Local Government Infrastructure Plan (LGIP)

Assumptions Report

March 2018

Table of Contents

1. Background

1.1 Overview

The *Planning Act 2016* (Act) is the principal legislation for Queensland's planning and development system. It aims to create an efficient system that embraces community engagement and stimulates investment and jobs.

In conjunction with a number of other key planning instruments, the Act also establishes a framework to plan for and resolve local government infrastructure matters. This framework is commonly referred to as the Infrastructure Planning and Charges Framework. The infrastructure planning and charges framework under the Act is generally consistent with the framework that existed under the repealed *Sustainable Planning Act 2009 (SPA).*

Banana Shire Council commenced preparation of a Local Government Infrastructure Plan (LGIP) under the *Sustainable Planning Act*, the purpose of which is to:

- Identify the Councils **projections of growth** for the region (both in absolute terms as well as its distribution);
- Identify the **desired standards of service** that Council intends to provide for each infrastructure type;
- Outline Councils preferred (most cost effective) pattern for development over the next 10-15 years (as defined in the **Priority Infrastructure Area (PIA)**); and
- Clearly identify the **scope and timing of trunk infrastructure** necessary to serve development within the PIA.

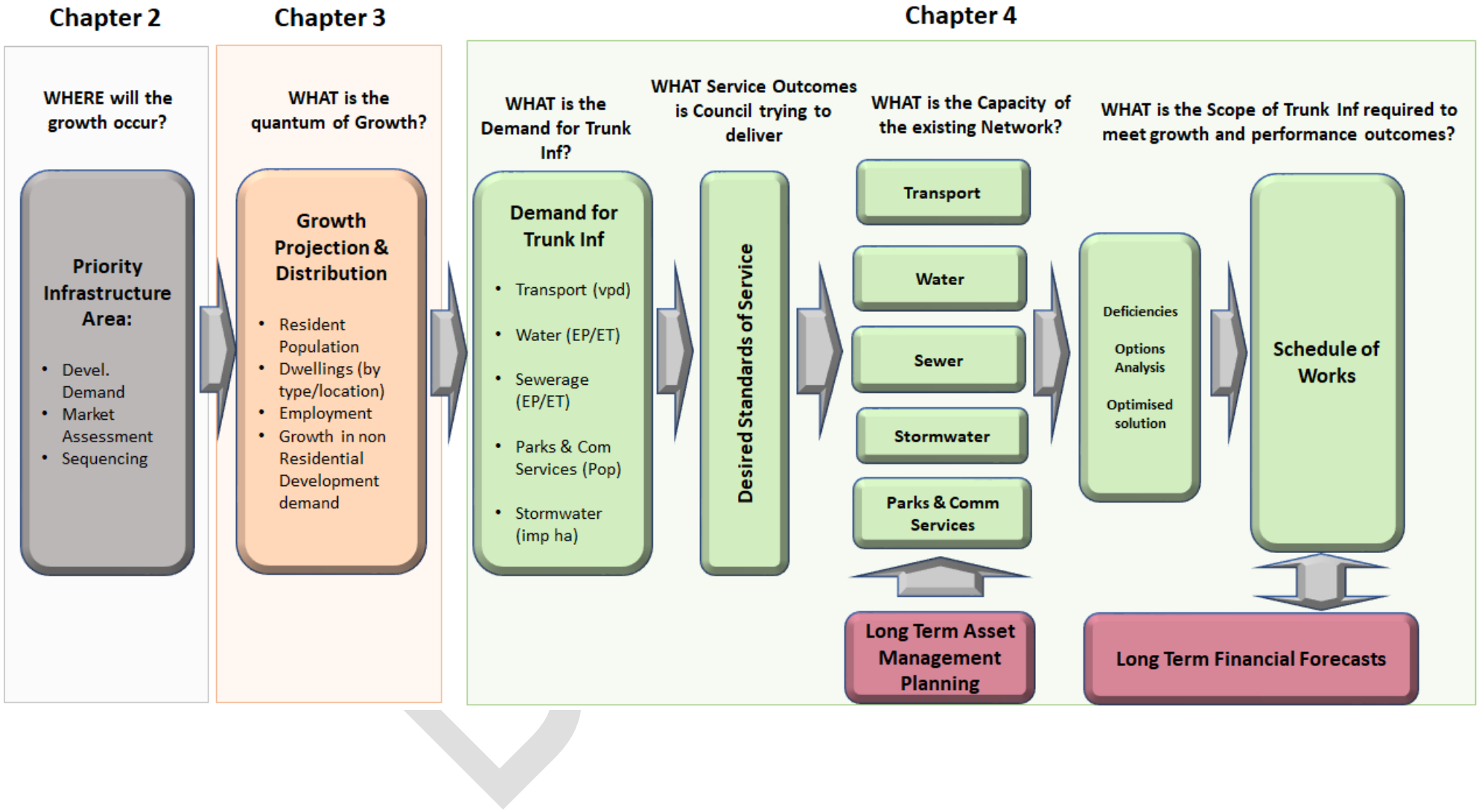
In developing its LGIP the Council needs to make a wide range of assumptions regarding the location, scope and timing of individual items within the trunk infrastructure network. Section 25 of the Ministers Guidelines[1] requires Council to provide a transparent explanation of these assumptions and the inter-relationships between each element of the LGIP.

The purpose of this brief report is to provide a succinct overview of the key planning assumptions that underpin the development of Banana Shire Council's LGIP

Conceptually, the report will step through the processes applied in determining the scope of the growth (quantum, timing and distribution), intended service outcomes, scope of trunk network to deliver those outcomes and augmentation required. This process is illustrated in Figure 1.1

[1] Department of Infrastructure Local Government and Planning (DILP), "Minister's Guidelines and Rules Under the Planning Act 2016", July 2017

Figure 1.1 – Process Overview



2. Establishment of the Priority Infrastructure Area

2.1 Overview

The **Priority Infrastructure Area** (PIA) is that part of the **Local Government Infrastructure Plan (LGIP)** which identifies those areas within the region where Council will support urban development. The PIA is typically intended to accommodate between ten (10) and fifteen (15) years anticipated urban growth. The benefit of the PIA is to enable improved coordination of development and focus Council's capital works program on supporting a development pattern which is efficient and represents the least cost to the community.

The PIA does not prevent development from occurring outside the designated areas. However, those proposals which are inconsistent with the PIA (i.e. "out of sequence") may trigger the provisions of the *Planning Act (2016*) that allow Council's to impose additional development conditions regarding the cost, timing and scope of trunk infrastructure.

Under the current infrastructure framework enacted by the State government, Councils are limited to recovering a capped charge under a maximum infrastructure charges resolution. As such, Council decisions in identifying a Priority Infrastructure Area (PIA) needs to consider a pathway that facilitates development in a manner that represents the least cost to the community.

2.2 Context

The Councils growth strategy plays a key role in facilitating development of the region. The strategy has been developed with due consideration of the following;

The Regional Context:

The **Central Queensland Regional Plan (CQRP)** was completed in 2013 and provides a broad framework with which to manage growth, change, land use and development across local government boundaries within the region. Regional planning matters are identified in collaboration with local governments, key industry groups and the wider community. Where a regional plan exists, the local government must consider it when preparing or making a major amendment to a Planning Scheme.

The CQRP addresses land use issues at the regional level and takes precedence over all other planning instruments. Current land use trends, population data and growth rates may vary slightly with the directions or assumptions of the Regional Plan due to the availability of more accurate information. Nevertheless, the broad desirable outcomes expressed in the CQRP remains a valid summary of the consensus reached in determining a pattern of growth that:

- Is efficient and effective (for Council and the community);
- Supports long-term viability and growth of the local economy; and
- Provides for liveable communities.

The Local Context:

Banana Shire Council currently administers two Planning Schemes covering the local government area previously defined as Taroom Shire and Banana Shire which were amalgamated in 2008. Section 3 of both Planning Schemes establishes a strategic direction for development of the entire local government area which is broadly consistent with the CQRP. In

doing so it prescribes a vision for the region that incorporates the Councils Corporate Plan as well as prescribed State interests.

2.2.1 Strategic Framework and Outcomes

The Strategic Framework contained in Part 3 of the Planning Schemes outlines the desired outcomes which then filters down into a local level through zones and codes which regulate development type and location. The ultimate objective of the strategic framework is to ensure sustainable development of the region and align land use with infrastructure planning to ensure economies of scale and responsible asset allocation

The Strategic Framework of both Planning Schemes are intended to achieve the following outcomes:

The desired outcomes anticipated for the **Environmental elements** of the Planning Schemes include:

- Protecting and enhancing the ecological, cultural and heritage systems and values across the region;
- Managing development to minimise adverse impact on air and water quality, prevent degradation, loos of habitat and biodiversity, protection of riparian areas and escarpments;
- Ensure that sites of existing and planned water resource infrastructure are not compromised by development in upstream catchments;
- Protecting recognised values and integrity of significant natural features, conservation areas and open space networks (e.g. Conservation Parks and National Parks);
- Protecting public health and the environmental from harm form waste and contaminated land; and
- Facilitating efficient resource use and waste minimisation through ecologically sustainable development

The desired outcomes anticipated for the **Economic Development** elements of the Planning Schemes include:

- Enhancing and diversifying the local economy through sustainable use of resources (including land and mineral resources) and tourism;
- Ensuring the long-term viability of agricultural industries are enhanced to protect productive agricultural land from fragmentation and encroachment of incompatible uses;
- Ensuring industrial development opportunities are consolidated and protected in a way that balances economic values with transport network capacity and residential amenity;
- Ensuring the efficiency of infrastructure networks (including telecommunication, electricity, transport, stormwater and water services) is maintained and future expansions are well planned to meet the future needs of the area; and
- Ensure that waste disposal facilities are adequate for the needs of the region.

The desired outcomes anticipated for the **Special and Community Services** elements of the Planning Schemes include:

- To provide services that are consistent with the community expectations/needs and contributes to community wellbeing through enhancement of core community elements (including built infrastructure, services, facilities sand infrastructure);
- Delivers communities that are preserved in character, well serviced, enjoy high levels of safety and amenity, able to accommodate growth and offer a range of accommodation options to meet the diverse needs of the community;
- Ensure that the settlement pattern is logical, sequenced to minimise costs and creates a built environment that contributes to the overall amenity and character of the region.
- Consolidate the main business and economic centres (which provide higher order services and a range of community and civic functions) around Taroom, Biloela and Moura;
- Ensure that the community of Banana, Baralaba, Cracow, Dululu, Jambin, Goovigen, Guluguba, Thangool, Theodore, Wandoran, and Wowan have access to facilities and services that meet local needs and, where appropriate, provide some higher order services and functions important to the Region; and
- Enhance and expand the park and recreational opportunities for residents and visitors of the Shire.

2.3 Priority Infrastructure Area (PIA) rationale

The *Priority Infrastructure Area (PIA)* is the area identified by Banana Shire Council within which it will prioritise the provision of trunk infrastructure for the next 10 to 15 years. The PIA supports the Planning Scheme through:

- Managing urban growth within defined boundaries in a sustainable manner;
- Enhancing liveability through access to adequate services, functional open space, and encouraging clever urban design to improve quality of life;
- Encouraging effective mobility (access and transport) through increased access to a range of modes of transport; and
- Encouraging development which delivers these outcomes within the broader constraints of infrastructure funding and sequencing.

The process of establishing a PIA within the **Local Government Infrastructure Plan** (LGIP) included the following staged series of steps;

- The original PIA was established by the Banana Shire Council in February 2011 as part of development of its draft Priority Infrastructure Plan (PIP). This reflected the outcomes of studies and activities undertaken at that time;
- More recently, Council revised the PIA to incorporate those areas which met the following criteria:
    - Areas which are **currently available for urban development** (as defined under the respective Planning Schemes). This included consideration of the

developable area as land which is not subject to a development constraint arising from:

- Acid sulphate soils;
- Airport environs;
- Biodiversity;
- Bushfire hazard;
- Coastal hazard;
- Extractive resources and minerals;
- Flood hazard;
- Hazardous activities;
- Heritage;
- Regional infrastructure;
- Scenic amenity;
- Steep land; and
- Water resource catchment.

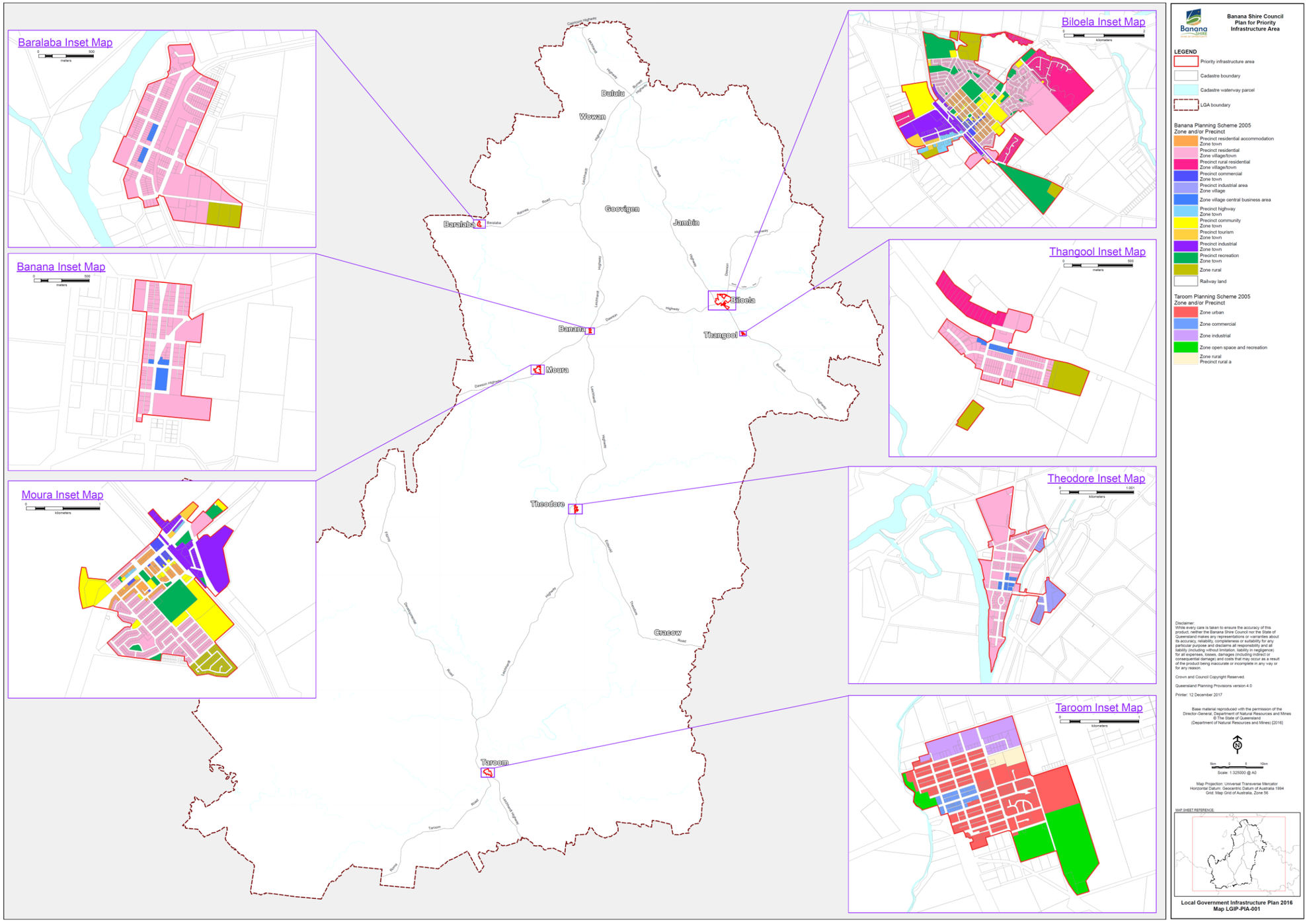
- Areas serviced by all (or most) of **the key trunk infrastructure** types (including water services, sewerage, transport, parks and land for community infrastructure); and

- Areas that are currently known to be **likely development sites**.

- Applying this criterion, Council officers developed a more refined assessment of the PIA based on consideration of each individual lot.

The Priority Infrastructure Area thus identified is provided on Figure 2.1.

Figure 2.1 – Priority Infrastructure Area – Banana Shire



3. Growth Projections and Distribution

3.1 Overview:

The objective of this section of the report is to provide a succinct summary of how key planning assumptions have been developed and applied within the Local Government Infrastructure Plan. As outlined schematically in Figure 1.1, development of the growth projections (and their allocation across the region) is a key input into infrastructure planning and subsequent development of a schedule of works (for trunk infrastructure).

3.2 Residential Population projections

The baseline (2016-2031) population data contained within the LGIP reflects the **Queensland Government Statisticians Office** (QGSO) medium series population projections. This data (and associated SA2 projections) provides estimates of total population together with a broad distribution of population across the region.

The QGSO data was checked against the Councils own estimates of population and dwelling forecast. The final estimates of total population are summarised Table 3.1

Table 3.1 –Population Projections

Banana (R)	2016	2021	2026	2031	Ultimate
Population	15,243	15,519	15,807	16,064	22,777
Growth (5yr)		1.81%	1.86%	1.63%	41.79%

These total growth figures were used as the “anchor points” for all projections. This provided a sound “top down” forecast of population growth across the region. A more granular allocation of forecast growth was determined using local knowledge and SA2 projections which provided a robust “bottom up” assessment of current and projected demand (by area). At this point, the location of the PIA was reviewed to ensure that the projected population within and outside the PIA was broadly consistent with QGSO estimates.

The statistical data also provided an initial estimate of **dwelling structure** (i.e. percentage of the population living in single dwellings; multiple dwellings or other accommodation) as follows:

- Banana: 1.8 pers/dwelling (single dwelling)
- Baralaba: 2.3 pers/dwelling (single dwelling);
- Biloela; 2.7 pers/dwelling (single dwelling); 1.7 pers/dwelling (multiple dwelling);
- Moura; 2.2 pers/dwelling (single dwelling); 1.2 pers/dwelling (multiple dwelling);
- Taroom; 1.9 pers/dwelling (single dwelling); 1.5 pers/dwelling (multiple dwelling);
- Thangool; 2.6 pers/dwelling (single dwelling);
- Theodore; 2.2 pers/dwelling (single dwelling); 1.3 pers/dwelling (multiple dwelling);
- Shire wide; 2.4 pers/dwelling (single dwelling); 1.4 pers/dwelling (multiple dwelling);

These broad estimates were compared with Australian Bureau of Statistics (ABS) data contained in its **General Community Profile**[2] (GCP) which provided an average measure for the entire region and suggested a slightly higher 2011 density of 2.64 for single detached dwelling and 1.69 for detached and semi-detached accommodation with a gross average of 2.07 persons/dwelling.

For the purpose of the LGIP, the dwelling densities suggested in the QGSO estimates have been applied. As this rate is marginally less than that suggested in the ABS General Community Profile, it tends to suggest a marginally higher dwelling projection over the medium to longer term. This suggests that the PIA may tend to be more accommodative than would be the case if the higher densities had been applied.

Estimates of ultimate dwelling projections were developed based on the landuses contained in the Planning Scheme and anticipated development density of those landuses. This assessment provided a measure of "ultimate capacity" (by location) across the region and reflects constraints to development as prescribed in the Planning Scheme. Ultimate population was estimated using the QGSO estimates of occupancy ratio for each dwelling type (by region). This approach provided a "bottom up" estimate of the ultimate residential development potential of the Planning Scheme.

Table 3.2 provides a summary of the population and dwelling projections contained within the LGIP.

[2] Australian Bureau Statistics, General community Profile, Table G32 – Dwelling Structure; Count of Private dwellings and Persons(a) in occupied(b) private dwellings, 2017

Table 3.2 – Population and dwelling projections

Area	Dwelling Type	Existing and projected population					Existing and projected dwellings				
		2016	2021	2026	2031	Ultimate	2016	2021	2026	2031	Ultimate
Banana	Single dwelling	149	149	149	149	521	82	82	82	82	288
	Multiple dwelling	0	0	0	0	0	0	0	0	0	0
	Other	0	0	0	0	0	0	0	0	0	0
	Total	**149**	**149**	**149**	**149**	521	**82**	**82**	**82**	**82**	**288**
Baralaba	Single dwelling	248	248	248	248	1,532	108	108	108	108	667
	Multiple dwelling	0	0	0	0	0	0	0	0	0	0
	Other	30	30	30	30	30	20	20	20	20	20
	Total	**278**	**278**	**278**	**278**	1,562	**128**	**128**	**128**	**128**	**687**
Biloela	Single dwelling	5,837	6,017	6,197	6,359	6,448	2,162	2,229	2,295	2,355	2,388
	Multiple dwelling	377	385	393	402	1,993	222	226	231	236	1,172
	Other	76	78	84	86	906	51	52	56	57	604
	Total	**6,290**	**6,480**	**6,674**	**6,847**	9,347	**2,435**	**2,507**	**2,582**	**2,648**	**4,164**
Moura	Single dwelling	1,705	1,758	1,813	1,862	1,934	775	799	824	846	879
	Multiple dwelling	78	80	80	80	605	65	67	67	67	504
	Other	25	26	26	27	76	19	20	20	21	58
	Total	**1,808**	**1,864**	**1,919**	**1,969**	2,615	**859**	**886**	**911**	**934**	**1,441**
Taroom	Single dwelling	577	595	613	629	2,531	304	313	323	331	1,332
	Multiple dwelling	24	24	25	25	302	16	16	17	17	201
	Other	14	15	15	16	16	10	11	11	11	11
	Total	**615**	**634**	**653**	**670**	2,849	**330**	**340**	**351**	**359**	**1,544**
Thangool	Single dwelling	298	298	298	298	511	115	115	115	115	197
	Multiple dwelling	6	6	6	6	11	5	5	5	5	8
	Other	3	3	3	3	3	0	0	0	0	0
	Total	**307**	**307**	**307**	**307**	**525**	**120**	**120**	**120**	**120**	**205**
Theodore	Single dwelling	428	433	448	460	888	195	197	204	209	404
	Multiple dwelling	29	29	29	29	30	22	22	22	22	23
	Other	19	20	20	20	20	16	17	17	17	17
	Total	**476**	**482**	**497**	**509**	**938**	**233**	**236**	**243**	**248**	**444**
Outside priority infrastructure area (total)	Single dwelling	5,193	5,198	5.203	5,208	5,208	2,274	2,280	2,286	2,293	2,112
	Multiple dwelling	4	4	4	4	4	40	41	42	43	43
	Other	123	123	123	123	123	65	64	64	65	65
	Total	**5,320**	**5,325**	**5,330**	**5,335**	**5,335**	**2,379**	**2,385**	**2,392**	**2,401**	**2,220**
Banana Shire	Single dwelling	14,435	14,696	14,969	15,213	19,574	6,015	6,123	6,237	6,339	8,267
	Multiple dwelling	518	528	537	546	2,945	370	377	384	390	1,951
	Other	290	295	301	305	1,173	181	184	188	191	775
	Total	**15,243**	**15,519**	**15,807**	**16,064**	**23,692**	**6,566**	**6,684**	**6,809**	**6,920**	**10,993**

3.3 Non-Residential Projections:

3.3.1 Existing and Projected Employment (employees)

An initial global estimate of the employed population was developed from data contained within the ABS **Basic Community Profile** for the Banana Local Government Area[3]. This data suggested a very high employment rate of 68.1%[4] and a high participation rate of 69.9%. Associated data on employment by industry type was also compiled based on ABS **Place of Enumeration** information. This data suggested that the dominant industry types across the region included Mining, Agriculture, Manufacturing and Construction. While this information provided a useful overview of the regions employment profile, these statistics reflect 2011 census information and hence were used to provide a general indication of characteristics while more detailed data was developed using a combination of known industry profile and QGSO data. This information suggested a current (2016) industry split across the region as follows:

- Retail – 7.4% of employment
- Commercial – 23.8%
- Industry – 17.5%
- Community – 6.5%; and
- Other (including agriculture and mining) – 44.8%

A key assumption within the forward forecasts is that the regional industrial framework will not change in a material way between 2016 and 2031.

Forward forecast of total employment growth has been aligned with total residential growth for each area and by each five (5) year period. Application of these employment statistics provided estimates of total employment by industry and by region contained within the LGIP.

3.3.2 Existing and Projected Non Residential Floor Space.

The initial assessment of the existing (2016) non-Residential **Gross Floor Area** (GFA) within Banana Shire Local Government Area was based on land-use data available from Councils GIS and local knowledge. This provided a reasonably accurate measure of supply of non-residential land as at the starting point (2016).

Projections of the growth in GFA were aligned with proposed population growth within each area (which in turn also underpins the forecast employment growth, thereby implying that employment and non -residential development will broadly proceed in parallel).

Average employment conversion rates applied in this process are consistent with the States averages and that used in other areas as follows;

- Retail – 25 m2 GFA per employee
- Commercial – 20 m2 GFA per employee; and

[3] Australian Bureau Statistics, Basic Community Profile, Table B 37 -Selected Labour Force, Education and Migration Characteristics.
[4] Ppercentage of those over 15 who were employed

- Industrial - 110 m2 GFA per employee

A significant anomaly arose in the estimate of ultimate GFA. This anomaly arises as a result of large areas of land which are zoned “Special industry” and are specifically intended to make provision for theoretical expansion of the power station and nitrate plant in areas outside the PIA. Council intends to retain these land uses within the planning scheme but considers it unlikely that these areas will be developed. As such, they have been excluded from the primary estimates of GFA but are reflected in the “ultimate” estimates as they remain a potentially valid land use option.

The scope of Existing Employed and GFA are summarised in Table 3.3.

Table 3.3 – Employment and GFA projections

Area	Development Type	Existing and projected employees					Existing and projected non-residential floor space (m^2 GFA)				
		2016	2021	2026	2031	Ultimate	2016	2021	2026	2031	Ultimate
Banana	Retail	7	7	7	7	154	166	166	166	166	3,648
	Commercial	23	23	23	23	804	451	451	451	451	15,753
	Industry	13	13	13	13	12	1,388	1,388	1,388	1,388	1,388
	Community	6	6	6	6	6	0	0	0	0	0
	Other	2	2	2	2	2	0	0	0	0	0
	Total	**51**	**51**	**51**	**51**	978	**2,005**	**2,005**	**2,005**	**2,005**	**20,789**
Baralaba	Retail	13	13	13	13	52	315	315	315	315	1,256
	Commercial	42	42	42	42	466	836	836	836	836	9,277
	Industry	23	23	23	23	22	2,537	2,537	2,537	2,537	2,537
	Community	11	11	11	11	11	0	0	0	0	0
	Other	4	4	4	4	4	0	0	0	0	0
	Total	**92**	**92**	**92**	**92**	555	**3,688**	**3,688**	**3,688**	**3,688**	**13,170**
Biloela	Retail	289	298	307	315	1,455	7,225	7,450	7,675	7,875	36,418
	Commercial	950	978	1,008	1,034	7,281	19,000	19,560	20,160	20,680	145,672
	Industry	516	531	547	561	4,297	56,708	58,357	60,115	61,654	472,244
	Community	245	253	260	267	242	0	0	0	0	0
	Other	94	97	100	103	92	0	0	0	0	0
	Total	**2,094**	**2,157**	**2,212**	**2,280**	**13,367**	**82,933**	**85,367**	**87,950**	**90,209**	**654,334**
Moura	Retail	89	91	94	96	303	2,234	2,284	2,359	2,410	7,592
	Commercial	287	296	305	313	1,766	5,740	5,920	6,100	6,260	35,269
	Industry	155	160	165	169	830	17,066	17,616	18,167	18,607	91,338
	Community	74	76	79	81	73	0	0	0	0	0
	Other	29	30	31	32	28	0	0	0	0	0
	Total	**634**	**653**	**674**	**691**	**3,001**	**25,040**	**25,820**	**26,626**	**27,277**	**134,199**
Taroom	Retail	28	29	30	31	256	706	731	756	781	6,449
	Commercial	92	95	98	101	2,651	1,849	1,910	1,970	2,030	53,260
	Industry	50	51	53	54	1,595	5,545	5,656	5,878	5,989	176,967
	Community	25	25	26	27	24	0	0	0	0	0
	Other	9	10	10	10	9	0	0	0	0	0
	Total	**204**	**210**	**217**	**223**	**4,535**	**8,100**	**8,297**	**8,604**	**8,800**	**236,676**
Thangool	Retail	14	14	14	14	34	357	357	357	357	872
	Commercial	46	46	46	46	303	925	925	925	925	6,106
	Industry	25	25	25	25	25	2,755	2,755	2,755	2,755	2,769
	Community	12	12	12	12	12	0	0	0		0
	Other	5	5	5	5	5	0	0	0		0
	Total	**102**	**102**	**102**	**102**	**379**	**4,037**	**4,037**	**4,037**	**4,037**	**9,747**

Area	Development Type	Existing and projected employees					Existing and projected non-residential floor space (m^2 GFA)				
		2016	2021	2026	2031	Ultimate	2016	2021	2026	2031	Ultimate
Theodore	Retail	22	23	23	24	95	548	573	573	598	2,368
	Commercial	72	73	75	77	842	1,440	1,460	1,500	1,540	16,827
	Industry	39	39	40	41	38	4,329	4,329	4,440	4,551	4,551
	Community	19	19	20	20	19	0	0	0	0	0
	Other	7	7	7	8	7	0	0	0	0	0
	Total	**159**	**161**	**165**	**170**	**1,001**	**6,317**	**6,362**	**6,513**	**6,689**	**23,746**
Outside priority infrastructure area (total)	Retail	26	22	18	14	151	649	649	649	649	3,897
	Commercial	58	45	31	19	817	1,159	1,159	1,159	1,159	16,436
	Industry	337	337	335	335	44,582	37,052	37,052	37,172	37,289	4,901,216
	Community	35	33	29	26	43	8,540	8,540	8,540	8,540	9,000
	Other	2,807	2,856	2,908	2,952	2,781	206,990	210,569	213,927	217,038	218,960
	Total	**3,263**	**3,293**	**3,321**	**3,346**	**48,374**	**254,390**	**257,969**	**261,447**	**264,675**	**5,149,409**
Banana Shire	Retail	488	497	506	514	2,500	12,200	12,525	12,850	13,151	62,500
	Commercial	1,570	1,598	1,628	1,655	14,930	31,400	32,221	33,101	33,881	298,600
	Industry	1,158	1,179	1,201	1,221	51,391	127,380	129,690	132,452	134,770	5,653,010
	Community	427	435	443	450	430	8,540	8,540	8,540	8,540	9,000
	Other	2,957	3,011	3,067	3,116	3,128	206,990	210,569	213,927	217,038	218,960
	Total	**6,600**	**6,720**	**6,845**	**6,956**	**72,379**	**386,510**	**393,545**	**400,870**	**407,380**	**6,242,070**

4. Trunk Infrastructure

4.1 General

Having established the projected growth in population, employment and non-residential GFA, the next step in the process was to determine the scope, timing and cost of trunk infrastructure necessary to accommodate the expected growth. In doing so, Council has clearly defined:

- How the projected growth could manifest in terms of **demand for trunk infrastructure;**
- The **standard of service** required of the trunk infrastructure (i.e. what are the outcomes implied or embedded in Councils planning and corporate strategies that the trunk infrastructure needs to deliver);
- The extent to which the **existing trunk infrastructure networks** can accommodate the anticipated growth and deliver the nominated service outcomes;
- The scope of **additional trunk infrastructure** necessary to augment the existing networks to accommodate the development sequence outlined in the PIA; and
- The **cost and approximate timing** of the proposed works.

The purpose of this section is to provide a summary of the key assumptions underpinning the development of the **schedule of (trunk infrastructure) works** necessary to accommodate projected growth. For simplicity, the link between infrastructure demand, service standards, technical assessment of capacity and development of a schedule of works is outlined separately for each trunk infrastructure network.

4.2 Apportionment

The Schedule of Works model identifies all trunk infrastructure classes as either an *open* or *closed* network. In the case of open networks (e.g. transport and parks/community services), select items of trunk infrastructure may be available (and hence allocated) across the entire Shire. In the case of closed network (e.g. water and sewerage), individual items of trunk infrastructure are typically allocated to the localities/catchments/zones which are serviced by those infrastructure items.

All development within Councils Priority Infrastructure Area (PIA) is required to make a contribution to the provision of services from these trunk networks. Under the Planning Scheme, development outside the PIA (which may include a number of zones such as rural, village, township, comprehensive development, local business, park residential/rural residential) may not be required to connect to reticulated services for the closed networks.

Council Charges are outlined in its **Adopted Infrastructure Charges Resolution** (AICR) No 1 (2015) which allocates different infrastructure charges by areas. The scope of the charge is (and indicative Residential Infrastructure Charge) is summarised in Table 4.1

Table 4.1 – Infrastructure Charges

Charge Area	Relevant Settlements	Adopted Charge (ROL) – Residential
Area1	Biloela and Moura	$10,545/lot (excl Valley View)
Area 2	Taroom and Theodore	$7,045/lot
Area 3	Banana, Baralaba and Thangool	$5,045/lot

4.3 Transport Infrastructure

4.3.1 Planned Infrastructure Demand

The planned transport infrastructure demand for the region is estimated using in-house analysis which is broadly based on an assumed rate of daily traffic generation of 10 trips per residential dwelling. This estimate of trip generation is consistent with other comparable Regional Councils as evident in the Capricorn Municipal Design Guidelines (refer Table D1.06.02). Trip generation (LGIP Table SC 1.1.8) is broadly consistent with the current and projected measures of "equivalent tenements" across the Shire (LGIP Table SC 3.1.7). Table SC 1.1.8 also separately identifies potential increase in transport demand which may occur if the Valley View Upgrade proceeds.

Allocation of trips across the network is undertaken using local knowledge and understanding of relative trip attraction associated with alternative land uses. This assessment has been used with the intention of identifying constraints on the existing transport network. In the general case, the existing trunk network should have sufficient capacity to accommodate the growth anticipated across the region. The possible exception is the impact of the Valley View Upgrade which, should it proceed, may result in the need for an additional roundabout and possible extension of the trunk transport network. As this development is located outside the PIA, such works are not included in the SOW Model.

Banana Shire has engaged progressively with the DTMR throughout the process. The DTMR has not identified any issues with the structure and content of the draft LGIP.

4.3.2 Desired Standard of Service

The size, scope and performance of trunk infrastructure networks depends on the service standards that such infrastructure is intended to provide. A service standard that is set too low will not deliver the outcomes that Council requires. A service standard that is too high can act as a potential constraint for new development.

Council has established a desired standard of service for the trunk transport network which reflects basic requirements and commonly used design parameters. The relevant performance criteria for Councils road transport network is outlined in the Capricorn Municipal Development Guidelines.

The Council recognises the importance of cycleways and footpaths in facilitating local transportation and has prescribed an outcome for these infrastructure types which provides a safe, attractive and convenient network that links residential areas to major activity nodes and public transport interchanges. The relevant performance criteria for pedestrians and cycle paths is outlined in the Capricorn Municipal Development Guidelines. The overall objective of Councils cycleway and footpath network is to encourage walking and cycling as acceptable and convenient travel alternatives.

4.3.3 Schedule of Works

Scope: (what's required to meet future demand)

Councils assessment of the regions transport capabilities suggest that the existing network has sufficient capability to accommodate the proposed growth. The exception may be the Valley View Upgrade for which additional roundabouts and road extensions may be required should the development proceed. As the Valley View upgrade is located outside the PIA, the scope of these works has not been included in the LGIP at this point in time.

The scope and scale of existing trunk infrastructure assets contained within the Schedule of Works model has been drawn from Councils Trunk Transport hierarchy and associated asset register.

Costing and Timing; (what it costs and when it will be delivered)

The establishment cost for proposed trunk transport assets has been determined using audited unit rates that have been used in defining Councils statutory asset valuation. This approach ensures that all projects are valued in a manner consistent with the statutory financial audit process. The unit rates applied in the valuation are representative of current costs incurred by Council in the construction of transport infrastructure and have been reviewed by external parties.

Allocation of Cost

The Schedule of Works Model includes provision for the cost of each initiative to be allocated to those catchments that receive a service benefit from the infrastructure. Allocation of costs in this way can assist Council in better understanding the cost structure of its infrastructure network and the scope of cost recovery relevant to individual development.

In the case of transport infrastructure, as these networks are “open” (i.e. accessible from across the Shire), most items are allocated across all PIA sites. The exception is “Valley View” upgrade infrastructure which are identified separately.

4.4 Trunk Water Supply

4.4.1 Planned Infrastructure Demand

The demand for Trunk Water Services across the region has been developed from studies undertaken by a range of consultants (specifically Cardno, City Water Technology and SKM). These studies focus on water supply issues for key development areas (e.g. Biloela, Baralaba, Moura and, Banana and Theodore). The performance of these networks has been assessed using an assumed demand of 650 L/EP/day (CMDG, Table D11.06.01). This level of demand is broadly consistent with other Regional Councils.

Demand generation for different land use types is related to Equivalent Tenements (ETs) using the factors contained in LGIP Table SC 1.1.5. In the case of water, the relevant conversion factors are as follows;

- Residential dwellings - 2.5EP/ET;
- Commercial and Retail land uses - 13.7EP/developable ha; and
- Industrial and Community purposes - 10.3EP/developable hectare.

The outcomes from the various studies have provided Council with an initial scope of proposed water services upgrades. These works are subject to review and refinement on an ongoing basis to ensure that the cost and timing of each item is relevant to Councils needs before they are incorporated in Councils Long Term Capital program. Only those items of TRUNK water services infrastructure which were identified in this process have been incorporated into the Schedule of Works model.

4.4.2 Desired Standard of Service

The Desired Standards of Service contained within the Local Government Infrastructure Plan (LGIP) includes a combination of qualitative (outcome based) and quantitative (technical) requirements. The specific technical requirements underpinning the service standards are those prescribed in the Capricorn Municipal Development Guidelines (CMDG). This document provides specific design criteria consistent with the States Planning Guidelines for Water Supply and Sewerage.

It should be noted that the CMDG establishes the requirements for non-trunk infrastructure and explicitly defers the application of the standard to TRUNK infrastructure back to the Council. For the purpose of the LGIP, the CMDG requirements will apply to all water supply assets up to and including 300mm diameter. For assets above this threshold (as well as any significant reservoirs or pump stations), developers should refer to Council for advice.

4.4.3 Schedule of Works

Scope: (what's required to meet future demand)

Councils assessment of the hydraulic capacity of the regions potable water supply network identified a range of challenges (primarily triggered by future demand). The various water services planning reports have proposed initiatives that are designed to address the issues identified. This initial work has been supplemented by ongoing assessment of the network capability in key areas.

The overall network upgrade strategy prescribed in the Schedule of Works is intended to support growth across the region and maintain the targeted standards of service. Those projects that have been identified as being necessary over the next 10-15 years have been incorporated into Councils Long Term Financial Forecasts (LTFF).

The scope and scale of existing trunk infrastructure assets contained within the Schedule of Works model have been drawn from Councils GIS and the associated fixed asset register.

Costing and Timing; (what It costs and when it will be delivered)

The costing of upgrades has been estimated using a combination of Council's audited unit rates as well as unit rates provided in the consultant's modelling report. These costs are considered to be preliminary estimates with an allowance for contingency but no specific factors such as geological (soil type), technological (change in technology) or access issues have been assessed in detail.

The timing of works was broadly linked to development expectations in the areas immediately relevant to the improvements. However, given uncertainties arising from the likely timing of development and limited traffic data, the dates provided should be interpreted broadly (i.e. likely to fall in a 3-5-year window) rather than being an absolute date.

Allocation of Cost

The Schedule of Works Model includes provision for the cost of each initiative to be allocated across relevant service catchments. Costs are generally allocated only to those catchments that receive a service benefit from the infrastructure. Allocation of costs in this way can assist Council in better understanding the cost structure of its infrastructure network and the scope of cost recovery relevant to individual development.

In the case of water services, the cost of proposed infrastructure items has been broadly allocated to the catchments that they serve. This creates the necessary link (nexus) between the cost of providing trunk infrastructure and the demand for water services.

4.5 Trunk Sewerage Network

4.5.1 Planned Infrastructure Demand

The demand for Trunk Sewerage Services across the region has been developed from a combination of in house analysis and consultants' reports. The performance of the network has been assessed using an average day demand of 200 L/EP/day (CMDG, Table D12.06.01). This flow is broadly consistent (albeit at the lower end) of demand when compared with other Regional Councils.

Demand generation for different land use types is related to Equivalent Tenements (ETs) using the factors contained in LGIP Table SC 1.1.5. In the case of sewerage transport and treatment, the relevant conversion factors are as follows:

- Residential dwellings - 2.1 EP/ET;
- Commercial and Retail land uses – 25 EP/developable ha; and
- Industrial and Community purposes – 19 EP/developable hectare.

The outcomes from various studies have provided Council with an initial scope of proposed upgrades to the sewerage network and treatment capacity. These works are subject to review and refinement an ongoing basis to ensure that the cost and timing of each item is relevant to Councils needs before they are incorporated in Councils Long Term Capital program. Those items of TRUNK sewerage infrastructure which were identified in this process have been incorporated into the Schedule of Works model.

4.5.2 Desired Standard of Service

The Desired Standards of Service contained within the Local Government Infrastructure Plan (LGIP) includes a combination of qualitative (outcome based) and quantitative (technical) requirements. The specific technical requirements underpinning the service standards are those prescribed in the Capricorn Municipal Development Guidelines (CMDG). This document provides specific design criteria consistent with the States Planning Guidelines for Water Supply and Sewerage.

It should be noted that the CMDG establishes the requirements for non-trunk infrastructure and explicitly defers the application of the standard to TRUNK infrastructure to the Council. For the purpose of the LGIP, the CMDG requirements will apply to all sewerage transport assets up to and including 300mm diameter and pump stations up to 200L/s. For assets above this threshold, more specific advice will be provided by Council.

4.5.3 Schedule of Works

Scope: (what's required to meet future demand)

Council's assessment of the hydraulic capacity of the regions sewer collection and transportation network identified a range of challenges (primarily triggered by future demand). Initiatives identified in Councils study and those provided by consultants are designed to address the issues identified. This initial work has been supplemented by ongoing assessment

of the network capability in key areas, specifically those for which demand is forecast to increase creating a need for augmentation.

The overall network upgrade strategy prescribed in the Schedule of Works is intended to support growth across the region and maintain the targeted standards of service. Those projects that have been identified as being necessary over the next 10-15 years have been incorporated into Councils Long Term Financial Forecasts (LTFF).

The scope and scale of existing trunk infrastructure assets contained within the Schedule of Works model have been drawn from Councils GIS and the associated fixed asset register.

Costing and Timing; (what It costs and when it will be delivered)

The process for determining the establishment cost of trunk sewerage transportation assets was the same as that applied to water supply assets. This approach ensures that all projects are valued in a consistent manner. The unit rates applied in the valuation are representative of current costs incurred by Council in the construction of trunk infrastructure and have been reviewed by external parties.

The timing of works was broadly linked to development expectations in the areas immediately relevant to the improvements. However, given uncertainties arising from the likely timing of development and limited traffic data, the dates provided should be interpreted broadly (i.e. likely to fall in a 3-5-year window) rather than being an absolute date.

Allocation of Cost

The Schedule of Works Model includes provision for the cost of each initiative to be allocated across relevant service catchments. Costs are generally allocated only to those catchments that receive a service benefit from the infrastructure. Allocation of costs in this way can assist Council in better understanding the cost structure of its infrastructure network and the scope of cost recovery relevant to individual development.

In the case of sewerage services, the cost of proposed infrastructure items has been broadly allocated to the catchments that they serve. This creates the necessary link (nexus) between the cost of providing trunk infrastructure and the demand for sewerage collection, transport and treatment services.

4.6 Parks and Land for Community Purposes

4.6.1 Planned Infrastructure Demand

The key source of information regarding the scope, cost and timing of parks and land for community infrastructure is the Councils Park Development Strategy (2014-2019). Demand generation for parks has been linked to population growth across the region.

4.6.2 Desired Standard of Service

The Desired Standards of Service contained within the Local Government Infrastructure Plan (LGIP) includes a combination of qualitative (outcome based) and quantitative (technical) requirements.

The primary performance criteria relevant in the provision of park and land for community services are outlined in the following LGIP tables:

- Table 1.4.5 – Accessibility Standard;

- Table 1.4.6 – Rate of land provision;
- Table 1.4.7 – Size;
- Table 1.4.8 – Maximum desired grade
- Table 1.4.9 – Minimum desired flood immunity; and
- Table 1.4.10 – Standard facilities/embellishments.

4.6.3 Schedule of Works

Scope: (what's required to meet future demand)

Council Parks Development Strategy (2014-2019) provides a succinct assessment of the provision of parkland and/or facilities as identified through previous demand indicators, mapping and public consultation. The outcome contained within the Strategy reflects community consultation, industry advice and the levels of service for each of the Councils Defined Use Categories. The overall network upgrade strategy prescribed in the Schedule of Works is intended to address current constraints, support growth and improve liveability in the region.

The scope and scale of existing trunk infrastructure assets contained within the Schedule of Works model have been drawn from Councils GIS.

Costing and Timing; (what It costs and when it will be delivered)

The costs of provision of open space assets have been estimated using market rates and values of land and embellishment. This cost of land does not include costs associated with design, planning and supervision of the development of the land in a manner that makes the land fit for purpose.

The timing of trunk aspect of parks and land for community infrastructure has been linked to development expectations in the areas immediately relevant to the improvements. However, given uncertainties arising from the likely timing of development and limited traffic data, the dates provided should be interpreted broadly (i.e. likely to fall in a 3-5-year window) rather than being an absolute date.

Allocation of Cost

The Schedule of Works Model includes provision for the cost of each initiative to be allocated across those catchments that receive a service benefit from the infrastructure. Allocation of costs in this way can assist Council in better understanding the cost structure of its infrastructure network and the scope of cost recovery relevant to individual development.

In the case of park assets that serve a broader function (metro and district), the cost of these items has been allocated broadly across the region. In the case of local/district assets, costs have been allocated more specifically to those catchments served by the trunk asset. This approach ensures there is a link (nexus) between the cost of providing trunk infrastructure and the demand for such service outcomes.

5. Schedule of Works (SOW) General Assumptions

5.1.1 Financial Assumptions

The general financial assumptions relevant to the calculations undertaken in the Schedule of Works (SOW) modelling are underpinned by the following assumptions:

- **Weighted Average Cost of Capital** has been estimated by the Council Manager of Financial Services to be 6% per annum. This is broadly consistent with the methodology outlined in **Local Government Bulletin 06/01** (as referenced in the States Guideline 3/14 appendix C) assuming a baseline margin of 3.5% on the ten (10) year bond rate of 2.5%;

- **Escalation of Infrastructure** was assumed at 4.1% which is broadly consistent with the ten (10) year average **Roads and Bridges Index (ABS 6427, Table 15, Index 3101)** as at 2014. This measure is considered by Council to be an accurate estimate of the long run PPI as it includes the GFC, mining boom/bust period. A ten-year PPI measured from 2017 excludes the more robust periods of growth and tends to understate the long term inflationary forces;

- **Escalation of land** has been estimated by the Councils Manager of Financial Services as 5% in line with local long run averages; and

- The **Infrastructure Charges inflator** has also been stated at 2.2% to align with CPI increases;

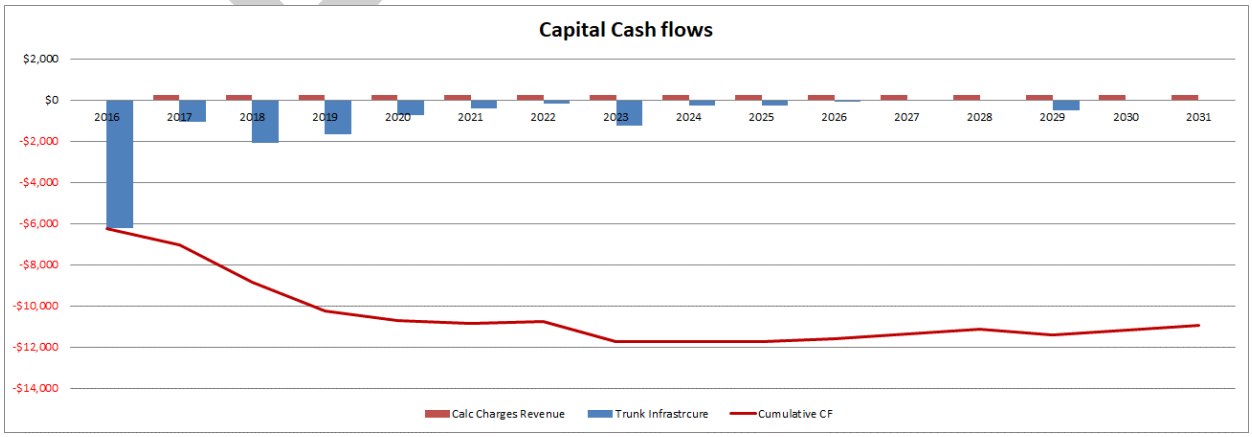
- The **term of the calculations** undertaken in the Schedule of Works is twenty (20) years

5.1.2 Revenue projections:

Revenue projections have been calculated in the States Schedule of Works model assuming application of adopted charges as outlined in the Councils **Adopted Infrastructure Charges Resolution (2015)**. Councils adopted charges for Reconfiguring a Lot within the Priority Infrastructure changes by region and ranges from $5,045 per lot (Banana, Baralaba and Thangool) to $10,545 per lot (Biloela and Moura).

The outcomes from the projected cashflow assessment of the LGIP suggest a cumulative shortfall in the order of $12million over the next ten (10) years. This shortfall will be funded by other sources (predominantly rates).

Figure 5.1 – Cumulative Cashflow



5.1.3 Alignment of SOW with LTFF

The current Schedule of Works (SOW) has been progressively developed to ensure that it aligns with the Councils Long Term Financial Forecasts. The initial Schedule of Works (SOW) has been checked against Council Long Term Financial Forecasts. Anomalies identified between the LGIP and LTFF are being reviewed and will be addressed. The new SOW will be aligned with the new financial years LTFF (1 July 2018) when the LGIP is implemented.