



Mareeba Shire Council Local Government Infrastructure Plan

Mareeba Shire Council

Background Information on Transport Network

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Document history and status

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Contents

1.	Preliminary	3
2.	Service Catchments	4
3.	Assumed Demand Generation Rates and	5
4.	Desired Standards of Service	6
5.	Definition of Trunk Infrastructure	7
6.	Network Planning and Modelling	8
7.	Network Costings and Valuation Methodology	9
7.1	Existing Trunk Infrastructure	9
7.2	Future Trunk Infrastructure	9
8.	Schedule of Works	10
9.	Source and Supporting Documents	12

1. Preliminary

This report provides the background information for the Transport Networks to support the development of the Mareeba Shire Council Local Government Infrastructure Plan (LGIP).

The transport network captures the local trunk roads network, as well as the trunk footpath network.

The report outlines:

1. The definition of trunk infrastructure (Section 2);
2. The service catchments (Section 3);
3. The demand assumptions and conversions (Section 4);
4. Catchment demands (Section 5);
5. The Desired Standards of Service (DSS) (Section 6);
6. Network planning and modelling (Section 7);
7. Network costings and valuation methodology (Section 8);
8. Schedules of work (Section 9); and
9. Source and supporting documents (Section 10).

2. Service Catchments

The transport network in Mareeba Shire Council is an open network operates as a single catchment. However, for the purposes of the LGIP, the transport planning focusses on the urban areas within the PIA. The service catchment geography therefore aligns with the PIA and is identified on the Transport network maps.

Table 2.1 : Transport Service Catchments

Catchment Name	Map Reference
Chillagoe	Roads-PFTI38
Dimbulah	Roads-PFTI37
Kuranda	Roads-PFTI32 - PFTI36
Mareeba	Roads-PFTI11 - PFTI13

3. Assumed Demand Generation Rates and

Demand generation rates were sourced from MSC Planning Scheme Table 4.2.11.2.1 Demand generation rates. The rates were used to establish the average vehicle trips/day (VPD) for each land use as shown in Table 3.1.

Table 3.1 : Assumed Transport Network Demand Generation Rate from MSC Planning Scheme Table 4.2.11.2.1 Demand generation rates

Planning scheme area identification & land use	Use intensity	Transport units of demand, Trips per day
Residential uses	Detached house and lot	9
Industrial uses	100 m ² use area	5
Retail Uses	100 m ² use area	10
Office (equivalent to Centre in MSC LGIP Background Information on Population Assumptions Table 5.2)	100 m ² use area	10
Community Facilities	100 m ² use area	4

Notes:

- Retail and Office - based on 624 trips per dev ha (MSC Planning Scheme Table 4.2.11.1.1) and 6,240 m²/ net. Hectare assumed density (floor space/ net. developable ha) (MSC LGIP Background Information on Population Assumptions Table 5.2 and MSC Planning Scheme Table 4.2.11.1.1)
- Community Facilities - based on 180 trip per dev hectare (MSC Planning Scheme Table 4.2.11.1.1) and 4,500 m²/ net. Hectare assumed density (floor space/ net. developable ha) (MSC LGIP Background Information on Population Assumptions Table 5.2 and MSC Planning Scheme Table 4.2.11.1.1).

The adopted rates from Table 3.1 were then multiplied by the catchment demand (residential and non-residential) from the planning assumptions. The total transport demand is summarised in Table 3.2.

Table 3.2 : Existing and Projected Demand for the Transport Network

Locality	2016	2021	2026	2031	Ultimate
Chillagoe	967	1,042	1,135	1,238	1,571
Dimbulah	2,348	2,159	2,350	2,568	3,734
Kuranda	9,452	10,709	11,459	12,253	14,173
Mareeba	42,849	48,690	52,120	55,758	74,241

4. Desired Standards of Service

Table 4.1 : Desired Standard of Service (DSS) for Transport Network

Measure	Planning Criteria (qualitative standards)	Design Criteria (quantitative standards)
Road Network Design / Planning Standards	<p>The road network provides a functional urban and rural hierarchy and freight routes which support settlement patterns and commercial and economic activities.</p> <p>Design of the road system will comply with established codes and standards</p>	<ul style="list-style-type: none"> ▪ FNQROC Development Manual ▪ <i>Road Planning and Design Manual</i> - Department of Transport and Main Roads ▪ Australian Standards ▪ AUSTRROADS guidelines
Public Transport Design / Planning Standards	<p>New urban development is designed to achieve safe walking distance to existing or potential bus stops or existing or proposed demand-responsive public transport routes.</p>	<ul style="list-style-type: none"> ▪ Design accords with the Performance Criteria set by Department of Transport and Main Roads ▪ AUSTRROADS guides for road-based public transport and high occupancy vehicles
Cycle ways and Pathways Design / Planning Standards	<p>Cycleways and pathways provide a safe and convenient network which encourages walking and cycling as acceptable alternatives.</p> <p>Design of the network will comply with established codes and standards.</p>	<ul style="list-style-type: none"> ▪ Australian Standards ▪ 'AUSTRROADS Guide to Road Design – Part 6A: Pedestrian and Cycle Paths' ▪ Queensland Cycle Strategy 2011-2021 ▪ 'Complete Streets'

5. Definition of Trunk Infrastructure

Table 5.1 : Transport Network Trunk Infrastructure

Network	System	Items
Transport	Road	<ul style="list-style-type: none"> Local government arterial, sub-arterial, collector and some rural collector roads (where immediately adjacent to, and serving a trunk function of, the PIA). Associated intersections, traffic lights, lighting, bridges, culverts, kerb and channel, local road drainage, on-road cycleways.
	Footpaths	<ul style="list-style-type: none"> Footpaths associated with Local and State Government arterial, sub-arterial, collector and some rural collector roads (where immediately adjacent to PIA). Additionally, footpaths linking key attractors such as schools, major parks, commercial areas, etc. may be defined as trunk, as shown on the plans for trunk infrastructure. Associated lighting, bridges, drainage culverts and cycleways. Footpaths not mapped are considered non trunk.
	Bikeways	<ul style="list-style-type: none"> Principal and Iconic Cycle Route

The trunk road network is limited to the roads directly servicing the demand within the PIA boundary. Major roads linking the townships are excluded, as many are State assets and also to ensure a realistic financial outcome.

6. Network Planning and Modelling

As Mareeba Shire Council is a low growth Council, there is no whole of network planning or modelling undertaken for the Shire wide transport network. Future projects are established through the identification of system bottlenecks and other deficiencies and consideration of the impact of additional load created as a result of future demands triggered by residential and non-residential increases in demand on the network.

The identified projects are entered into the capital works program which is prioritised by Council.

7. Network Costings and Valuation Methodology

The establishment cost for the transport network is calculated using a variety of methods.

7.1 Existing Trunk Infrastructure

The replacement cost of the existing trunk infrastructure has been determined by identifying those assets in the register that meet the definition of trunk for the transport network and retrieving the assigned replacement values in the asset register. The establishment and replacement costs of the networks have been based on 2013 valuation rates and escalated to 2018.

The total replacement value of the existing transport infrastructure in Kuranda and Mareeba is estimated to be \$23,686,085.

7.2 Future Trunk Infrastructure

Future capital projects are estimated using past capital project actual construction costs, quoted prices and unit rates where applicable. Estimates are created in the broader context of Council's capital works program framework and project periodization tool (PPT). It is recognized projects are inherently uncertain and that for the purposes of capital works project planning, that there will be incomplete or sometimes unavailable project scope information on which to base the project estimates. Estimate reliability will progressively improve throughout the project life cycle as a result of systematic review and associated approval processes. The sow model has escalated the establishment costs to the base year of 2016.

It is acknowledged that some projects contain an element of asset renewal. This has been considered at the project level and a portion of the total cost has been allocated to renewal and this part of the cost does not form part of the total. For further detail, refer to the Schedule of Works model and the documents referenced in Section 9.

8. Schedule of Works

Table 8.1 : Transport network schedule of works

Ref	Trunk infrastructure	Estimated timing	Establishment cost
TPT-01	Rob Veivers Drive, Kuranda. Rehabilitate Pavement and Widen.	2017	\$490,000.00
TPT-02	Thongon Street, Kuranda. Replace K&C and construct parking indent along frontage of Foodworks.	2017	\$60,000.00
TPT-03	Barang Street/Rob Veivers Drive, Kuranda. Upgrade of intersection to include Channelised right turn pocket.	2026	\$90,000.00
TPT-04	Chewko Road, Mareeba. Widen and Seal to 8.5m.	2022	\$280,000.00
TPT-08	Bowers Street, Mareeba. Rehabilitate pavement both lanes Asphalt overlay.	2020	\$570,000.00
TPT-10	Moorong Street, Kuranda. Reconfigure Car Park.	2020	\$50,000.00
TPT-11	Barang Street, Kuranda. Widen and upgrade to collector street standard.	2020	\$390,000.00
TPT-13	Raleigh Street, Dimbulah. Carpark Improvement	2020	\$165,000.00
TPT-14	Black Mountain Road. Widen seal to 6.5m. Ch. 0.5 - 1.1.	2020	\$225,000
TPT-15	McGrath Road. Rehabilitate Pavement and Reseal to m. Ch. 0.014 - 0.835.	2021	\$520,000
TPT-16	Chewko Road. Rehabilitate Pavement, widen and seal to 8.5m. Ch. 0.4 - 1.	2021	\$300,000
TPT-17	Herberton Street/Constance Street intersection upgrade.	2027	\$1,800,000
TPT-18	McIver Road. Construct new kerb and channel. Ch. 0 - 0.22.	2028	\$150,000
TPT-19	Myola Road. Intersection of Kuranda Heights Road onto Myola Road (near Water tank). Ch. 0.16 - 0.18.	2028	\$60,000
TPT-20	Rankin Street/Walsh Street. Rankin Street/Walsh Street Intersection Upgrade.	2020	\$1,200,000

Ref	Trunk infrastructure	Estimated timing	Establishment cost
TPT-21	Walsh Street. Walsh Street / Coles and Target Accesses upgrade.	2020	\$400,000
TPT-22	Ceola Drive/Anzac Avenue intersection	2021	\$1,000,000
TPT-23	Barron Falls Road. Rehabilitate, widen to 6.5m seal width and intersection upgrade with Mason Road to 6.5m. Ch. 1.2 - 2.6.	2023	\$400,000
TPT-24	Mason Road. Reprofile road due to drainage issues. Ch. 0.2 - 0.6.	2021	\$70,000
TPT-25	Hastie Road Upgrade, Mareeba	2020	\$700,000
TPT-26	Railway Avenue Car Park, Mareeba	2019	\$280,000
TPT-27	McIver Road – Ray Road Upgrade, Mareeba	2023	\$450,000
TPT-28	Malone Road widening, Mareeba	2022	\$800,000
TPT-29	Hastie Rd – Emerald End Rd intersection upgrade	2025	\$450,000
TPT-30	Railway Avenue Car Park Stage 2	2026	\$250,000
	TOTAL		\$11,150,000

9. Source and Supporting Documents

Mareeba Shire Council Local Government Infrastructure Plan – Background Information on Population Assessment, February 2018.

Mareeba Shire Planning Scheme, MSC, 2016.

Tablelands Regional Council, *Mareeba Shire Planning Scheme Priority Infrastructure Plan Assumptions and Priority Infrastructure Area*, 2011.