

## Part 4 Local government infrastructure plan

### 4.1 Preliminary

- (1) This local government infrastructure plan has been prepared in accordance with the requirements of the *Planning Act 2016*.
- (2) The purpose of the local government infrastructure plan is to:
  - (a) integrate infrastructure planning with the land-use planning identified in the planning scheme;
  - (b) provide transparency regarding a local government's intentions for the provision of trunk infrastructure;
  - (c) enable a local government to estimate the cost of infrastructure provision to assist its long-term financial planning;
  - (d) ensure that trunk infrastructure is planned and provided in an efficient and orderly manner;
  - (e) provide a basis for the imposition of conditions about infrastructure on development approvals.
- (3) The local government infrastructure plan:
  - (a) states in Section 4.2 (planning assumptions) the assumptions about future growth and urban development including the assumptions of demand for each trunk infrastructure network;
  - (b) identifies in Section 4.3 (priority infrastructure area) the prioritised area to accommodate urban growth up to 2028;
  - (c) states in Section 4.4 (desired standards of service) for each trunk infrastructure network the desired standard of performance;
  - (d) identifies in Section 4.5 (plans for trunk infrastructure) the existing and future trunk infrastructure for the following networks:
    - (i) water supply;
    - (ii) wastewater;
    - (iii) stormwater;
    - (iv) transport (roads);
    - (v) transport (pedestrian and cycle movement);
    - (vi) parks and land for community facilities.
  - (e) Identifies in Section 4.6 (extrinsic material) a list of supporting documents that assist in the interpretation of the local government infrastructure plan.

### 4.2 Planning assumptions

- (1) The planning assumptions state the assumptions about:
  - (a) population and employment growth;
  - (b) the type, scale, location and timing of development including the demand for each trunk infrastructure network.
- (2) The planning assumptions together with the desired standards of service, form the basis for the planning of the trunk infrastructure networks and the determination of the priority infrastructure area.

- (3) The planning assumptions have been prepared for:
  - (a) the base date 2018 and the following projection years:
    - (i) mid 2021;
    - (ii) mid 2026;
    - (iii) mid 2031;
    - (iv) mid 2036;
    - (v) ultimate development.
  - (b) the LGIP development types in column 2 that include the uses in column 3 of Table 4.2.1;
  - (c) the projection areas identified on Local Government Infrastructure Plan Priority Infrastructure Area (PIA) Maps PIA-01 - PIA-10 in Schedule 3 - Local government infrastructure plan mapping and tables.

**Table 4.2.1 - Relationship between LGIP development categories, LGIP development types and uses**

Column 1 LGIP development category	Column 2 LGIP development type	Column 3 Uses
Residential development	Detached dwelling	Caretaker's accommodation Dwelling house
	Attached dwelling	Dual occupancy Dwelling unit Multiple dwelling Retirement facility Short-term accommodation
	Other dwelling	Community residence Home based business Non-resident workforce accommodation Outstation Relocatable home park Residential care facility Rooming accommodation Rural workers accommodation Tourist Park
Non-residential development	Retail	Adult store Agricultural supplies store Brothel Bulk landscape supplies Car wash Food and drink outlet Garden centre Hardware and trade supplies Market Outdoor sales Parking station Sales office Service station Shop Shopping Centre Showroom Wholesale nursery



Column 1 LGIP development category	Column 2 LGIP development type	Column 3 Uses
	Commercial	Bar Club Function facility Hotel Indoor sport and recreation Nature-based tourism Nightclub entertainment facility Office Resort complex Theatre Tourist attraction Veterinary services
	Industry	Extractive Industry High impact industry Low impact industry Marine industry Medium impact industry Research and technology industry Service industry Special industry Transport depot Warehouse
	Community Purposes	Cemetery Child care centre Community care centre Crematorium Community use Detention facility Educational establishment Emergency services Funeral parlour Health care services Hospital Major sport, recreation and entertainment facility Motor sport facility Outdoor sport and recreation Park Place of Worship
	Other Uses	Air services Animal Husbandry Animal keeping Aquaculture Cropping Environment facility Intensive animal industry



Column 1 LGIP development category	Column 2 LGIP development type	Column 3 Uses
		Intensive horticulture Landing Major electrical infrastructure Permanent plantation Port services Renewable energy facility Roadside stall Rural industry Substation Telecommunications facility Utility installation Winery

- (4) Details of the methodology used to prepare the planning assumptions are stated in the extrinsic material.

#### 4.2.1 Population and employment growth

- (1) A summary of the assumptions about population and employment growth for the planning scheme area is stated in Table 4.2.1.1 - Population and employment assumptions summary.

**Table 4.2.1.1 - Population and employment assumptions summary**

Column 1 Description	Column 2 Assumptions					
	Base date (2018)	2021	2026	2031	2036	Ultimate development
Population	188,641	195,999	209,400	222,910	235,784	315,347
Employment	72,110	75,084	80,694	86,348	91,735	125,054

- (2) Detailed assumptions about growth for each projection area and LGIP development type category are identified in the following tables in Schedule 3 Local government infrastructure plan mapping and tables:
- (a) for population, Table SC3.2.1 - Existing and projected population;
  - (b) for employment, Table SC3.2.2 - Existing and projected employees.

#### 4.2.2 Development

- (1) The developable area is represented by zones relating to urban uses not affected by the following constraints:
- a. water resources;
  - b. flood hazards;
  - c. biodiversity, waterways & conservation areas; and
- (2) Constrained land identified in Department of State Development Infrastructure and Planning & Cairns Regional Council Broad Hectare Study.
- (3) The planned density for future development is stated in Table SC3.2.3 in Schedule 3 - Local government infrastructure plan mapping and tables.

- (4) A summary of the assumptions about future residential and non-residential development for the planning scheme area is stated in Table 4.2.2.1 - Residential dwellings and non-residential floor space assumptions summary.

**Table 4.2.2.1 - Residential dwellings and non-residential floor space assumptions summary**

Column 1 Description	Column 2 Assumptions					
	Base date (2018)	2021	2026	2031	2036	Ultimate development
Residential dwellings	75,294	78,657	84,744	90,898	96,438	128,980
Non-residential floor space (m <sup>2</sup> GFA)	3,767,562	3,922,964	4,216,079	4,511,471	4,792,941	6,533,779

- (5) Detailed assumptions about future development for each projection area and LGIP development type are identified in the following tables in Schedule 3 Local government infrastructure plan mapping and tables:
- (a) for residential development, Table SC3.2.5 - Existing and projected residential dwellings;
  - (b) for non-residential development, Table SC3.2.6 - Existing and projected non-residential floor space.

### 4.2.3 Infrastructure demand

- (1) The demand generation rate for a trunk infrastructure network is stated in Column 3 of Table SC3.2.4 - Planned density and demand generation rate for a trunk infrastructure network in Schedule 3 Local government infrastructure plan mapping and tables.
- (2) A summary of the projected infrastructure demand for each service catchment is stated in:
- (a) for the water supply network, Table 4.2.3.1 – Water supply network – assumed demand summary;
  - (b) for the wastewater network, Table 4.2.3.2 – Wastewater network – assumed demand summary;
  - (c) for the stormwater network, Table 4.2.3.3 – Stormwater network – assumed summary;
  - (d) for the transport (roads) network, Table 4.2.3.4 – Transport (roads) network – assumed demand summary;
  - (e) for the transport (pedestrian and cycle) network, Table 4.2.3.5 –Transport (pedestrian and cycle movement) network – assumed demand summary;
  - (f) for the parks and land for community facilities network, Table 4.2.3.6 – parks and land for community facilities network – assumed demand summary.

**Table 4.2.3.1 – Water supply network – assumed demand summary**

Column 1 Service Catchment <sup>1</sup>	Column 2 Existing and projected demand (EDU)					
	2018 (base date)	2021	2026	2031	2036	Ultimate
Palm Cove / Moore Rd (W1)	18,989	19,792	21,031	22,124	22,958	27,328
University (W2)	30,540	32,494	35,880	39,012	41,205	52,736
Brinsmead / Redlynch (W3)	22,915	23,787	25,080	26,136	26,936	31,339
City (W4)	98,595	101,928	109,186	117,045	124,299	160,507
Red Hill (W5)	21,972	22,821	24,404	25,743	26,893	33,419
Edmonton (W6)	28,537	29,952	32,535	35,582	37,550	52,828
Gordonvale (W7)	10,203	10,502	11,128	11,673	13,092	24,500
Babinda (W8)	2,481	2,521	2,631	2,680	2,804	3,820
Mount Peter (W9)	643	1,041	1,728	2,498	4,955	32,373
Goldsborough (W10)	837	886	960	1,029	1,192	2,050

**Table 4.2.3.2 – Wastewater network – assumed demand summary**

Column 1 Service Catchment <sup>2</sup>	Column 2 Existing and projected demand (EP)					
	2018 (base date)	2021	2026	2031	2036	Ultimate
Marlin Coast (WW1)	44,113	46,811	51,284	55,344	58,262	73,497
Northern (WW2)	75,990	78,985	84,444	90,326	96,034	125,066
Southern (WW3)	67,936	69,933	74,608	78,906	82,236	98,697
Edmonton (WW4)	25,959	27,066	29,093	31,570	32,750	40,667
Gordonvale (WW5)	7,248	7,498	8,017	8,458	9,303	16,379
Babinda (WW6)	1,987	2,023	2,122	2,162	2,273	3,232
Mount Peter (WW9)	800	1,539	2,826	4,256	7,923	46,320

<sup>1</sup> The service catchment for the water supply network is identified on Local Government Infrastructure Plan Water Supply Catchment Maps CM WS-01 - CM WS-06 in Schedule 3 (local government infrastructure mapping and tables).

<sup>2</sup> The service catchment for the wastewater network is identified on Local Government Infrastructure Plan Wastewater Catchment Map CM SEW-01 – CM SEW-05 in Schedule 3 (local government infrastructure mapping and tables).



**Table 4.2.3.3 – Stormwater network – assumed demand summary**

Column 1 Service Catchment <sup>3</sup>	Column 2 Existing and projected demand (Impervious Ha)					
	2018 (base date)	2021	2026	2031	2036	Ultimate
Palm Cove (SW1)	32	32	33	34	35	41
Sweet Creek (SW2)	29	30	32	33	35	44
Delaney Creek (SW3)	33	34	37	39	41	52
Deadmans Gully/Clifton Beach (SW4)	38	39	40	41	42	47
Deep Creek/Kewarra Beach (SW5)	112	115	120	125	129	152
Cayley Street Drain/Trinity Beach (SW6)	85	86	88	90	92	99
Moore's Gully/Trinity Park (SW7)	86	90	95	101	105	133
Smithfield/Yorkeys Knob/Moon River (SW8)	251	266	289	311	330	435
Barron River Delta (SW9)	46	48	52	56	59	77
Richters/Thomatis Creek (SW9a)	42	43	44	46	47	53
Barr Creek (SW9b)	50	51	53	55	56	62
Redden Creek (SW9c)	21	21	22	23	23	26
Stony Creek/Rainforest Estate (SW10)	9	9	9	9	9	10
Kamerunga (SW11)	14	15	16	16	17	20
Lower Freshwater (SW12)	65	67	70	72	74	87
Stratford (SW13)	45	46	47	48	49	55
Redlynch (SW14)	28	29	31	33	34	42
Marinos (SW15)	31	33	36	39	41	55
Shaws Road (SW16)	4	4	5	5	5	5

<sup>3</sup> The service catchment for the wastewater network is identified on Local Government Infrastructure Plan Stormwater Catchment Map CM SW-01 – CM SW-06 in Schedule 3 (local government infrastructure mapping and tables).

Bella Vista Main Drain (SW17)	81	82	84	86	87	95
Rices Gully (SW18)	32	33	34	35	35	39
Freshwater Creek (SW19)	84	87	93	98	103	130
Cheepi Creek (SW20)	6	6	6	6	7	7
Saltwater Creek (SW21)	402	408	420	431	441	490
Cairns Business District (SW22)	205	207	211	215	219	240
Fearnley Street Drain (SW23)	191	195	202	209	216	250
Chinaman Creek (SW24)	636	648	669	690	708	805
Clarkes Creek (SW25)	79	80	83	85	87	96
Gordon Creek (SW26)	116	119	123	127	131	150
Crowleys Creek (SW27)	61	62	63	65	67	77
Sawpit Gully (SW28)	84	85	88	90	92	106
Skeleton Creek (SW30)	208	213	221	229	236	288
Blackfellows Creek (SW31)	152	163	180	200	219	383
Collinson Mckinnon Creek (SW32)	139	146	159	173	187	303
Stony Creek (SW33)	17	18	21	24	27	55
Wrights Creek (SW34)	21	36	60	86	119	411
Mackey Creek (SW35)	38	46	59	73	91	244
O'learys Creek (SW36)	103	106	112	117	124	169
Fishery Falls/Deeral (SW37)	10	10	11	12	12	15



Babinda (SW38)	56	59	65	70	76	117
Bramston Beach (SW39)	13	13	14	14	15	19
Vico Street (SW40)	27	28	30	31	33	42
River Stone (SW41)	62	64	68	72	77	116

**Table 4.2.3.4 – Transport (roads) network – assumed demand summary**

Column 1 Service Catchment <sup>4</sup>	Column 2 Existing and projected demand (Trips)					
	2018 (base date)	2021	2026	2031	2036	Ultimate
Cairns Urban (TR1)	823,708	870,216	946,718	1,025,106	1,095,098	1,522,514
Gordonvale / Goldsborough (TR2)	35,006	36,451	38,805	40,856	45,333	76,649
Babinda (TR3)	8,964	9,275	9,908	10,216	10,895	16,289
Rural Lands (TR4)	19,226	19,752	20,550	21,307	22,435	27,492

**Table 4.2.3.5 – Transport (pedestrian and cycle) network – assumed demand summary**

Column 1 Service Catchment <sup>5</sup>	Column 2 Existing and projected demand (EDU)					
	2018 (base date)	2021	2026	2031	2036	Ultimate
Cairns Urban (TR1)	623,744	656,837	708,570	761,820	807,814	1,074,287
Gordonvale / Goldsborough (TR2)	27,463	28,516	30,158	31,454	34,865	57,020
Babinda (TR3)	5,986	6,088	6,167	6,271	6,367	6,963
Rural Lands (TR4)	14,263	14,634	15,144	15,612	16,464	19,817

<sup>4</sup> The service catchment for the transport (roads) network is identified on Local Government Infrastructure Plan Transport Catchment Map CM TR-01 – CM TR-03 in Schedule 3 (local government infrastructure mapping and tables).

<sup>5</sup> The service catchment for the transport (pedestrian and cycle) network is identified on Local Government Infrastructure Plan Transport Catchment Map CM TR-P-01 – CM TR-P-03 in Schedule 3 (local government infrastructure mapping and tables).



Table 4.2.3.6 – Parks and land for community facilities network – assumed demand summary

Column 1 Service Catchment <sup>6</sup>	Column 2 Existing and projected demand (Persons)					
	2018 (base date)	2021	2026	2031	2036	Ultimate
Cairns Beaches (N1)	22,703	23,585	25,284	26,910	28,098	33,858
Barron - Smithfield (N2)	19,427	20,360	22,195	23,783	24,784	30,038
Freshwater - Stratford - Aeroglen (C1)	4,269	4,346	4,524	4,668	4,769	5,410
Redlynch Valley (C2)	9,133	9,488	10,102	10,589	10,925	12,825
Inner Suburbs (C3)	64,749	65,798	69,897	73,488	76,083	87,521
CBD - North Cairns (C4)	17,994	18,988	20,690	23,169	26,097	38,935
Portsmith - Woree Industrial (C5)	966	1,032	1,102	1,175	1,242	1,568
White Rock - Edmonton (C6)	32,683	33,561	35,613	38,039	38,975	44,462
Mt Peter (S1)	472	810	1,402	2,068	4,599	33,120
Gordonvale – Goldsborough (S2)	5,541	5,628	5,917	6,113	6,772	11,538
Babinda (R1)	1,506	1,499	1,512	1,517	1,531	1,671
Rural Towns and Villages (R2)	1,316	1,305	1,319	1,330	1,435	1,865
Northern (N1 & N2)	43,740	45,545	49,100	52,331	54,551	65,711
Central (C1 to C6)	132,370	135,755	144,481	153,692	160,676	193,428
Sothern (S1 & S2)	8,253	8,717	9,703	10,661	14,089	48,631
Remainder (R1 & R2)	5,730	5,740	5,869	5,974	6,210	7,284
Cairns City (All Areas)	190,093	195,756	209,152	222,658	235,525	315,054

<sup>6</sup> The service catchment for the transport (pedestrian and cycle) network is identified on Local Government Infrastructure Plan Transport Catchment Map CM TR-P-01 – CM TR-P-03 in Schedule 3 (local government infrastructure mapping and tables).

### 4.3 Priority infrastructure area

- (1) The priority infrastructure area identifies the area prioritised for the provision of trunk infrastructure to service the existing and assumed future urban development up to 2028.
- (2) The priority infrastructure area is identified on Local Government Infrastructure Plan Priority Infrastructure Area (PIA) Maps PIA-01 – PIA-10 in Schedule 3 - Local government infrastructure plan mapping and tables.

### 4.4 Desired standards of service

- (1) This section states the key standards of performance for a trunk infrastructure network.
- (2) Details of the standard of service for a trunk infrastructure networks are identified in the extrinsic material.

#### 4.4.1 Water supply network

**Table 4.4.1.1 – Desired Standards of Service – Water Supply**

Planning Standard	Community Outcome
Ensure drinking water complies with the NHMRC Australian Drinking Water Guidelines.	<ul style="list-style-type: none"> <li>• Provides uniform quality of water monitored in relation to recognised standards</li> <li>• Provide a safe and reliable water supply</li> <li>• Safeguards community health</li> </ul>
Water infrastructure provides for system operation and monitoring in accordance with recognised standards.	<ul style="list-style-type: none"> <li>• Ensures environmental controls are maintained</li> <li>• Ensures potable water is provided in a manner consistent with environmental standards</li> </ul>
Reduce non-revenue water (water that has been produced and is 'lost' before it reaches the customer, including physical losses or leakages, commercial losses such as water meter inaccuracies, unauthorised consumption, and data handling errors, and unbilled authorised consumption such as water used for firefighting).	<ul style="list-style-type: none"> <li>• Extend asset life</li> <li>• Improve environmental flows</li> <li>• Reduced greenhouse gas emissions</li> <li>• Reduce extraction of water from source</li> </ul>
Provide infrastructure which optimises whole of life costs.	<ul style="list-style-type: none"> <li>• Cost effective service for community</li> <li>• Reduced energy cost</li> <li>• Reduced greenhouse gas emissions</li> <li>• Reduced maintenance costs</li> <li>• Reduced overall operation costs</li> <li>• Reduced replacement costs</li> <li>• Reduction in disposal of waste</li> <li>• Reduced environmental effects from chemical production</li> </ul>

Design Standard	Community Outcome
<p>Design water supply infrastructure to comply with:</p> <ul style="list-style-type: none"> <li>• Far North Queensland Regional Organisation of Councils (FNQROC) Development Manual, where relevant to Trunk Infrastructure</li> <li>• Customer Service Standards</li> <li>• Water Act 2000</li> <li>• Plans for Trunk Infrastructure – Water Supply</li> </ul>	<ul style="list-style-type: none"> <li>• Provides uniform quality of water monitored in relation to recognised standards</li> <li>• Provide a safe and reliable water supply</li> <li>• Safeguards community health</li> </ul>

#### 4.4.2 Wastewater network

Table 4.4.2.1 – Desired Standards of Service – Wastewater

Planning Standard	Community Outcome
<p>Ensure wastewater collection, transportation and treatment system remains effective and compliant with relevant legislation and licence conditions.</p>	<ul style="list-style-type: none"> <li>• Reduced impact from blockages, overflows and spills</li> <li>• Reduced impact on residents</li> <li>• Reduced lease of Nitrogen and phosphorous to aquatic ecosystems</li> <li>• Improved community health</li> <li>• Reduced greenhouse gas emissions</li> </ul>
<p>Provide infrastructure which optimises whole of life costs.</p>	<ul style="list-style-type: none"> <li>• Cost effective service for community</li> <li>• Reduced energy cost</li> <li>• Reduced maintenance costs</li> <li>• Reduced overall operation costs</li> <li>• Reduced replacement costs</li> <li>• Reduction in disposal of waste</li> <li>• Reduced greenhouse gas emissions</li> <li>• Reduced environmental effects from chemical production</li> </ul>
Design Standard	Community Outcome
<p>Design wastewater infrastructure to comply with:</p> <ul style="list-style-type: none"> <li>• FNQROC Development Manual, where relevant to Trunk Infrastructure</li> <li>• Customer Service Standards</li> <li>• Water Act 2000</li> <li>• Plans for Trunk Infrastructure - Wastewater</li> </ul>	<ul style="list-style-type: none"> <li>• Noise control</li> <li>• No adverse visual effect</li> <li>• Control of overflows from system</li> <li>• Improves community health</li> <li>• Reduction in contaminated discharges</li> <li>• Reduced odour emissions</li> </ul>
<p>Ensure infiltration and inflow in new wastewater collection and transportation systems remain within industry acceptable limits (compliance with Environmental licences, IEMS and associated EMPs) and is minimised to a practical extent in existing systems.</p>	<ul style="list-style-type: none"> <li>• Reduced cost of energy for effluent transport, treatment and disposal</li> <li>• Minimise customer overflow issues</li> <li>• Maximise life of system</li> <li>• Reduced overflows to local waterways</li> </ul>

4.4.3 Stormwater network

Table 4.4.3.1 – Desired Standards of Service – Stormwater

Planning Standard	Community Outcome
Provide a system of shared stormwater infrastructure allowing for safe drainage of urban land while maintaining or improving the quality of run-off.	<ul style="list-style-type: none"> <li>Minimises inundation of habitable areas</li> <li>Minimises the damage and risk associated with flooding</li> <li>Minimises the impact of development on the ecological health and water quality within waterway corridor</li> </ul>
Ensure the use of Water Sensitive Urban Design and other types of on-site infrastructure to minimise impact on the natural environment	<ul style="list-style-type: none"> <li>Provides waterways infrastructure at the lowest life cycle cost</li> <li>Reduces the scale of built infrastructure by optimising on site solutions</li> <li>Improves water quality at the point of discharge to benefit the natural waterway corridor's health</li> </ul>
Ensure sufficient buffers from urban development are along waterway corridors for ecological links (including the rehabilitation of degraded waterway corridor banks, where required).	<ul style="list-style-type: none"> <li>Maintain or improves environment amenity such as scenic values and natural construction</li> <li>Erosion and sedimentation run off is minimised</li> <li>Negative impacts on adjoining and downstream properties are minimised</li> <li>Protects environmentally sensitive areas from development</li> </ul>
Ensure natural stream processes are maintained within waterway corridors.	<ul style="list-style-type: none"> <li>Reduces the need for costly structural treatments of waterway corridor banks</li> <li>Provides for natural processes of accretion, erosion and sedimentation and reduces environmental effects from pollution</li> <li>Increases regional water quality</li> </ul>
Design Standard	Community Outcome
Design stormwater infrastructure to comply with: <ul style="list-style-type: none"> <li>Far North Queensland Regional Organisation of Councils (FNQROC) Design Manual</li> <li>Queensland Urban Drainage Manual (QUDM)</li> <li>EPA requirements and guidelines</li> <li>Plans for trunk infrastructure - Stormwater</li> </ul>	<ul style="list-style-type: none"> <li>Free and safe drainage of urban land</li> <li>Maintain or improve water quality and ecological health</li> </ul>
Implement Water Sensitive Urban Design principles to achieve maximum on-site quantity and quality treatment and minimise offsite discharge.	<ul style="list-style-type: none"> <li>Maximise the water quality on site</li> <li>Negative impacts on adjoining and downstream properties are minimised</li> </ul>
Implement regional and on-site detention facilities to minimise the impact of peak run-off for the full range of Annual Exceedance Probability (AEP) events (100% AEP to 1% AEP) from developments, taking into account safety and risk.	<ul style="list-style-type: none"> <li>Reduces the cumulative impact from existing and future developments on peak flow levels</li> <li>Reduces the need to increase the size of waterway corridors and underground drainage</li> </ul>

<p>Design detention basins to maintain pre-development peak flow levels from the development site for all flood events (100% AEP to 1% AEP).</p> <p>Design Detention Basins in the same catchment to ensure that the coincident peak discharge at downstream control points is not increased.</p>	<ul style="list-style-type: none"> <li>Increases active and passive recreation opportunities</li> <li>Minimises the impact on the environmental values of downstream waterway corridors by maintaining pre-development flows and velocities</li> <li>Reduces downstream sedimentation by slowing flow velocities</li> </ul>
<p>Design bridges and culverts with appropriate flood immunity and capacity to convey floodwater, taking into account the Council's road hierarchy.</p> <p>Construction of bridges and culverts must not adversely impact on the natural environment, such as through the loss of vegetation and undesirable impacts on bio-diversity.</p> <p>Design bridges and culverts to maintain fauna and recreational links.</p>	<ul style="list-style-type: none"> <li>Ensures road crossings operate safely in times of inundation</li> <li>Reduces the risk of flooding for surrounding properties</li> <li>Provides opportunities for extended pedestrian and bicycle links</li> <li>Enhances ecological links</li> </ul>

#### 4.4.4 Transport network

Table 4.4.4.1 – Desired Standards of Service – Transport

Planning Standard	Community Outcome
<b>Road Network</b>	
<p>The existing and future role and function of the road network is defined by a functional road hierarchy for the Region.</p>	<ul style="list-style-type: none"> <li>The road hierarchy supports the preferred settlement patterns as well as the expected growth and development of the Region</li> <li>A functional, safe and efficient transport network is established</li> <li>Transport infrastructure is provided in an integrated and timely manner</li> </ul>
<b>Pedestrian and Cycle Movement Network</b>	
<p>A safe, efficient and attractive pedestrian and cycle movement network is established for the Region.</p>	<p>The pedestrian and cycle movement network:</p> <ul style="list-style-type: none"> <li>promotes active transport opportunities</li> <li>Improves connectivity in the Region</li> <li>Active transport infrastructure is provided in an integrated and timely manner.</li> </ul>
Design Standard	Community Outcome
<b>Road Network</b>	
<p>Road network system is designed and provided in accordance with:</p> <ul style="list-style-type: none"> <li>Queensland Streets, Queensland Residential Design Guidelines, FNQROC Development Manual, DTMR and Australian Standards</li> <li>Plans for Trunk Infrastructure – Road Network</li> </ul>	<ul style="list-style-type: none"> <li>A functional, safe and efficient transport network is established</li> <li>Transport infrastructure is provided in an integrated and timely manner</li> <li>Infrastructure provided meets recognised standards</li> </ul>

Pedestrian and Cycle Movement Network	
<p>Pedestrian and Cycle movement network is designed and provided in accordance with:</p> <ul style="list-style-type: none"> <li>• FNQROC Development Manual</li> <li>• Queensland Streets, Queensland Residential Design Guidelines Austroads, DTMR and Australian Standards</li> <li>• Plans for Trunk Infrastructure – Pedestrian and Cycle Movement Network</li> </ul>	<ul style="list-style-type: none"> <li>• Active transport opportunities are promoted</li> <li>• Connectivity is improved in the Region</li> <li>• Infrastructure provided meets recognised standards</li> </ul>

#### 4.4.5 Parks and land for community facilities network

Table 4.4.5.1 – Desired Standards of Service – Parks and land for community facilities

Planning Standard	Community Outcome
<p>Provide a connected and accessible network of parks, open space, and community facilities that meet the needs of the City’s residents and visitors.</p>	<ul style="list-style-type: none"> <li>• Provides opportunities for access and increased usage of open space, recreational and community facilities</li> <li>• Provides for an appropriate balance of land uses and ensures high levels of amenity in the urban form</li> <li>• Provides a basis for a healthy and active community</li> </ul>
<p>Ensure strong linkages and, where possible, co-location of existing and future parks, open space and community facilities.</p>	<ul style="list-style-type: none"> <li>• Ensures utilisation of existing and future assets while maintaining maximum access</li> </ul>
<p>Provide embellishments to parks, commensurate with the range of activities envisaged.</p>	<ul style="list-style-type: none"> <li>• Provides open space embellishments that meet the needs of the community by providing a range of facilities for social activities and/or fitness/recreational pursuits</li> <li>• Ensures activities are met and contained within designated areas - reducing potential off-site impacts to other more sensitive areas in the Local government</li> </ul>
<p>Ensure that existing and future parks, open space and community facilities with significant environmental, waterway or cultural heritage value are managed appropriately.</p>	<ul style="list-style-type: none"> <li>• Protects and enhances items of cultural interest in the Local government for the benefit of current and future communities in the Local government</li> <li>• Provides a basis for tourism opportunities</li> <li>• Protection of the natural landscape ensures maintenance of quality of air, water and land resources reducing negative impacts requiring amelioration</li> <li>• Recreational and sporting parks promote the health and well-being of the Local government’s residents</li> </ul>
Design Standard	Community Outcome
<p>Parks and community land areas are provided in accordance with the preferred quantity, distribution (City Wide, district, local, sporting, community), quality and level of development specified in the ‘Cairns Public Open Space</p>	<ul style="list-style-type: none"> <li>• Provides a standard of service reflecting the communities’ needs as identified by the local government’s adopted strategies</li> <li>• Provides access to recreation and sporting parks with a diverse range of activity opportunities and landscape settings to</li> </ul>

<p>Policy' and Plans for Trunk Infrastructure – Parks and Land for Community Facilities.</p> <p>Provide an accessible network of parks, open space, and community facilities that meets the needs of residents and visitors in accordance with the rate of provision identified in Table 4.4.5.2, the accessibility standards outlined in Table 4.4.5.3, and quality standards outlined in Table 4.4.5.5. Ensure land for parks and community facilities has minimum land size as identified in Table 4.4.5.4.</p>	<p>encourage healthy lifestyles and maximise opportunities for activity</p> <ul style="list-style-type: none"> <li>• Recreation and open space facilities are managed in the most efficient and cost - effective way</li> <li>• Recreation and open space facilities can be safely and conveniently accessed by all existing and potential users</li> </ul>
<p>Land provided for parks, recreation, and sport is not constrained by physical, environmental or other hazards.</p>	<ul style="list-style-type: none"> <li>• Ensure adequate provision of safe, accessible and usable facilities</li> </ul>
<p>Park embellishments are provided in accordance with the 'Cairns Public Open Space Policy' and the Plans for Trunk Infrastructure – Parks and Land for Community Facilities. Embellish parks to complement the type and purpose of the park as identified in Table 4.4.5.6.</p>	<ul style="list-style-type: none"> <li>• Provides a range of park types that are suitability embellished to meeting their purpose within the park hierarchy</li> </ul>

**Table 4.4.5.2 Rate of land provision for parks and land for community facilities**

Infrastructure item	Rate of provision (Ha/1000 people)		
	Local (Level 1)	District (Level 2)	City-wide (Level 3)
Recreation park (2.5 Ha/1000)	1 Ha/1000	1.3 Ha/1000	0.2 Ha/1000
Sport park (2 Ha/1000)	0	1.6 Ha/1000	0.4 Ha/1000
Land for community facilities (0.3 Ha/1000)	0	0.15 Ha/1000	0.15 Ha/1000

**Table 4.4.5.3 Accessibility standards for parks and land for community facilities**

Infrastructure item	Accessibility standard (km)		
	Local (Level 1)	District (Level 2)	City-wide (Level 3)
Recreation park	400-500m	2-5km	10-20km
Sport park	NA	5-15km	15-30km
Land for community facilities	NA	5km	15-30km



**Table 4.4.5.4 Size of parks and land for community facilities**

Infrastructure item	Minimum size (Ha)		
	Local (Level 1)	District (Level 2)	City-wide (Level 3)
Recreation park	Standalone – 1 Ha pref, 0.5 Ha min Rec node <sup>7</sup> – 0.2 Ha	Standalone – 2-5 Ha Rec Node – 2 Ha	Standalone – Not specific, depends on key features. Rec Node – 5 Ha
Sport park	NA	10 Ha	20 Ha
Land for community facilities	NA	Cultural Activity Space (CAS) 1500m <sup>2</sup>  Community Meeting & Activity Space (CMS) 2000m <sup>2</sup>  Community Service Facility (CSF) 1000m <sup>2</sup>  Formal Memorial Space (FMS) 1000m <sup>2</sup>	CAS 1 Ha  CMS 1 Ha  CSF 1 Ha  FMS 10 Ha

**Table 4.4.5.5 Land quality standards for parks and land for community facilities**

Park/ Community Facility Type	Road frontage minimum	Useable area for main purpose <sup>8</sup>	Slope and Topography (Maximum)	Flooding <sup>9</sup> and other hazards	Other comments
<b>Local Recreation Park</b>	50%	0.2 Ha	1: 20 for main use area 1: 6 for remainder	Whole area free of regular flooding (i.e.: above ARI 5) with the Main Purpose Area or 10 % (whichever is the greater) of total area above ARI 50. Free of hazards	Should have good visibility from surrounding residences. Narrow linear shapes are not preferred.
<b>District Recreation Park DP</b>	50%	1-2 Ha	1: 20 for main use area Variable topography for remainder	Whole area free of regular flooding (i.e.: above ARI 5) with Main Purpose Area or 10 % (whichever is the greater) of total area above ARI 50. Free of hazards	Will also provide local recreation park function for immediate n'hood.

<sup>7</sup> Refers to a local park facility provided as part of a larger open space area such as a district sports field or open space corridor.  
<sup>8</sup> Useable area refers to the space within the park available for sport or recreation activity and facilities. This therefore excludes creeks, stands of vegetation, water bodies, wetlands, steeply sloping land and other “constrained” land.  
<sup>9</sup> Flooding is expressed as the Average Recurrence Interval. This means the average no of years to exceed a given rainfall total (or in this case level of inundation). However the probability of exceeding this level in any one year (AEP) is a different value. E.g. an ARI 5 means there is an 18% chance of this level being exceeded in any one year.

Park/ Community Facility Type	Road frontage minimum	Useable area for main purpose <sup>8</sup>	Slope and Topography (Maximum)	Flooding <sup>9</sup> and other hazards	Other comments
<b>District Sport Park DSP</b>	50%	7 Ha (allows for 3 fields and ancillary)	1: 50 for field and court areas 1: 10 elsewhere.	Main sporting use areas above ARI 50. Total area to be above ARI 5. Built Facilities above ARI 100. Free of hazards	Also expected to provide local or district recreation nodes.
<b>Community Facilities CF</b>	50%	100%	1:20 max slope	Whole of site to be above ARI 100. Free of Hazards.	Integrated into community precinct- shops and services. Parking provided
<b>City Wide Recreation Park CWP</b>	25-50%	Design dependant	Use areas 1: 20	Free of hazards. Facilities above ARI 100 At least 50% of park to be above ARI 50	Usually master planned and located due to key feature.
<b>City Wide Sports Park/ Precinct CSP</b>	25%- external. Served by internal road network	15 Ha	1: 50 for all playing surfaces	Free of hazards. Fields/ courts above ARI 50. Built Facilities above ARI 100	Expected to provide local or district recreation nodes as well. Usually master planned.
<b>All Parks and Land for Community Facilities</b>	<p>All land free of hazards and constraints to community use. Unacceptable land includes:</p> <ul style="list-style-type: none"> <li>• Land listed on Contaminated Land Register or Environmental Management Register.</li> <li>• Land known or suspected as being contaminated.</li> <li>• Land under High Voltage Power lines or within 50m of the Line easement.</li> <li>• Land constrained by Easements.</li> <li>• Land constrained by proximity to noxious uses.</li> </ul> <p>Minimum Widths</p> <ul style="list-style-type: none"> <li>• Land should be greater than 15m wide unless part of a linkage or minor entry point then 5m minimum applies.</li> <li>• Land for sporting use must be 200 or greater for any dimension.</li> </ul> <p>Safety and Design</p> <ul style="list-style-type: none"> <li>• All location choice and development of parks and community facilities should consider CPTED principles and any urban design guidelines for public spaces and facilities adopted by Council.</li> </ul> <p>Buffers and adjacent land use</p>				

Park/ Community Facility Type	Road frontage minimum	Useable area for main purpose <sup>8</sup>	Slope and Topography (Maximum)	Flooding <sup>9</sup> and other hazards	Other comments
		<ul style="list-style-type: none"> <li>Parks should consider adjacent land uses and be adequately buffered from incompatible uses. Solutions may include vegetation corridors, planted mounds and fencing.</li> </ul>			
		<p>Constructed Drains and Flooding</p> <ul style="list-style-type: none"> <li>Constructed drains and overland flow paths are not suitable for parkland.</li> <li>Detention and Retention Basins are not suitable for parkland.</li> <li>All Parkland should be above the ARI 5 inundation line.</li> </ul>			

**Table 4.4.5.6 Standard facilities/embellishments for parks<sup>10</sup>**

Embellishment type	Recreation parks			Sport parks	
	Local	District	City-wide	District	City-wide
Water connection/tap	✓	✓	✓	✓	✓
Drinking Fountain	✓	✓	✓		
Lighting	✓ (street lights only)	✓	✓	✓	✓
Fencing (bollard)	✓	✓	✓	✓	✓
Playground equipment (incl. soft fall)	✓	✓	✓		
Seating	✓	✓	✓	✓	✓
Picnic Shelter	✓	✓	✓		
BBQ		✓	✓		
Earthworks – Field preparation/ Kickabout	✓	✓	✓	✓	✓
Sports facilities (e.g. courts, goalposts)				✓	✓
Informal Activity Facilities (e.g. off leash areas, space for informal kickabout)	✓	✓	✓		
Informal Activity Facilities (e.g. skate bowl, half courts)		✓	✓		
Spectator seating				✓	✓
Landscaping	✓	✓	✓	✓	✓
Power		✓	✓	✓	✓
Irrigation (new parks)		✓		✓	✓

<sup>10</sup> Refer to the Cairns Public Open Space Policy, 'Table 6 - Minimum Level of Developments (Embellishments)' for further detail on minimum standards.

Embellishment type	Recreation parks			Sport parks	
	Local	District	City-wide	District	City-wide
Public Toilet		✓	✓		
Path/bikeways	✓	✓	✓	✓	✓
Car parking and access works	✓ (on street only)	✓	✓	✓	✓
Bins	✓	✓	✓	✓	✓

## 4.5 Plans for trunk infrastructure

The plans for trunk infrastructure identify the trunk infrastructure networks intended to service the existing and assumed future urban development at the desired standard of service.

### 4.5.1 Plans for trunk infrastructure maps

- (1) The existing and future trunk infrastructure networks are shown on the following maps in Schedule 3 - Local government infrastructure plan mapping and tables:
  - (a) Local Government Infrastructure Plan Maps WS-01 to WS-17 - Plans for trunk infrastructure - water supply;
  - (b) Local Government Infrastructure Plan Maps SEW-01 to SEW-14 - Plans for trunk infrastructure – wastewater;
  - (c) Local Government Infrastructure Plan Maps SW-01 to SW-18 – Plans for trunk infrastructure - stormwater
  - (d) Local Government Infrastructure Plan Maps TR-R-01 to TR-R-30 - Plans for trunk infrastructure - transport (roads);
  - (e) Local Government Infrastructure Plan Maps TP-01 to TP-15 - Plans for trunk infrastructure - transport (pedestrian and cycle movement);
  - (f) Local Government Infrastructure Plan Maps EX PLCF-01 to EX PCLF-22 - Plans for trunk infrastructure - existing parks and land for community facilities;
  - (g) Local Government Infrastructure Plan Maps FUT PLCF-01 to FUT PLCF-19 - Plans for trunk infrastructure - future parks and land for community facilities.
  
- (2) The State infrastructure forming part of transport trunk infrastructure network has been identified using information provided by the relevant State infrastructure supplier.

### 4.5.2 Schedules of works

- (1) Details of the existing and future trunk infrastructure networks are identified in the electronic Excel schedule of works model which can be viewed here: [Excel Schedule of Works Model](#)
- (2) The future trunk infrastructure is identified in Schedule 3 - Local government infrastructure plan mapping and tables:
  - (a) for the water supply network, Table SC3.3.1;
  - (b) for the wastewater network, Table SC3.3.2;
  - (c) for the stormwater network, Table SC3.3.3;
  - (d) for the transport (roads) network, Table SC3.3.4;
  - (e) for the transport (pedestrian and cycle) network, Table SC3.3.5;
  - (f) for the parks and land for community facilities network, Table SC3.2.6.

## 4.6 Extrinsic material

- (1) Section 3.4 in Schedule 3 identifies the documents that assist in the interpretation of the local government infrastructure plan and are extrinsic material under the *Statutory Instruments Act 1992*.