

**Background information for
Transport Network for the
Western Downs Regional Council
Local Government Infrastructure Plan**

**21 April 2016
Version 2**



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1.0 Preliminary

This report provides the background information for the Transport Network, to support the development of the Western Downs Regional 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 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 costings and valuation methodology (Section 7);
7. Schedules of work (Section 8);
8. Source and supporting documents (Section 9).

2.0 Service catchments

The transport network in WDRC 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
Wandoan	LGIP-R-01
Miles	LGIP-R-02
Chinchilla	LGIP-R-03
Jandowae	LGIP-R-04
Tara	LGIP-R-05
Dalby	LGIP-R-06

3.0 Demand assumptions and conversions

Demand generation rates were sourced from “RTA Guide to Traffic generating developments” (October 2002). 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 — Adopted Demand Generation Rates

Development type	Unit of demand	Adopted average trips/unit of demand
Detached houses	Dwelling	9
Attached dwellings	Dwelling	5.25
Office and commercial	100m2 GFA	10
Retail	100m2 GFA	70
Industry	100m2 GFA	4.5
Community	100m2 GFA	33
Education	100m2 GFA	33

Notes:

- Retail - based on small shopping centres (0-10000 @121 vpd) and video stores as a representative of the smaller convenience retail
- Community and Education - based on child care centres - 2.2 trips/pre-school child and 6.7m² per child = 33 trips/100m²

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 — Total transport demand

Service catchment	2016	2021	2026	Ultimate 2031
Chinchilla	54,704	60,802	66,398	71,581
Dalby	120,068	124,502	129,548	136,546
Miles	16,310	19,234	21,841	23,542
Wondoan	4,776	5,297	6,443	7,107
Tara	8,257	8,654	9,056	9,804
Jandowae	7,161	7,329	7,507	7,920
Outside PIA	86,660	86,884	87,285	87,954
Total transport trips	297,936	312,702	328,078	344,454

4.0 Desired standards of service

The Desired Standard of Service for the Transport network is provided in Table 4.1.

Table 4.1 — Transport network desired standards of service

Measure	Planning criteria (qualitative standards)	Design criteria (quantitative standards)
Road network design/planning standards	The road network provides a reliable and functional urban and rural hierarchy that supports settlement patterns, commercial and economic activities, and freight movement. Design of the road system will comply with established codes and standards.	<ul style="list-style-type: none"> Local government road design and development manual/standards/codes in planning scheme and planning scheme policy Road Planning and Design Manual developed by the Department of Transport and Main Roads Australian Standards AUSTROADS guides
Footpaths and cycleways	Plan cycle ways and footpaths to provide a safe, attractive and convenient network that links residential areas to major activity nodes thereby encouraging walking and cycling as acceptable travel alternatives	<ul style="list-style-type: none"> Local government road design and development manual/standards/codes in planning scheme and planning scheme policy

5.0 Definition of trunk infrastructure

The definition of Trunk Infrastructure for the Transport network is provided in Table 5.1.

Table 5.1 — Transport Network Trunk Infrastructure

Network	System	Items
Transport	Roads	<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.
Transport	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.

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 in the SOW model.

6.0 Network planning and modelling

As WDRC is a low growth Council, there has been no whole of network planning or modelling undertaken for the 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.

7.0 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, specifically the fields named "CVR_At_Cost_Value" or "total replacement value". The establishment and replacement costs of the networks have been based on 2014 valuation rates and escalated to 2016.

The values in the asset register were initially established as a result of the report "Valuation of Western Downs Infrastructure Assets Roads Bridges Aerodromes and Storm Water Revaluation of Non-Current Assets in Accordance with Australian Accounting Standards" (APV, 2012) and have been escalated to June 2014 asset valuation figures (refer Infrastructure Services Audit Committee Report 2014 Asset Management Annual Review (WDRC, June 2014).

The SOW model has escalated the replacement costs to the base year of 2016.

7.2. Future Trunk Infrastructure

The establishment cost of future infrastructure has generally been based on cost estimates developed by the Works Manager for the projection area. The estimates have been developed using rates as developed for the existing trunk infrastructure, adjusted where appropriate to allow for local conditions and delivery methods. On-cost have been included in the cost estimates based on Council's anticipated costs for these services, on average a rate of 10% has been applied. Contingency has been included based on the project delivery horizon. The following rates have been applied:

- Delivery in 0 – 5 years: 7.5%
- Delivery in 5 – 10 years: 15%
- Delivery in 10 – 20 years: 20%
- Delivery in 20+ years: 25%

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.

8.0 Schedule of works

The Schedule of Works have been derived from Council's prioritised capital works program and includes the items in the program that are consistent with the definition of trunk infrastructure for the transport network. The Schedule of Works are provided in Table 8.1 and Table 8.2 and shown on the maps referenced in Section 2.

The establishment costs have been escalated to 2016 based on the methodology in the Schedule of Works model.

Table 8.1—Road transport network schedule of works

Column 1 Map reference	Column 2 Trunk infrastructure	Column 3 Estimated timing	Column 4 Establishment cost
R0245	Zeller St - Chinchilla, Rehabilitation, widen, kerb & channel Windmill Rd to Mackie St	2017	\$645,000
R0260	Zeller St - Chinchilla, Rehabilitation, widen, kerb & channel Mackie St to Price St	2019	\$860,000
R0298	Hypatia St - Chinchilla, Reconstruct, widen, seal Colamba St - Canaga St	2020	\$376,250
R0333	Hypatia St - Chinchilla, Reconstruct, widen, seal Heeney St to Colamba St	2022	\$575,000
R0353	Hypatia St - Chinchilla, Reconstruction Heeney St - Helena St (550m)	2023	\$575,000
R0376	Park St - Chinchilla, Reconstruct, widen, k&c, seal Chinchilla St-Russell St	2025	\$862,500
R0420/R0421	Fry St - Tara, Reconstruct, widen, seal, Bilton-Showground	2016	\$1,290,000
R0424	Benn St - Tara, Reconstruct, widen & seal, Day St-Hallinan Transport	2016	\$397,750
R0425	Coutts St - Tara, Reconstruct, Widen & Seal, Smallacombe - Binnie	2021	\$301,000
R0426	Binnie St - Tara, Reconstruct, Widen & Seal, Coutts - Fry St	2020	\$322,500
R0480	Warrego Hwy-Wambo St - Chinchilla, Railway crossing TMR OLC Project - Inverai Rd Extension	2017	\$537,500
R0551	Old Rosevale Ch 0 - 0.02 - Jandowae, Reconstruction to a Rural Collector Standard, formation width 9.0m & Seal 8.0m	2020	\$31,304
R0559	Dixon Street Ch 0.00 - 0.02 - Dalby, Reconstruction to a Urban Collector Standard, formation width 9.0m & Seal 8.0m.	2017	\$35,260
R0729	Oak Street - Chinchilla, Extend Kerb and Channel and footpath to facilitate access to School with increased demand	2016	\$32,250
TOTAL			\$6,841,314

Table 8.2—Active transport network schedule of works

Column 1 Map reference	Column 2 Trunk infrastructure	Column 3 Estimated timing	Column 4 Establishment cost
F0044	McNulty Street - Dawson St to Bourne - Miles, Construct Footpath - 360m x 2m	2017	\$103,200
F0047	Myall Creek Linear Park - Dalby, Footpath construction - Missing link down the Myall Creek	2016	\$25,800
F0049	Windmill Rd - Chinchilla, Install footpath, from Fraser St - Zeller St	2016	\$80,625
F0050	Wambo St - Chinchilla, Install footpath, from Russel St - Nowland St	2017	\$91,375
F0052	Zeller St - Chinchilla, Install footpath Mackie St - Atkins St northern side	2018	\$21,500
F0053	Zeller St - Chinchilla, Install footpath Atkins St - Evans St, northern side	2018	\$21,500
F0054	Zeller St - Chinchilla, Install footpath Evans St - Windmill Rd, northern side	2018	\$26,875
F0056	Glasson St - Chinchilla, Replace & upgrade footpath Claydon St - Wood St	2018	\$32,250
F0058	Chinchilla St - Chinchilla, Replace & upgrade footpath King St - Park St	2019	\$26,875
F0059	Heeney St - Chinchilla, Replace & upgrade footpath Condamine St - Hypatia St east side	2019	\$37,625
F0060	Zeller St - Chinchilla, Install footpath Old Tara Rd - Dorney St, northern side	2019	\$59,125
F0061	Middle St - Chinchilla, Replace & upgrade Footpath Wambo St - Canaga St	2020	\$59,125
F0062	Middle St - Chinchilla, Replace & upgrade footpath Zanoni St - Canaga St	2020	\$38,700
F0063	Park St - Chinchilla, Replace & Upgrade footpath Chinchilla St - Boyd St	2020	\$25,800
F0067	Colamba St - Chinchilla, Replace & upgrade footpath Hypatia St - Middle St west side	2021	\$37,625
F0069	Heeney St - Chinchilla, Replace & upgrade footpath Hypatia St - motel	2021	\$26,875
F0071	Price St - Chinchilla, Install footpath, from Fraser St - Zeller St	2023	\$69,000
F0072	Hypatia St - Chinchilla, Replace & upgrade footpath Colamba St - Heeney St	2022	\$46,000
F0073	Hypatia St - Chinchilla, Replace & upgrade footpath Canaga St - Colamba St	2022	\$40,250
F0074	Middle St - Chinchilla, Replace & upgrade footpath Canaga St - Colamba St	2022	\$23,000
F0076	Chinchilla St - Chinchilla, Replace & upgrade footpath Park St - Colamba St	2024	\$25,300
F0077	Chinchilla St - Chinchilla, Replace & upgrade footpath Wambo St - King St	2024	\$36,800
F0081	Fry St - Tara, Replace & upgrade footpath Smallacombe St - Binnie St	2016	\$21,500
F0082	Sara St - Tara, Replace & upgrade footpath Day St - Bilton St	2016	\$40,850
F0085	Fry St - Tara, Replace & upgrade footpath Milne St - Bilton St	2020	\$21,500
F0089	Day St - Tara, Replace & upgrade footpath BP - ambulance	2017	\$30,100
F0092	Fry St - Tara, Replace & upgrade footpath Laundromat - Milne St	2018	\$43,000



Table 8.2—Active transport network schedule of works

Column 1 Map reference	Column 2 Trunk infrastructure	Column 3 Estimated timing	Column 4 Establishment cost
F0093	Fry St - Tara, Replace & upgrade footpath western side. Binnie St to Adams St.	2018	\$37,625
F0094	Day St - Tara, Replace & upgrade footpath northern side	2019	\$86,000
F0096	Day St - Tara, Replace & Upgrade footpath Fry St - Roberts St	2021	\$32,250
F0097	Day St - Tara, Replace & upgrade footpath Fry St east on southern side	2021	\$37,625
F0111	Edith Street - Centenary Av to Colamba St - Miles, Construct Footpath -310m x 1.5m	2016	\$66,650
F0112	Edith Street - Wallen St to Dawson St - Miles, Construct Footpath - 220m x 1.5m	2016	\$47,300
F0114	Bourne Street - McNulty St to Hawkins St - Miles, Construct Footpath - 120m x 2m	2016	\$34,400
F0119	Edith Street - Centenary Av to Lee St North Side - Miles, Construct Footpath - 130m x 1.5m	2023	\$29,900
F0122	Henderson Rd - Hospital to West St - South side - Wandoan, Construct - Concrete Footpath 180m x 2m	2016	\$51,600
F0123	North St - Waterloo St to Lawton St - South side - Wandoan, Construct - Concrete Footpath 210m x 1.5m	2017	\$45,150
F0124	Moore St - Waterloo St to West St - South side - Wandoan, Construct - Concrete Footpath 80m x 1.5m	2016	\$17,200
F0125	Waterloo St - Mundell St to North St - School side - Wandoan, Construct - Concrete Footpath 200m x 1.5m	2016	\$43,000
F0126	Lawton St - North St to Moore St - West side - Wandoan, Construct - Concrete Footpath 80m x 1.5m	2017	\$17,200
F0128	Henderson Rd - O'Sullivan Park to Royd St - West side - Wandoan, Construct - Concrete Footpath 200m x 1.5m	2024	\$46,000
F0133	Royd Street (Stage 1) - Wandoan, Footpath Upgrade	2021	\$612,750
F0134	Lawton Street - Wandoan, Footpath Upgrade	2023	\$366,850
F0148	Pine Street - Constance St to Marian St - east side - Miles, Footpath Upgrade - 120m x 1.5m (widen from 0.9m to 1.5m)	2019	\$25,800
F0149	Royd Street (Stage 2) - Wandoan, Footpath Upgrade	2022	\$655,500
F0155	Dalby Jandowae Road & Warrego Highway - Dalby, Footpath construction linking to existing footpath networks and access to the High School	2016	\$167,700
F0156	Mary Street - Dalby, Footpath construction linking to existing footpath networks and access to the Christian School and sporting fields	2016	\$116,100
F0157	Edward Street - Dalby, Footpath construction linking to existing footpath networks and access to the State School and sporting fields	2016	\$52,245
TOTAL			\$3,701,020



9.0 Source and supporting documents

A list of supporting information is provided in Table 9.1.

Table 9.1—Reference Documents

Document name	Document author	Version
Valuation of Western Downs Infrastructure Assets Roads Bridges Aerodromes and Storm water Revaluation of Non Current Assets in Accordance with Australian Accounting Standards	APV Valuers and Asset Management	30 June 2012
Infrastructure Services Audit Committee Report 2014 Asset Management Annual Review	WDRC	June 2014
WDRC 10 Year Chinchilla version 15-1 Rev 090315PIA.xlsx	WDRC	July 2015
WDRC 10 Year Program Dalby Version 15.1 REVIEWED 10_3_15 LGIP.xlsx	WDRC	July 2015
WDRC 10 Year Tara version 15-1 Rev 090315 PIA.xlsx	WDRC	July 2015
LGIP Miles Wandoan 17062015.xlsm	WDRC	August 2015

