Rockhampton Regional Council Planning Assumptions Report

Version 3, May 2019

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Executive Summary

This Planning Assumptions Report (PAR) contains the planning assumptions and growth projections underpinning the Local Government Infrastructure Plan (LGIP) prepared by Rockhampton Regional Council.

This PAR has been scoped to:

- document the methodology and assumptions used to prepare the Planning Assumptions Model (PAM), dwelling, population, gross floor area (GFA) and employment planning assumptions and the timing of development (development sequence);
- present and discuss dwelling, population, GFA, employment projections and development sequence; and
- identify the Priority Infrastructure Area (PIA);

The planning assumptions are critical elements underpinning the LGIP. Their purpose is to provide a logical and consistent basis for detailed infrastructure planning within network catchments and state assumptions about the type, scale, location and timing of future development and subsequent population and employment growth. The PAR applies to all land within the boundaries of Rockhampton Regional Council (as set out within the Rockhampton Region Planning Scheme), and demonstrates how the strategic outcomes of the Rockhampton Region Planning Scheme are to be implemented at the local level. The planning period for the PAR is 19 years to 2036.

Methodology

To guide the process of developing planning assumptions for the Rockhampton Regional Council LGIP, a detailed, robust and transparent methodology has been adopted consisting of seven key steps. The seven steps are;

Step 1 – Existing Land Use and Development Assumptions

Step 2 – Future Land Use Assumptions

Step 3 – Development Capacity Analysis

Step 4 – Development Sequencing Analysis

Step 5 – Priority Infrastructure Area

Step 6 – Growth Projections

Step 7 – Planning Assumptions Report

The Rockhampton region resident population growth projections are benchmarked against Queensland Government Statistician's Office (QGSO) 2015 Medium Series population projections. Residential development sequencing and population growth projections are guided by the sub-regional allocation of population growth for the former Rockhampton City, Fitzroy and Mount Morgan Local Government areas.

Priority Infrastructure Area

The PIA identifies sufficient land to accommodate forecast growth to October 2036. The PIA is a two dimensional extent consisting of multiple geographically discreet areas and is to read in combination with development sequencing assumptions detailed in Appendix P. The PIA is shown in Appendix Q.

Population

As of 10 October 2017, the estimated resident population (ERP) of the Rockhampton region is modelled in the PAM to be 82,841 persons with a non-resident population (NRP) of 4,352 persons and a total population (ERP plus NRP) of 87,193 persons (refer to Section 4.2.1). By 2036, it is projected that the total population will be 104,383 persons. As shown in Figure E.1, the resident population of the Rockhampton Regional Council (RRC) area is projected in the PAM to grow in line with the 2018 Medium Series population. Although the PAM population projection is lower than the 2015 Medium Series population projection, the growth rates are similar at 0.9% pa and 1.0% pa respectively. Section 2.5.2 provides the population projections methodology used.

A summary of population projections at a sub-regional scale is shown in Table E.1. A summary of population inside and outside the PIA is shown in Table E.2.

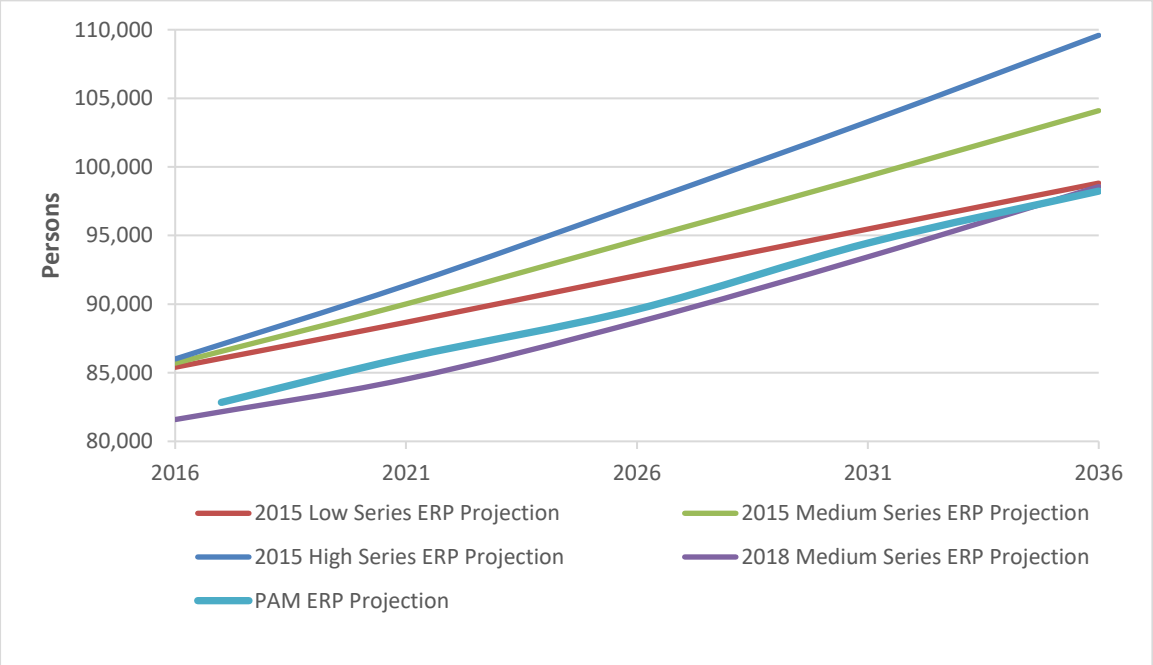

Figure E.1 - Planning Assumptions Model and Queensland Government ERP Projections

Table E.1 - Planning Assumptions Model and Queensland Government ERP Projection Comparison

		Existing (2017)#	2021	2026	2031	2036	Growth Rate ^	RRC Growth Share (2017 - 2036)
Rockhampton City Area	Planning Assumptions Model	63,507	65,560	67,191	69,761	72,330	0.7%	57.3%
	2015 Medium Series Projection	66,167	68,288	70,376	72,727	75,719		
	Difference with PAM	**-2,660**	**-2,728**	**-3,185**	**-2,966**	**-3,389**		
		-4.2%	**-4.2%**	**-4.7%**	**-4.3%**	**-4.7%**		
	2018 Medium Series Projection	62,019	63,328	65,450	67,890	70,154		
	Difference with PAM	**1,488**	**2,232**	**1,741**	**1,871**	**2,176**		
		2.3%	**3.4%**	**2.6%**	**2.7%**	**3.0%**		
Fitzroy Area	Planning Assumptions Model	16,307	17,519	19,408	21,504	22,726	1.8%	41.7%
	2015 Medium Series Projection	17,179	18,454	20,792	22,788	24,323		
	Difference with PAM	**-872**	**-935**	**-1,384**	**-1,284**	**-1,597**		
		-5.3%	**-5.3%**	**-7.1%**	**-6.0%**	**-7.0%**		
	2018 Medium Series Projection	**17,143**	**18,193**	**20,218**	**22,525**	**25,354**		
	Difference with PAM	**-836**	**-674**	**-810**	**-1,021**	**-2,628**		
		-5.1%	**-3.8%**	**-4.2%**	**-4.7%**	**-11.6%**		
Mount Morgan Area	Planning Assumptions Model	3,027	3,024	3,024	3,183	3,181	0.3%	1.0%
	2015 Medium Series Projection	3,192	3,270	3,478	3,806	4,059		
	Difference with PAM	**-165**	**-246**	**-454**	**-623**	**-878**		
		-5.5%	**-8.1%**	**-15.0%**	**-19.6%**	**-27.6%**		
	2018 Medium Series Projection	**2,987**	**3,010**	**3,013**	**3,029**	**3,059**		
	Difference with PAM	**40**	**15**	**11**	**153**	**123**		
		1.3%	**0.5%**	**0.4%**	**4.8%**	**3.9%**		

		Existing (2017)[#]	2021	2026	2031	2036	Growth Rate ^	RRC Growth Share (2017 - 2036)
RRC LGA	Planning Assumptions Model	82,841	86,104	89,623	94,448	98,237	0.9%	100.0%
	2015 Medium Series Projection	86,538	90,012	94,646	99,321	104,101		
	Difference with PAM	**-3,697**	**-3,908**	**-5,023**	**-4,873**	**-5,864**		
		-4.5%	**-4.5%**	**-5.6%**	**-5.2%**	**-6.0%**		
	2018 Medium Series Projection	82,149	84,532	88,680	93,444	98,567		
	Difference with PAM	**692**	**1,572**	**942**	**1,004**	**-329**		
		0.8%	**1.8%**	**1.1%**	**1.1%**	**-0.3%**		

^Average annual population growth rate between 2017 and 2036

[#] 2015 Medium Series Projection and 2018 Medium Series Projection Existing (2017) estimated using average annual growth between 2016 and 2021

Table E.2 - Population Summary

	Existing (2017)	2021	2026	2031	2036
Total ERP in PIA	73,818	76,934	80,348	85,173	88,960
Total ERP outside PIA	9,023	9,169	9,275	9,275	9,277
Total Non-Resident Population	4,352	4,528	5,363	5,864	6,146
Total RRC Population Projection (ERP + NRP)	**87,193**	**90,631**	**94,986**	**100,312**	**104,383**

Employment

As of 10 October 2017, the number of employed persons in urban based employment in the Rockhampton region is modelled in the PAM to be 37,786 (refer to Section 5.1.1). By 2036, it is projected that the total urban based employment in the Rockhampton Region will be 47,760 persons. Figure E.2 below shows a comparison between employment and population projections (ERP plus NRP).

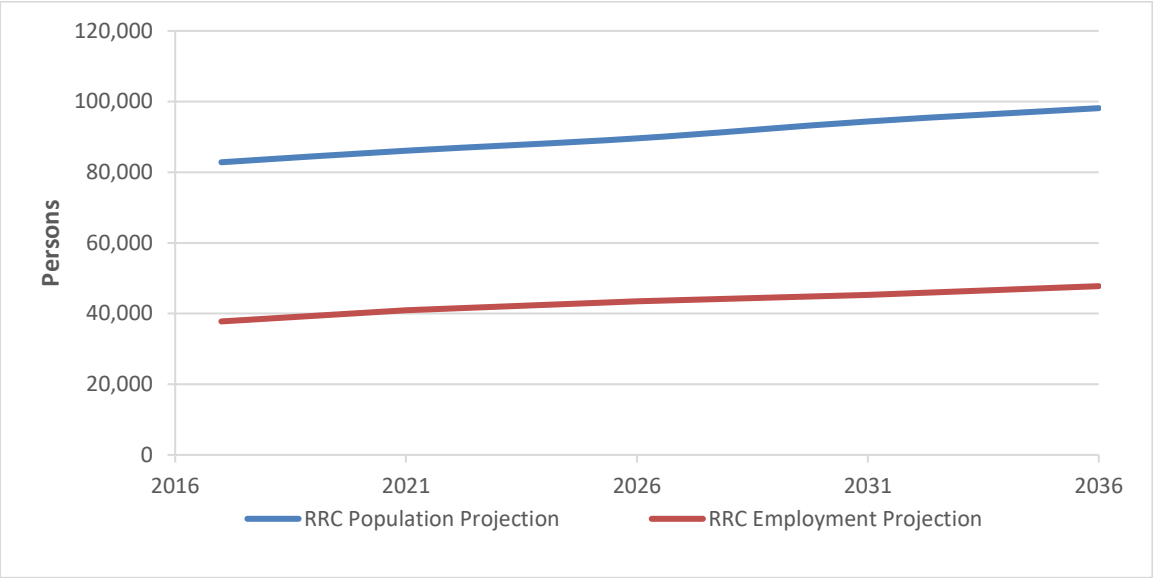

Figure E.2 - RRC Population and Employment Projections

A summary of employment projections at a sub-regional scale and inside and outside the PIA is shown in Table E.3. Employment projections for sub-regional areas are shown in Figure E.3.

Table E.3 - Employment Projection Summary

	Existing (2017)	2021	2026	2031	2036
Employment Projection by Sub-Regional Area					
Rockhampton City Area Employment	35,051	38,076	39,959	41,388	43,271
Fitzroy Area Employment	1,951	2,115	2,760	3,106	3,618
Mount Morgan Area Employment	784	784	784	818	871
Employment Projection Summary					
Total Employment in PIA	36,532	39,702	42,218	44,013	46,447
Total Employment outside PIA	1,254	1,274	1,286	1,300	1,314
Total RRC Employment	**37,786**	**40,976**	**43,504**	**45,313**	**47,760**

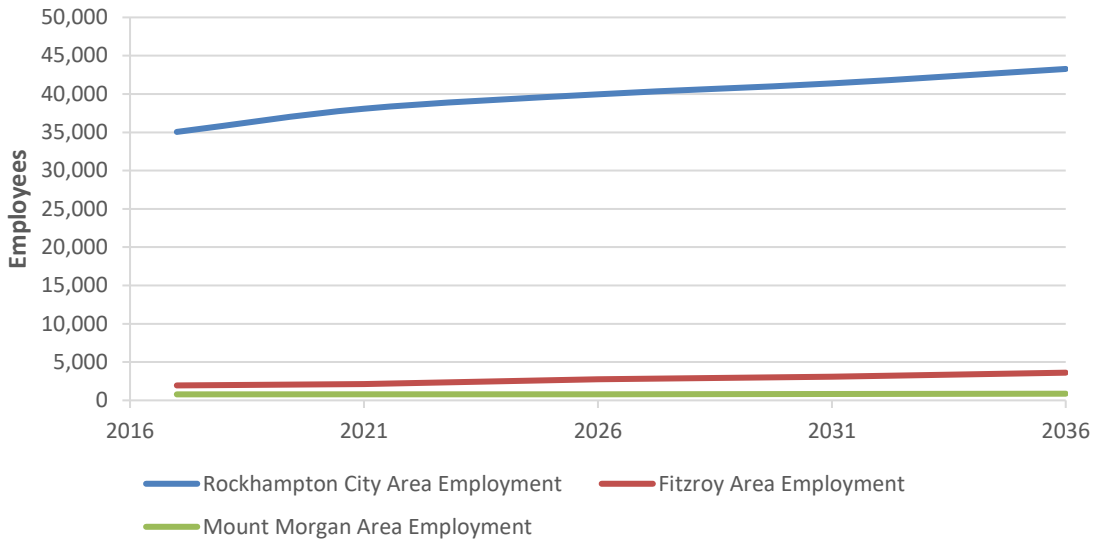

Figure E.3 - Employment Projections for Sub-Regional Areas

As shown in Figure E.4, it is projected that retail and commercial development will drive employment growth, with steady growth in community purposes based employment.

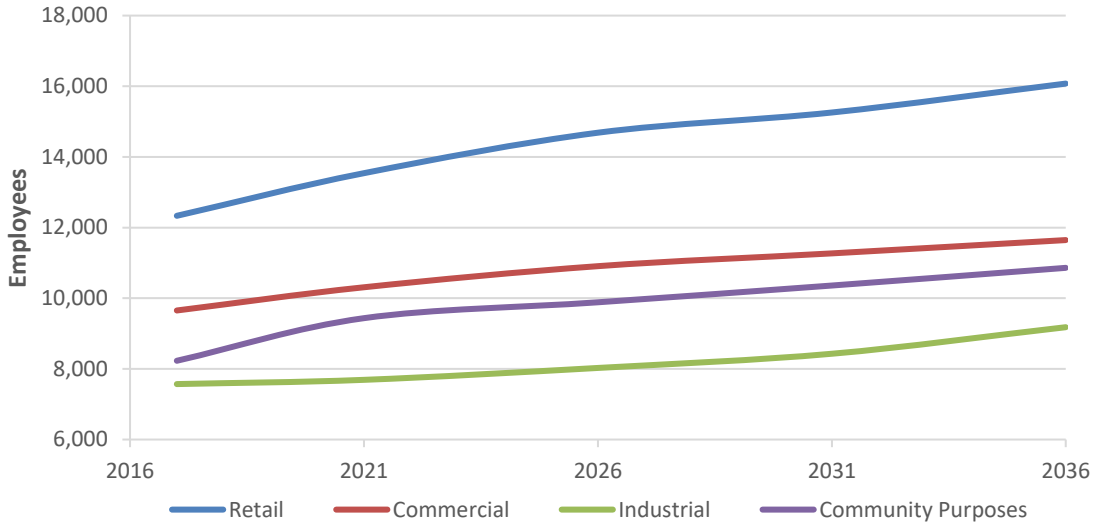

Figure E.4 - Employment Projections by Employment Category

Achieved Density

A comparison of the maximum dwelling per hectare yield and the average dwelling yield achieved in the PAM on residential greenfield land (> 2,500m^2) is shown in Table E.4.

Table E.4 - Comparison Between Maximum Possible Dwelling Yield and Average Achieved Dwelling Yield for Greenfield Residential Land

SPP Residential Zone	Maximum Yield (dwellings/ha of net developable area)	Average Yield Achieved in PAM (dwellings/ha of net developable area)	Average Achieved Lot Size Per Dwelling (m^2)
Low density residential	16.3	10.8	926
Medium density residential	24.4	20.4	491
High density residential	880.0	880.0	11.4
Emerging community	16.3	11.8	847
Rural residential	0.5	0.4	24,334

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Definitions, Abbreviations and Acronyms

Term	Definition
ABS	Australian Bureau of Statistics
Base year	10 October 2017
CQU	Central Queensland University
ERP	The Estimated Resident Population is the estimated number of persons whose principal place of residence is within the Rockhampton Regional Council area.
Fitzroy Area	Former Fitzroy Shire Council area
GIA	Gracemere Industrial Area
Interim development capacity	The anticipated development yield planned for under the Rockhampton Region Planning Scheme for land parcels developed up to 2036 having regard to allowable uses, development densities, lot size, internal road, park and drainage allowances, development constraints and development approvals.
Mount Morgan Area	Former Mount Morgan Shire Council area
NRP	The Non-Resident Population is the estimated number of persons who reside in non-resident accommodation, including hospitals, hotels, relocatable home parks, rooming accommodation, short-term accommodation and tourist parks.
PAM	Rockhampton Regional Council Planning Assumptions Model
PAR	Rockhampton Regional Council Planning Assumptions Report
PDA	Priority Development Area
PIA	Priority Infrastructure Area
LGIP	Local Government Infrastructure Plan
Projection cohort	Five year projection cohorts from 10 October
QGSO	Queensland Government Statistician's Office
SPP	State Planning Provisions
Rockhampton City Area	Former Rockhampton City Council area
RRC	Rockhampton Regional Council
Ultimate development capacity	The maximum development yield planned for under the Rockhampton Region Planning Scheme for land parcels developed after 2036 having regard to allowable uses, development densities, lot size, internal road, park and drainage allowances, development constraints and development approvals.
Urban based employment	Employment within existing urban employment generating development. It excludes rural and mining based employment not located in an urban area or building.

1. Introduction

This Planning Assumptions Report (PAR) contains the planning assumptions and growth projections underpinning the Local Government Infrastructure Plan (LGIP) prepared by Rockhampton Regional Council.

This Planning Assumptions Report (PAR) has been scoped to:

- document the methodology and assumptions used to prepare the Planning Assumptions Model (PAM), dwelling, population, gross floor area (GFA) and employment planning assumptions and the timing of development (development sequence);
- present and discuss dwelling, population, GFA, employment projections and development sequence; and
- identify the Priority Infrastructure Area (PIA);

1.1 Short Title and Commencement

1. This document may be cited as the Rockhampton Regional Council Planning Assumptions Report Version 3, 2019 (the PAR).

2. The PAR informs the Local Government Infrastructure Plan which forms Part 4 of the Rockhampton Region Planning Scheme.

1.2 The Rockhampton Region

Located in the heart of Central Queensland, the Rockhampton Region is located approximately 600km north of Brisbane, and approximately 300km south of Mackay. The region spans an area of approximately 6,600km^2 with the City of Rockhampton as a main service centre for the Central Queensland region. The Rockhampton region is strategically located at the junction of the Bruce, Capricorn and Burnett Highways, between Gladstone to the south, Mackay to the north and Emerald to the west. The Rockhampton Region includes the three main urban areas of Rockhampton, Gracemere and Mount Morgan, significant rural areas (including townships), and national parks.

1.3 Role and Purpose of the Planning Assumptions

The planning assumptions are critical elements underpinning the LGIP. Their purpose is to provide a logical and consistent basis for detailed infrastructure planning within network catchments and state assumptions about the type, scale, location and timing of future development and subsequent population and employment growth. Combined with the desired standards of service they assist in the development of the plans for trunk infrastructure and form the basis for the calculation of infrastructure charges and additional infrastructure cost assessments.

The PAR underpins the LGIP and has been drafted in accordance with the Planning Act 2016 and Minister's Guidelines and Rules 2017. The PAR applies to all land within the boundaries of Rockhampton Regional Council (as set out within the Rockhampton Region Planning Scheme), and demonstrates how the strategic outcomes of the Rockhampton Region Planning Scheme are to be implemented at the local level. This includes how Council proposes to achieve strategic dwelling targets and other key population and employment development policies identified in the strategic plan.

The planning period for the PAR is 19 years to 2036. This long term planning is required to provide for the most efficient and effective development of identified land and the provision of future infrastructure.

1.4 Role and Purpose of the Priority Infrastructure Area

The PIA details Rockhampton Regional Council's intent to sequence the supply of trunk infrastructure to accommodate anticipated urban development over the next 19 years in the most efficient way. The PIA is a two dimensional extent and is to be read in combination with development sequencing assumptions (Section 2.5).

2. Methodology

2.1 Overarching Process

To guide the process of developing planning assumptions for the Rockhampton Regional Council LGIP, a detailed, robust and transparent methodology has been adopted consisting of seven key steps. The seven steps are;

Step 1 – Existing Land Use and Development Assumptions

Step 2 – Future Land Use Assumptions

Step 3 – Development Capacity Analysis

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The final deliverables of this process are a land parcel based GIS model (referred to in this report as the PAM and the PAR. The PAM was developed using ESRI ArcGIS and examined existing land use and development, modelled projected future dwelling, population, GFA and employment growth and calculated the interim and ultimate development capacity of the Rockhampton Region Planning Scheme (including consideration of planning scheme provisions and planning scheme overlay constraints, existing land uses and development approvals).

The methodology and assumptions for each step are contained in Sections 2.2 to 2.8.

2.2 Step 1 – Existing Land Use and Development Assumptions

The first step in the LGIP planning assumptions process is the establishment of existing land use and development assumptions. Existing land use and development assumptions data are used:

- to develop the base year (10 October 2017) dwelling, population, GFA and employment assumptions;
- for comparison to the development capacity analysis to identify land which is entirely developed; and
- for adjusting development capacity data where existing development exceeds calculated development capacity (e.g. development with a higher yield than allowed for under the Rockhampton Region Planning Scheme).

Land use and development assumptions data is underpinned by RRC rating land use data classified by Department of Natural Resources and Mines (DNRM) land valuation land use codes. For the purposes of the PAR and PAM, land uses are reclassified into corresponding State Planning Policy (SPP) use type definitions (e.g. Single Unit Dwelling reclassified to Dwelling House, Drive in Shopping Centre reclassified to Shopping Centre). Identified errors and gaps in RRC data were corrected through desktop analysis, including a review of 2017/2018 aerial photography and use of Google Street View.

Sections 2.2.1 to 2.2.4 outline the methodology and assumptions utilised in the development of existing dwelling, population, GFA and employment assumptions.

2.2.1 Existing Dwellings

Existing dwelling houses, dual occupancies, multiple dwellings and other dwellings are identified utilising corrected SPP classified land use data. Table 1 shows the reporting categories and the corresponding SPP use definitions for dwellings and population. Land parcels with a dwelling house land use record are assigned one single dwelling in the PAM. Land parcels with a dual occupancy land use record are assigned one dual occupancy dwelling per Group Title or Building Unit Plan lot (excluding common land). Where a dual occupancy is on one land parcel, two semi-attached dwellings are assigned to the land parcel in the PAM. Land parcels with a multiple dwelling land use record are assigned one multiple dwelling per Group Title or Building Unit Plan lot (excluding common or non-residential land) or for multiple dwellings on one land parcel, the number of multiple dwellings are identified using drive-by survey or Google Street View. Multiple dwellings are assumed to be equivalent two bedroom dwelling units.

The number of other dwellings on land parcels with Tourist Park, Relocatable Home Park, Short-term Accommodation, Hotel, Rooming Accommodation and Hospital land uses are based on the number of beds, sites or units identified through drive-by survey, internet research or telephone contact. The captured data is converted in to the equivalent two bedroom other dwelling units (e.g. 50 short-term accommodation beds are converted in to 25 other dwelling units) and assigned to land parcels in the PAM.

Where existing dwellings extend over a number of land parcels, the number of dwellings is equally split over the land parcels (e.g. one dwelling house over two land parcels is split, with each land parcel given 0.5 dwellings).

Table 1 - Dwelling and Population Reporting Categories and Corresponding SPP Use Definitions

Reporting Category	SPP Use Definition
Dwelling House	Dwelling House
Dual Occupancy	Dual Occupancy
Multiple Dwelling	Multiple Dwelling, Residential Care Facility, Retirement Facility
Other Dwelling	Hospital, Hotel, Relocatable Home Park, Rooming Accommodation, Short-term Accommodation, Tourist Park

2.2.2 Existing Resident and Non-Resident Population

The existing resident population is calculated using the existing number of dwellings in the Dwelling House, Dual Occupancy and Multiple Dwelling reporting categories multiplied by the dwelling occupancy rates contained in Table 2. Dwelling occupancy rates are based on the 2016 ABS Census at a sub-regional level to reflect sub-regional variances. Of note, is the low dwelling occupancy rate within dwelling houses in Mount Morgan indicating lower occupancy or alternatively higher vacancy rates.

The existing non-resident population is calculated using the existing number of dwellings in the Other Dwelling reporting category multiplied by the dwelling occupancy rates contained in Table 2. Populations in Relocatable Home Parks are split 50% resident and 50% non-resident.

Table 2 - Existing Dwelling Occupancy Rate Assumptions

Reporting Category	Dwelling Conversion Rate	Dwelling Occupancy Rates		
		Rockhampton City	Fitzroy	Mount Morgan
Dwelling House	Persons per dwelling	2.5	2.6	1.9
Dual Occupancy	Persons per dwelling unit	1.4	1.1	2.2
Multiple Dwelling	Persons per two bedroom equivalent multiple dwelling unit	1.3	1.1	0.9
Other Dwelling	Persons per dwelling unit or number of beds (two bedroom multiple dwelling equivalent)	1.3	1.3	1.3

2.2.3 Existing Gross Floor Area

Existing retail, commercial, industrial and community purposes GFA is calculated using reclassified and corrected land use data and digitised building footprint data and multiplied by identified levels of GFA (e.g. building footprint of 1,000m^2 multiplied by 2 levels of GFA equals 2,000m^2 GFA). Levels of GFA exclude underground or under storey car parking.

Table 3 details the reporting categories and the corresponding SPP use definitions for GFA and employment.

Table 3 - GFA and Employment Reporting Categories and Corresponding SPP Use Definitions

Reporting Category	SPP Use Definition
Retail	Food and Drink Outlet, Garden Centre, Hotel, Nightclub Entertainment Facility, Outdoor Sales, Service Industry, Service Station, Shop, Shopping Centre, Showroom, Theatre, Tourist Attraction
Commercial	Air Services, Funeral Parlour, Child Care Centre, Office, Short-term Accommodation, Residential Care Facility
Industrial	Extractive Industry, High Impact Industry, Low Impact Industry, Marine Industry, Medium Impact Industry, Research and Technology Industry, Transport Depot, Warehouse
Community Purposes	Club, Community Use, Detention Facility, Educational Establishment, Emergency Services, Hospital, Place of Worship

2.2.4 Existing Employment

Existing employment is calculated based on existing GFA divided by the employee to GFA ratios contained in Table 4. Employee to GFA ratio assumptions are informed by a business survey of businesses in the Rockhampton CBD capturing the number of employees for comparison with captured GFA. Employee to GFA ratios are also informed by the ABS Retail Industry Survey 1998-99[1] which contains GFA and employee data to allow the calculation of employee to GFA ratios for retail land uses.

It should be noted that the existing employment calculated represents the total number of employees per GFA and does not distinguish between type of employment i.e. fulltime, part time etc. or shift work. In determining infrastructure demand, consideration should be given to potential types of employment for particular work places. E.g. it could be assumed a large proportion of hospital, emergency services employees would work in split shifts

Table 4 - SPP Use Definitions and Employee to GFA Ratio Assumptions

SPP Use Definition	Employee to GFA Ratio
Detention Facility, Nightclub Entertainment Facility, Rooming Accommodation, Shop, Shopping Centre, Child Care Centre, Emergency Services, Service Industry	35m^2 GFA/employee
Hospital	30m^2 GFA/employee
Garden Centre, Low Impact Industry, Marine Industry, Outdoor Sales, Research and Technology Industry, Service Station, Transport Depot, Warehouse, Air Services, Funeral Parlour, Showroom, Theatre	100m^2 GFA/employee
Food and Drink Outlet	15m^2 GFA/employee
Hotel	50m^2 GFA/employee
Residential Care Facility, Short-term Accommodation	200m^2 GFA/employee
Office	25m^2 GFA/employee
Educational Establishment	70m^2 GFA/employee
Extractive Industry, Medium Impact Industry, Tourist Attraction	120m^2 GFA/employee
High Impact Industry	150m^2 GFA/employee
Cemetery, Club, Community Use, Park, Place of Worship	300m^2 GFA/employee

[1] 8622.0 – Retail Industry, Australia, 1998-99

2.3 Step 2 – Future Land Use Assumptions

The second step in the Planning Assumptions process is the determination of future land uses and development assumptions based on the SPP zones and Strategic Framework Settlement Pattern Maps of the Rockhampton Region Planning Scheme. Land use zoning is shown in Appendix B. Precinct boundaries are shown in Appendix C.

Future land use and development assumptions data are used:

- to develop land use and development density assumptions for SPP zones; and
- to identify and utilise broad development sequencing contained in SPP zones and the Strategic Framework Settlement Pattern Maps.

2.4 Step 3 – Development Capacity Analysis

The third step in the LGIP Planning Assumptions process is the calculation of development capacity for dwellings, population, GFA and employment.

Development capacity data is used:

- to determine the development yield of infill and greenfield residential and non-residential land;
- to determine land requirements for growth;
- to inform development sequencing and determination of a PIA;
- for comparison to existing development to identify land that is fully developed; and
- as one input to a test of a development's consistency with the LGIP assumptions.

Sections 2.4.1 to 2.4.8 document the methodology and assumptions utilised in the calculation of development capacity for dwellings, population, GFA and employment.

2.4.1 Development Constraints

Development capacity analysis is informed by mapping and analysis of a range of development constraints. The aim of this methodology is to determine the areas of land subject to different types of constraints. Each development constraint is considered individually in regard to its varying impact on development yield. The percentage loss in yield ranges from completely constrained areas that are not suitable for urban development to a reduced yield of 50%, 60% and 80%. As a working example, in a constrained area with a 60% development yield in a Low Density Residential zone, development yield would be 9.6 dwellings/ha of net developable area (60% of 16 dwellings/ha of net developable area).

Constraint analysis is undertaken at a land parcel level with each land parcel area split in to the areas of completely constrained, 50% development yield, 60% development yield and 80% development yield and populated in the PAM to form part of the development capacity calculation process. The unconstrained land area is then calculated in the PAM by subtracting the combined constraint area from the total parcel area.

Table 5 shows the list of constraints and their assumed impact on development yield. The mapping of the constraint areas is shown in Appendix F. The constraint areas contained in Appendix F predate changes made in the major amendment to planning scheme. As such, the constraint areas may have been changed in the major amendment to planning scheme since the constraints contained in the PAM were finalised. Any changed constraint areas will be incorporated into the next iteration of the PAM (and PAR) to inform the next planning scheme.

Table 5 - Development Constraint Assumptions

Development Constraint	Map Reference	Assumed Impact on Development Yield	Data Source
Matters of State Environmental Significance	Map DC-MSES	No development yield	- Queensland Government - Matters of State Ecological Significance 2017 (MSES 2017) - RRC Natural Environment Study 2010
Biodiversity - Corridors	Map DC-BC	Corridors - No development yield	RRC Natural Environment Study 2010
Biodiversity - Waterways	Map DC-BWw	• Waterways of High Ecological Value (buffered 100m) - No development yield • Regulated Vegetation intersection a watercourse (buffered*)	Queensland Government - Matters of State Ecological Significance 2017 (MSES 2017)
Biodiversity - Wetlands	Map DC-BWt	• High Ecological Significance (HES) - No development yield • HES Buffer - No development yield • General Ecological Significance (GES) - 50% development yield • GES Buffer - 50% development yield	- Queensland Government - Matters of State Ecological Significance 2017 (MSES 2017) - RRC Natural Environment Study 2010
Bushfire Hazard	Map DC-BH	• Medium Bushfire Hazard Area - 60% development yield • High Bushfire Hazard Area - No development yield	Queensland Government Bushfire Prone Area - Vegetation Hazard Class Central Queensland 2015
Coastal Protection - Hazard Areas	Map DC-CP	• Storm tide high hazard- 80% development yield • Storm tide medium hazard- 80% development yield	DEH Storm Tide Hazard Mapping 2017
DCDB Parcel Type	Map DC-PT	DCDB Parcel Type: Road, Intersection or Water - No development yield	DERM Digital Cadastral Database 2017
Extractive Resources	Map DC-ER	Land within Extractive Resources Overlay - No development yield	Queensland Government KRA 2016

Development Constraint	Map Reference	Assumed Impact on Development Yield	Data Source
Flood Hazard	Map DC-FH	• Planning Area 1 - No development yield • Planning Area 2 - 80% development yield	- AECOM Fitzroy River Flood Study 2014 - Aurecon Gracemere Catchments Flood Study 2013 - AECOM Local Catchment Flood Studies 2016-2018 - Limestone Creek - Ramsay Creek - Splitters Creek - Frenchmans / Thozet Creek - Moores Creek - South Rockhampton Local Catchment - West and Wandal Local Catchment
Industrial and Landfill Buffer	Map DC-ILB	Land within Buffer - No development yield	RRC Planning Scheme Industrial Zones and Landfill Sites
Land Use	Map DC-LU	SPP Existing Land Use: Park, Cemetery, Community Use, Place of Worship, Defence Force, Hospital, Educational Establishment, Emergency Services, Correctional Facility, Utility Installation - No development yield	Reclassified from DERM Land Use Valuation Codes
Landslide Hazard	Map DC-LH	• Land Slope ≥25% - No development yield • Land Slope ≥15% - 80% development yield	RRC, 2016 (based on LIDAR 2014)
Queensland Heritage Register	Map DC-QHR	Land on Queensland Heritage Register - No development yield	Qld Heritage Register 2017
Tenure	Map DC-T	DCDB Tenure Code: FD, LL, NP, RE, RY, SF - No development yield	DERM Digital Cadastral Database 2017
Water Resource Catchments	Map DC-WRC	Land within Water Resource Catchments - 50% development yield	RRC & Vegetation Management Plan 2010

*Editor's note—Waterway buffers (aside from MSES-Waterways) have been mapped based on the following minimum widths:
(a) fifty (50) metres buffer (twenty-five (25) metres either side of the waterway) for stream orders 1 and 2;
(b)100 metres (fifty (50) metres either side of the waterway) for stream orders 3 and 4;

(c) 200 metres for stream order 5 and above, except for the Fitzroy River; and
(d) for the Fitzroy River: 350 metres buffer (175 metres either side of the waterway) upstream of the Fitzroy River Barrage, and 450 metres (225 metres either side of the waterway) downstream of the Fitzroy River Barrage.

2.4.2 Internal Non-Developable Area Assumptions for Greenfield Land

Development capacity analysis of greenfield land is informed by consideration and allowance for land area required for internal roads, parks and drainage. The percentage of land assigned to internal roads, parks and drainage varies depending on the zone and minimum lot size. Internal roads, parks and drainage area assumptions are contained in Table 6.

Internal road percentages are informed by Economic Development Queensland's (EDQ) Practice Notes. Allowances for internal roads, parks and drainage are made for unconstrained land and land with a reduced yield constraint. It is assumed that a percentage of park and drainage area can be provided in any completely constrained land area (e.g. drainage within the 30m waterway buffer). The calculation of internal roads, parks and drainage allowances are undertaken at a land parcel level and populated in to the PAM.

Table 6 - Internal Non-Developable Area Assumptions for Greenfield Land

SPP Zone	Internal Road %	Parks / Drainage %
Low Density Residential	30%	5%
Low-Medium Density Residential	25%	5%
Low Impact Industry	35%	2%
Medium Impact Industry	20%	2%
High Impact Industry	20%	2%
Waterfront and Marine Industry	20%	2%
Emerging Community	30%	5%
Rural Residential	20%	5%

2.4.3 Development Density Assumptions

Development capacity analysis is based on development density assumptions for each Rockhampton Region Planning Scheme zone and precinct including allowable uses within a zone, mixture of uses, building height, levels of GFA and minimum lot size for greenfield and infill land. Where it is assumed that multiple and other dwellings are integrated in to a mixed use development, density assumptions are calculated based on the residential split of GFA divided by the assumed GFA per dwelling to produce the number of dwellings.

Appendix A contains the land use and density assumption table. This table shows for each zone and precinct, use definition types, building height, levels of GFA, minimum lot size and density assumptions. Development density assumptions are applied to the pre-calculated developable area of land and are negatively adjusted based on internal road, park and drainage and development constraint assumptions.

Interim and Ultimate Development Density Assumptions

In the previous version of the PAM (PAM V2 2014) there was a noticeable difference between the maximum development densities permitted by the planning scheme and the actual development densities of approved and constructed developments. The disparity between these figures had a significant impact on the LGIP planning projects identified to service forecast demand. In an attempt to model both likely development and the maximum development permissible under the Planning Scheme, the density assumptions include Interim development and Ultimate development assumptions. The Interim development density assumptions are used to calculate the Interim development yield for land parcels that are developed during the life of the PAM (to 2036). The Ultimate development density assumptions are used to calculate the maximum permissible development yield allowable under the Planning Scheme for all land parcels beyond the PAM (2036+). The Interim development densities are lower than the Ultimate development densities in some instances allowing more “realistic” infrastructure planning to be undertaken.

For example within the Principle Centre zone, the ultimate development density assumption allows for new high density buildings to be built to a height of 12 storeys in certain precincts. However for the Interim development density assumption, the assumed building height for new development sites is 6 storeys. The rationale is that not all new buildings that can be built to 12 storeys will be built to 12 storeys within the life of the PAM. This is evidenced through high density buildings that have been built or are proposed within these precincts with heights ranging from 6 storeys 12 storeys. However ultimately, the Planning Scheme does allow for all new buildings (within particular precincts) to be built to 12 storeys. Therefore, the ultimate development density assumptions shown in Appendix A reflect the maximum possible density.

2.4.4 Development Application and Approvals

Interim and Ultimate development capacity analysis considered development approvals (Material Change of Use or Reconfiguration of a Lot, including Preliminary Approvals) within their currency period up to October 2017. Development approval information was sourced from the RRC development approval system and where required, additional details on the approved number of lots, dwellings or GFA was obtained through a search and retrieval of individual development approvals.

2.4.5 Interim and Ultimate Dwelling Capacity

This task involves the calculation of the dwelling yield permissible under the Rockhampton Region Planning Scheme for land parcels as part of the interim and ultimate development capacity calculation process. Interim and ultimate dwelling capacity is calculated at a land parcel level through the multiplication of unconstrained, 50% development yield, 60% development yield and 80% development yield constraint land area by development density assumptions. This includes allowances for internal roads, parks and drainage. Any area of land unsuitable for urban development because of a particular development constraint is excluded from the calculation process. In formula form, the calculation of interim and ultimate dwelling capacity is shown below.

The total number of interim and ultimate dwellings is apportioned based on the assumed dwelling split in the density assumptions in Appendix A (e.g. 85% Dwelling House, 5% Dual Occupancy, 5% Multiple Dwelling, 5% Residential Care Facility/Retirement Facility) and populated in to the PAM. Interim and ultimate dwelling capacity is adjusted on land with a development approval to reflect the number of approved dwellings by dwelling type. Where the number of existing dwellings exceeds the calculated interim or ultimate dwelling capacity, the interim or ultimate dwelling capacity is adjusted to reflect the existing number of dwellings.

Interim and Ultimate Dwelling Capacity Formulas:

Unconstrained Development Yield =

Unconstrained Land Area × (1 – Internal Non-Developable Percentage (Table 6)) × Density Assumptions (Appendix A)

80% Development Yield =

80% Yield Constraint Land Area × (1 – Internal Non-Developable Percentage (Table 6)) × Density Assumptions (Appendix A) × 0.8

60% Development Yield =

60% Yield Constraint Land Area × (1 – Internal Non-Developable Percentage (Table 6)) × Density Assumptions (Appendix A) × 0.6

50% Development Yield =

50% Yield Constraint Land Area × (1 – Internal Non-Developable Percentage (Table 6)) × Density Assumptions (Appendix A) × 0.5

Dwelling Capacity =

Unconstrained Development Yield + 80% Development Yield + 60% Development Yield + 50% Development Yield

The findings from the ultimate dwelling capacity analysis are shown in Appendix K.

2.4.6 Interim and Ultimate Population Capacity

Interim and ultimate population capacity is calculated at a land parcel level through the multiplication of the dwelling capacity and the dwelling occupancy rate assumptions shown in Table 7. Where the interim or ultimate dwelling capacity is equal to the number of existing dwellings, the occupancy rates in Table 2 are utilised.

The findings from the ultimate population capacity analysis are shown in Appendix L.

Table 7 – Interim and ultimate Dwelling Occupancy Rate Assumptions

Reporting Category	Dwelling Conversion Rate	Dwelling Occupancy Rates		
		Rockhampton City	Fitzroy	Mount Morgan
Dwelling House	Persons per dwelling	2.5	2.7	2.1
Dual Occupancy	Persons per dwelling unit	1.6	1.6	1.6
Multiple Dwelling	Persons per two bedroom equivalent multiple dwelling unit	1.5	1.5	1.5
Other Dwelling	Persons per dwelling unit or number of beds (two bedroom multiple dwelling equivalent)	1.3	1.3	1.3

2.4.7 Interim and Ultimate Gross Floor Area Capacity

This task involves the calculation of the GFA yield permissible under the Rockhampton Region Planning Scheme for land parcels as part of the interim and ultimate development capacity calculation process. Interim and ultimate GFA capacity is calculated at a land parcel level through the multiplication of unconstrained, 50% development yield, 60% development yield and 80% development yield constraint land area by development density assumptions. This includes allowances for internal roads, parks and drainage. Any area of land unsuitable for urban development because of a particular development constraint is excluded from the calculation process. In formula form, the calculation of interim and ultimate GFA capacity is shown below.

The total amount of interim and ultimate GFA is apportioned based on the assumed GFA split in the density assumptions in Appendix A (e.g. 60% commercial, 20% retail). Interim and ultimate GFA capacity is adjusted on land with a development approval to reflect the amount of approved GFA by GFA type. Where the amount of existing GFA exceeds the calculated interim or ultimate GFA capacity, the interim or ultimate GFA capacity is adjusted to reflect the existing amount of GFA.

Interim and Ultimate GFA Capacity Formulas:

Unconstrained Development Yield =

Unconstrained Land Area × (1 – Internal Non-Developable Percentage (Table 6)) × Density Assumptions (Appendix A)

80% Development Yield =

80% Yield Constraint Land Area × (1 – Internal Non-Developable Percentage (Table 6)) × Density Assumptions (Appendix A) × 0.8

60% Development Yield =

60% Yield Constraint Land Area × (1 – Internal Non-Developable Percentage (Table 6)) × Density Assumptions (Appendix A) × 0.6

50% Development Yield =

50% Yield Constraint Land Area × (1 – Internal Non-Developable Percentage (Table 6)) × Density Assumptions (Appendix A) × 0.5

GFA Capacity =

Unconstrained Development Yield + 80% Development Yield + 60% Development Yield + 50% Development Yield

The findings from the ultimate GFA capacity analysis are shown in Appendix M.

2.4.8 Interim and Ultimate Employment Capacity

Interim and ultimate employment capacity is calculated at a land parcel level through dividing the ultimate GFA capacity by the employee to GFA ratio assumptions in Table 8. Employee to GFA ratios represent the average employee to GFA ratios for retail, commercial, industrial and community purposes GFA and are consistent with the employee to GFA ratios contained in Table 4. Where the interim or ultimate GFA capacity is equal to the amount of existing GFA, the employee to GFA ratios in Table 4 are utilised.

It should be noted that the Interim and ultimate employment calculated represents the total number of employees per GFA and does not distinguish between type of employment i.e. fulltime, part time etc. or shift work. In determining infrastructure demand, consideration should be given to potential types of employment for particular work places. E.g. It could be assumed a large proportion of hospital, emergency services employees would work in split shifts

The findings from the ultimate employment capacity analysis are shown in Appendix N.

Table 8 - SPP Zones and Employee to GFA Ratio Assumptions

Reporting Category	Employee to GFA Ratio
Retail	45m^2 GFA/employee
Commercial	40m^2 GFA/employee
Industrial	100m^2 GFA/employee
Community Purposes	65m^2 GFA/employee

2.5 Step 4 – Development Sequencing Analysis

The fourth step in the LGIP Planning Assumptions process is the sequencing of development inside and outside the PIA from 2017 to 2036 and beyond.

Development sequencing is undertaken at a land parcel level using timeframes contained and described in Table 9. Development sequencing is used:

- to determine the extent of the PIA;
- to guide growth projections and the provision of trunk infrastructure; and
- as one input to a test of a development's consistency with the LGIP assumptions.

Development sequencing is informed by development probability analysis which examines a range of scored criteria to identify the order of future development from high to low probability. Sections 2.5.1 to 2.5.6 document the methodology and assumptions utilised in the development probability analysis and the guiding principles for development sequencing.

Table 9 - Development Sequence Timeframes

Timing	Description
Existing	Applies to existing development at 2017. No further urban development planned for under the Rockhampton Region Planning Scheme.
2021	Development begins after 10 October 2017 and is fully completed by 10 October 2021.
2026	Development begins after 10 October 2021 and is fully completed by 10 October 2026.
2026+	Staged development, part of the development begins after 10 October 2021 and is completed by 10 October 2026, but the balance of the development is commenced and completed after 10 October 2026.
2031	Development begins after 10 October 2026 and is fully completed by 10 October 2031.
2036	Development begins after 10 October 2031 and is fully completed by 10 October 2036.
2036+	Staged development, part of the development begins after 10 October 2031 and is completed by 10 October 2036, but the balance of the development is commenced and completed after 10 October 2036.

2.5.1 Guiding Principles

Development sequencing is guided by a set of principles that are used consistently across the region including:

- advancing the purpose of the Planning Act through sequencing urban development in areas where adequate infrastructure exists or can be provided efficiently;
- the sub-regional allocation of resident population growth throughout the Rockhampton region;
- sequencing of land to accommodate population growth in a diversity of housing choices to meet housing needs (informed by the Rockhampton Regional Council Population Distribution and Residential Development Study[2]); and
- sequencing of land to accommodate urban based employment growth through the consideration of the employment needs to meet projected resident and non-resident population growth

2.5.2 Sub-Regional Allocation of Resident Population Growth

The Rockhampton region resident population growth projections are benchmarked using the QGSO 2015 Medium Series population projection growth rate. The adoption of the 2015 Medium Series population projections was a decision made by RRC in consideration of the following:

- the historical population growth for the Rockhampton region;
- the extent and scale of residential development approvals across the Rockhampton region;
- the slowdown in economic growth in response to a significant decline in the mining and resources sector and its influence on employment and housing demand.

The QGSO 2018 population projections were not released at the time of the PAM review. Although the 2018 Medium series population projections are lower than the 2015 Medium Series population projections, the growth rates are very similar at 0.9% pa and 1.0% pa respectively. These are consistent with the 10 year (2006-2016) average annual growth rate of 0.9% for the region. The reason the 2018 Medium series population projections are lower than the 2015 Medium Series population projections is due to the projection base year. The 2015 Medium Series population projections base year is 2011, corresponding with 2011 ABS Census population data, with the 2016 population projected to be 85,701. The 2018 Medium series population projections base year is 2016, corresponding with 2016 Census population data, with a 2016 ERP of 81,589. Since 2016 ABS census population data was available, and the most recent QGSO population projections were the 2015 series, PAM was benchmarked using 2016 ABS census population data with the 2015 Medium Series population projection growth rate.

Residential development sequencing and population growth projections are guided by the sub-regional allocation of population growth for the former Rockhampton City, Fitzroy and Mount Morgan Local Government areas. The sub-regional allocation of population growth is informed by analysis of

[2] Rockhampton Regional Council Population Distribution and Residential Development Study November 2010 prepared by Buckley Vann, 99 Consulting and Urban Economics

ABS historical resident population estimates, the extent, distribution and scale of residential development approvals across the Rockhampton region and emerging development activity.

2.5.3 Development Probability Analysis

The development probability analysis method is used to quantitatively assess the probability of future development across the Rockhampton area to assist in the development sequencing of land to meet projected population and employment growth. Development probability analysis involves the consideration of a range of rated criteria to determine the comparative probability of future development. The analysis criteria, description of each criterion and rating criteria are contained in Table 10.

The adopted rating system included the following range of values which are weighted based on comparative significance:

- Very Low: 0
- Low: 25
- Medium: 50
- High: 75
- Very High: 100

The deliverable from the analysis is the calculation of total ratings and production of a development probability map detailing future development probability from very low to very high. In terms of development sequencing, land with the highest development probability is considered for sequencing first followed sequentially down through the development probability ratings. The findings from the development probability analysis are shown on Appendix O.

Table 10 - Development Probability Analysis Criteria

Criteria	Description	Development Probability and Rating Criteria
All Urban and Rural Residential Land Criteria		
Strategic Framework Settlement Pattern Map Designation	Consideration of Strategic Framework Settlement Pattern Map designations as an indicator of Council's preferred high level sequencing of development.	Strategic Framework Settlement Pattern Map designation: • Urban, Urban Infill, Urban renewal, Rural Residential (≥ 5ha): Very High (100) • New Urban Area: High (75) • Future Urban Area: Medium (50)
Vacant Land	Identification of vacant urban and rural residential land. It was assumed that vacant land would have higher market desirability than land with existing development.	• Vacant land: High (75)
Development Approvals	Identification of land with a development approval for a Material Change of Use or Reconfiguration of a Lot (including Preliminary Approvals) within its currency period. Includes development approvals up to October 2017.	• Material Change of Use or Reconfiguration of a Lot approval: Very High (100)
Commercial or Market Viability and Rate of Return	Analysis of the increase in development yield achieved through development as an indicator for commercial or market viability and rate of return. This involved the comparison of existing development and development capacity calculations and the calculation of the percentage (%) increase in development yield (e.g. 10 existing dwellings with development capacity of 20 dwellings is a 100% increase or doubling of yield). Notionally, development of vacant land would have a higher percentage increase in yield compared to an infill or redevelopment site.	Percentage increase in yield: • 0 - 200%: Very Low (0) • 200 – 300%: Low (25) • 300 - 500%: Medium (50) • 500%+: High (75)

Criteria	Description	Development Probability and Rating Criteria
Proximity to Existing Infrastructure	Identification of land in proximity to existing trunk infrastructure or vacant residential lots serviced with infrastructure.	• Vacant residential lot with capacity for one detached dwelling: Very High (100); or Buffer distance: • 0m - 100m: Very High (100) - Water Supply (33.3) - Sewerage (33.3) (Urban land only) - Road (33.3) • 100m - 200m: Medium (50) - Water Supply (16.6) - Sewerage (16.6) (Urban land only) - Road (16.6) • 200m+: Very Low (0)
State or Local Government Owned Land	Identification of land owned by State or Local Government. Development of Government owned land will be addressed as part of the declaration of State Interest and Council consultation processes.	• Government ownership: Very Low (0) • Not Government owned: Very High (100)
Additional Residential Zoned Land Criteria		
Proximity to Incompatible and/or Undesirable Existing Land Uses	Identification of land in proximity to incompatible and/or undesirable existing land uses including: • Special Industries; • Extractive Industries; • Detention Facilities; • Intensive Animal Industries; • Utility Installations (Waste Management Facilities); • Cemeteries.	Buffer distance: • 0m - 50m: Very Low (0) • 50m - 100m: Low (25) • 100m+: Medium (50)
Proximity to Commercial Centres	Identification of land in proximity to zoned commercial centres as an indicator of proximity to services and employment.	Buffer distance: • 0km - 1km: Medium (50) • 1km - 5km: Low (25) • 5km - 10km: Very Low (0)

Criteria	Description	Development Probability and Rating Criteria
Proximity to Lifestyle Attractors	Identification of land in proximity to lifestyle attractors as an indicator of market desirability including: • Schools or Universities; • Beaches, waterways and lakes; • Parks and sport and recreation facilities;	Buffer distance: • 0m - 500m: Medium (50) • 500m - 5km: Low (25) • 5km - 10km: Very Low (0)
Investment Properties	Land in ownership by a company or trust as an indicator of an investment property and not the principal place of residence.	• Land in ownership by a company or trust or rating address not principal place of residence: Medium (50)

2.5.4 Residential Development Sequencing

Residential land is sequenced using ABS Census 5 year cohorts for Rockhampton City, Fitzroy and Mount Morgan areas. At each cohort, land is sequenced based on the selection of land with the highest development probability until the calculated cumulative total sub-regional population reaches the adopted sub-regional population projection benchmark. This iterative process is continued for 2021, 2026, 2031 and 2036 cohorts through sequencing land based on highest through to lowest development probability. The sequencing of land is supported through internal Council and external development industry consultation.

Residential development sequencing is shown in Appendix P.

2.5.5 Non-Residential Development Sequencing

Non-residential land is sequenced using ABS Census 5 year cohorts. At each cohort, land is sequenced based on the selection of land with the highest development probability until the calculated cumulative employment total reaches comparable employment projection benchmarks. This iterative process is continued for 2021, 2026, 2031 and 2036 cohorts through sequencing land based on highest through to lowest development probability.

Non-residential development sequencing is shown in Appendix P.

2.5.6 Sequencing Ground-Truthing

A ground-truthing exercise is then performed on the sequenced parcels to test the sequencing against local knowledge of what is likely to occur (particularly for greenfield parcels). Where required, the sequencing is then updated to reflect this local knowledge while still ensuring that population and employment projections match sub-regional benchmarks.

This process is performed to pick up sequencing that may not be in-line with local knowledge of an area and is an acknowledgement that the Planning Assumptions Model process cannot possibly capture all of the factors that affect the sequencing of development. As the development of a Planning Assumptions Model can take some time, this ground-truthing exercise also picks up significant land use changes and development approvals that may have occurred since the beginning of the process.

2.6 Step 5 – Priority Infrastructure Area

The fifth step in the LGIP Planning Assumptions process is determining the PIA. The PIA shows Rockhampton Regional Council's intent to sequence the supply of trunk infrastructure to accommodate anticipated urban development in the most efficient way. The PIA includes sufficient urban greenfield and infill land to accommodate population and employment growth up to October 2036.

The PIA is a two dimensional extent consisting of multiple geographically discreet areas and is to be read in combination with development sequencing assumptions detailed in Appendix P. The PIA aligns with development sequencing assumptions and includes land sequenced to complete development by October 2036 (includes Existing, 2021, 2026, 2031 and 2036 timeframes).

Land sequenced to commence development after October 2036 is outside the PIA and primarily applies to infill and redevelopment areas inside the PIA or greenfield land outside the PIA that are not required for 15 to 20 years of growth. The PIA aligns with the Rockhampton Region Planning Scheme Strategic Framework Settlement Pattern Maps urban and new urban designations, and includes some future urban areas in Gracemere.

The PIA is shown in Appendix Q.

2.7 Step 6 – Growth Projections

The sixth step in the LGIP Planning Assumptions process is the preparation of dwelling, population, GFA and employment growth projections. Growth projections are prepared at a land parcel level in the PAM, exported and summarised by PAM Reporting Areas. Reporting areas are based on QLD gazetted localities that were amalgamated in areas outside the PIA to form a balance area. The Gracemere reporting area is split in to two areas (Gracemere North and Gracemere South) to enable the mapping of the areas at a comparable scale. PAM Reporting Areas are shown in Appendix E.

2.8 Step 7 – Planning Assumptions Report

The seventh step in the LGIP Planning Assumptions process is the preparation of the PAR. The PAR contains the planning assumptions and growth projections underpinning the PAM.

This PAR is structured to:

- document the methodology and assumptions used to prepare dwelling, population, GFA and employment planning assumptions and the timing of development (development sequence);
- present and discuss dwelling, population, GFA, employment projections and development sequence; and
- identify a PIA;

3. Central Queensland University Rockhampton Priority Development Area

The Central Queensland University (CQU) Rockhampton Priority Development Area (PDA) was declared on 9 December 2011 and on 26 April 2013 the CQU Rockhampton PDA Development Scheme was approved by the state government. The PDA covers 189 hectares and is located approximately 5km north of Rockhampton Central Business District in the suburbs of Norman Gardens and Parkhurst. The PDA will combine educational, cultural, retail, recreational, commercial and community facilities with a wide range of residential developments. The PDA, once fully developed, could provide up to 1500 dwellings

Recent discussions with the State Government have indicated that development of the PDA is unlikely to occur in the foreseeable future and as such growth to the CQU Rockhampton PDA has not been incorporated into the PAM forecasts (2017-2036). The PDA site is still included within the PIA but does not have any proposed growth apportioned to it. Due to the significant size and scale of the PDA, it is expected that its development will significantly influence growth in other areas, particularly Parkhurst.

4. Dwelling and Population Planning Assumptions

4.1 Estimated Resident and Non-Resident Population

The LGIP planning assumptions include assumptions on the estimated resident population (ERP) and non-resident population (NRP). The inclusion of the NRP was required to allow the total infrastructure demand to be considered during infrastructure planning. It is noted that the benchmark Queensland Government population projections only include projections for the ERP. NRP data is not available through the Queensland Government and was calculated as part of the PAM process. The NRP is the estimated number of persons who reside in non-resident accommodation, including tourist parks, relocatable home parks, short-term accommodation, hotels, rooming accommodation and hospitals.

In the Rockhampton planning area, the omission of the NRP would result in an approximate 5% under estimation of population within the PIA in 2017 and an approximate 6% under estimation of population within the PIA in 2036. This highlights the significance of accounting for the non-resident population.

4.2 Base Year (2017)

4.2.1 Population

As of 10 October 2017, the estimated resident population of the Rockhampton region was modelled in the PAM to be 82,841 persons with a non-resident population of 4,352 persons. The total 2017 population (ERP plus NRP) was calculated to be 87,193. The estimated resident population inside the PIA was modelled in the PAM to be 73,818 persons with 9,023 persons residing outside the PIA. Figure 1 shows the 2017 ERP inside the PIA for each Reporting Area.

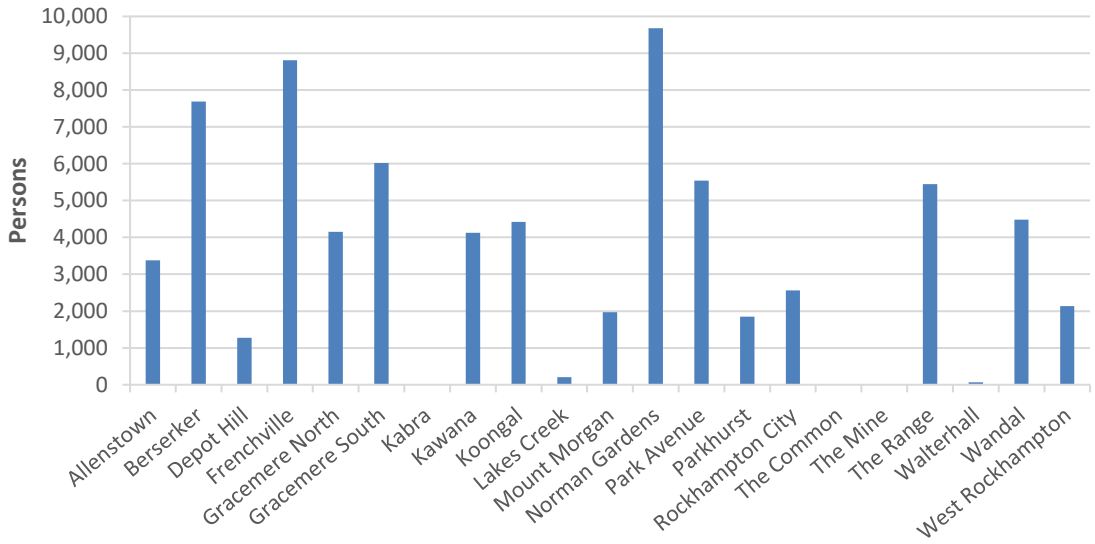

Figure 1 – Existing (2017) ERP inside the PIA by Reporting Area

4.2.2 Dwellings

As of 10 October 2017, the total number of dwellings was modelled in the PAM to be 39,536 dwellings, consisting of 30,033 dwelling houses, 1,801 dual occupancies, 4,118 multiple dwellings and 3,584 other dwellings. Figure 2 shows the 2017 dwelling mix across the Rockhampton region.

The total number of dwellings inside the PIA as of 10 October 2017 was 35,814 dwellings, consisting of 26,461 dwelling houses, 1,798 dual occupancies, 4,011 multiple dwellings and 3,543 other dwellings. Figure 3 shows the 2017 dwelling mix inside the PIA. Of note is the lower percentage of dwelling houses and the increased percentage of multiple and other dwellings inside the PIA compared to the entire Rockhampton region.

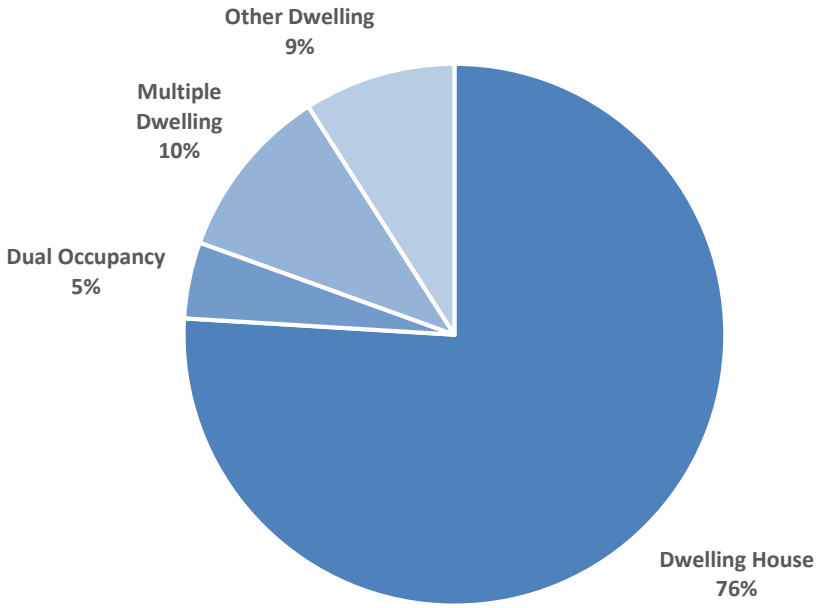

Figure 2 - Existing (2017) Dwelling Mix within the Rockhampton Regional Council Area

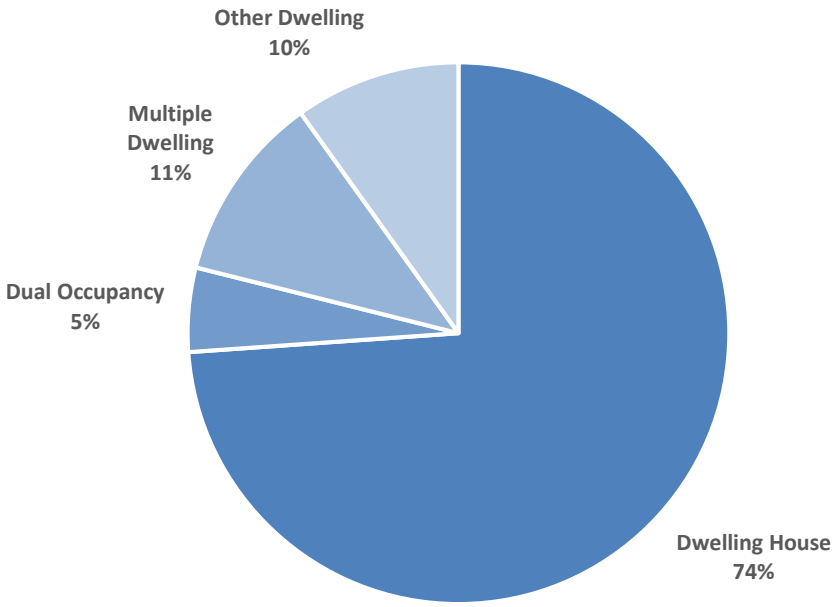

Figure 3 - Existing (2017) Dwelling Mix within the Priority Infrastructure Area

4.3 Growth Projections

The following sections provide a summary of residential development and projected population growth for each projection cohort. Table 19 and Table 20 contain dwelling and population projections for the area inside the PIA (grouped by Reporting Area), totals for inside and outside the PIA and the regional total. Reporting Areas with no population inside the PIA were only included in the totals for outside the PIA and were not included individually in the tables. PAM Reporting Area boundaries are shown in Appendix E.

4.3.1 2021 Projection

As of 10 October 2021, the estimated resident population of the Rockhampton region is projected in the PAM to be 86,104 persons with 76,934 persons inside the PIA and 9,169 persons outside the PIA. The non-resident population is projected to be 4,528 persons, with the total population projected to be 90,631 persons.

Figure 4 shows Estimated Resident Population growth inside the PIA between 2017 and 2021 by Reporting Area. As demonstrated by Figure 4, the greatest amount of population growth inside the PIA is projected in Norman Gardens, Gracemere South, and Parkhurst. Figure 5 shows the projected 2021 dwelling mix across the Rockhampton region.

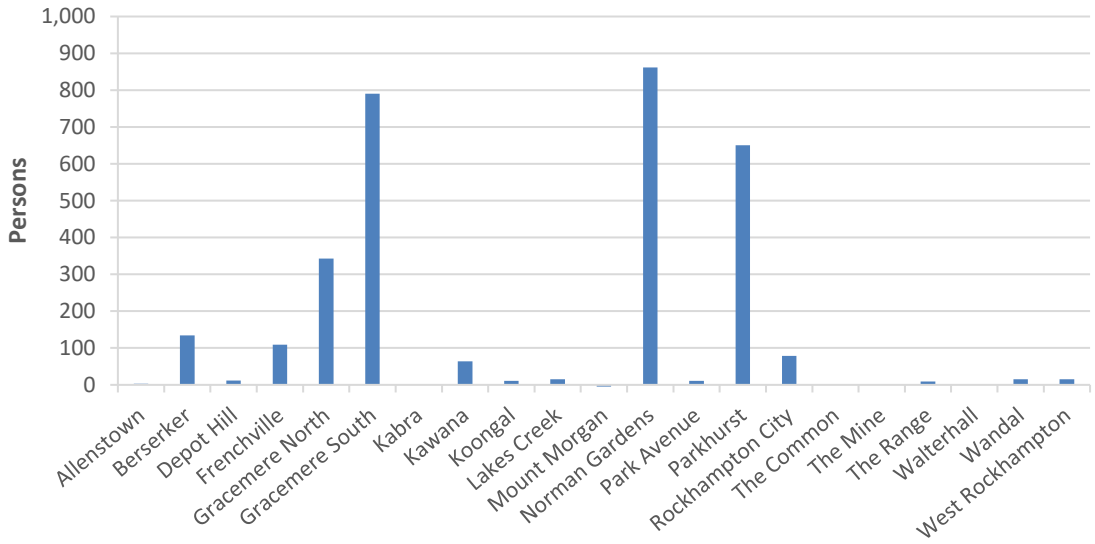

Figure 4 - Existing (2017) to 2021 Population Growth (ERP) inside the PIA by Reporting Area

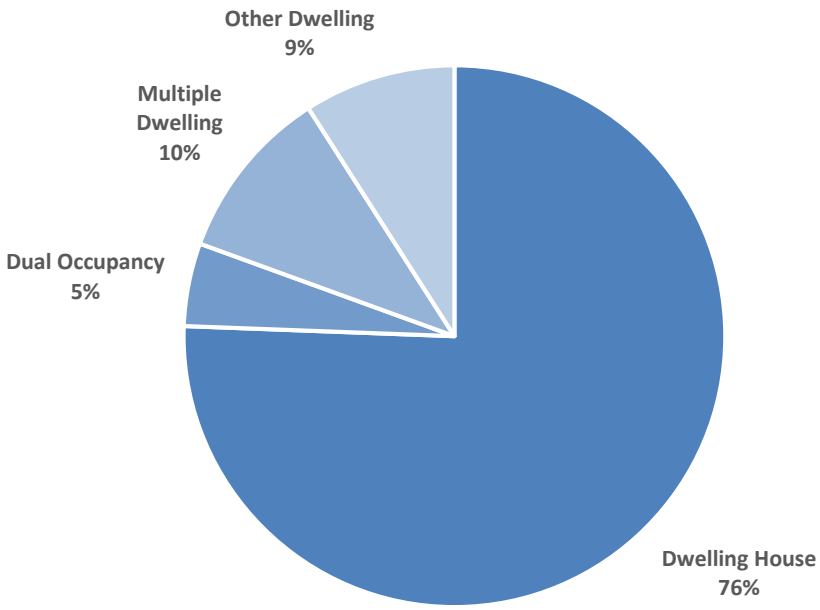

Figure 5 - 2021 Dwelling Mix within the Rockhampton Regional Council Area

4.3.2 2026 Projection

As of 10 October 2026, the estimated resident population of the Rockhampton region is projected in the PAM to be 89,623 persons with 80,348 persons inside the PIA and 9,275 persons outside the PIA. The non-resident population is projected to be 5,363 persons, with the total population projected to be 94,986 persons.

Figure 6 shows estimated resident population growth inside the PIA between 2021 and 2026 by Reporting Area. As demonstrated by Figure 6, the greatest amount of population growth is projected in Parkhurst and Gracemere.

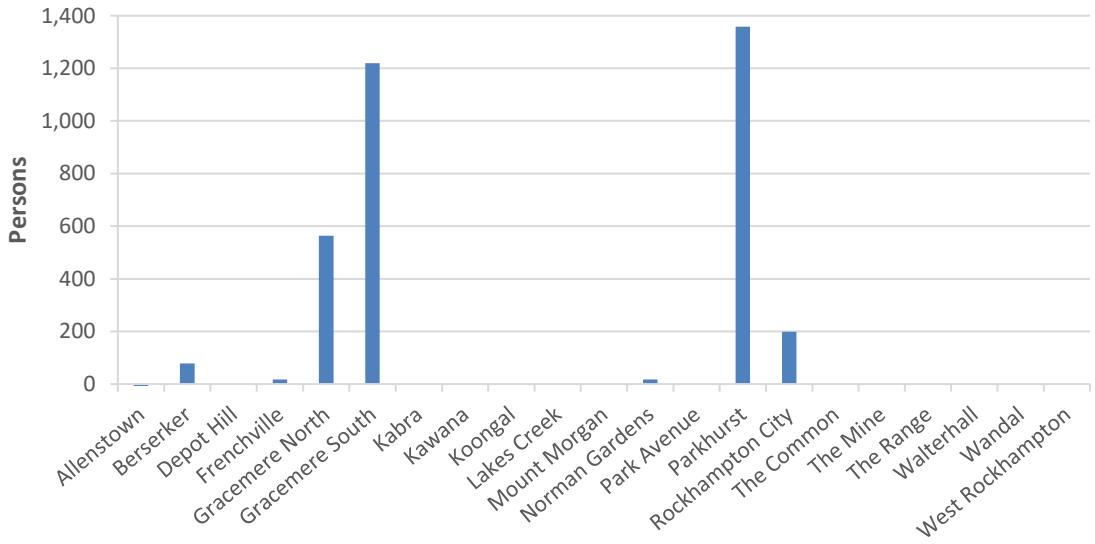

Figure 6 - 2021 to 2026 Population Growth (ERP) inside the PIA by Reporting Area

Figure 7 shows the projected 2026 dwelling mix across the Rockhampton region. A comparison of the 2026 dwelling mix with the 2021 dwelling mix shows that the percentage of dwelling houses decreases to 74% and multiple dwellings and other dwellings increase to 11% and 10% respectively.

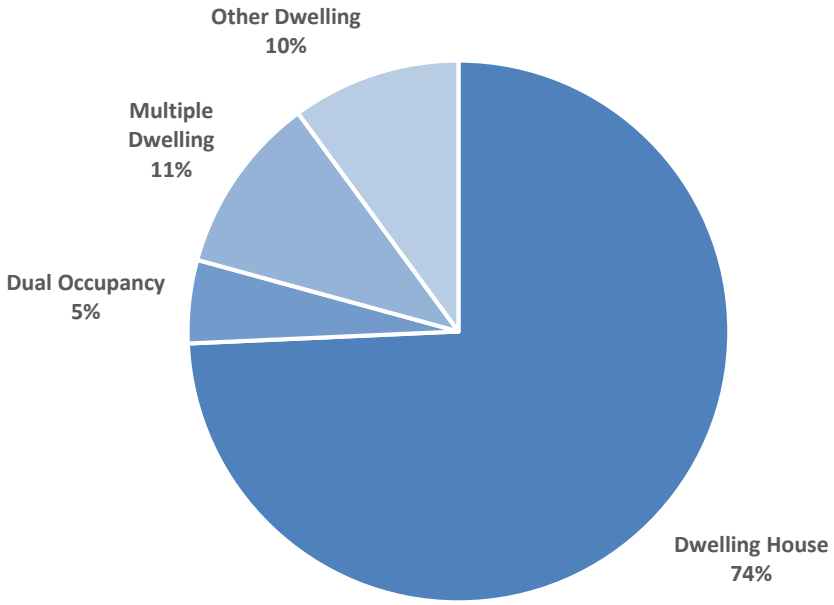

Figure 7 - 2026 Dwelling Mix within the Rockhampton Regional Council Area

4.3.3 2031 Projection

As of 10 October 2031, the estimated resident population of the Rockhampton region is projected in the PAM to be 94,448 persons with 85,173 persons inside the PIA and 9,275 persons outside the PIA. The non-resident population is projected to be 5,864 persons, with the total population projected to be 100,312 persons.

Figure 8 shows estimated resident population growth inside the PIA between 2026 and 2031 by Reporting Area. As demonstrated by Figure 8, the greatest amount of population growth is projected in Parkhurst and Gracemere. Figure 9 shows the projected 2031 dwelling mix across the Rockhampton region.

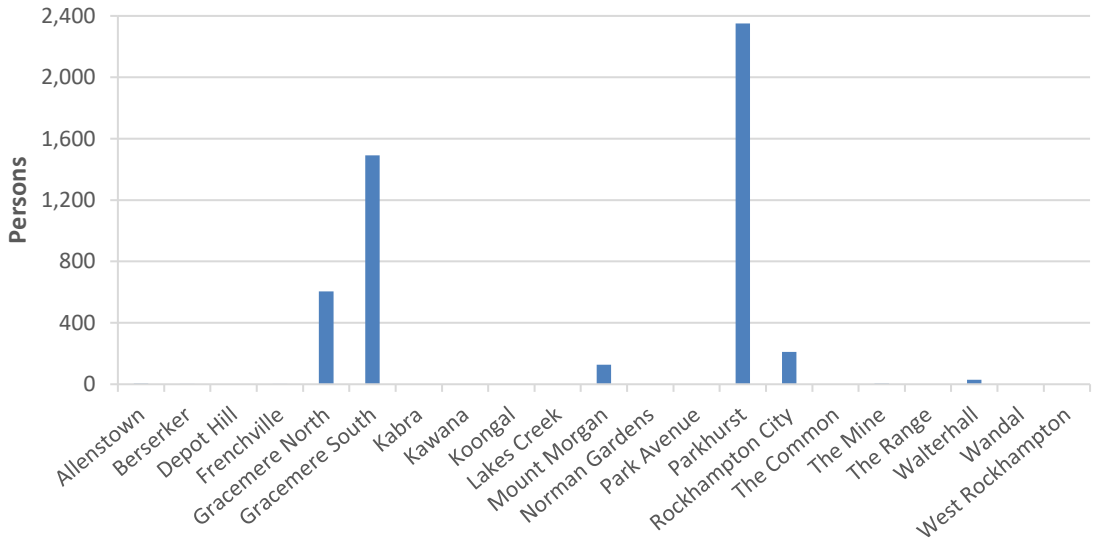

Figure 8 - 2026 to 2031 Population Growth (ERP) inside the PIA by Reporting Area

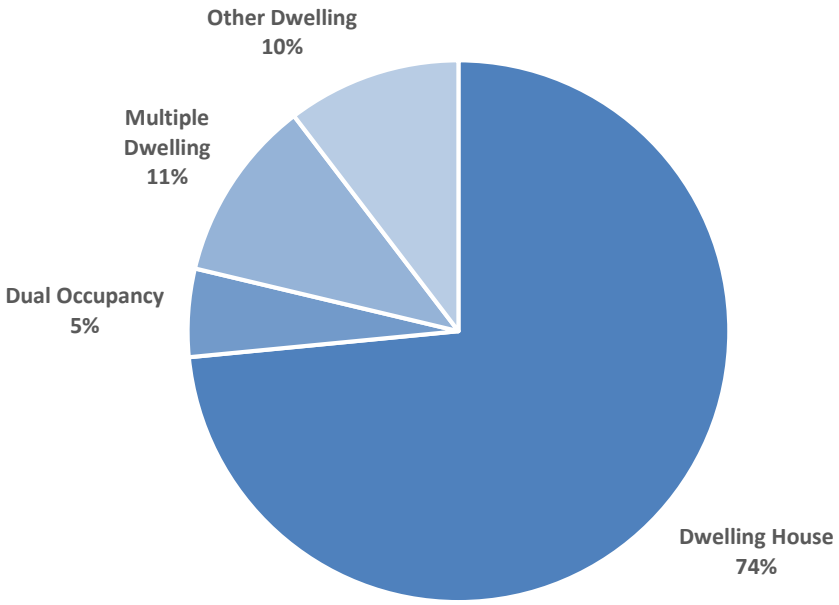

Figure 9 - 2031 Dwelling Mix within the Rockhampton Regional Council Area

4.3.4 2036 Projection

As of 10 October 2036, the estimated resident population of the Rockhampton region is projected in the PAM to be 98,237 persons with 88,960 persons inside the PIA and 9,277 persons outside the PIA. The non-resident population is projected to be 6,146 persons, with the total population projected to be 104,383 persons.

Figure 10 shows estimated resident population growth inside the PIA between 2031 and 2036 by Reporting Area. As demonstrated by Figure 10, the greatest amount of population growth is projected in Parkhurst and Gracemere South. Figure 11 shows the projected 2031 dwelling mix across the Rockhampton region.

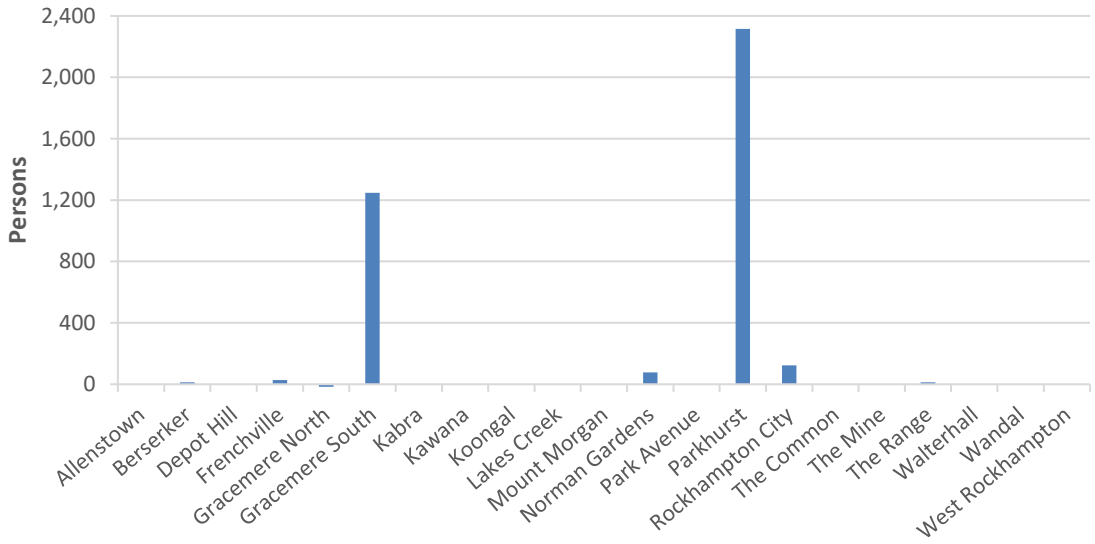

Figure 10 - 2031 to 2036 Population Growth (ERP) inside the PIA by Reporting Area

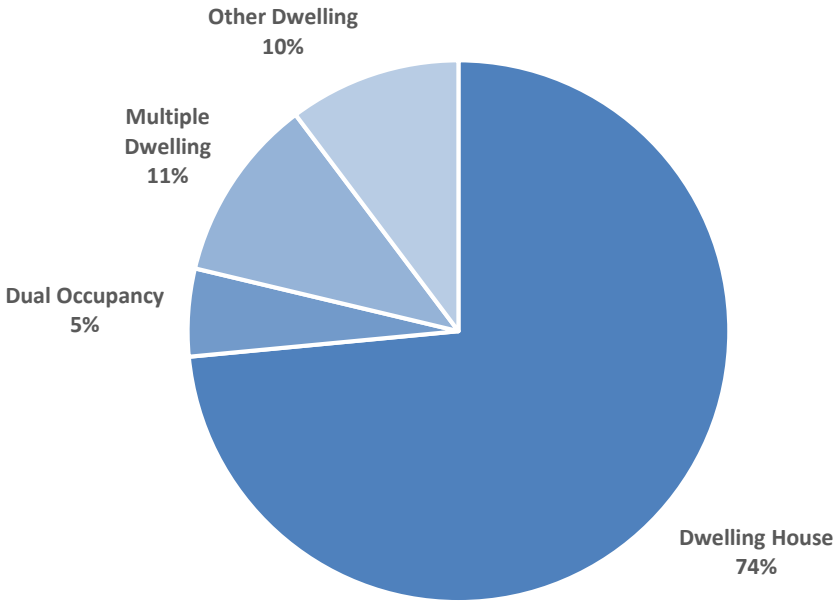

Figure 11 - 2036 Dwelling Mix within the Rockhampton Regional Council Area

4.4 Ultimate Development

Ultimate development refers to the development yield possible if development is consistent with the Rockhampton Region Planning Scheme for land parcels having regard to allowable uses, development densities, lot size, internal road, park and drainage allowances, development constraints and development approvals. Ultimate development yield for the region is limited by zoned land within the Rockhampton Region Planning Scheme and should not be considered a cap or constraint on growth within region.

Based on ultimate population capacity analysis, the ultimate resident population is modelled in the PAM to be 131,915 persons with 116,199 persons inside the PIA and 15,716 persons outside the PIA. The non-resident population is projected to be 20,489 persons, with the total population projected to be 152,404 persons. This ultimate population identifies the total resident and non-resident population that can be accommodated within the identified settlement pattern of the planning scheme.

Figure 12 shows the ultimate resident population capacity for Reporting Areas with an ERP greater than 500 persons. As demonstrated in Figure 12, the three Reporting Areas with the highest population capacity are Parkhurst, Gracemere South and Norman Gardens.

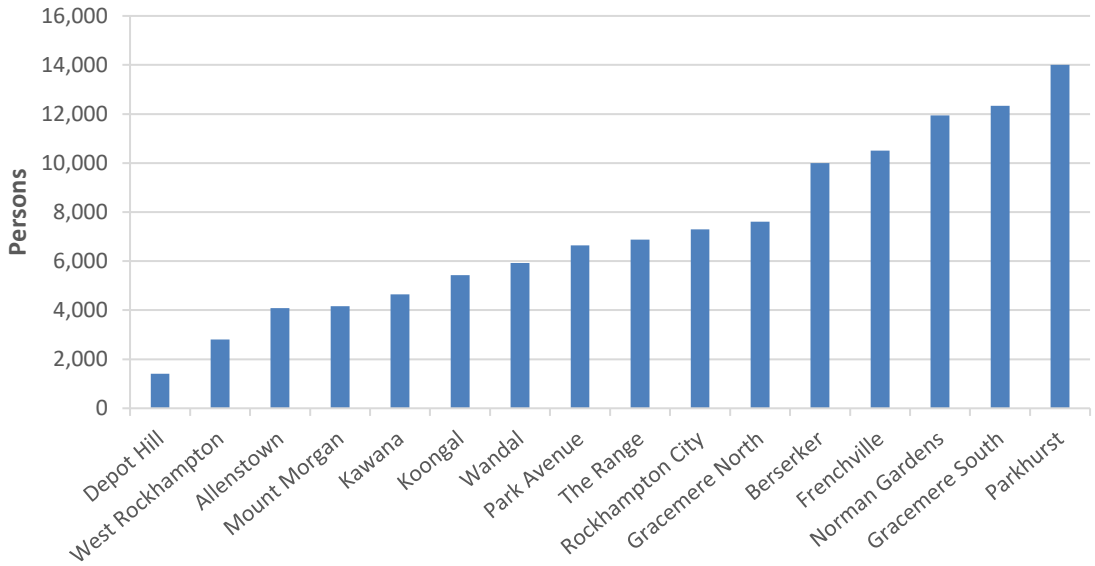

Figure 12 - Ultimate Population Capacity (ERP) by Reporting Area (where ERP > 500)

Figure 13 shows the dwelling mix at ultimate development across the Rockhampton region. As demonstrated in Figure 13, the ultimate dwelling mix permissible under the Rockhampton Region Planning Scheme sees a decrease in the percentage of dwelling houses and an increase in the percentage of dual occupancies and other dwellings. The significant increase in the percentage of dual occupancies is attributable to the high prevalence of lot sizes in infill areas that meet the lot size criteria for the building of dual occupancy dwellings under the Planning Scheme. Many of these parcels have existing dwelling houses on them and would require redevelopment to achieve this ultimate density.

The significant increase in the percentage of other dwellings is attributable to the multistorey buildings allowable in the Principal Centre and High Density Residential zones within Rockhampton's Central Business District. Many of these parcels have existing uses on them and would require redevelopment to achieve this ultimate density.

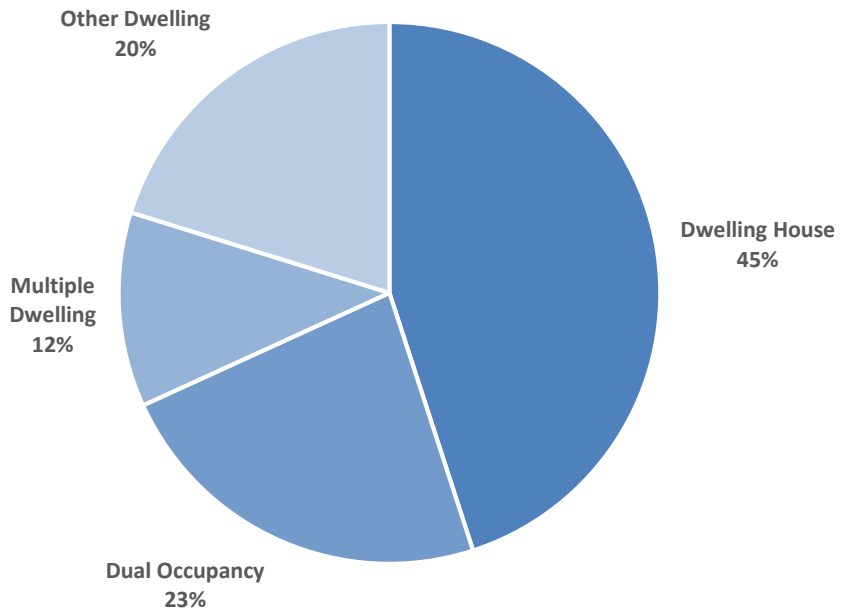

Figure 13 - Ultimate Dwelling Mix within the Rockhampton Regional Council Area

Table 11 - Existing and Projected Dwellings

Reporting Area	Reporting Category	Dwellings Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
Allenstown	Dwelling House	1,033	1,033	1,017	1,017	1,017	1,097
	Dual Occupancy	81	81	81	83	83	318
	Multiple Dwelling	460	460	460	460	460	502
	Other Dwelling	751	768	768	769	769	943
	Total Dwellings	**2,325**	**2,342**	**2,326**	**2,329**	**2,329**	**2,860**
Berserker	Dwelling House	2,679	2,703	2,716	2,716	2,722	2,464
	Dual Occupancy	169	172	174	174	174	1,368
	Multiple Dwelling	540	585	612	614	614	1,067
	Other Dwelling	233	233	214	214	160	113
	Total Dwellings	**3,621**	**3,692**	**3,716**	**3,718**	**3,670**	**5,011**
Depot Hill	Dwelling House	505	505	505	505	505	457
	Dual Occupancy	2	10	10	10	10	162
	Multiple Dwelling	5	5	5	5	5	4
	Other Dwelling	11	11	11	11	11	0
	Total Dwellings	**523**	**531**	**531**	**531**	**531**	**623**
Frenchville	Dwelling House	3,280	3,307	3,310	3,311	3,322	2,888
	Dual Occupancy	252	276	276	277	277	1,860
	Multiple Dwelling	196	197	204	204	204	206
	Other Dwelling	0	0	0	0	0	33
	Total Dwellings	**3,728**	**3,780**	**3,790**	**3,791**	**3,802**	**4,987**
Gracemere North	Dwelling House	1,537	1,634	1,817	2,021	2,017	1,706
	Dual Occupancy	64	97	113	125	125	1,561
	Multiple Dwelling	76	83	112	136	136	375

Reporting Area	Reporting Category	Dwellings Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
	Other Dwelling	25	25	30	36	37	435
	Total Dwellings	**1,702**	**1,840**	**2,072**	**2,317**	**2,315**	**4,077**
Gracemere South	Dwelling House	2,268	2,528	2,942	3,444	3,870	3,231
	Dual Occupancy	45	71	96	126	151	2,055
	Multiple Dwelling	91	115	132	192	242	294
	Other Dwelling	20	20	20	20	20	0
	Total Dwellings	**2,424**	**2,734**	**3,191**	**3,781**	**4,284**	**5,581**
Kabra	Dwelling House	1	1	1	1	0	0
	Dual Occupancy	0	0	0	0	0	0
	Multiple Dwelling	0	0	0	0	0	0
	Other Dwelling	0	0	0	0	0	0
	Total Dwellings	**1**	**1**	**1**	**1**	**0**	**0**
Kawana	Dwelling House	1,441	1,454	1,454	1,454	1,454	1,284
	Dual Occupancy	198	212	212	212	212	801
	Multiple Dwelling	188	189	189	189	189	105
	Other Dwelling	13	13	13	13	13	0
	Total Dwellings	**1,840**	**1,868**	**1,868**	**1,868**	**1,868**	**2,190**
Koongal	Dwelling House	1,597	1,598	1,598	1,598	1,598	1,428
	Dual Occupancy	122	124	124	124	124	976
	Multiple Dwelling	197	197	197	197	197	199
	Other Dwelling	21	21	21	21	21	12
	Total Dwellings	**1,937**	**1,940**	**1,940**	**1,940**	**1,940**	**2,615**
Lakes Creek	Dwelling House	81	87	87	87	87	50
	Dual Occupancy	0	0	0	0	0	98

Reporting Area	Reporting Category	Dwellings Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
	Multiple Dwelling	0	0	0	0	0	0
	Other Dwelling	0	0	0	0	0	0
	Total Dwellings	**81**	**87**	**87**	**87**	**87**	**148**
Mount Morgan	Dwelling House	1,003	1,000	1,000	1,022	1,020	1,024
	Dual Occupancy	8	8	8	58	60	1,207
	Multiple Dwelling	48	48	48	48	48	57
	Other Dwelling	18	18	18	19	20	83
	Total Dwellings	**1,077**	**1,074**	**1,074**	**1,147**	**1,148**	**2,371**
Norman Gardens	Dwelling House	3,365	3,633	3,671	3,671	3,702	3,091
	Dual Occupancy	385	425	425	425	425	2,170
	Multiple Dwelling	494	528	528	528	528	434
	Other Dwelling	268	268	268	268	268	195
	Total Dwellings	**4,512**	**4,854**	**4,892**	**4,892**	**4,923**	**5,890**
Park Avenue	Dwelling House	1,991	1,994	1,994	1,994	1,994	1,544
	Dual Occupancy	198	200	200	200	200	1,574
	Multiple Dwelling	223	223	223	223	223	176
	Other Dwelling	93	93	93	93	93	0
	Total Dwellings	**2,505**	**2,510**	**2,510**	**2,510**	**2,510**	**3,293**
Parkhurst	Dwelling House	706	913	1,357	2,096	2,941	4,637
	Dual Occupancy	23	82	157	310	361	917
	Multiple Dwelling	0	6	132	264	365	597
	Other Dwelling	164	164	164	164	164	172
	Total Dwellings	**893**	**1,165**	**1,811**	**2,834**	**3,831**	**6,323**
Rockhampton City	Dwelling House	742	762	757	747	742	661

Reporting Area	Reporting Category	Dwellings Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
	Dual Occupancy	46	46	44	44	44	4
	Multiple Dwelling	492	518	659	816	908	3,759
	Other Dwelling	1,606	1,663	2,299	2,656	2,813	13,401
	Total Dwellings	**2,886**	**2,988**	**3,758**	**4,263**	**4,507**	**17,825**
The Common	Dwelling House	0	0	0	0	0	0
	Dual Occupancy	0	0	0	0	0	0
	Multiple Dwelling	0	0	0	0	0	0
	Other Dwelling	0	0	0	0	0	0
	Total Dwellings	**0**	**0**	**0**	**0**	**0**	**0**
The Mine	Dwelling House	9	9	9	9	9	31
	Dual Occupancy	0	0	0	2	2	6
	Multiple Dwelling	0	0	0	0	0	0
	Other Dwelling	0	0	0	0	0	0
	Total Dwellings	**9**	**9**	**9**	**11**	**11**	**38**
The Range	Dwelling House	1,782	1,783	1,783	1,783	1,786	1,489
	Dual Occupancy	90	94	94	94	98	1,336
	Multiple Dwelling	668	668	668	668	668	678
	Other Dwelling	321	383	403	424	447	434
	Total Dwellings	**2,861**	**2,928**	**2,948**	**2,970**	**2,999**	**3,937**
Walterhall	Dwelling House	33	33	33	42	42	59
	Dual Occupancy	0	0	0	6	6	28
	Multiple Dwelling	0	0	0	0	0	0
	Other Dwelling	0	0	0	0	0	0
	Total Dwellings	**33**	**33**	**33**	**48**	**48**	**87**

Reporting Area	Reporting Category	Dwellings Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
Wandal	Dwelling House	1,608	1,612	1,612	1,612	1,612	1,761
	Dual Occupancy	49	53	53	53	53	664
	Multiple Dwelling	304	304	304	304	304	305
	Other Dwelling	0	0	0	0	0	0
	Total Dwellings	**1,961**	**1,969**	**1,969**	**1,969**	**1,969**	**2,730**
West Rockhampton	Dwelling House	801	802	802	802	802	581
	Dual Occupancy	66	74	74	74	74	812
	Multiple Dwelling	30	30	30	30	30	34
	Other Dwelling	0	0	0	0	0	0
	Total Dwellings	**897**	**906**	**906**	**906**	**906**	**1,427**
Total Inside PIA	Dwelling House	26,461	27,391	28,465	29,930	31,240	29,483
	Dual Occupancy	1,798	2,026	2,143	2,397	2,480	17,916
	Multiple Dwelling	4,011	4,154	4,502	4,877	5,121	8,793
	Other Dwelling	3,543	3,679	4,321	4,707	4,835	15,821
	Total Dwellings	**35,814**	**37,250**	**39,431**	**41,911**	**43,676**	**72,013**
Total Outside PIA	Dwelling House	3,571	3,623	3,664	3,664	3,667	5,850
	Dual Occupancy	3	5	5	5	5	284
	Multiple Dwelling	106	106	106	106	106	328
	Other Dwelling	41	41	41	41	41	36
	Total Dwellings	**3,722**	**3,776**	**3,816**	**3,816**	**3,819**	**6,498**
Total Regional Area	Dwelling House	30,033	31,015	32,129	33,594	34,906	35,333
	Dual Occupancy	1,801	2,031	2,148	2,402	2,485	18,199
	Multiple Dwelling	4,118	4,260	4,608	4,983	5,227	9,121
	Other Dwelling	3,584	3,720	4,362	4,748	4,876	15,857

Reporting Area	Reporting Category	Dwellings Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
	Total Dwellings	**39,536**	**41,026**	**43,247**	**45,727**	**47,495**	**78,511**

Note: Sum of data may not equal totals due to rounding

Table 12 - Existing and Projected Population

Reporting Area	Reporting Category	Population Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
Allenstown	Dwelling House	2,583	2,586	2,546	2,546	2,543	2,743
	Dual Occupancy	113	113	113	117	117	508
	Multiple Dwelling	597	597	597	597	597	752
	Other Dwelling	85	85	85	85	85	85
	Total ERP	**3,379**	**3,381**	**3,341**	**3,344**	**3,342**	**4,088**
	Total NRP	**892**	**914**	**914**	**915**	**915**	**1,226**
Berserker	Dwelling House	6,698	6,760	6,793	6,793	6,805	6,159
	Dual Occupancy	237	241	245	245	245	2,188
	Multiple Dwelling	702	769	810	812	813	1,601
	Other Dwelling	51	51	51	51	51	51
	Total ERP	**7,687**	**7,821**	**7,899**	**7,901**	**7,914**	**10,000**
	Total NRP	**252**	**252**	**227**	**227**	**157**	**147**
Depot Hill	Dwelling House	1,263	1,261	1,261	1,261	1,261	1,143
	Dual Occupancy	3	16	16	16	16	259
	Multiple Dwelling	7	7	7	7	7	6
	Other Dwelling	0	0	0	0	0	0
	Total ERP	**1,272**	**1,283**	**1,283**	**1,283**	**1,283**	**1,408**
	Total NRP	**14**	**14**	**14**	**14**	**14**	**0**
Frenchville	Dwelling House	8,199	8,267	8,275	8,277	8,304	7,221
	Dual Occupancy	353	392	392	392	392	2,976
	Multiple Dwelling	255	256	267	267	267	309
	Other Dwelling	0	0	0	0	0	0
	Total ERP	**8,807**	**8,916**	**8,934**	**8,936**	**8,964**	**10,505**

Reporting Area	Reporting Category	Population Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
	Total NRP	**0**	**0**	**0**	**0**	**0**	**42**
Gracemere North	Dwelling House	3,996	4,276	4,759	5,308	5,292	4,536
	Dual Occupancy	70	124	149	168	168	2,497
	Multiple Dwelling	75	85	140	177	177	562
	Other Dwelling	14	14	14	14	14	14
	Total ERP	**4,155**	**4,498**	**5,061**	**5,667**	**5,650**	**7,608**
	Total NRP	**19**	**19**	**26**	**33**	**35**	**552**
Gracemere South	Dwelling House	5,897	6,611	7,729	9,083	10,225	8,600
	Dual Occupancy	50	91	131	179	215	3,289
	Multiple Dwelling	75	110	171	260	329	442
	Other Dwelling	0	0	0	0	0	0
	Total ERP	**6,021**	**6,811**	**8,031**	**9,522**	**10,769**	**12,330**
	Total NRP	**26**	**26**	**26**	**26**	**26**	**0**
Kabra	Dwelling House	3	3	3	3	0	0
	Dual Occupancy	0	0	0	0	0	0
	Multiple Dwelling	0	0	0	0	0	0
	Other Dwelling	0	0	0	0	0	0
	Total ERP	**3**	**3**	**3**	**3**	**0**	**0**
	Total NRP	**0**	**0**	**0**	**0**	**0**	**0**
Kawana	Dwelling House	3,603	3,636	3,636	3,636	3,636	3,210
	Dual Occupancy	277	307	307	307	307	1,281
	Multiple Dwelling	244	246	246	246	246	157
	Other Dwelling	0	0	0	0	0	0
	Total ERP	**4,124**	**4,188**	**4,188**	**4,188**	**4,188**	**4,649**

Reporting Area	Reporting Category	Population Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
	Total NRP	**16**	**16**	**16**	**16**	**16**	**0**
Koongal	Dwelling House	3,992	3,999	3,999	3,999	3,994	3,570
	Dual Occupancy	171	174	174	174	174	1,561
	Multiple Dwelling	256	256	256	256	256	298
	Other Dwelling	0	0	0	0	0	0
	Total ERP	**4,419**	**4,430**	**4,430**	**4,430**	**4,424**	**5,430**
	Total NRP	**27**	**27**	**27**	**27**	**27**	**16**
Lakes Creek	Dwelling House	203	218	218	218	218	125
	Dual Occupancy	0	0	0	0	0	157
	Multiple Dwelling	0	0	0	0	0	0
	Other Dwelling	0	0	0	0	0	0
	Total ERP	**203**	**218**	**218**	**218**	**218**	**282**
	Total NRP	**0**	**0**	**0**	**0**	**0**	**0**
Mount Morgan	Dwelling House	1,905	1,900	1,900	1,947	1,942	2,150
	Dual Occupancy	18	18	18	98	101	1,932
	Multiple Dwelling	43	43	43	43	43	86
	Other Dwelling	0	0	0	0	0	0
	Total ERP	**1,966**	**1,961**	**1,961**	**2,088**	**2,086**	**4,167**
	Total NRP	**23**	**23**	**23**	**24**	**26**	**108**
Norman Gardens	Dwelling House	8,415	9,161	9,179	9,179	9,256	7,730
	Dual Occupancy	539	604	604	604	604	3,471
	Multiple Dwelling	642	693	693	693	693	652
	Other Dwelling	86	86	86	86	86	86
	Total ERP	**9,682**	**10,543**	**10,561**	**10,561**	**10,638**	**11,939**

Reporting Area	Reporting Category	Population Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
	Total NRP	**262**	**262**	**262**	**262**	**262**	**168**
Park Avenue	Dwelling House	4,977	4,984	4,984	4,984	4,984	3,859
	Dual Occupancy	277	280	280	280	280	2,518
	Multiple Dwelling	290	290	290	290	290	264
	Other Dwelling	0	0	0	0	0	0
	Total ERP	**5,544**	**5,555**	**5,555**	**5,555**	**5,555**	**6,641**
	Total NRP	**121**	**121**	**121**	**121**	**121**	**0**
Parkhurst	Dwelling House	1,765	2,313	3,422	5,270	7,352	11,593
	Dual Occupancy	32	126	247	491	572	1,467
	Multiple Dwelling	0	9	137	396	548	896
	Other Dwelling	55	55	55	55	55	52
	Total ERP	**1,852**	**2,502**	**3,861**	**6,211**	**8,527**	**14,008**
	Total NRP	**159**	**159**	**159**	**159**	**159**	**198**
Rockhampton City	Dwelling House	1,855	1,904	1,891	1,866	1,854	1,652
	Dual Occupancy	64	64	62	62	62	6
	Multiple Dwelling	639	669	883	1,120	1,258	5,639
	Other Dwelling	0	0	0	0	0	0
	Total ERP	**2,558**	**2,637**	**2,836**	**3,047**	**3,173**	**7,297**
	Total NRP	**2,088**	**2,162**	**2,988**	**3,452**	**3,772**	**17,421**
The Common	Dwelling House	0	0	0	0	0	0
	Dual Occupancy	0	0	0	0	0	0
	Multiple Dwelling	0	0	0	0	0	0
	Other Dwelling	0	0	0	0	0	0
	Total ERP	**0**	**0**	**0**	**0**	**0**	**0**

Reporting Area	Reporting Category	Population Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
	Total NRP	**0**	**0**	**0**	**0**	**0**	**0**
The Mine	Dwelling House	17	17	17	17	17	66
	Dual Occupancy	0	0	0	3	3	10
	Multiple Dwelling	0	0	0	0	0	1
	Other Dwelling	0	0	0	0	0	0
	Total ERP	**17**	**17**	**17**	**20**	**20**	**76**
	Total NRP	**0**	**0**	**0**	**0**	**0**	**0**
The Range	Dwelling House	4,456	4,459	4,459	4,459	4,464	3,722
	Dual Occupancy	126	132	132	132	139	2,138
	Multiple Dwelling	868	868	868	868	869	1,017
	Other Dwelling	0	0	0	0	0	0
	Total ERP	**5,450**	**5,459**	**5,459**	**5,459**	**5,472**	**6,877**
	Total NRP	**417**	**497**	**524**	**552**	**581**	**564**
Walterhall	Dwelling House	63	63	63	81	81	124
	Dual Occupancy	0	0	0	10	10	45
	Multiple Dwelling	0	0	0	0	0	0
	Other Dwelling	0	0	0	0	0	0
	Total ERP	**63**	**63**	**63**	**91**	**91**	**169**
	Total NRP	**0**	**0**	**0**	**0**	**0**	**0**
Wandal	Dwelling House	4,020	4,029	4,029	4,029	4,029	4,403
	Dual Occupancy	69	75	75	75	75	1,062
	Multiple Dwelling	395	395	395	395	395	457
	Other Dwelling	0	0	0	0	0	0
	Total ERP	**4,484**	**4,499**	**4,499**	**4,499**	**4,499**	**5,923**

Reporting Area	Reporting Category	Population Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
	Total NRP	**0**	**0**	**0**	**0**	**0**	**0**
West Rockhampton	Dwelling House	2,002	2,005	2,005	2,005	2,005	1,453
	Dual Occupancy	92	105	105	105	105	1,299
	Multiple Dwelling	39	39	39	39	39	51
	Other Dwelling	0	0	0	0	0	0
	Total ERP	**2,134**	**2,149**	**2,149**	**2,149**	**2,149**	**2,803**
	Total NRP	**0**	**0**	**0**	**0**	**0**	**0**
Total Inside PIA	Dwelling House	65,910	68,450	71,167	74,960	78,262	74,057
	Dual Occupancy	2,491	2,863	3,050	3,457	3,584	28,665
	Multiple Dwelling	5,127	5,332	5,841	6,466	6,826	13,189
	Other Dwelling	290	290	290	290	290	287
	Total ERP	**73,818**	**76,934**	**80,348**	**85,173**	**88,960**	**116,199**
	Total NRP	**4,316**	**4,493**	**5,328**	**5,829**	**6,111**	**20,442**
	Total Population	**78,134**	**81,427**	**85,676**	**91,002**	**95,071**	**136,641**
Total Outside PIA	Dwelling House	8,863	9,006	9,111	9,111	9,113	14,753
	Dual Occupancy	4	7	7	7	7	454
	Multiple Dwelling	138	138	138	138	138	492
	Other Dwelling	18	18	18	18	18	18
	Total ERP	**9,023**	**9,169**	**9,275**	**9,275**	**9,277**	**15,716**
	Total NRP	**35**	**35**	**35**	**35**	**35**	**47**
	Total Population	**9,058**	**9,204**	**9,310**	**9,310**	**9,312**	**15,763**
Total Regional Area	Dwelling House	74,772	77,456	80,278	84,071	87,376	88,809
	Dual Occupancy	2,496	2,870	3,057	3,465	3,592	29,119
	Multiple Dwelling	5,265	5,470	5,980	6,604	6,964	13,681

Reporting Area	Reporting Category	Population Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
	Other Dwelling	308	308	308	308	308	306
	Total ERP	**82,841**	**86,104**	**89,623**	**94,448**	**98,237**	**131,915**
	Total NRP	**4,352**	**4,528**	**5,363**	**5,864**	**6,146**	**20,489**
	Total Population	**87,193**	**90,631**	**94,986**	**100,312**	**104,383**	**152,404**

Note: Sum of data may not equal totals due to rounding

5. Gross Floor Area and Employment Planning Assumptions

5.1 Base Year (2017)

5.1.1 Employment

As of 10 October 2017, the number of persons in urban based employment in the Rockhampton region was modelled in the PAM to be 37,786 persons. Urban based employment inside the PIA was modelled in the PAM to be 36,532 persons with 1,254 persons employed outside the PIA. As shown in Figure 14, the Reporting Areas with the largest urban based employment inside the PIA are Rockhampton City, Park Avenue and Berserker.

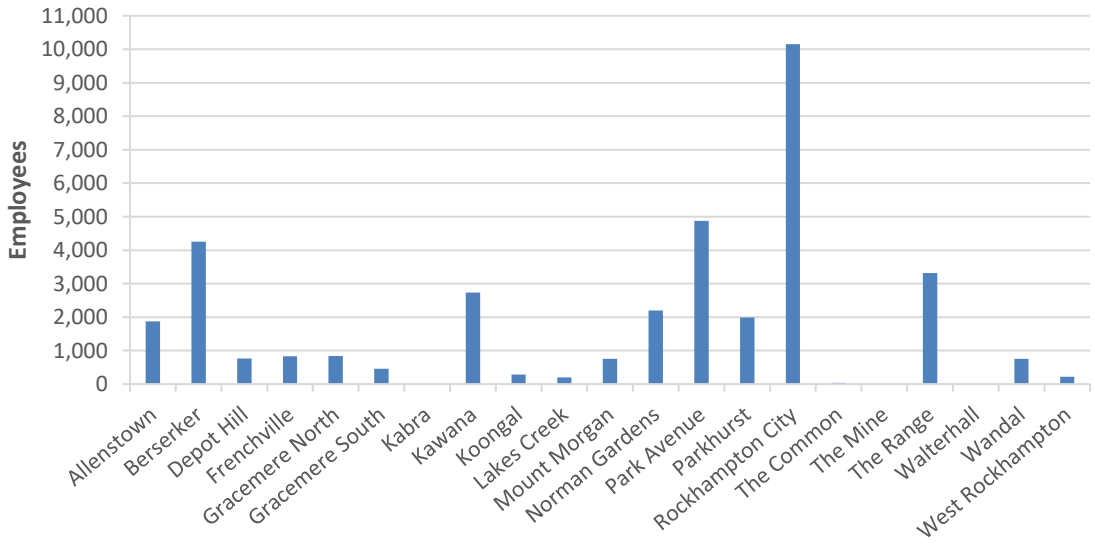

Figure 14 - Existing (2017) Urban Based Employment inside the PIA by Reporting Area

5.1.2 Gross Floor Area

As of 10 October 2017, the amount of urban GFA in the Rockhampton region was modelled in the PAM to be 2,261,787 m^2 GFA (226 ha). Urban GFA inside the PIA was calculated to be 2,110,747 m^2 GFA (211 ha) with 151,040 m^2 GFA (15 ha) located outside the PIA.

5.2 Growth Projections

The following sections provide a summary of non-residential development and projected employment growth for each projection cohort. Table 21 and Table 22 contain GFA and employment projections within the PIA for each Reporting Area, totals for inside and outside the PIA and the area total. Reporting Areas with no employment inside the PIA were not included in the tables. PAM Reporting Area boundaries are shown in Appendix E.

5.2.1 2021 Projection

As of 10 October 2021, urban based employment in the Rockhampton area is projected in the PAM to be 40,976 persons with 39,702 employed persons inside the PIA and 1,274 employed persons outside the PIA. Figure 15 shows projected employment growth inside the PIA between 2017 and 2021 by Reporting Area. As demonstrated in Figure 15, the greatest amount of employment growth is projected in Rockhampton City and The Range. This reflects employment growth in the retail and commercial sectors and in health and education.

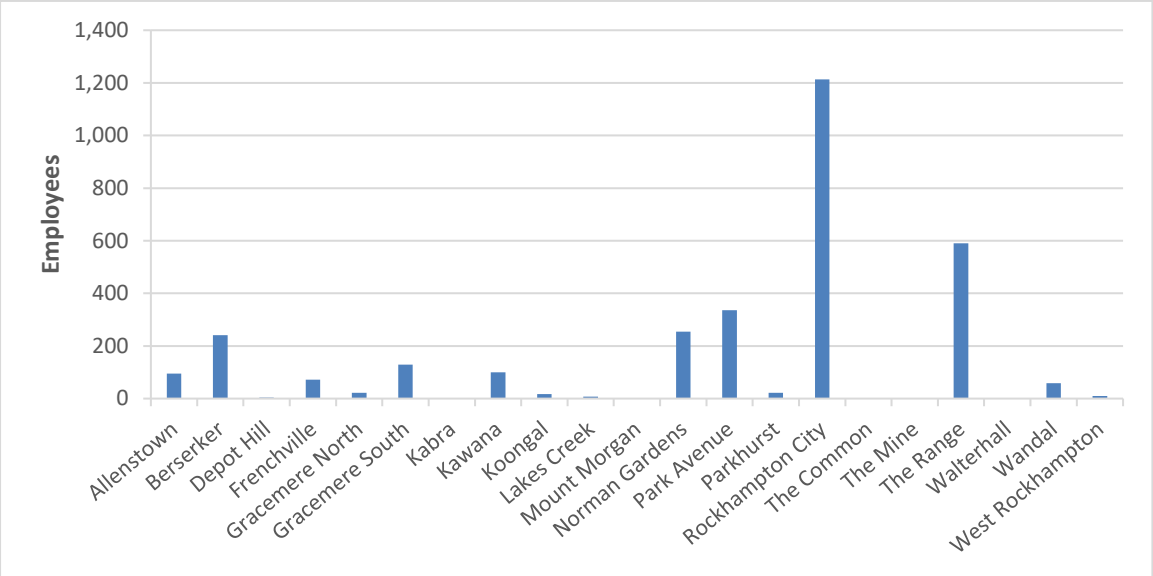

Figure 15 - Existing (2017) to 2021 Employment Growth inside the PIA by Reporting Area

5.2.2 2026 Projection

As of 10 October 2026, urban based employment in the Rockhampton region is projected in the PAM to be 43,504 persons with 42,218 employed persons inside the PIA and 1,286 employed persons outside the PIA. Figure 16 shows projected employment growth inside the PIA between 2021 and 2026 by Reporting Area. As demonstrated in Figure 16, the greatest amount of employment growth is projected in Rockhampton City and Gracemere. This reflects retail and commercial employment growth within the Principal Centre and Gracemere District Centre and industrial employment growth within the GIA.

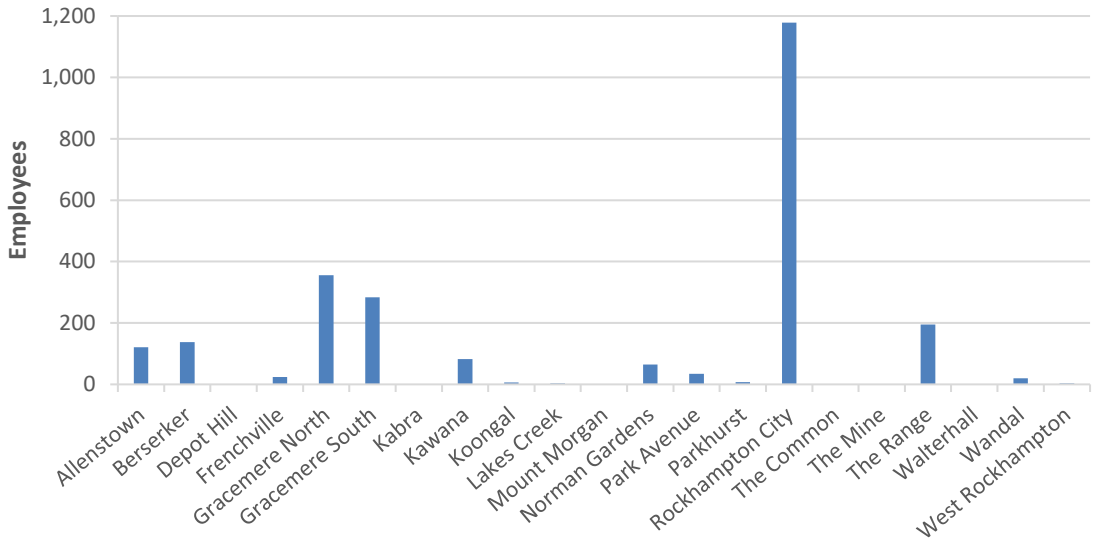

Figure 16 - 2021 to 2026 Employment Growth inside the PIA by Reporting Area

5.2.3 2031 Projection

As of 10 October 2031, urban based employment in the Rockhampton region is projected in the PAM to be 45,313 persons with 44,013 employed persons inside the PIA and 1,300 employed persons outside the PIA. Figure 17 shows projected employment growth inside the PIA between 2026 and 2031 by Reporting Area. As demonstrated in Figure 17, the greatest amount of employment growth is projected in Rockhampton City, The Range and Gracemere South. Again, the Principal Centre is projected to experience the highest employment growth.

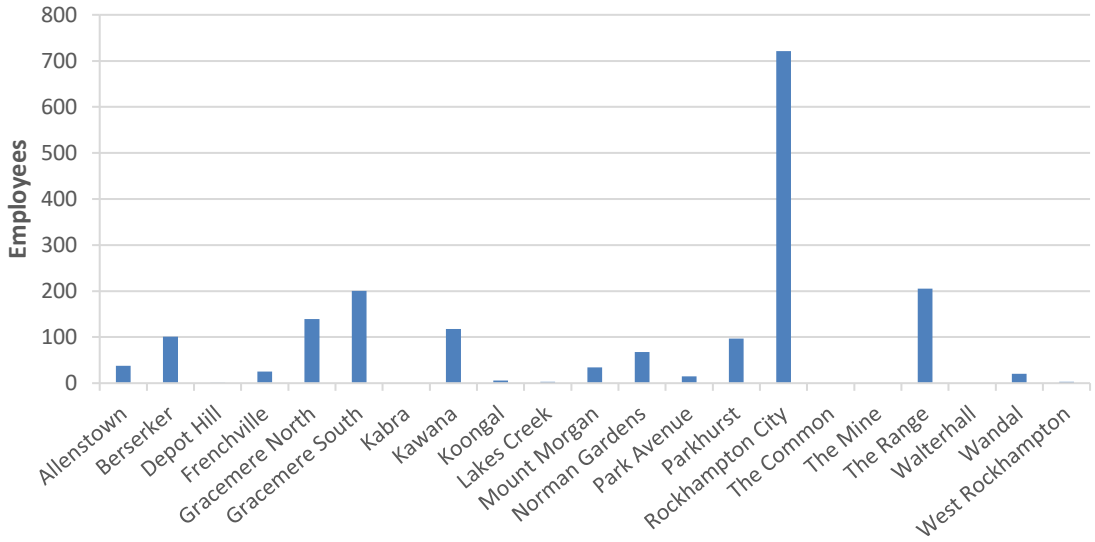

Figure 17 - 2026 to 2031 Employment Growth inside the PIA by Reporting Area

5.2.4 2036 Projection

As of 10 October 2036, urban based employment in the Rockhampton region is projected in the PAM to be 47,760 persons with 46,447 employed persons inside the PIA and 1,314 employed persons outside the PIA. Figure 18 shows projected employment growth inside the PIA between 2031 and 2036 by Reporting Area. As demonstrated in Figure 18, the greatest amount of employment growth is projected in Rockhampton City, Berserker and Gracemere South.

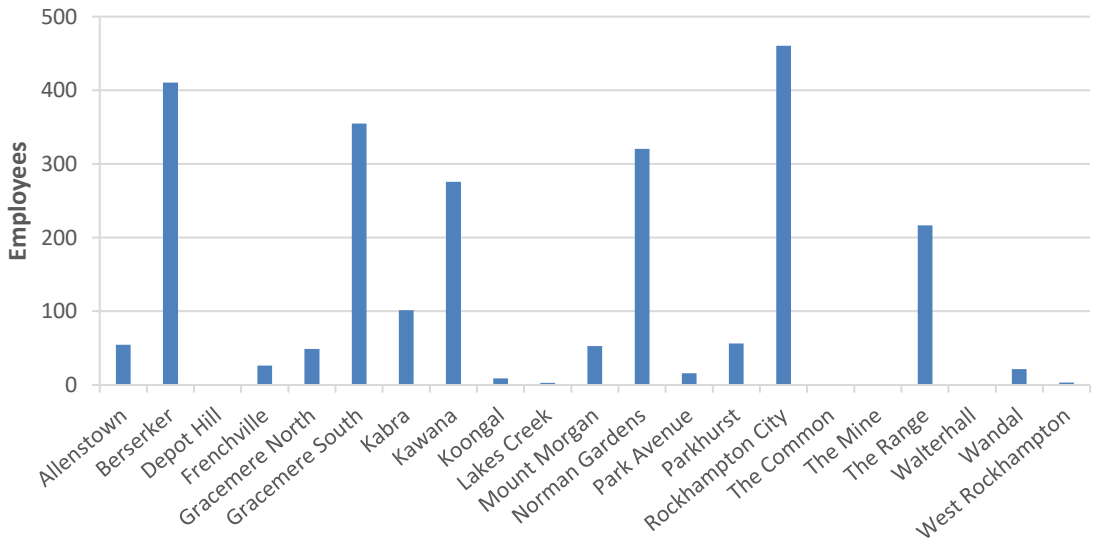

Figure 18 - 2031 to 2036 Employment Growth inside the PIA by Reporting Area

5.3 Ultimate Development

Ultimate development refers to the development yield permissible under the Rockhampton Region Planning Scheme for land parcels having regard to allowable uses, development densities, lot size, internal road, park and drainage allowances, development constraints and development approvals. Ultimate development yield for the region is limited by zoned land within the Rockhampton Region Planning Scheme and should not be considered a cap or constraint on growth within region.

Based on ultimate GFA and employment capacity analysis, the ultimate urban based employment is modelled in the PAM to be 219,822 persons with 154,639 employed persons inside the PIA and 65,183 employed persons outside the PIA. This ultimate employment identifies the total employment that can be generated within the identified settlement pattern of the planning scheme.

Figure 19 shows the ultimate employment capacity for Reporting Areas with number of employees greater than 200 persons. As demonstrated in Figure 19, the Reporting Areas with the employment include Rockhampton City, Berserker, Norman Gardens and Park Avenue.

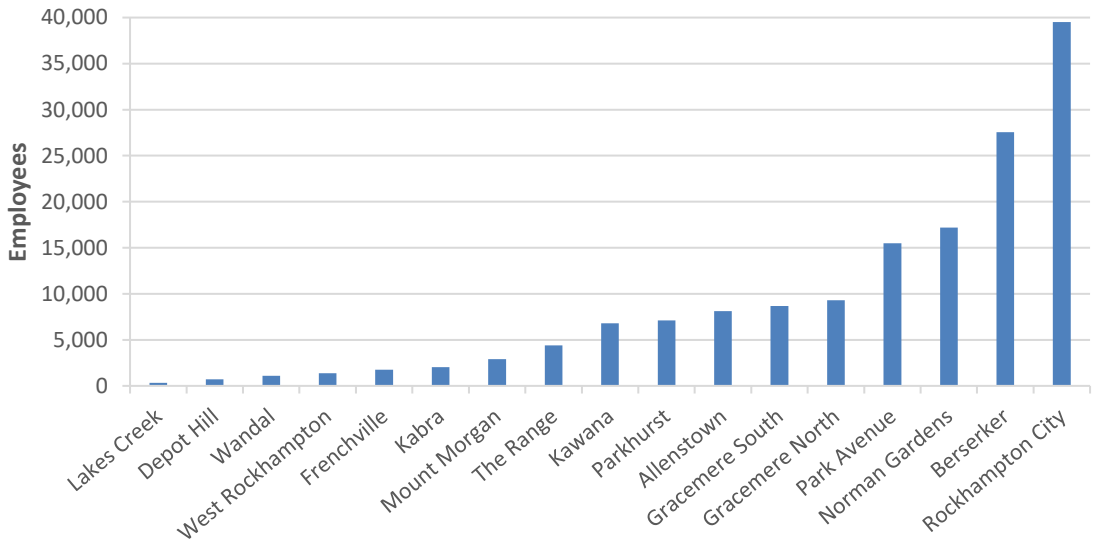

Figure 19 - Ultimate Employment Capacity by Reporting Area (where Employees > 200)

Table 13 - Existing and Projected Non-Residential Gross Floor Area (m^2)

Reporting Area	Reporting Category	Gross Floor Area (m^2) Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
Allenstown	Retail	42,074	43,483	48,185	48,918	50,473	276,539
	Commercial	33,018	34,718	34,718	34,828	34,828	16,521
	Industrial	16,248	16,248	16,905	16,905	17,942	87,330
	Community Purposes	25,531	29,360	30,624	31,957	33,363	33,363
	Total GFA	**116,871**	**123,809**	**130,432**	**132,607**	**136,606**	**413,753**
Berserker	Retail	98,304	103,563	107,262	110,203	122,228	880,896
	Commercial	41,315	45,033	46,582	47,262	51,077	264,024
	Industrial	16,067	13,889	13,889	15,170	16,570	98,571
	Community Purposes	25,246	28,723	29,870	31,080	32,422	33,136
	Total GFA	**180,932**	**191,207**	**197,602**	**203,715**	**222,297**	**1,276,627**
Depot Hill	Retail	2,412	2,412	2,412	2,412	2,412	9
	Commercial	8,278	8,278	8,278	8,278	8,278	8,149
	Industrial	39,000	39,000	39,000	39,000	39,000	36,408
	Community Purposes	2,239	2,482	2,563	2,647	2,737	2,737
	Total GFA	**51,929**	**52,172**	**52,253**	**52,337**	**52,427**	**47,303**
Frenchville	Retail	8,479	8,479	8,479	8,479	8,479	52,206
	Commercial	10,850	10,850	10,850	10,850	10,850	0
	Industrial	792	792	792	792	792	0
	Community Purposes	31,119	35,929	37,517	39,192	40,959	41,701
	Total GFA	**51,240**	**56,051**	**57,639**	**59,313**	**61,081**	**93,907**
Gracemere North	Retail	20,818	20,818	35,707	39,806	41,023	332,886
	Commercial	9,365	9,766	10,412	11,025	11,281	44,155
	Industrial	15,245	15,245	15,245	17,631	18,379	60,356

Reporting Area	Reporting Category	Gross Floor Area (m^2) Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
	Community Purposes	10,374	11,561	11,953	12,366	12,802	12,802
	Total GFA	**55,802**	**57,390**	**73,317**	**80,827**	**83,485**	**450,199**
Gracemere South	Retail	1,595	1,595	1,595	1,595	1,595	0
	Commercial	1,782	1,782	1,782	1,782	1,782	0
	Industrial	33,108	44,627	72,507	92,102	127,072	847,001
	Community Purposes	4,717	5,661	5,972	6,301	6,647	14,207
	Total GFA	**41,201**	**53,664**	**81,855**	**101,779**	**137,095**	**861,208**
Kabra	Retail	0	0	0	0	0	0
	Commercial	0	0	0	0	0	0
	Industrial	0	0	0	0	10,142	202,848
	Community Purposes	0	0	0	0	0	0
	Total GFA	**0**	**0**	**0**	**0**	**10,142**	**202,848**
Kawana	Retail	18,146	18,146	18,146	18,146	18,146	69,613
	Commercial	15,773	15,773	15,773	15,773	15,773	8,627
	Industrial	167,527	170,204	176,017	185,256	210,146	453,834
	Community Purposes	26,433	31,550	33,239	35,020	36,900	36,900
	Total GFA	**227,879**	**235,673**	**243,175**	**254,196**	**280,965**	**568,974**
Koongal	Retail	4,892	4,892	4,892	4,892	4,892	3
	Commercial	1,994	1,994	1,994	1,994	1,994	0
	Industrial	1,704	1,704	1,704	1,704	1,969	700
	Community Purposes	8,633	9,826	10,220	10,635	11,073	11,259
	Total GFA	**17,223**	**18,416**	**18,810**	**19,225**	**19,928**	**11,962**
Lakes Creek	Retail	0	0	0	0	0	0
	Commercial	0	0	0	0	0	0

Reporting Area	Reporting Category	Gross Floor Area (m^2) Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
	Industrial	23,840	23,840	23,840	23,840	23,840	28,804
	Community Purposes	2,723	3,268	3,448	3,637	3,837	3,837
	Total GFA	**26,564**	**27,108**	**27,288**	**27,478**	**27,678**	**32,641**
Mount Morgan	Retail	13,606	13,611	13,611	14,858	16,804	111,214
	Commercial	5,999	5,999	5,999	6,233	6,598	1,895
	Industrial	174	174	174	174	174	0
	Community Purposes	24,027	24,027	24,027	24,027	24,027	24,027
	Total GFA	**43,807**	**43,812**	**43,812**	**45,292**	**47,603**	**137,136**
Norman Gardens	Retail	62,470	73,494	73,494	73,494	84,707	707,863
	Commercial	20,143	20,893	20,893	20,893	20,893	7,099
	Industrial	6,172	6,172	6,172	6,172	6,172	0
	Community Purposes	74,252	87,883	92,381	97,126	102,133	102,133
	Total GFA	**163,038**	**188,443**	**192,941**	**197,686**	**213,905**	**817,094**
Park Avenue	Retail	86,000	100,142	100,142	100,142	91,744	586,109
	Commercial	35,940	35,940	36,640	36,640	36,640	7,947
	Industrial	91,970	91,970	91,970	91,970	91,970	154,923
	Community Purposes	22,919	25,955	26,957	28,014	29,129	29,129
	Total GFA	**236,828**	**254,007**	**255,709**	**256,766**	**249,483**	**778,108**
Parkhurst	Retail	22,803	22,803	22,803	22,803	22,803	82,275
	Commercial	14,387	14,387	14,387	14,387	14,387	9,202
	Industrial	157,543	157,543	157,543	166,454	171,273	501,371
	Community Purposes	8,109	9,220	9,587	9,974	10,382	10,382
	Total GFA	**202,842**	**203,953**	**204,320**	**213,617**	**218,844**	**603,230**
Rockhampton City	Retail	138,949	170,640	198,847	215,642	224,761	958,048

Reporting Area	Reporting Category	Gross Floor Area (m^2) Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
	Commercial	165,524	185,010	193,060	198,117	201,483	453,049
	Industrial	100,618	102,105	102,105	102,249	102,611	102,175
	Community Purposes	50,413	50,570	52,123	53,758	55,479	56,379
	Total GFA	**455,503**	**508,325**	**546,135**	**569,766**	**584,335**	**1,569,651**
The Common	Retail	674	674	674	674	674	674
	Commercial	0	0	0	0	0	0
	Industrial	0	0	0	0	0	0
	Community Purposes	7,032	7,032	7,032	7,032	7,032	7,032
	Total GFA	**7,706**	**7,706**	**7,706**	**7,706**	**7,706**	**7,706**
The Mine	Retail	0	0	0	0	0	0
	Commercial	0	0	0	0	0	0
	Industrial	0	0	0	0	0	0
	Community Purposes	0	0	0	0	0	0
	Total GFA	**0**	**0**	**0**	**0**	**0**	**0**
The Range	Retail	3,637	3,637	3,637	3,637	3,637	1,735
	Commercial	27,085	27,085	27,085	27,085	27,085	17,605
	Industrial	0	0	0	0	0	0
	Community Purposes	115,878	138,198	145,564	153,335	161,533	162,286
	Total GFA	**146,599**	**168,919**	**176,285**	**184,056**	**192,254**	**181,626**
Walterhall	Retail	0	0	0	0	0	0
	Commercial	0	0	0	0	0	0
	Industrial	0	0	0	0	0	0
	Community Purposes	0	0	0	0	0	0
	Total GFA	**0**	**0**	**0**	**0**	**0**	**0**

Reporting Area	Reporting Category	Gross Floor Area (m^2) Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
Wandal	Retail	10,190	10,190	10,190	10,190	10,190	20,989
	Commercial	8,028	8,028	8,028	8,028	8,028	4,309
	Industrial	4,106	4,106	4,106	4,106	4,106	3,206
	Community Purposes	51,772	55,867	57,218	58,644	60,147	60,147
	Total GFA	**74,096**	**78,191**	**79,542**	**80,968**	**82,472**	**88,652**
West Rockhampton	Retail	1,512	1,512	1,512	1,512	1,512	12,768
	Commercial	2,350	2,350	2,350	2,350	2,350	25,537
	Industrial	3,350	3,350	3,350	3,350	3,350	1,508
	Community Purposes	3,472	4,133	4,351	4,581	4,823	30,190
	Total GFA	**10,685**	**11,345**	**11,563**	**11,793**	**12,036**	**70,003**
Total Inside PIA	Retail	536,560	600,089	651,587	677,402	706,080	4,093,827
	Commercial	401,831	427,886	438,830	445,524	453,326	868,118
	Industrial	677,466	690,971	725,321	766,877	845,510	2,579,035
	Community Purposes	494,890	561,246	584,644	609,326	635,427	671,648
	Total GFA	**2,110,747**	**2,280,192**	**2,400,382**	**2,499,128**	**2,640,342**	**8,212,627**
Total Outside PIA	Retail	9,438	9,438	9,438	9,438	9,438	4,612
	Commercial	21,810	21,810	21,810	21,810	21,810	8,581
	Industrial	87,893	87,893	87,893	87,893	87,893	6,464,252
	Community Purposes	31,899	33,404	33,901	34,426	34,979	46,914
	Total GFA	**151,040**	**152,546**	**153,043**	**153,567**	**154,120**	**6,524,360**
Total Regional Area	Retail	545,998	609,528	661,025	686,840	715,518	4,098,439
	Commercial	423,641	449,696	460,641	467,334	475,136	876,699
	Industrial	765,359	778,864	813,214	854,770	933,403	9,043,287
	Community Purposes	526,789	594,650	618,545	643,751	670,405	718,562

Reporting Area	Reporting Category	Gross Floor Area (m^2) Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
	Total GFA	**2,261,787**	**2,432,738**	**2,553,425**	**2,652,695**	**2,794,462**	**14,736,987**

Note: Sum of data may not equal totals due to rounding

Table 14 - Existing and Projected Employment

Reporting Area	Reporting Category	Employees Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
Allenstown	Retail	886	918	1,020	1,036	1,070	6,134
	Commercial	515	523	523	526	526	683
	Industrial	162	162	162	162	162	873
	Community Purposes	310	365	383	402	422	422
	Total Employment	**1,874**	**1,968**	**2,089**	**2,127**	**2,182**	**8,114**
Berserker	Retail	2,352	2,469	2,553	2,618	2,878	19,500
	Commercial	1,428	1,521	1,557	1,574	1,712	6,645
	Industrial	157	135	135	135	129	986
	Community Purposes	315	368	386	404	424	432
	Total Employment	**4,252**	**4,493**	**4,631**	**4,732**	**5,142**	**27,562**
Depot Hill	Retail	49	49	49	49	49	0
	Commercial	331	331	331	331	331	326
	Industrial	362	362	362	362	362	364
	Community Purposes	21	25	26	27	29	29
	Total Employment	**764**	**767**	**768**	**770**	**771**	**719**
Frenchville	Retail	206	206	206	206	206	1,160
	Commercial	204	204	204	204	204	16
	Industrial	8	8	8	8	8	0
	Community Purposes	413	486	509	535	561	572
	Total Employment	**832**	**904**	**928**	**953**	**979**	**1,748**
Gracemere North	Retail	480	480	811	902	929	7,397
	Commercial	99	102	121	139	146	1,104
	Industrial	145	145	145	169	177	629

Reporting Area	Reporting Category	Employees Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
	Community Purposes	122	140	146	153	160	160
	Total Employment	**845**	**867**	**1,223**	**1,363**	**1,411**	**9,290**
Gracemere South	Retail	27	27	27	27	27	0
	Commercial	51	51	51	51	51	0
	Industrial	309	424	703	899	1,248	8,480
	Community Purposes	67	81	85	90	95	211
	Total Employment	**455**	**583**	**866**	**1,067**	**1,422**	**8,692**
Kabra	Retail	0	0	0	0	0	0
	Commercial	0	0	0	0	0	0
	Industrial	0	0	0	0	101	2,028
	Community Purposes	0	0	0	0	0	0
	Total Employment	**0**	**0**	**0**	**0**	**101**	**2,028**
Kawana	Retail	346	346	346	346	346	1,547
	Commercial	387	387	387	387	387	113
	Industrial	1,624	1,651	1,709	1,802	2,051	4,697
	Community Purposes	375	448	472	498	525	525
	Total Employment	**2,733**	**2,833**	**2,915**	**3,033**	**3,309**	**6,881**
Koongal	Retail	117	117	117	117	117	0
	Commercial	49	49	49	49	49	0
	Industrial	17	17	17	17	20	24
	Community Purposes	103	121	126	132	139	141
	Total Employment	**286**	**304**	**310**	**316**	**325**	**166**
Lakes Creek	Retail	0	0	0	0	0	0
	Commercial	0	0	0	0	0	0

Reporting Area	Reporting Category	Employees Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
	Industrial	159	159	159	159	159	288
	Community Purposes	39	47	49	52	55	55
	Total Employment	**198**	**206**	**208**	**211**	**214**	**343**
Mount Morgan	Retail	326	326	327	354	397	2,462
	Commercial	105	105	105	112	121	101
	Industrial	2	2	2	2	2	0
	Community Purposes	326	326	326	326	326	326
	Total Employment	**759**	**759**	**759**	**793**	**846**	**2,888**
Norman Gardens	Retail	974	1,014	1,014	1,014	1,263	15,722
	Commercial	151	170	170	170	170	60
	Industrial	62	62	62	62	62	0
	Community Purposes	1,009	1,204	1,268	1,336	1,408	1,408
	Total Employment	**2,196**	**2,450**	**2,514**	**2,582**	**2,903**	**17,190**
Park Avenue	Retail	2,208	2,501	2,501	2,501	2,501	13,025
	Commercial	1,031	1,031	1,051	1,051	1,051	199
	Industrial	1,382	1,382	1,382	1,382	1,382	1,910
	Community Purposes	254	297	312	327	343	343
	Total Employment	**4,875**	**5,211**	**5,245**	**5,260**	**5,276**	**15,476**
Parkhurst	Retail	390	390	390	390	390	1,708
	Commercial	103	103	103	103	103	230
	Industrial	1,380	1,380	1,380	1,469	1,518	5,023
	Community Purposes	119	141	148	155	163	163
	Total Employment	**1,992**	**2,014**	**2,021**	**2,118**	**2,174**	**7,125**
Rockhampton City	Retail	3,482	4,209	4,836	5,208	5,413	22,973

Reporting Area	Reporting Category	Employees Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
	Commercial	4,614	5,145	5,661	5,972	6,188	14,028
	Industrial	1,057	1,057	1,057	1,057	1,057	1,429
	Community Purposes	995	951	987	1,025	1,065	1,079
	Total Employment	**10,148**	**11,362**	**12,541**	**13,262**	**13,722**	**39,508**
The Common	Retail	7	7	7	7	7	7
	Commercial	0	0	0	0	0	0
	Industrial	0	0	0	0	0	0
	Community Purposes	28	28	28	28	28	28
	Total Employment	**35**	**35**	**35**	**35**	**35**	**35**
The Mine	Retail	0	0	0	0	0	0
	Commercial	0	0	0	0	0	0
	Industrial	0	0	0	0	0	0
	Community Purposes	0	0	0	0	0	0
	Total Employment	**0**	**0**	**0**	**0**	**0**	**0**
The Range	Retail	97	97	97	97	97	50
	Commercial	206	206	206	206	206	110
	Industrial	0	0	0	0	0	0
	Community Purposes	3,016	3,606	3,801	4,007	4,224	4,234
	Total Employment	**3,319**	**3,909**	**4,104**	**4,310**	**4,526**	**4,394**
Walterhall	Retail	0	0	0	0	0	0
	Commercial	0	0	0	0	0	0
	Industrial	0	0	0	0	0	0
	Community Purposes	0	0	0	0	0	0
	Total Employment	**0**	**0**	**0**	**0**	**0**	**0**

Reporting Area	Reporting Category	Employees Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
Wandal	Retail	185	185	185	185	185	414
	Commercial	111	111	111	111	111	108
	Industrial	36	36	36	36	36	32
	Community Purposes	423	482	501	522	543	543
	Total Employment	**754**	**813**	**832**	**853**	**874**	**1,097**
West Rockhampton	Retail	40	40	40	40	40	284
	Commercial	94	94	94	94	94	614
	Industrial	34	34	34	34	34	26
	Community Purposes	48	57	60	64	67	459
	Total Employment	**215**	**225**	**228**	**231**	**235**	**1,383**
Total Inside PIA	Retail	12,173	13,380	14,525	15,097	15,915	92,382
	Commercial	9,479	10,134	10,725	11,080	11,450	24,337
	Industrial	6,895	7,015	7,352	7,754	8,505	26,790
	Community Purposes	7,984	9,172	9,615	10,082	10,575	11,130
	Total Employment	**36,532**	**39,702**	**42,218**	**44,013**	**46,447**	**154,639**
Total Outside PIA	Retail	159	159	159	159	159	63
	Commercial	174	176	182	189	196	45
	Industrial	675	675	675	675	675	64,644
	Community Purposes	246	263	270	277	284	430
	Total Employment	**1,254**	**1,274**	**1,286**	**1,300**	**1,314**	**65,183**
Total Regional Area	Retail	12,333	13,540	14,685	15,257	16,075	92,446
	Commercial	9,653	10,310	10,907	11,269	11,646	24,382
	Industrial	7,570	7,690	8,027	8,428	9,180	91,434
	Community Purposes	8,230	9,436	9,885	10,359	10,860	11,560

Reporting Area	Reporting Category	Employees Per Time Period					
		Existing (2017)	2021	2026	2031	2036	Ultimate
	Total Employment	**37,786**	**40,976**	**43,504**	**45,313**	**47,760**	**219,822**

Note: Sum of data may not equal totals due to rounding

6. Priority Infrastructure Area

The PIA was determined in the fifth step of the LGIP Planning Assumptions process. The PIA identifies sufficient land to accommodate forecast growth to October 2036. It facilitates the delivery of services and infrastructure in the most efficient way. The LGIP, in collaboration with the strategic settlement pattern zone allocations and provisions, will schedule infrastructure works to service development within the PIA.

The PIA is a two dimensional extent consisting of multiple geographically discreet areas and is to read in combination with development sequencing assumptions detailed in Appendix P. The PIA aligns with development sequencing assumptions and includes land sequenced to complete development by October 2036 (includes Existing, 2021, 2026, 2026+, 2031, 2036 and 2036+ timeframes in Appendix P). In some instances, there may be parcels that have commenced development but not yet completed development in the life of the PAM. This is mainly due to their size (large greenfield sites) and the premise that one development is unlikely to obtain 100% of the market share in a particular locality. For this reason, these parcels have been included within the PIA.

Land sequenced to commence development after 10 October 2036 (2036+ timeframe) is outside the PIA and primarily applies to infill and redevelopment areas inside the PIA or greenfield land outside the PIA that are not required for 15 to 20 years of growth. The PIA aligns with the Rockhampton Region Planning Scheme Strategic Framework Settlement Pattern Maps urban and new urban designations and urban zones excluding rural residential land parcels not intended to be serviced with trunk infrastructure.

The PIA is shown in Appendix Q.

7. Summary

7.1 Population

As of 10 October 2017, the estimated resident population (ERP) of the Rockhampton region is modelled in the PAM to be 82,841 persons with a non-resident population (NRP) of 4,352 persons and a total population (ERP plus NRP) of 87,193 persons (refer to Section 4.2.1). By 2036, it is projected that the total population will be 104,383 persons.

As shown in Figure 20, the resident population of the Rockhampton Regional Council (RRC) area is projected in the PAM to grow in line with the 2018 Medium Series population. Although the PAM population projection is lower than the 2015 Medium Series population projection, the growth rates are similar at 0.9% pa and 1.0% pa respectively. Section 2.5.2 provides the population projections methodology used.

The sub-regional population projections are shown in Figure 21 and Figure 22 shows the projected resident population for the RRC area by dwelling type.

A summary of population projections at a sub-regional scale is shown in Table 23. A summary of population inside and outside the PIA is shown in Table 24. The 2015 and 2018 Queensland Government population projections are shown in Table 25.

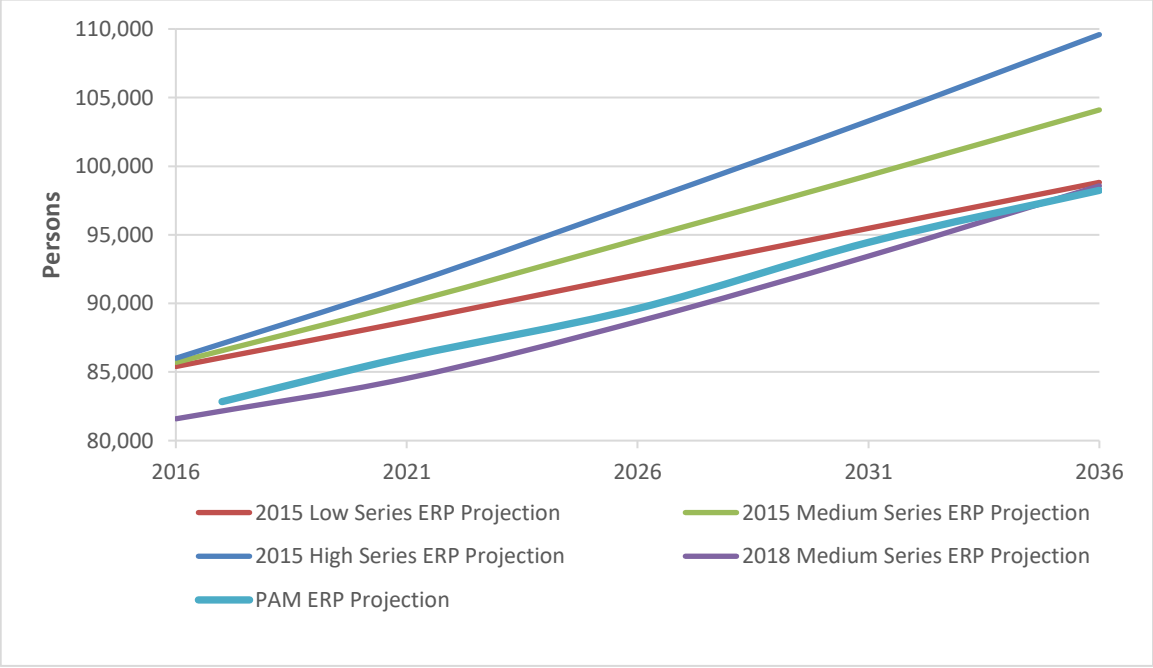

Figure 20 - Planning Assumptions Model and Queensland Government ERP Projections

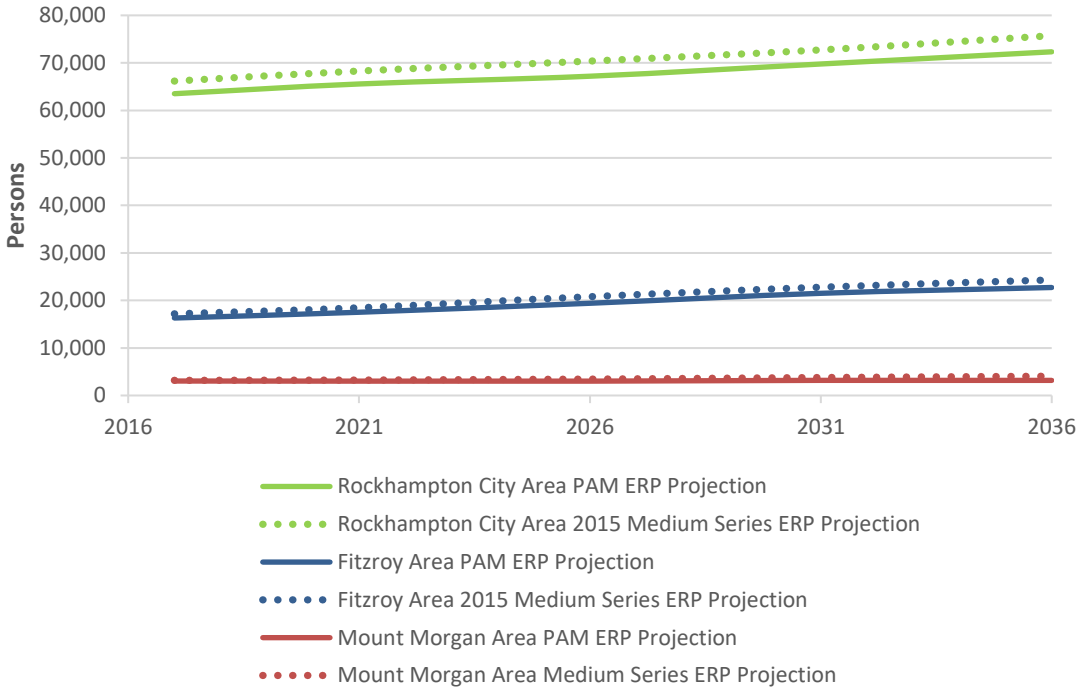

Figure 21 - Planning Assumptions Model and 2015 Queensland Government Sub-Regional ERP Projections

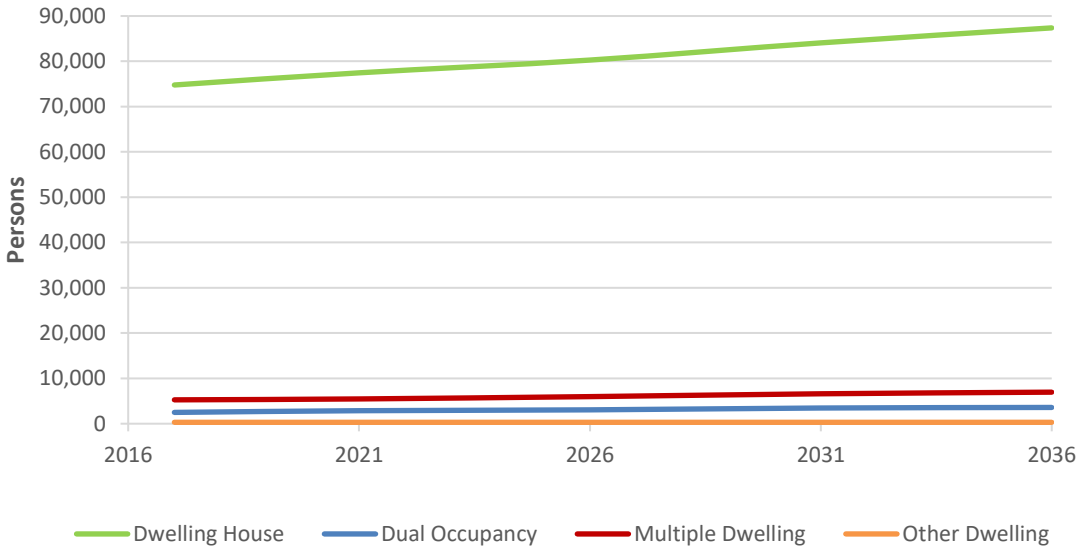

Figure 22 - ERP Projections by Dwelling Type

Table 15 - Planning Assumptions Model and Queensland Government ERP Projection Comparison

		Existing (2017)#	2021	2026	2031	2036	Growth Rate ^	RRC Growth Share (2017 - 2036)
Rockhampton City Area	Planning Assumptions Model	63,507	65,560	67,191	69,761	72,330	0.7%	57.3%
	2015 Medium Series Projection	66,167	68,288	70,376	72,727	75,719		
	Difference with PAM	**-2,660**	**-2,728**	**-3,185**	**-2,966**	**-3,389**		
		-4.2%	**-4.2%**	**-4.7%**	**-4.3%**	**-4.7%**		
	2018 Medium Series Projection	62,019	63,328	65,450	67,890	70,154		
	Difference with PAM	**1,488**	**2,232**	**1,741**	**1,871**	**2,176**		
		2.3%	**3.4%**	**2.6%**	**2.7%**	**3.0%**		
Fitzroy Area	Planning Assumptions Model	16,307	17,519	19,408	21,504	22,726	1.8%	41.7%
	2015 Medium Series Projection	17,179	18,454	20,792	22,788	24,323		
	Difference with PAM	**-872**	**-935**	**-1,384**	**-1,284**	**-1,597**		
		-5.3%	**-5.3%**	**-7.1%**	**-6.0%**	**-7.0%**		
	2018 Medium Series Projection	17,143	18,193	20,218	22,525	25,354		
	Difference with PAM	**-836**	**-674**	**-810**	**-1,021**	**-2,628**		
		-5.1%	**-3.8%**	**-4.2%**	**-4.7%**	**-11.6%**		
Mount Morgan Area	Planning Assumptions Model	3,027	3,024	3,024	3,183	3,181	0.3%	1.0%
	2015 Medium Series Projection	3,192	3,270	3,478	3,806	4,059		
	Difference with PAM	**-165**	**-246**	**-454**	**-623**	**-878**		
		-5.5%	**-8.1%**	**-15.0%**	**-19.6%**	**-27.6%**		
	2018 Medium Series Projection	2,987	3,010	3,013	3,029	3,059		
	Difference with PAM	**40**	**15**	**11**	**153**	**123**		
		1.3%	**0.5%**	**0.4%**	**4.8%**	**3.9%**		

		Existing (2017)[#]	2021	2026	2031	2036	Growth Rate ^	RRC Growth Share (2017 - 2036)
RRC LGA	Planning Assumptions Model	82,841	86,104	89,623	94,448	98,237	0.9%	100.0%
	2015 Medium Series Projection	86,538	90,012	94,646	99,321	104,101		
	Difference with PAM	**-3,697**	**-3,908**	**-5,023**	**-4,873**	**-5,864**		
		-4.5%	**-4.5%**	**-5.6%**	**-5.2%**	**-6.0%**		
	2018 Medium Series Projection	82,149	84,532	88,680	93,444	98,567		
	Difference with PAM	**692**	**1,572**	**942**	**1,004**	**-329**		
		0.8%	**1.8%**	**1.1%**	**1.1%**	**-0.3%**		

^Average annual population growth rate between 2017 and 2036

[#] 2015 Medium Series Projection (Existing 2017) estimated using average annual growth between 2016 and 2021

Table 16 - Population Summary

	Existing (2017)	2021	2026	2031	2036
Total ERP in PIA	73,818	76,934	80,348	85,173	88,960
Total ERP outside PIA	9,023	9,169	9,275	9,275	9,277
Total Non-Resident Population	4,352	4,528	5,363	5,864	6,146
Total RRC Population Projection (ERP + NRP)	**87,193**	**90,631**	**94,986**	**100,312**	**104,383**

Table 17 - Queensland Government ERP Projection Summary

	2016	2021	2026	2031	2036	Growth Rate % ^
2015 Queensland Government ERP Projections						
2015 Low Series Projection	85,402	88,675	92,086	95,471	98,820	0.7%
2015 Medium Series Projection	85,701	90,013	94,647	99,321	104,100	1.0%
2015 High Series Projection	86,001	91,368	97,267	103,294	109,591	1.2%
2018 Queensland Government ERP Projections						
2018 Medium Series Projection	81,589	84,532	88,680	93,444	98,567	0.9%

^Average annual population growth rate between 2016 and 2036

7.2 Employment

As of 10 October 2017, the number of employed persons in urban based employment in the Rockhampton region is modelled in the PAM to be 37,786 (refer to Section 5.1.1). By 2036, it is projected that the total urban based employment in the Rockhampton Region will be 47,760 persons. Figure 23 below shows a comparison between employment and population projections (ERP plus NRP).

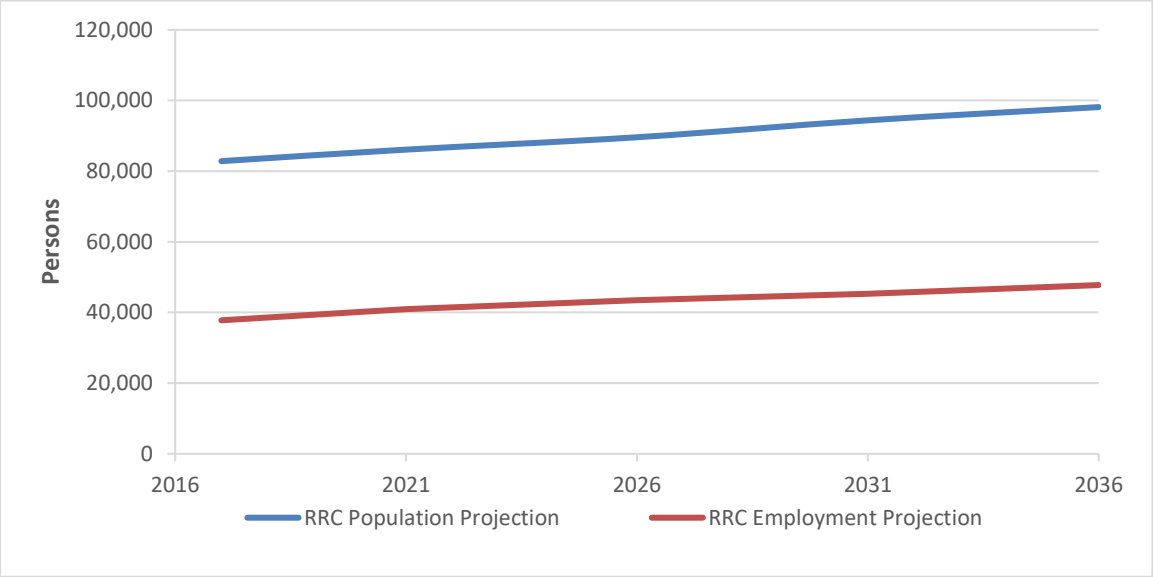

Figure 23 - RRC Population and Employment Projections

A summary of employment projections at a sub-regional scale and inside and outside the PIA is shown in Table 26. Employment projections for sub-regional areas are shown in Figure 24.

Table 18 - Employment Projection Summary

	Existing (2017)	2021	2026	2031	2036
Employment Projection by Sub-Regional Area					
Rockhampton City Area Employment	35,051	38,076	39,959	41,388	43,271
Fitzroy Area Employment	1,951	2,115	2,760	3,106	3,618
Mount Morgan Area Employment	784	784	784	818	871
Employment Projection Summary					
Total Employment in PIA	36,532	39,702	42,218	44,013	46,447
Total Employment outside PIA	1,254	1,274	1,286	1,300	1,314
Total RRC Employment	**37,786**	**40,976**	**43,504**	**45,313**	**47,760**

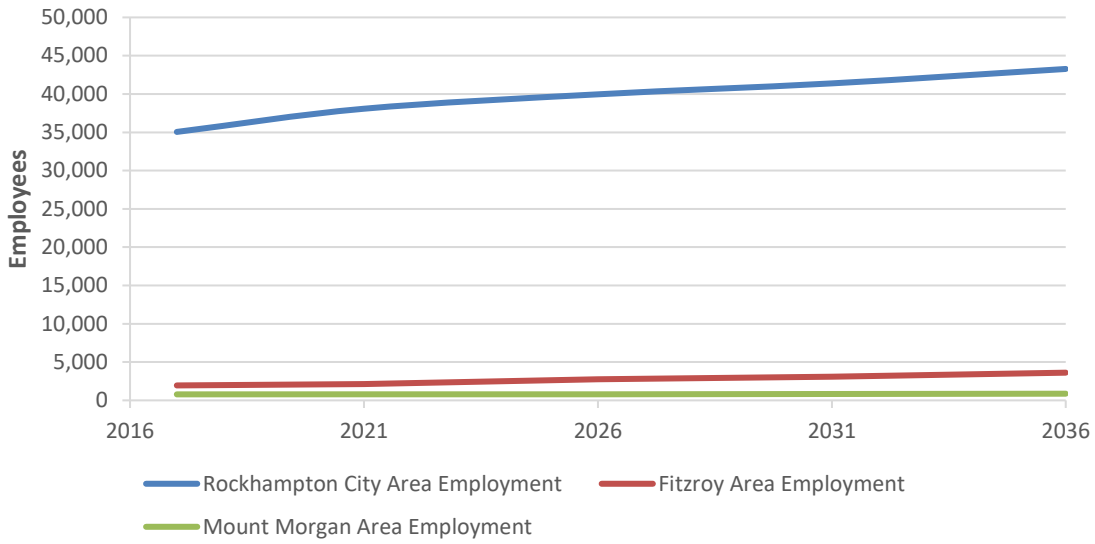

Figure 24 - Employment Projections for Sub-Regional Areas

As shown in Figure 25, it is projected that retail development will drive employment growth, with steady growth in commercial and community purposes based employment. As shown in Table 3 in Section 2.2.3, the retail category includes a broad range of retail land uses including shops and shopping centres through to food and drink outlets and the service industry. In comparison, the commercial category includes office type land uses. Employment growth within community purposes will predominantly be derived from education and hospital type land uses.

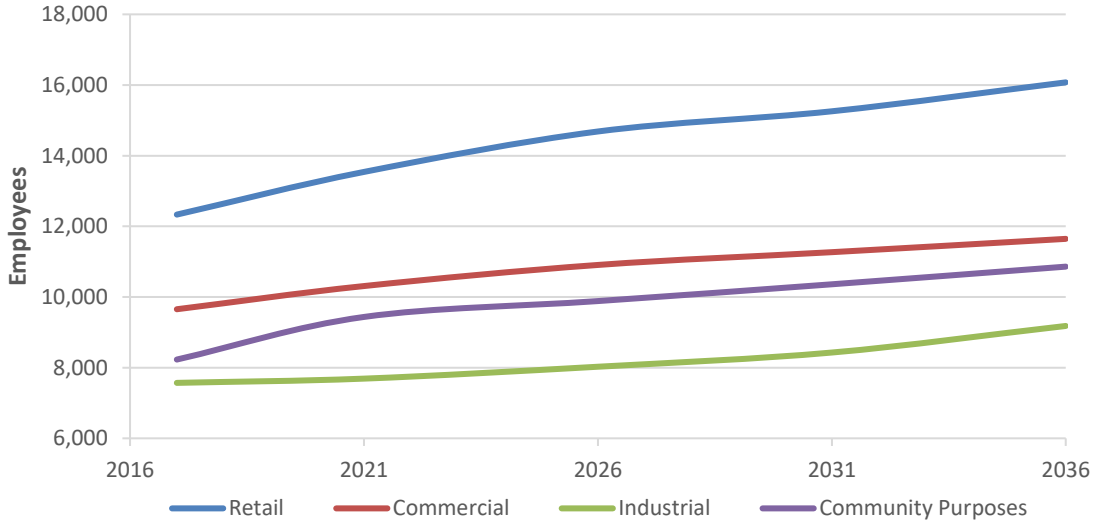

Figure 25 - Employment Projections by Employment Category

It was found that employment as a percentage of the population varied across the region and was dependent on the availability and sequencing of employment generating development in each sub-regional area. Table 27 shows sub-regional employment as a percentage of sub-regional estimated resident population (ERP). In general, employment as a percentage of population remains steady across the sub-regions.

Table 19 - Sub-Regional Employment as a Percentage of Sub-Regional ERP

	Existing (2017)	2021	2026	2031	2036
Rockhampton City Area	55%	58%	59%	59%	60%
Fitzroy Area	12%	12%	14%	14%	16%
Mount Morgan Area	26%	26%	26%	26%	27%

7.3 Achieved Density

A comparison of the maximum dwellings per hectare yield (according to density assumptions) and the average dwelling yield achieved in the PAM on residential greenfield land (> 2,500m^2) is shown in Table 28.

The selection criteria used to select parcels for analysis are:

- Parcels with an area larger than 2,500m^2 – this ensures that only greenfield land is analysed;
- Parcel with growth potential (i.e. Ultimate number of dwellings > Existing number of dwellings);
- Ultimate number of detached dwellings does not equal 1 – this removes any already subdivided vacant lots

Table 20 - Comparison Between Maximum Dwelling Yield and Average Achieved Dwelling Yield for Greenfield Residential Land

SPP Residential Zone	Maximum Yield (dwellings/ha of net developable area)	Average Yield Achieved in PAM (dwellings/ha of net developable area)	Average Achieved Lot Size Per Dwelling (m^2)
Low density residential	16.3	10.8	926
Medium density residential	24.4	20.4	491
High density residential	880.0	880.0	11.4
Emerging community	16.3	11.8	847
Rural residential	0.5	0.4	24,334

Table 28 shows that before constrained land is removed, the achieved yield is often less than the assumed density assumption for each zone. Consequently the achieved minimum lot size is often larger than the assumed minimum lot size for each zone. The current trend is towards reduced lot sizes in new master planned developments. For this reason, the higher assumed yields have been retained for planning purposes.

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Appendices

Appendix A - Density Assumptions Table

Appendix B - Land Use Zoning

Appendix C - Precincts

Appendix D - Building Heights

Appendix E - PAM Reporting Areas.pdf

Appendix F - Constraints

Appendix G - Interim Dwelling Capacity

Appendix H - Interim Population Capacity

Appendix I - Interim GFA Capacity

Appendix J - Interim Employment Capacity

Appendix K - Ultimate Dwelling Capacity

Appendix L - Ultimate Population Capacity

Appendix M - Ultimate GFA Capacity

Appendix N - Ultimate Employment Capacity

Appendix O - Development Probability

Appendix P - Development Sequencing Assumptions

Appendix Q - Priority Infrastructure Area.pdf