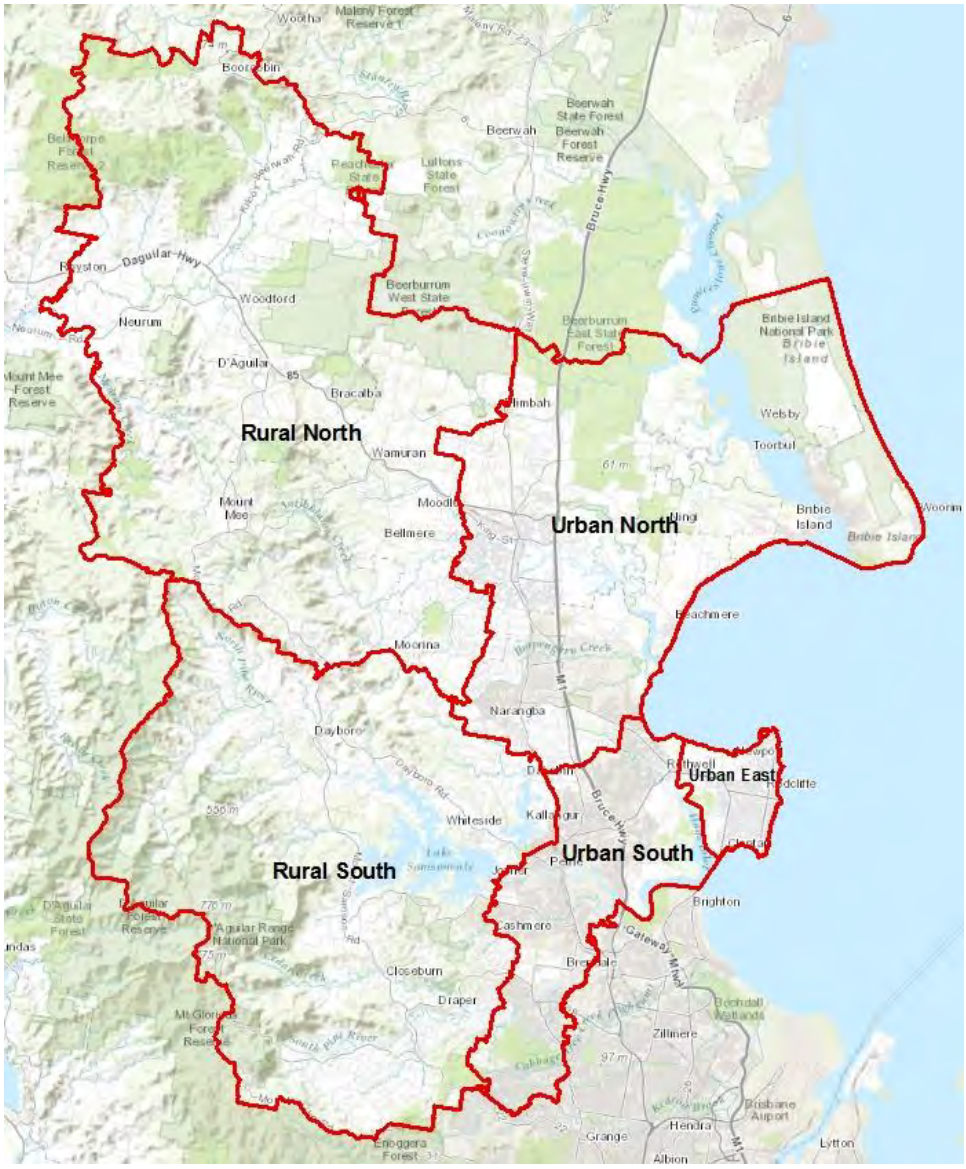


Figure 1 - LGIP transport network service catchment

3.0 Demand assumptions and conversions

3.1 Source of vehicular trips

The population and job assumptions used to undertake catchment planning for the transport network, as identified in the Transport Networks and Corridors Strategy, were based on the Moreton Bay Regional Council Planning Assumptions (current as of August 2013). See **Table 2**, 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 following is noted regarding the population assumptions:

- 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
- Demographics for years 2011, 2021 and 2031 formed key inputs into the Strategic Transport Model, which in turn was used to derive transport demands with the Region.
- Demographics for years 2016, 2026 and 2036 have been derived by interpolation of the above figures.

Table 2 –Growth assumptions 2011-2036

Place Type	2011		2016		2021		2026		2031		2036	
	Dwellings	Jobs	Dwellings	Jobs	Dwellings	Jobs	Dwellings	Jobs	Dwellings	Jobs	Dwellings	Jobs
Activity Centre	13,567	37,562	15,070	46,659	16,572	55,756	18,267	64,919	19,962	74,081	21,657	83,244
Enterprise/Employment	4,370	19,561	5,236	23,410	6,101	27,259	7,048	31,051	7,995	34,842	8,942	38,634
Urban	18,337	7,696	22,484	9,068	26,631	10,440	31,212	11,871	35,793	13,301	40,374	14,732
Next Gen Suburban	23,414	6,370	29,197	7,512	34,979	8,654	41,717	9,718	48,454	10,782	55,192	11,846
Suburban	67,912	17,210	69,937	18,733	71,962	20,255	74,015	21,637	76,068	23,019	78,121	24,401
Special Area	393	723	472	721	550	718	630	722	710	726	790	730
Key Resource Area	1,502	805	1,522	802	1,542	798	1,562	793	1,581	788	1,601	783
Rural / Coastal	19,695	8,231	20,620	8,976	21,545	9,722	22,555	10,468	23,564	11,214	24,574	11,960
MBRC Total	**149,190**	**98,158**	**164,536**	**115,880**	**179,882**	**133,602**	**197,005**	**151,178**	**214,127**	**168,753**	**231,250**	**186,329**

Population growth to 2036 – Moreton Bay Regional Council population assumptions, September 2013

3.2 Mode share Targets

The **Moreton Bay Strategic Multi-Modal Transport Model** (MBRSTM-MM) extrapolated current *"trends"* from 2010 to 2031. This trend model forecasts 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).

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 this 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 3 Below summarises how mode share changes depending on place type between 2011 and 2031. 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 3 comparison of "Trend" and "Policy" Mode shares by Place type*

	2011 Base Model			2021 Trend-Based Model			2031 Policy-Based Model		
Place Type	Car	Public Transport	Active Transport	Car	Public Transport	Active Transport	Car	Public Transport	Active Transport
Activity Centre	80%	4%	16%	77%	6%	17%	65%	10%	25%
Enterprise/Employment	90%	5%	6%	89%	6%	5%	85%	9%	6%
Urban	84%	7%	9%	83%	9%	8%	67%	14%	19%
Next Generation Suburban	86%	5%	9%	87%	5%	8%	74%	11%	14%
Suburban	87%	6%	7%	86%	7%	6%	78%	12%	10%
Special Area	94%	2%	4%	95%	2%	3%	91%	7%	2%
Key resource Area	95%	4%	1%	95%	3%	1%	93%	6%	1%
Rural/Coastal	93%	3%	4%	93%	3%	4%	90%	6%	4%
Total	**87%**	**5%**	**8%**	**86%**	**6%**	**8%**	**75.6%**	**10.8%**	**13.6%**

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

3.3 Trip Generation Rates

Vehicular trip generation rates have been derived from the **Moreton Bay Strategic Multi-Modal Transport Model** (MBRSTM-MM). These rates, applied to residential demographics produce traffic demands on the road network.

Summaries of residential and employment trip generation rates are provided in Tables 4 and 5 respectively.

Table 4 - Residential Trip Generation Rates

Place Type	Daily Vehicle Trips Per Dwelling					
	2011	2016	2021	2026	2031	2036
Activity Centre	5.70	5.74	5.78	5.29	4.81	4.33
Enterprise/Employment	5.04	4.87	4.70	4.54	4.39	4.23
Urban	4.68	4.46	4.23	3.74	3.25	2.76
Next Gen Suburban	4.18	4.16	4.14	3.77	3.40	3.03
Suburban	5.40	5.09	4.79	4.50	4.21	3.92
Special Area	8.42	7.52	6.62	6.10	5.57	5.05
Key Resource Area	5.76	5.51	5.26	5.18	5.09	5.00
Rural / Coastal	6.21	5.92	5.62	5.50	5.37	5.25
MBRC Total	**5.26**	**5.02**	**4.78**	**4.42**	**4.07**	**3.71**

Table 5 - Employment Trip Generation Rates

Employment Category	Daily Vehicle Trips Per Employee					
	2011	2016	2021	2026	2031	2036
Retail	5.73	6.12	6.50	5.75	4.99	4.23
Service	0.89	0.98	1.06	0.92	0.78	0.64
Professional	2.21	2.28	2.36	2.14	1.92	1.71
Industry	1.02	1.09	1.17	1.04	0.90	0.76
Other	1.11	1.10	1.10	1.06	1.02	0.98
MBRC Total	**2.11**	**2.33**	**2.55**	**2.30**	**2.05**	**1.81**

The strategic transport model calculates trips based on the concept of production and attraction. Generally residential land uses produce trips and employment based uses attract these trips. Trip generation rates for residential and employment land uses have been modified to ensure there is no double counting of trips between these uses. For the purpose of documenting the trip generation rates a simple assumption has been made that of all Residential to employment and shopping uses, 50% of these trips have been attributed to residential trip generation (as per Table 4) and 50% have been attributed to employment generation (as per Table 5).

3.4 Regional Traffic Growth Predictions

The catchment based demand summary has been derived directly from the transport model. These figures reflect the total vehicle modelled trips which are a combination of planning assumptions, demand generation rates and place types. These figures are provided in **Table 6**, for future years.

Table 6 - Total Daily Vehicular Demand

Catchment	2016	2021	2026	2031	Ultimate
Urban North	155,128	162,835	161,343	15,9850	15,8371
Urban South	464,272	525,215	551,120	57,7024	604,146
Urban East	338,480	388,214	411,808	435,402	460,348
Rural North	75,812	78,212	78,465	78,719	78,973
Rural South	42,673	48,179	51,229	54,279	57,511
Total Daily Trips	1,076,365	1,202,656	1,253,965	1,305,274	1,359,349

4.0 Desired standards of service

Desired standards of service (DSS) are generally related to capacity, and the likelihood of congestion (e.g. modelled volume-to-capacity ratios). **Table 7** provides MBRCs DSS criteria used to identify required road upgrades within the transport model.

Table 7 – Desired Standard of Service **

Category type		Place Type Grouping		
		1	2	3
Max Level of Service		D/E	D	C
Road Link Maximum Degree of Saturation	Arterial	0.95	0.85	0.65
	Sub Arterial	0.95	0.85	0.65
	Collector	0.90	0.80	0.60
Intersection Maximum Turn Degree of Saturation	Signalised	0.95	0.95	0.90
	Roundabout	0.95	0.95	0.85
	Priority	0.90	0.90	0.80

** From Table 2, 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

The DSS recognises the different expectations for acceptable peak period traffic conditions across the different place types. For example, in built-up areas such activity centres, a lower level of service is tolerated compared to rural areas.

Council has adopted level of service definitions for the DSS that are generally lower in activity centres and urban areas than has been used in the previous PIPs for Caboolture, Pine Rivers and Redcliffe.

This aligns with Council's objectives for creating more sustainable transport outcomes such as an increased mode share of walking, cycling and public transport.

For more detail, refer to the ***Networks and Corridors Strategy Background Paper, Appendix B Arup Technical Note 2013.***

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 road infrastructure has been determined to comprise:

- District collector roads carrying greater than 3,500 vehicles per day;
- Sub-arterial roads; and
- Arterial roads (excluding State Controlled Roads) including Arterial Main Streets.

6.0 Network planning and modelling

Transport network planning was undertaken as part of the development of the ***Draft Network and Corridors Strategy***. Modelling for future road requirements has primarily been undertaken using the Moreton Bay Region Strategic Transport Model (MBRSTM). This model relies on population and growth forecasts and has been used to determine road links and intersections which exceed the desired standard of service criteria.

Full details of the transport modelling methodology are provided in the ***Networks and Corridors Strategy, Appendix B - Arup Technical Note 2013.***

7.0 Network costing and valuation methodology

7.1 Value of existing assets:

Existing road facilities were identified from MBRC assets register and costed by external consultants applying standard unit rates (values are at December 2014). Current asset values were established by multiplying asset quantities by MBRC unit rates derived for various construction types. These values were aggregated by both catchment and asset type to provide a summary of current road asset value. The road asset elements considered in this valuation include:

- Road Barriers
- Bridge Structures
- Guardrails
- Retaining Walls
- Road Structure
- Road Kerb and Channel
- Traffic Islands
- Traffic Lights

A summary of the total value of the existing assets by hierarchy is provided in Table 9.

Table 9 – Asset valuation

Roads		
Road classification		**Value December 2014**
Arterial	$	204,767,910
Sub-Arterial	$	230,039,228
Collector	$	385,634,147
Total		**$820,441,285**

The costs of the existing assets have been apportioned to catchments in the SOW model based on the catchment relationship as provided in Table 1.

7.2 Costing of new and upgraded assets:

Projects included in the ***Schedule of Works*** were compiled from a number of sources. The costing methodologies used by each source were broadly consistent enough in approach to be used for priority infrastructure planning purposes. All project costs included in the Schedule of works have had all contingency costs removed to make them compatible with the Schedule of Works Model.

7.2.1 MBRC costing methodology

MBRC have undertaken a number of planning studies to inform preliminary, concept or detailed design for planned upgrades. Where information is available, costings from these studies have been used to determine planned costs for upgrades. A breakdown of the total establishment costs into base land, on-costs and contingency is provided in **Table 10.**

It is usual practice for MBRC and its consultants to use the MBRC Construction Cost Estimator to determine construction costs based on quantities identified from the design stages. Individual planning studies are referenced where they have been used to determine costs for proposed upgrades listed in **Table 10**.

The costs of the future assets have been apportioned to catchments in the SOW model based on the catchment relationship as provided in Table 1.

7.2.2 Arup costing methodology

High level planning costs were prepared for each project within the Networks and Corridors Strategy, Appendix B - Arup Technical Note 2013. 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. A standardised contingency rate of 70% was agreed with MBRC officers (however these contingencies and any on costs have been removed from the figures in **Table 10**).

The quantities used were derived from GIS measurements and site observation in the absence of detail survey, design drawings, field investigations or studies into aspects such as detailed traffic impacts, PUP, geometry, lighting or geotechnical conditions. Items costed by Arup are annotated as (ii) in **Table 10**.

7.2.3 Exclusions from LGIP cost and contribution calculations

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).

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 Draft 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.

8.0 Schedules of works

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 10** below.

Table 10 —Road network schedule of works

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Item ID	**Future infrastructure asset location**	**Future infrastructure asset description**	**Estimated Timing**	**Catchment**	**Establishment cost ($) (excluding land, contingency and on costs)***	**Land Cost ($)**	**Contingency and On Costs ($)**	**Base Year for Valuation**	**Total baseline cost ($)**	**Guideline compliant establishment cost ($)#**	**Comment**
RD01	Youngs Crossing Road, Joyner	Intersection and Corridor Upgrade. Oxford Street to Francis Road widening	2016	Urban South	$7,161,267 (i)		$2,757,088	2014	$9,918,355	$9,744,534	Concept Design Costing Estimate
RD02	Oakey Flat Road, Morayfield	Intersection and Corridor Upgrade. Morayfield Road to Clark Road intersection upgrade and localised widening	2016	Urban North	$16,797,184 (ii)		$6,466,916	2014	$23,264,100	$22,856,393	Network and Corridor Strategy Proposal
RD04	Dohles Rocks Road, Kallangur	Duplication of Dohles Rocks Road between School Road and Ogg Road, associated with the MBRL proposals	2016	Urban South	$4,529,412 (ii)		$3,170,588	2013	$7,700,000	$6,300,789	Included as part of MBRL external road works
RD07	Old North Road, Warner	Duplication of Old North Road and intersection upgrades – South Pine to Kremzow	2016	Urban South	$7,734,563 (i)		$1,546,913	2015	$9,281,476	$10,290,320	Detailed design cost estimate
RD27	South Pine Road, Everton Hills	Duplication of South Pine Road between Camelia Avenue and Queens Road	2016	Urban South	$8,214,286 (i)		$3,285,714	2014	$11,500,000	$11,177,406	Currently under construction

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Item ID	**Future infrastructure asset location**	**Future infrastructure asset description**	**Estimated Timing**	**Catchment**	**Establishment cost ($) (excluding land, contingency and on costs)***	**Land Cost ($)**	**Contingency and On Costs ($)**	**Base Year for Valuation**	**Total baseline cost ($)**	**Guideline compliant establishment cost ($)#**	**Comment**
RD32	Leitchs Road, Brendale	Realignment Kremzow Road to Stanley Street, 2 lanes, undivided	2016	Urban South	$19,651,629 (i)		$7,860,652	2014	$27,512,281	$26,740,515	Concept Design Costing Estimate
INT01	Old Gympie Road/Macarthur Drive, Kallangur	Localised widening and Upgrade of intersection to signals	2016	Urban South	$594,000 (ii)		$415,800	2013	$1,009,800	$826,304	Network and Corridor Strategy Proposal
INT02	Old Gympie Road/Hughes Road, Kallangur	Upgrade of intersection to signals	2016	Urban South	$220,000 (ii)		$154,000	2013	$374,000	$306,038	Network and Corridor Strategy Proposal
INT03	Anderson Road/Lindsay Road, Morayfield	Localised widening and Upgrade of intersection to signals	2016	Urban North	$869,000 (ii)		$608,300	2013	$1,477,300	$1,208,851	Network and Corridor Strategy Proposal
INT29	Welsby Parade/Kangaroo Avenue, Bongaree	Intersection works to improve safety and amenity	2016	Urban North	$924,528 (i)		$55,472	2014	$980,000	$1,258,031	Detailed design cost estimate
RD03	Mango Hill Ring Road, Mango Hill	New corridor for local connectivity	2016	Urban South	$10,520,000 (i)		$2,630,000	2013	$13,150,000	$14,634,197	Partially constructed by private developers and MBRL
RD05	Dohles Rocks Road,	Goodrich Road to Castle Hill Drive, Bruce Highway	2016	Urban South	$1,703,571 (i)		$681,429	2014	$2,385,000	$2,318,097	Concept Design

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
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	Murrumba Downs	intersection upgrade and road widening									Costing Estimate
INT31	Smiths Road, Del Rosso Road intersection, Caboolture	Upgrade of existing signals to improve safety for pedestrians	2017	Urban North	$157,143 (i)		$62,857	2014	$220,000	$213,829	Concept Design Costing Estimate
INT24	Bunya Road/Jinker Track, Bunya	Upgrade of intersection to signals	2018	Urban South	$785,714 (i)		$314,286	2014	$1,100,000	$1,069,143	Concept Design Costing Estimate
RD08	Old North Road, Warner	Duplication of Old North Road and intersection upgrades – Lavarak to Kremzow	2019	Urban South	$4,492,857 (i)		$1,797,143	2014	$6,290,000	$6,113,555	Concept Design Costing Estimate
RD30	Old North Road, Warner	Duplication of Old North Road and intersection upgrades – Lavarak to Everest	2019	Urban South	$4,100,000 (i)		$1,640,000	2014	$5,740,000	$5,578,983	Concept Design Costing Estimate
RD31	Boundary Road, North Lakes	Duplication of Boundary Road – Bruce Highway to NSUA	2019	Urban South	$421,429 (i)		$168,571	2014	$590,000	$573,450	Construction to tie into TMR Bruce Highway Interchange Upgrade Project

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
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INT33	Samsonvale Road/Kentwood Drive	Intersection upgrade including approach lanes between Dundee Street and Elmwood Drive for capacity and drainage improvements	2019	Urban South	$1,157,143 (i)		$462,857	2014	$1,620,000	$1,574,556	Concept Design Costing Estimate
INT04	Burpengary Road/New Settlement Road, Burpengary	Signalisation, Bridge Works and localised widening	2021	Urban North	$13,255,000 (ii)		$9,278,500	2013	$22,533,500	$18,438,810	Network and Corridor Strategy Proposal
INT05	South Pine Road/Camelia Avenue, Everton Hills	Intersection reconfiguration and upgrade to Signals	2021	Urban South	$2,376,000 (ii)		$1,663,200	2013	$4,039,200	$3,305,214	Network and Corridor Strategy Proposal
INT06	Samsonvale Road/Lavarack Road, Bray Park	Upgrade of Signals	2021	Urban South	$407,000 (ii)		$284,900	2013	$691,900	$566,171	Network and Corridor Strategy Proposal
INT07	Kremzow Road/Leitchs Road, Brendale	Upgrade of Signals	2021	Urban South	$676,500 (ii)		$473,550	2013	$1,150,050	$941,068	Network and Corridor Strategy Proposal
INT08	South Pine Road/Plucks	Upgrade of Signals	2021	Urban South	$594,000 (ii)		$415,800	2013	$1,009,800	$826,304	Network and Corridor

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6		Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Item ID	**Future infrastructure asset location**	**Future infrastructure asset description**	**Estimated Timing**	**Catchment**	**Establishment cost ($) (excluding land, contingency and on costs)***		**Land Cost ($)**	**Contingency and On Costs ($)**	**Base Year for Valuation**	**Total baseline cost ($)**	**Guideline compliant establishment cost ($)#**	**Comment**
	Road, Arana Hills											Strategy Proposal
RD09	Graham Rd, Morayfield	Lomandra Drive to Buchanan Road Duplication	2021	Urban North	$2,965,114	(ii)		$2,075,579	2013	$5,040,693	$4,124,720	Network and Corridor Strategy Proposal
RD10	Buchanan Road, Morayfield	Morayfield Road to Bruce Highway intersection upgrade and localised widening, including new rail bridge	2021	Urban North	$66,325,000	(i)	$8,250,000	$13,265,000	2009	$87,840,000	$108,822,453	Concept Design Costing Estimate
RD11	Caboolture River Rd , Morayfield/Upper Caboolture	Grant Road to Morayfield Road intersection upgrade and localised widening	2021	Urban North	$18,050,956	(ii)	$1,000,000	$4,512,739	2013	$23,563,695	$26,268,010	Network and Corridor Strategy Proposal
RD12	NSUA Mango Hill to Griffin, Mango Hill	New 2 lane arterial road and corridor between Mango Hill and Griffin, including improvements to the existing section of Dohles Rocks Road to the Bruce Highway	2021	Urban South	$55,994,341	(i)		$16,798,302	2008	$72,792,643	$72,834,639	Preliminary Planning Cost Estimate
RD06	West Petrie Bypass – Stage 1, Joyner	Duplication of Youngs Crossing Road extending	2023	Urban South	$59,272,727	(i)	$1,500,000	$22,227,273	2012	$83,000,000	$91,596,451	Preliminary Planning Complete.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
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		from Dayboro Road to South of Protheroe Road to increase capacity and provide flood immunity									Subject to state and federal funding
INT11	Boundary Road/Narangba Road, Dakabin	Localised widening and intersection signalisation	2026	Rural South	$2,838,000 (ii)		$1,986,600	2013	$4,824,600	$4,223,329	Network and Corridor Strategy Proposal
RD14	Lindsay Rd, Morayfield	Morayfield Rd to O'Brien Road intersection upgrade and localised widening	2026	Urban North	$1,265,000 (ii)		$885,500	2013	$2,150,500	$1,882,492	Network and Corridor Strategy Proposal
RD15	Old Gympie Road, Dakabin - Kallangur	Boundary Road to Anzac Ave intersection upgrade and localised widening	2026	Urban South	$16,764,000 (ii)		$11,734,800	2013	$28,498,800	$24,947,107	Network and Corridor Strategy Proposal
RD16	Burpengary Road and Station Road, Burpengary	O'Brien Road to Rosehill Drive intersection upgrade and localised widening	2026	Urban North	$2,761,000 (ii)		$1,932,700	2013	$4,693,700	$4,108,743	Network and Corridor Strategy Proposal
RD17	Cundoot Creek, South Caboolture	New 2 lane arterial road between Buchanan Road and Lower King Street	2031	Urban North	$34,776,000 (i)	$2,030,000	$8,694,000	2013	$45,500,000	$56,351,447	Preliminary Planning Estimates

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RD18	Brown Street, Caboolture	New 2 Lane Sub-Arterial Road between Ardrossan Rd and Pettigrew Street	2031	Urban North	$15,136,170 (ii)		$3,784,042	2013	$18,920,212	$23,504,008	Currently Under Construction
INT12	Mewett Street/Lee Street/Summerfields Drive, Caboolture	Reconfiguration and Upgrade of intersection to signals	2031	Urban North	$220,000 (ii)		$154,000	2013	$374,000	$341,624	Network and Corridor Strategy Proposal
INT13	Oakey Flat Road/Burbury Road, Morayfield	Localised widening and Upgrade of intersection to signals	2031	Urban North	$4,202,000 (ii)		$2,941,400	2013	$7,143,400	$6,525,022	Network and Corridor Strategy Proposal
RD33	Eastern Collector Road, Strathpine (Works)	New road	2026	Urban South	$2,106,720 (iii)		$1,695,909	2014	$3,802629	$3,066,673	Master plan Estimate
RD33	Eastern Collector Road, Strathpine (Land)	Land for new road	2018	Urban South	$0	$650,000 (iV)	$0	2015	$650,000	$682,500	Master plan Estimate
INT20	Klingner Road/Boardman Road, Kippa-Ring	Upgrade of intersection to signals	2023	Urban East	$2,166,065 (i)		$833,935	2014	$3,000,000	$3,153,059	Preliminary Planning Cost Estimate
INT30	King St/Victoria Avenue, Woody Point	Upgrade of intersection to signals	2016	Urban East	$1,577,458 (i)		$492,956	2015	$2,070,414	$2,098,702	Concept Design Costing Estimate

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
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INT32	Griffith Road/Newport Drive, Newport	Upgrade of intersection to signals	2022	Urban East	$765,343 (i)		$294,657	2014	$1,060,000	$1,114,081	Preliminary Planning Cost Estimate

* Source of costings are identified as:
(i) MBRC Construction Cost Estimations resulting from concept or detailed design
(ii) ARUP Network and Corridor Strategy Estimations
(iii) Based on Master Plan estimate. See A10608216 - Northern Part of ECR, ECR through Raynbird Park and Southern Stage of ECR.
(iV) Based on 2015 suburb based land valuations prepared by Opteon Property Group (A12531058)

Statutory guideline 03/14 - Local government infrastructure plans

9.0 Source and supporting documents

The documents relied on in support of the Road Network LGIP shown in **Table 11** below, include:

Table 11 - References

Source document	Rio Reference
Transport Networks and Corridors Strategy 2012-2031	A12821783
Transport Networks and Corridors Strategy Appendix B - Infrastructure Requirements	A8876639
Arup MBRC Networks and Corridors Strategy Report Draft V4 Final	A8063013
Arup MBRC Networks and Corridors Strategy Appendix B – Arup Technical Note	A8209944
Capital Works Program 2015/16	A10063250
MBRC Infrastructure Charges Resolution No 3	A12771369
20090901 - MWH - Buchanan Road - Concept Investigation & Planning - FINAL Design Report	A2113456
North South Urban Arterial - Preliminary Planning Report	A80240
Youngs Crossing Road - Options Analysis Report	A6474458
20150512 Transport Network – Barrier Valuation	A12006548
Youngs Crossing Road, Joiner Design Report	A9236293
Oakey Flat Road Planning Report	A9624165
Welsby Parade/Kangaroo Avenue Design Cost Estimate	A11916152
20150512 Transport Network – Bridges Valuation	A12006549
Dohles Rocks Road Planning Report	A12004449
20150512 Transport Network – Guardrails Valuation	A12006553
20150512 Transport Network – Retaining Walls Valuation	A12006550
20150512 Transport Network – Road Structure Valuation	A12006552
20150512 Transport Network – Roads_KerbChannel Valuation	A12006547
20150512 Transport Network – Traffic Island Valuation	A12006544
20150512 Transport Network – Traffic Light Valuation	A12006542
Catchment demands and relation analysis - Arup	A14326654 A14325502