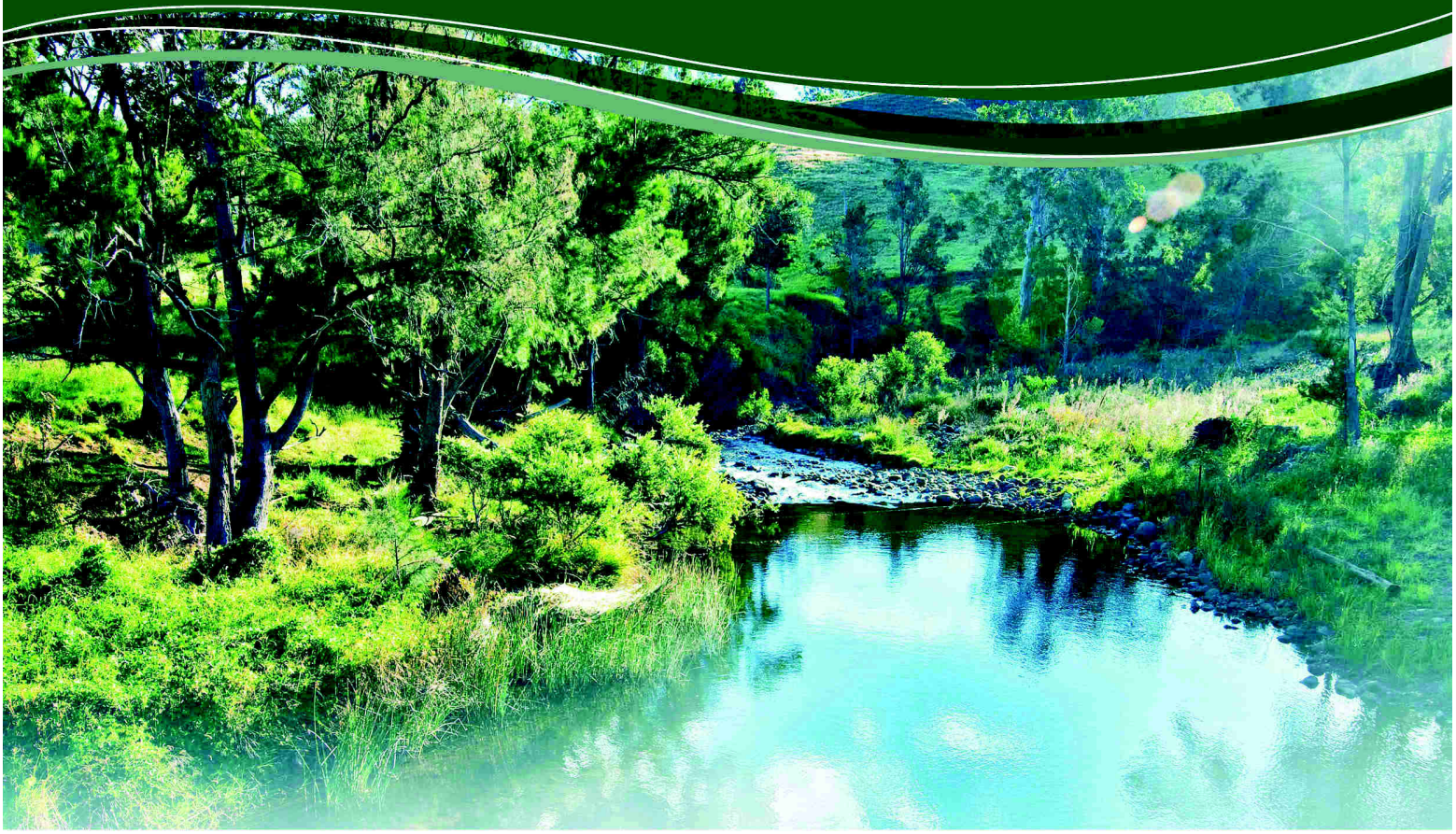
Scenic Rim Regional Council



Planning Assumptions - Extrinsic Material for LGIP

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Contents

Planning Assumptions

Purpose

Under the *Planning Act 2016*, Councils are required to prepare and adopt Local Government Infrastructure Plan (LGIP). LGIP is an infrastructure plan derived to accommodate projected growth through planning assumptions.

The LGIP must state assumptions about: -

- population and employment growth; and
- type, scale, location and timing of development.

These assumptions are collectively known as the planning assumptions. The planning assumptions are a critical element underpinning the LGIP. Together with the Desired Standard of Services (DSS) they provide a logical and consistent basis for trunk infrastructure planning and the determination of the Priority Infrastructure Area (PIA).

The planning assumptions about the type and scale of development also provide an important consideration for a local government when determining whether to impose a condition for the payment of additional trunk infrastructure costs under section 130 of the Planning Act.
The planning assumptions section of the LGIP clearly identifies a summary of the existing and future projected urban residential and non-residential development by development type for a projection area in terms of:

- dwellings;
- population;
- non-residential gross floor area (GFA); and
- employment.

The key assumptions used to prepare the projections (planned densities and demand generation rates) are also summarised in this report. The purpose of this report is to support the infrastructure planning and LGIP. Also note that the planning assumptions and the PIA detailed in this report have been prepared in accordance with the *Minister's Guidelines and Rules* July 2017.

Population and Dwelling Projections

Population and dwelling projections are based on the author's published chapter *Demographic Forecasting for Local Governments in Queensland, Australia - Difficult but Effective* in the book *The Frontiers of Applied Demography*, published by Springer in 2017.

Dwelling data from the Scenic Rim's population and development model was used in Queensland Government Statistician's Office's (QGSO) publication *Queensland Government Population Projections* 2015 edition.

Overview

The development projections are prepared using a top down, bottom up approach. The top down approach involves the forward projection of historical growth data to estimate future growth. The bottom up approach involves limiting growth projections to the physical capacity available to accommodate growth in a locality. That is, development at a local level is projected to occur for each projection year until it reaches the adopted population and employment capacity (ultimate development) for a locality.

Top down approach

For top down approach, population projections from QGSO publication *Projected population, by local government area, Queensland, 2011 to 2036, 2*015 edition are used as control totals. These projections are based on the Australian Bureau of Statistics, Regional population growth, Australia 2013-14 (Cat no. 3218).

Table 1 Scenic Rim Regional Council Projected Population

Period	Low series:	Medium series:	High series:
2011	37,437	37,437	37,437
2016	40,865	41,014	41,161
2021	44,616	45,813	47,033
2026	48,743	51,205	53,751
2031	53,590	57,662	61,916
2036	57,838	63,396	69,239

Bottom up approach:

In this approach, physical constraints are applied to the lot which excludes the undevelopable area. The remaining developable area is assigned respective land use information to generate ultimate development.

Forecasts include the intensity and timing of development. This forecast is assigned to a 5 yearly cohort for the next 15 years and ultimate growth. Grouped forecast will be in benchmark of the control totals from the top-down approach. Hence, it is a check on the bottom-up forecast process.

Digital Cadastral Database (DCDB)

The growth forecasting exercise commenced in December 2014, hence version of DCDB for December 2014 is locked for this exercise; all other data will be surrounding this period. This exercise is executed in GIS ESRI and MS Excel programs to make the Scenic Rim's population and development model.

Constraints

Constraint analysis is undertaken for the draft Scenic Rim planning scheme in June 2014. The same information is used to build up the constraint layer for demographic projections as in December 2014 this constraint information is still relevant at the time of modelling.

The following list provides the constraints used in determining developable areas:

1. Mining Development Licence & Lease
2. Key Resource Area (KRA) resource process & separation areas, haul & transport route & transport route separation
3. Matters of State Environmental Significance (MSES) - regulated vegetation & protected areas
4. MSES - Wild Rivers, High ecological value waters, Wetlands & Wildlife habitat
5. Matters of National Environmental Significance (MNES) - wetlands, world heritage
6. Declared catchment area (Dam)
7. Military base
8. Ipswich difficult topography (slope greater than 25%)

9. Ipswich slope 15%-25%
10. Beaudesert Landslide Hazard (slope greater than 25%)
11. Beaudesert slope 15%-25% or high/med landslide hazard
12. Combined flood layer (Queensland Reconstruction Authority and Council studies)
13. Commonwealth, Queensland & Local Heritage Register of Scenic Rim
14. State Development Area
15. Bushfire hazard area (medium to very high)

On cadastre, all constraints are applied and developable area is calculated by removing area of constraints from the lot area. Output is the Developable Area (DA) for every lot. After removing constraints and calculating developable area, next step is to apply land development types and land uses feasible for every lot.

The relationship between development categories, development types and planning scheme land uses

The demographic forecast is prepared for a limited number of development types. Uses under the planning scheme, which are guided by *Planning Regulation 2017*, are grouped into broader types of development that adequately reflect differences in infrastructure demand for various infrastructure networks.

Development categories are mainly Residential and Non-residential. These categories are further distributed as per *Minister's Guidelines and Rules* to sub-categories such as:

- detached dwellings;
- attached dwellings;
- other dwellings (tourist accommodation)
- retail;
- commercial;
- industrial; and
- community purposes.

The category, “Rural development type” is added to cater for the regional characteristics of the Scenic Rim. Below table shows the relationship between development categories, development types and planning scheme land uses.

Table 2 Relationship between development categories, development types and uses

Development category	Development type	Uses#
Residential development	Attached dwelling	Caretaker's accommodation Community residence Dual occupancy Dwelling unit Home based business Multiple dwelling Nature-based tourism Non-resident workforce accommodation Relocatable home park Resort complex Retirement facility Rooming accommodation Rural workers' accommodation Short-term accommodation Tourist park
	Detached dwelling	Dwelling house Sales office
Non-residential development	Commercial	Garden centre Hardware and trade supplies Outdoor sales Showroom
	Community purpose	Cemetery Club Community care centre Community use Crematorium Detention facility Emergency services Funeral parlour Hospital Outstation Place of worship Residential care facility
	Industry	Brothel Bulk landscape supplies Extractive industry Low impact industry High impact industry Medium impact industry Research and technology industry Special industry Transport Depot Warehouse

Development category	Development type	Uses#
	Retail	Adult store Bar Car wash Child care centre Educational establishment Food and drink outlet Function facility Health care services Hotel Indoor sport and recreation Major sport, recreation and entertainment facility Market Motor sport facility Nightclub entertainment facility Office Outdoor sport and recreation Parking station Service industry Service station Shop Shopping centre Theatre Tourist attraction Veterinary services
	Rural	Agricultural supplies store Animal husbandry Animal keeping Aquaculture Cropping Intensive animal industry Intensive horticulture Permanent plantation Roadside stall Rural industry Wholesale nursery Winery
	Other	Air services Environment facility Landing Major electricity infrastructure Park Renewable energy facility Substation Telecommunication facility Utility installation

to assist in interpretation, refer to document "Equivalent land uses, zones and precincts in the Beaudesert, Boonah & Ipswich Planning Schemes for the LGIP"

Existing Land Use Classification & Existing Dwelling Forecast

Based on the categories as shown in above table, all lots are classified using their existing land use. Three individual datasets from Council's rates database are used to determine existing land use as follows:

1. Primary Use Land Use Codes Description;

2. Emergency services land use codes; and

3. Improvements values

All three datasets were analysed and for inconsistence, validation is done via ground truth exercise, using Council's development assessment database and satellite imagery. The Output is the number of existing dwellings, its type - attached or detached, occupied by resident or tourist.

Tourist Accommodation

Tourist accommodation is determined using the comparisons of Primary Land Use Description, Emergency service category and Improvements values from rates database. Due to the limited number of tourist accommodation dwellings in the region, a separate exercise is undertaken to research number of accommodation units/ rooms and to know caretaker's residential status. It is found that at majority of places, caretakers are residing on the property. This exercise gave accurate numbers of dwellings and resident population in them. Tourist accommodation dwellings are categorised as other dwellings and has different resident population rate compared to town dwellings. The tourist population is ignored for this exercise as the demand generation due to tourism is not significant compared to the total population of Scenic Rim. As well as complexities of vacancy rates and market conditions are required to be addressed to get tourist population number. Hence to avoid further complications, tourist population is unaccounted.

Ultimate Dwellings forecast

Planned Density

Existing dwellings, types of dwellings and their occupancy are determined through existing dwelling forecast process. To project the ultimate dwellings, the assumed type and scale of development for a particular location is determined by applying a planned density to the developable area of the site. Considerations as per the *Minister's Guidelines and Rules* for this include:

- the South East Queensland Regional Plan framework for infrastructure planning;
- the strategic framework within the local government's planning scheme;
- zoning and development provisions within the planning scheme;
- other planning instruments such as State Development Area development schemes;
- approved plans for development; and
- current development trends in the area (or similar areas).

The planned densities, used to prepare the demographic projections, are identified in terms of dwellings per developable hectare for residential development. While defining planned densities for each precinct/ zone of the planning scheme, a broad assumption of 30% land removal for infrastructure purposes is made.

Table 3 Planned Density

Planning Scheme Zone	Planning Scheme Precinct	Residential Density dw/ha
Community Facilities		0.1
Conservation		0
District Centre		4
Industry		0.5
Limited Development	Flood Land	0
	Historical Subdivision	0
Local Centre		2
Low Density Residential	Mountain Residential	0
	Where no precinct applies	10
Low-Medium Density Residential		13.5
Major Centre		4
Major Tourism		0
Minor Tourism		0
Mixed Use	CI - Commercial / Industry	0
	Where no precinct applies	4
Neighbourhood Centre		0
Recreation and Open Space		0
Rural	Tamborine Mountain Rural	0.01667
	Where no precinct applies	0.01667
	RE - Rural Escarpment	0.01667
Rural Residential	Where no precinct applies	3.33
	RRESA - Rural Residential A - 1 ha lots	1
Special Purpose	Bromelton State Development Area - Where no precinct applies	0.01667
	Bromelton State Development Area - Rail Dependent Industry precinct	0
	Bromelton State Development Area - Medium-High Industry precinct	0
	Bromelton State Development Area - Special Industry Precinct	0

Planning Scheme Zone	Planning Scheme Precinct	Residential Density dw/ha
	Bulk Water Storage - BW	0
	Where no precinct applies	0
Township	Township Residential	3.33
		10
	Where no precinct applies	4

This growth forecast is the ideal situation, hence overwrites are applied to make forecast realistic and achievable. This exercise has filtered data for any unrealistic growth and helps the local government to adequately supply infrastructure over the life of planning scheme. Further this growth needs to be distributed for each Census cohort (every 5 years).

Urban Footprint and Priority Infrastructure Area

Both the "Urban Footprint" and the "Priority Infrastructure Area" (PIA) are used to determine the timing of the growth & development. Urban footprint as per South East Queensland Regional Plan 2009-2031 (2014) was used for this exercise as it was the available information.

The PIA is an area used, or approved for use, for urban development; and serviced, or intended to be serviced, with development infrastructure networks; and that will accommodate at least 10 (but no more than 15) years of growth for urban development as defined in the *Minister's Guidelines and Rules*. It is very important to determine PIA accurately as it influences infrastructure requirements, timing of growth and financial sustainability of a local government. For this exercise, in addition to above criteria for PIA, following additional criteria are considered.

1. availability of existing water and sewer infrastructure network (as shown in Table 4); and

2. the local government must be able to fund and supply adequate trunk infrastructure to service the assumed urban development inside the PIA.

Table 4 Infrastructure availability to finalise Priority Infrastructure Area

Town	Population		Availability of Infrastructure	
	2011	2016	Water	Sewer
Aratula	516	535	Yes	Yes
Beaudesert including Gleneagle	6778	7328	Yes	Yes
Boonah	2528	2693	Yes	Yes
Canungra	770	804	Yes	Yes
Harrisville	437	431	Yes	No
Kalbar	741	812	Yes	Yes
Kooralbyn	1406	1711	Yes	Yes

Peak Crossing	407	478	Yes	No
Tamborine Mt	7025	7545	No	No

Considering the preceding criteria, the following urban centres are identified to accommodate growth for 10 to 15 years:

1. Beaudesert;
2. Boonah;
3. Canungra;
4. Kalbar; and
5. Kooralbyn.

Aratula is the only town where key infrastructure for water and sewer are available still it is not included as Priority Infrastructure Area. Aratula has a base population of 535 people and it is growing at 0.7% annually. In recent couple of years, there is a decline in population which further justifies its exclusion from priority infrastructure area.

The future timing of the assumed type and scale of development for a particular location is based on the population projections for that location. This involves making an assumption concerning the timing of development in a particular location; for example, inside PIA development occurs by 15 years while outside PIA development occurs after 15 years and before ultimate capacity of the planning scheme. Outside urban footprint, rural subdivision occurs generally for the rural purposes and hence not much growth anticipated. For this exercise, priority in given to lots inside PIA, where development is serviced by basic infrastructure, and hence growth is financially sustainable for local government.

The identified PIAs have capacity to accommodate growth for at the least 15 years, some of the PIAs do not develop to full potential by year 2031 and still have ability to further grow. This is reflected in the below table where growth in dwellings is projected for ultimate development, which is beyond 15 years. Below table also represents that for the next 15 years, 85 % of growth occurs inside the PIA while 15% growth is expected outside PIA, as Scenic Rim is a regional area and changing the trend from rural to town living.

Table 5—Existing and projected residential dwellings

Projection area	Existing and projected residential dwellings					
	Dec 2014	2016	2021	2026	2031	Ultimate development
Beaudesert PIA	3065	3181	4530	6361	7965	8880
Kooralbyn PIA	394	406	436	546	592	592
Canungra PIA	318	374	520	690	932	1080
Kalbar PIA	275	294	389	421	445	445
Boonah PIA	1090	1096	1253	1441	1561	1730
Inside priority infrastructure area (total)	5142	5351	7128	9459	11495	12727

Projection area	Existing and projected residential dwellings					
	Dec 2014	2016	2021	2026	2031	Ultimate development
Outside priority infrastructure area (total)	11577	11577	11770	12109	12671	20711
Scenic Rim Regional Council	**16719**	**16928**	**18898**	**21568**	**24166**	**33438**

Occupancy Rates

In Table 17.6, Occupancy rate for Scenic Rim Local Government Area, the 2011 figure is an estimate based on estimated resident population (ERP) from 2011 Census. 2011 ERPs for the local government area have been derived using published Statistical Area Level 2 and local government area ERP data. The projected occupancy rate at local government level is an average of occupancy rates for SA2 geographical area and different type of dwellings.

Table 6 Occupancy rate for Scenic Rim Local Government Area

Local government area	2016	2021	2026	2031	2036	Ultimate
Scenic Rim (R)	2.40	2.40	2.41	2.41	2.40	2.39

Over the years, occupancy rate trend is portrayed from Census data where lifestyle choices influence the household size. Considering these variations, Table 17.7 represents various occupancy rates for year 2011 as used in this exercise. Tourist accommodation is standardised to account for caretaker population.

Table 7 Year 2011 Occupancy rates at SA2 level

Location	Type of dwelling		
	Detached dwelling	Attached dwelling	Tourist accommodation
Beaudesert	2.60	1.34	1
Boonah	2.46	1.24	1
Tamborine - Canungra	2.55	1.29	1

The Ultimate and Existing population forecast

Forecasting population is relatively simple though highly dependent on dwelling forecast. Population is derived by multiplying number of dwellings with occupancy rates for individual SA2. These data is available at lot level, so it can be aggregated to any geographical boundary.

Population is generated using the occupancy rates previously described. The output is the existing population grouped for three SA2 making up local government area. The same logic applies for future population projections at 5 yearly cohorts. These population totals are compared with the

control totals from the top-down methodology, where bottom-up methodology refines the control totals using the available information. For Scenic Rim, population projections under bottom up and top down strategies are very similar; differences are maximum up to 2% of projections.

The Forecasted population for the nearest future cohort i.e. year 2016, for this exercise is required to be analysed thoroughly. Queensland Government Statistician's Office publishes estimated resident population at SA2 and local government area level intermittently using above mentioned datasets and ABS catalogue 3218.0, Regional Population Growth, Australia. The existing and forecasted population numbers are revised with Census information every 5 years and hence the model can be re-based.

Employment projections

Various data sources were investigated to create employment projections for the LGIP including National Institute of Economic and Industry Research (NIEIR), Scenic Rim Planning Scheme activity centre strategy and Queensland Treasury's Regional employment projections. Below describes various options and how LGIP's employment projections were derived.

NIEIR projections

NIEIR released a Summary Report for Scenic Rim Regional Council in February 2015 under SEQ Employment and Economic Activity Forecasting Project for the SEQ Council of Mayors.

These report produced number of jobs - existing and projection for future under three scenarios. Scenario 2 was considered most suitable for the local government, as it acknowledge the population forecast prepared by Queensland Treasury and Trade (QTT) in 2013 as unrealistic and redistributed population based on lower growth rate of 2.7% average between 2011 and 2041. Scenario 2 provides small area projections based on the capacity of areas to grow both population and employment, subject to a travel time constraint that links population growth in each specific area to places where suitable employment can be assessed.

Under Scenario 2, population forecasted by NIEIR for 2041 is 83,137 which is in the proximity of the population forecast undertaken for LGIP land use development model. The employment forecasted based on Place of Work categorisation is very low and hardly any growth is forecasted in 30 years. This proves the data irrelevant comparing to the local growth envisaged particularly at Bromelton state development area. Hence NIEIR projections were investigated but not used for LGIP employment forecast.

Activity Centre Strategy

Scenic Rim planning scheme review team undertook a ground truth study in 2013 to evaluate existing retail and commercial gross floor area and corresponding land area. These data was used in the Scenic Rim Region Activity Centre Strategy to ultimately inform, the draft Scenic Rim Planning Scheme, the requirement of retail and commercial land uses.

Activity Centre Strategy yields the gross floor area required and an audit of the supply of floor space for commercial and retail land uses. This study was limited to certain land uses and hence was not able to inform LGIP employment forecast.

Queensland Treasury's Regional employment projections

Regional employment projections 2010-11 to 2040-41 was published by Queensland Treasury (QT) in 2016 based on QT's 2015 population projections. Scenic Rim's land use development model was used to inform these population projections, hence it becomes more relevant to use regional employment projections compared to any other dataset.

From regional employment projections, control total for jobs at each of the ANZSIC divisions for projection year 2011 to 2041 were derived and categorised by LGIP employment type at LGA level.

Table 8 - Regional Employment Projections - 2010-11 to 2040-41

ANZSIC Divisions	2011	2016	2021	2026	2031	2036	2041
Retail Trade	1,435	1,496	1,523	1,555	1,600	1,629	1,655

ANZSIC Divisions	2011	2016	2021	2026	2031	2036	2041
Other Services	553	591	634	679	734	785	838
Health Care and Social Assistance	1,515	1,764	2,007	2,311	2,666	3,014	3,367
Arts and Recreation Services	252	253	266	285	306	330	356
Public Administration and Safety	1,025	1,075	1,146	1,249	1,360	1,477	1,598
Mining (WC + storage)	94	85	99	132	179	236	297
Manufacturing	860	893	940	990	1,058	1,131	1,210
Construction (WC + storage)	1,365	1,216	1,608	1,818	1,965	2,078	2,173
Wholesale Trade	370	334	347	358	370	383	396
Transport, Postal and Warehousing	480	442	466	498	535	568	604
Electricity, Gas, Water and Waste Services	160	149	191	320	533	716	842
Accommodation and Food Services	1,336	1,570	1,630	1,737	1,851	1,972	2,097
Financial and Insurance Services	145	194	186	175	172	183	200
Rental, Hiring and Real Estate Services	201	173	208	247	290	333	383
Professional, Scientific and Technical Services	543	577	669	776	894	1,015	1,163
Administrative and Support Services	324	294	326	384	451	520	601
Education and Training	1,276	1,379	1,534	1,739	1,972	2,206	2,446
Information Media and Telecommunications	148	140	141	147	155	162	170
Agriculture, Forestry and Fishing	1,742	1,550	1,480	1,446	1,418	1,397	1,385
Total persons employed	**13,824**	**14,171**	**15,402**	**16,844**	**18,510**	**20,136**	**21,780**

Further, jobs data was sourced from the Department of Transport and Main Roads via data sharing agreement at the Statistical Area 1 (SA1) geographical boundary and ANZSIC employment categories.

These data was categorised at SA2 level and were reported for each LGIP employment type at projection years till ultimate development.

These employment projections were further converted to Gross Floor Area (GFA) projections, for non-residential development, using the industry conversion rates of floor space required per employee. Data was then categorised into LGIP non-residential categories by grouping various ANZSIC sub-categories.

GFA for manufacturing was measured manually in 2016 for each of the properties listed as having Manufacturing businesses in Australian Business Register (ABR). ABR has data on all businesses in

the Scenic Rim with their operating address and is updated every year and is classified with ANZSIC categories. This research formulates GFA for manufacturing under Industry for year 2016.

From these data, conversion rate is standardised for future (2021, 2026…..ultimate) & past (2014 & 2011) years. GFA for these years are extrapolated using the conversion rate only for manufacturing industry. The deviation from the normal process is undertaken as the gross floor area conversion rate for various manufacturing types varies from 30 to 200 sqm per employee.

Table below represents the conversion rates assumed for each category of employment by ANZSIC divisions and LGIP projection types to the required gross floor area for work:

Table 9 Gross floor space for each employment category

LGIP projection type	ANZSIC Divisions	Floor space (Sqm)
Commercial/ Retail	Retail Trade - retail	29
Commercial/ Retail	Retail Trade - commercial	45
Community Purpose/ Other/ Retail	Other Services	29
Community Purposes	Health Care and Social Assistance	35
Community Purposes	Arts and Recreation Services	35
Community Purposes	Public Administration and Safety	35
Industry	Mining (WC + storage)	55
Industry	Manufacturing	Based on survey data
Industry	Construction (WC + storage)	55
Industry	Wholesale Trade	220
Industry	Transport, Postal and Warehousing	220
Industry	Electricity, Gas, Water and Waste Services	120
Retail	Accommodation and Food Services	29
Retail	Financial and Insurance Services	25
Retail	Rental, Hiring and Real Estate Services	25
Retail	Professional, Scientific and Technical Services	25
Retail	Administrative and Support Services	25
Retail	Education and Training	35
Retail/ Industry	Information Media and Telecommunications	120
Rural	Agriculture, Forestry and Fishing	0

The outcome of this analysis is listed in tables 4.6 and 4.9 of the LGIP as existing and projected employees and the existing and projected non-residential floor space.

Demand Projections

The planning assumptions provide a consistent basis for the planning of the trunk infrastructure networks. For this reason, the projections of development and growth must be converted into projections of demand for each network.

Each network expresses demand using different demand units. The demand units adopted are as follows:

- for the stormwater quantity network, hectare of impervious area, or imp ha.
- for the transport network, vehicle trip ends per day, or vpd.
- for the parks network, Equivalent Persons, or EP.

Following Table 10 reflects the planned density and relevant demand generation rate for each trunk infrastructure network for residential and non-residential LGIP development types.

Table 10 Planned density and demand generation rate for a trunk infrastructure network

Column 1 Planning scheme zones#	Column 2 Planning scheme precincts#	Column 3 Planned density		Column 4 Demand generation rate for a trunk infrastructure network		
		Non-residential plot ratio (floor space in m2/ employee)	Residential density (dwellings/ dev ha)	Transport network (vpd/dev ha)	Parks and land for community facilities network (ha/1000 persons)	Stormwater network (imp ha/dev ha)
Residential development type						
Low Density Residential	(Where no precinct applies)	0	10	60	4.4	0.6
	Mountain Residential	0	0	0	4.4	0
Low-Medium Density Residential		0	13.5	81	4.4	0.6
Rural	(Where no precinct applies)	0	0.01667	8	4.4	**
	Tamborine Mountain Rural	0	0.01667	8	4.4	**
	Rural Escarpment	0	0.01667	8	4.4	**
Rural Residential	(Where no precinct applies)	0	3.33	27	4.4	0.1
	Rural Residential A	0	1	8	4.4	0.1
Township	(Where no precinct applies)	0	4	32	4.4	0.1
	Township Residential	0	3.33	27	4.4	0.1
Non-residential or mixed use development type						
Community Facilities		35	0.1	*	0	0.1
Conservation		0	0	0	0	0
District Centre		25 - 45	4	*	4.4	0.6
Industry		55 - 220	0.5	*	0	0.9
Limited	Flood Land	0	0	0	0	0

Column 1 Planning scheme zones#	Column 2 Planning scheme precincts#	Column 3 Planned density		Column 4 Demand generation rate for a trunk infrastructure network		
		Non-residential plot ratio (floor space in m2/ employee)	Residential density (dwellings/ dev ha)	Transport network (vpd/dev ha)	Parks and land for community facilities network (ha/1000 persons)	Stormwater network (imp ha/dev ha)
Development	Historical Subdivision	0	0	0	0	0
Local Centre		25 - 45	2	*	4.4	0.6
Major Centre		25 - 120	4	*	4.4	0.9
Major Tourism		*	0	*	0	0.6
Minor Tourism		*	0	*	0	0.6
Mixed Use	(Where no precinct applies)	25 - 120	4	*	4.4	0.9
	Commercial Industrial	45 - 120	0	*	0	0.9
Neighbourhood Centre		25	0	*	0	0.6
Recreation and Open Space		0	0	0	0	0
Special Purpose	(Where no precinct applies)	0	0	8	4.4	0.6
	Bulk Water Storage	0	0	*	0	0
	Bromelton State Development Area	55 - 220	0.01667	*	4.4	0.9

* assessed by Council on a case by case basis
** an assumption of 500 sqm of impervious area per dwelling is used.
# to assist in interpretation, refer to document "Equivalent land uses, zones and precincts in the Beaudesert, Boonah & Ipswich Planning Schemes for the LGIP"

EMPLOYMENT IMPLICATIONS OF THE DEVELOPMENT OF BROMELTON

DRAFT REPORT

AUGUST 2016

Scenic Rim Regional Council

Economic Associates

EMPLOYMENT IMPLICATIONS OF THE DEVELOPMENT OF BROMELTON

Draft Report

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EXECUTIVE SUMMARY

Economic Associates was commissioned by Scenic Rim Regional Council to undertake an analysis of the employment implications resulting from the development of Bromelton. As a key industrial node for the Scenic Rim and SEQ more broadly, Bromelton is anticipated to generate significant employment and will require access to a skilled workforce. Hence, it is pertinent to investigate whether or not the Scenic Rim (in its current and future capacity) provides a sufficient pool of workers to appropriately support the development of Bromelton or whether alternative sources of available workforce (beyond the Scenic Rim) may be required to supplement any potential employment shortfalls (skills and/or number of workers) and the implications of that.

Located west of the town of Beaudesert, Bromelton has long been identified as having the potential to develop as a significant industrial node particularly in meeting a range of regional industry needs in the form of intermodal and/or rail freight facilities and 'difficult to locate' or large footprint industry. As a long term development, appropriate planning is required to ensure the necessary infrastructure is developed and maintained to support Bromelton as a key industrial node not only for the Scenic Rim but the broader South East Queensland. This not only includes the necessary transport and service infrastructure to support businesses within Bromelton but also ensuring the appropriate infrastructure (such as transport, recreational, community, educational and health infrastructure) is in place to support the broader community as Bromelton evolves.

Existing industrial uses within the Bromelton SDA include the Gelita gelatine factory, AJ Bush and Son's rendering plant, quarries and Council's waste facility. Bromelton also hosts a number of poultry farms. Construction is also underway of the SCT Logistics 130 hectare freight terminal to be developed in several stages and located on the dual gauge rail line between Brisbane and Sydney. The SCT Logistics facility is expected to create 1,000 direct jobs on site once fully completed[1].

Bromelton is expected to yield 943 hectares of industrial land allotments. Industrial development at Bromelton is anticipated to include a range of industrial land uses including:

- Major industry: medium to high impact industry, generally occupying sites in excess of one hectare (potential allotment yield of 617 hectares);
- Rail dependent industry: large footprint industry that requires direct access to rail facilities (potential allotment yield of 244 hectares);
- Rail sidings: rail loops and spur lines to facilitate the (un)loading of rail based freight (potential allotment yield of 58 hectares);
- Corporate logistics: typically national based transport and logistics centres (potential allotment yield of 18 hectares);
- Local service centre: a retail and business hub that provides retail and commercial services to workers and businesses (potential allotment yield of 6 hectares).

At build out, Bromelton is anticipated to yield 24,802 workers consisting of:

- 617 hectares of major industry, employing 18,510 workers;
- 244 hectares of rail dependent industry, employing 4,870 workers;
- 58 hectares of rail sidings, employing 290 workers;
- 6 hectares of local services centres, employing 580 workers; and
- 18 hectares of corporate logistics, employing 552 workers.

With Bromelton yielding a workforce of 24,802 workers, access to a suitable workforce with the necessary skills will be required to support the employment requirements of Bromelton as well as businesses within the broader Scenic Rim Region, particularly Beaudesert. Based on various development scenarios, the employment workforce is expected to peak in 2064 under the main scenario, in 2054 under the accelerated scenario (assumes development take-up is reduced by 10 years) and in 2074 under the extended scenario (assumes development take-up

1 http://www.scenicrim.qld.gov.au/news/-/asset_publisher/X8llByIPtOtj/blog/7-december-30-million-freight-terminal-for-bromelton

extends by 10 years). With the construction of the SCT Logistics underway, development take up of the Bromelton SDA at this stage aligns with the accelerated development scenario.

Historically, the Scenic Rim has had a significant affiliation with the agricultural sector borne by the region's strong links to horticulture and farming. The development of Bromelton will assist in shaping the region's local economy over the longer term. The Scenic Rim is generally characterised by an older demographic, reflective of the Region's appeal to retirees and the region's relationship with the agricultural sector. As the local community continues to age the growth in the local skilled workforce is likely to diminish placing increasing pressure to seek alternative sources of available workforce that not only support local businesses but also have the necessary skills base. The long term development of Bromelton as a significant industrial node will contribute to the need for Scenic Rim businesses to have access to a skilled workforce to supplement any shortfalls in the availability of the local workforce and/or skills, particularly skilled blue collar workers.

The total available workforce in the Scenic Rim is estimated to be 13,674 in 2016 increasing to 18,931 persons. Based on persons employed in non-population serving sectors, the workforce population is estimated to be 11,188 persons in 2016 increasing to 15,489 persons by 2036.

Comparison of the incremental growth in the Scenic Rim of those employed in non-population serving sectors as well as available local workforce with the employment yield for Bromelton between 2021 and 2036 highlights a potential shortfall in workers to support development of the Bromelton SDA by 2036 under the main and accelerated development scenarios. Alternatively, if development of the Bromelton SDA aligns with the accelerated development scenario, there will be a shortfall in available local workforce by 2021. Consequently, alternative sources of available workforce would be required to support the ongoing development of the Bromelton SDA as

well as local businesses within the Scenic Rim.

The most proximate alternative source of available workforce to service the development of the Bromelton SDA (and the broader Scenic Rim) is south west Logan, in particular the Greenfield corridors of Greater Flagstone and Yarrabilba. The connectivity of the Greater Flagstone and Yarrabilba communities to Bromelton and the Scenic Rim makes those future communities a logical source of available workforce to supplement potential shortfalls in the availability and/or skills of the local workforce. Both Greater Flagstone and Yarrabilba represent long term developments that are anticipated to accommodate significant populations and subsequently a large pool of workers. It is envisaged that the Greater Flagstone and Yarrabilba communities will attract a similar demographic to other greenfield corridors within the South East Queensland located in proximity to other major employment nodes such as North Lakes, Greater Springfield and the northern Gold Coast. These communities have generally been attractive for first home buyers and have typically attracted a young skilled blue collar workforce.

As Bromelton develops, it is apparent that there is a shortfall in the location workforce population to not only support the employment requirements of Bromelton but also the local businesses of Beaudesert. With Greater Flagstone/Yarrabilba representing the most logical and proximate alternative workforce source to supplement the anticipated shortfall in the supply of available local workforce, it is pertinent to ensure sufficient connectivity to Bromelton is developed and maintained.

The Mount Lindesay Highway and Beaudesert-Boonah Road provide the main connectivity between the Bromelton SDA and Greater Flagstone/Yarrabilba region. Other key connector roads linking the Greater Flagstone/Yarrabilba region to the Bromelton SDA (via the Mount Lindesay Highway and Beaudesert-Boonah Road) include:

- Camp Cable Road (main road connecting Yarrabilba to the Mount Lindesay Highway);
- Waterford-Tamborine Road,
- Beaudesert-Beenleigh Road; and
- Beaudesert-Nerang Road.

Internal road connections between Greater Flagstone and Bromelton SDA are provided via Bromelton House Road, Allan Creek Road, Brookland Road and Undullah Road (which provides connectivity with the Mount Lindesay Highway). These roads are generally characterised by a six metre wide, single carriage way with a single lane seal with speed limits generally varying between 60 kph and 80 kph. The Ferguson Reserve Bridge along Brookland Road is a narrow bridge that functions as a slow point (due to its narrowness) as part of the internal road connection within the Bromelton SDA. The JS Cochrane Bridge is also a narrow bridge (barely two lanes) located along Undullah Road (west of Brookland Road) that poses difficult for passing vehicles at speed. As an alternative route between Greater Flagstone and the Bromelton SDA, these internal road connections would need to upgrading and appropriate management to support the development of the Bromelton SDA.

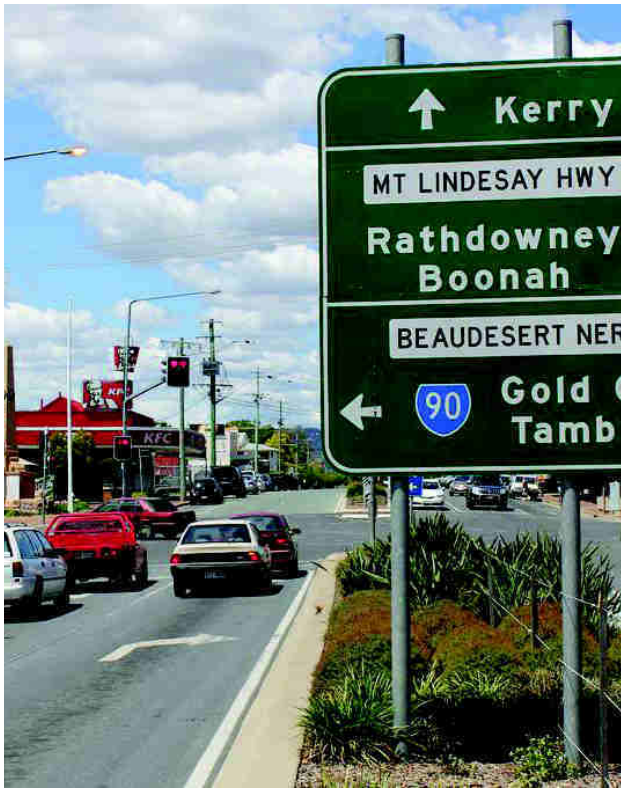
The ongoing development of the Bromelton SDA is likely to result in a number of flow-on effects to the local community. As the largest and most proximate centre to the Bromelton SDA, Beaudesert is likely to experience the most notable flow-on effects resulting from the development of the Bromelton SDA. Anticipated implications for Beaudesert over the medium to long term include:

- Changes in the structure of the demographic profile particularly in regards to age, with younger families likely to be attracted to Beaudesert for employment opportunities within the Bromelton SDA;
- Compositional changes of the local workforce in terms of skills and industry profile (particularly within the transport, postal and warehousing industry sectors), with the local workforce attaining the necessary skills and training required by businesses within the Bromelton SDA;
- Increase in household income levels as a result of the attraction of Bromelton SDA as a major employment node particularly for skilled blue collar workers; and
- Increases in the working age population

compared to the retiree population as younger workers seek employment opportunities derived from the Bromelton SDA.

The structural and compositional changes of the employment and demographic profile of Beaudesert would also result in additional flow-on effects with respect to the provision of local services and infrastructure provided such as:

- Sufficient provision of retail and commercial services and facilities to cater for the needs of the local resident population as well as the workforce population. Demand for retail provision would result from the anticipated increase in household incomes and subsequent discretionary income;
- Provision of recreational (e.g. parks), community (e.g. libraries), educational (e.g. schools) and health (e.g. hospitals) infrastructure to support the local resident and workforce population; and
- Provision and maintenance of transport infrastructure (e.g. local roads, bridges, public transport etc.) to support the anticipated increases in traffic and workers within Beaudesert and surrounds.



1. INTRODUCTION

1.1 BACKGROUND AND CONTEXT

Bromelton is located approximately six kilometres west of the town of Beaudesert. In the late 1990s, Bromelton was identified as having the potential to meet a range of regional industry needs in the form of intermodal and/or rail freight facilities and 'difficult to locate' or large footprint industry. A number of high impact industry activities relocated from Brisbane to Bromelton, including AJ Bush & Sons (rendering facility) and Gelita (manufacturers of gelatine) in the 1990s and remain operational. Other uses within the Bromelton SDA include quarries, Council's waste facility as well as a number of poultry farms.

The first statutory regional plan for South East Queensland (SEQ RP 2005-2026) confirmed Bromelton's intended role and function as a regionally significant future industry location, and included Bromelton in the SEQ urban footprint. This was reinforced through the Beaudesert Shire whole of shire planning project undertaken in 2006 by the former Beaudesert Shire Council.

In 2008, the Queensland Government declared the Bromelton State Development Area, which covers approximately 15,000 hectares, including the land designated as urban footprint at Bromelton under the SEQ RP 2005-2026.

There has been considerable developer interest at Bromelton with large englobo development parcels being acquired by a number of major industrial land developers and logistics operators, including Mirvac, Eureka and SCT Logistics. Construction is also underway of the SCT Logistics 130 hectare freight terminal to be developed in several stages and located on the dual gauge rail line between Brisbane and Sydney. The SCT Logistics facility is expected to create 1,000 direct jobs on site once fully completed[2].

1.2 PURPOSE

Scenic Rim Regional Council is seeking to obtain an understanding of the potential implications on the Scenic Rim (in particular Beaudesert) derived from the long term development of Bromelton. Intended as a significant industrial node for the Scenic Rim and the broader South East Queensland, Bromelton is anticipated to generate a significant workforce population. The development of Bromelton is expected to have a number of flow-on implications for the Scenic Rim, which need to be appropriately planned for and managed. Such implications include:

- Scenic Rim's capacity to provide a sufficient workforce source to support the continued development of Bromelton in the long term;
- In the event additional workers are required to support the development of Bromelton, where are the alternatives sources of available workforce likely to come from;
- What are the demographic characteristics of the alternative sources of available workforce likely to be, or put another way, would these alternative locations be likely to have populations with the skills base required by Bromelton businesses;
- What are the likely corridors that would be used by Bromelton workers originating from outside the Scenic Rim, and in a strategic sense what is the status of those corridors; and
- What are the potential implications of the development of Bromelton on Beaudesert in the long term, or how will the Beaudesert community need to change to better support Bromelton.

Economic Associates was commissioned by Scenic Rim Regional Council to undertake an analysis of the employment implications resulting from the development of Bromelton. As a key industrial node for the Scenic Rim, Bromelton is anticipated to generate significant employment and will require access to a skilled labour workforce. Hence, it is pertinent to investigate whether or not the Scenic Rim (in its current and future capacity) provides a sufficient pool of workers to appropriately support the development of Bromelton or whether alternative sources of available workforce (beyond the Scenic Rim) may be required to supplement any potential employment shortfalls in skills and/or number of workers).

2 http://www.scenicrim.qld.gov.au/news/-/asset_publisher/X8llByIPtOtj/blog/7-december-30-million-freight-terminal-for-bromelton

2. ANTCIPATED EMPLOYMENT AT BROMELTON

2.1 NATURE OF INDUSTRIAL DEVELOPMENT

Industrial development at Bromelton is anticipated to ultimately comprise 1,114 hectares. Previous work undertaken by Queensland Urban Utilities and Economic Associates anticipated that this 1,114 hectares of industrial development would comprise:

- Major industry: medium to high impact industry, generally occupying sites in excess of one hectare (potential allotment yield of 617 hectares);
- Rail dependent industry: large footprint industry that requires direct access to rail facilities (potential allotment yield of 244 hectares);
- Rail sidings: rail loops and spur lines to facilitate the (un)loading of rail based freight (potential allotment yield of 58 hectares);
- Corporate logistics: typically national based transport and logistics centres (potential allotment yield of 18 hectares); and
- Local service centre: a retail and business hub that provides retail and commercial services to workers and businesses (potential allotment yield of 6 hectares).

Existing industrial uses within the Bromelton SDA include the Gelita gelatine factory and AJ Bush and Son's rendering plant. Bromelton also has extractive industries, Council's waste management facility and a number of poultry farms. Construction is now underway of the SCT Logistics 130 hectare freight terminal to be developed in several stages and located on the dual gauge rail line between Brisbane and Sydney. The SCT Logistics facility is expected to create 1,000 direct jobs on site once fully completed[3].

3 http://www.scenicrim.qld.gov.au/news/-/asset_publisher/X8llByIPtOtj/blog/7-december-30-million-freight-terminal-for-bromelton

2.2 BROMELTON DEVELOPMENT SCENARIOS

For the purposes of this analysis, three development scenarios have been generated to assess the implications of alternative take-up scenarios of the Bromelton SDA based on the uses identified in section 2.1. The development scenarios assessed include the following:

- Main Development Scenario: is the base case scenario that assumes development take-up occurs in line with the anticipated take-up derived by Queensland Urban Utilities for the development of a water main to Bromelton;
- Extended (or Protracted) Development Scenario: assumes development take-up occurs at a slower rate than anticipated by the main development scenario (e.g. development take-up extends by 10 years than anticipated under the main scenario); and
- Accelerated Development Scenario: assumes development take-up occurs at a faster rate than anticipated by the main development scenario (e.g. development take-up reduces by 10 years than anticipated under the main scenario).

With construction of the SCT Logistics freight terminal now underway, development of Bromelton is likely to be somewhere between the main and accelerated development scenarios at least in the short term.

2.2.1 MAIN DEVELOPMENT SCENARIO

Queensland Utilities estimates that 1,114 hectares of industrial land would yield 943 hectares of industrial allotments. Under the main development scenario, the first land at Bromelton is assumed will be taken up in 2023, with the full 943 hectares of industrial allotments expected to be taken up over the next 40–45 years.

The take-up of industrial land by land use type has been utilised as a basis to estimated indicative employment levels at Bromelton. As already mentioned, the five main land use types anticipated within Bromelton including Major Industry; Rail Dependent Industry; Rail Sidings; Local Services Centres and Corporate Logistics. Employment density ratios have been utilised to derive the total employment generated by the development of the Bromelton SDA.

Over the past ten years, Economic Associates has interviewed in excess of 400 industrial businesses for various industrial land studies for the Queensland Government and a number of major local governments. This database of information includes information pertaining to employment densities, which has informed the employment density assumptions used in this report.

Employment density ratios adopted in this report are as follows:

- Major Industry: 30 workers per hectare;
- Rail Dependent Precinct: 20 workers per hectare;
- Rail Sidings: 5 workers per hectare;
- Local Services Centre: 100 workers per hectare; and
- Corporate Logistics: 30 workers per hectare.

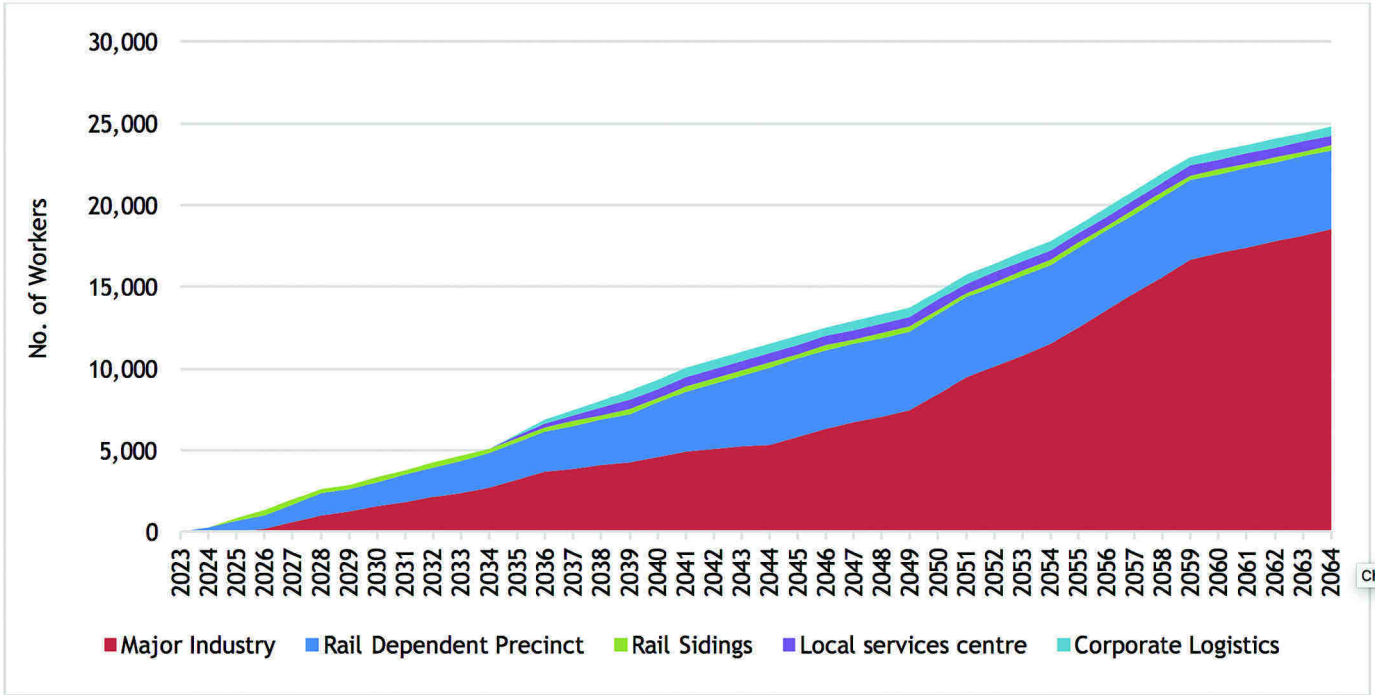
Based on the above employment densities a cumulative employment profile for Bromelton by land use type has been generated in Table A.1 in Appendix A.

By 2026, employment at Bromelton is anticipated to comprise 1,324 workers, increasing to 3,790 workers by 2031 and 6,871 workers by 2036 (under the main development scenario). Employment within Bromelton is anticipated to peak at 24,802 workers by 2064, comprising:

- 18,510 workers within the Major Industry precinct;
- 4,870 workers within the Rail Dependent Industry precinct;
- 290 workers within the Rail Sidings precinct;
- 580 workers within the Local Services Centre; and
- 552 workers within the Corporate Logistics precinct.

The ongoing development of Bromelton is anticipated to generate significant employment requiring access to a suitable pool of available workforce with the appropriate skills to support the Bromelton SDA. Figure 2.1 illustrates the cumulative employment resulting from the development of the Bromelton SDA under the main development scenario.

Figure 2.1: Cumulative Employment by Land Use Type, Bromelton SDA, Main Development Scenario



Source: Queensland Urban Utilities, Economic Associates Analysis

2.2.2 ACCELERATED DEVELOPMENT SCENARIO

Development of Bromelton under the accelerated development scenario assumes employment generated by Bromelton occurs at a faster rate (i.e. total employment peaks at 24,802 workers ten years earlier than anticipated under the main scenario in 2054). Under the accelerated development scenario, the following has been assumed:

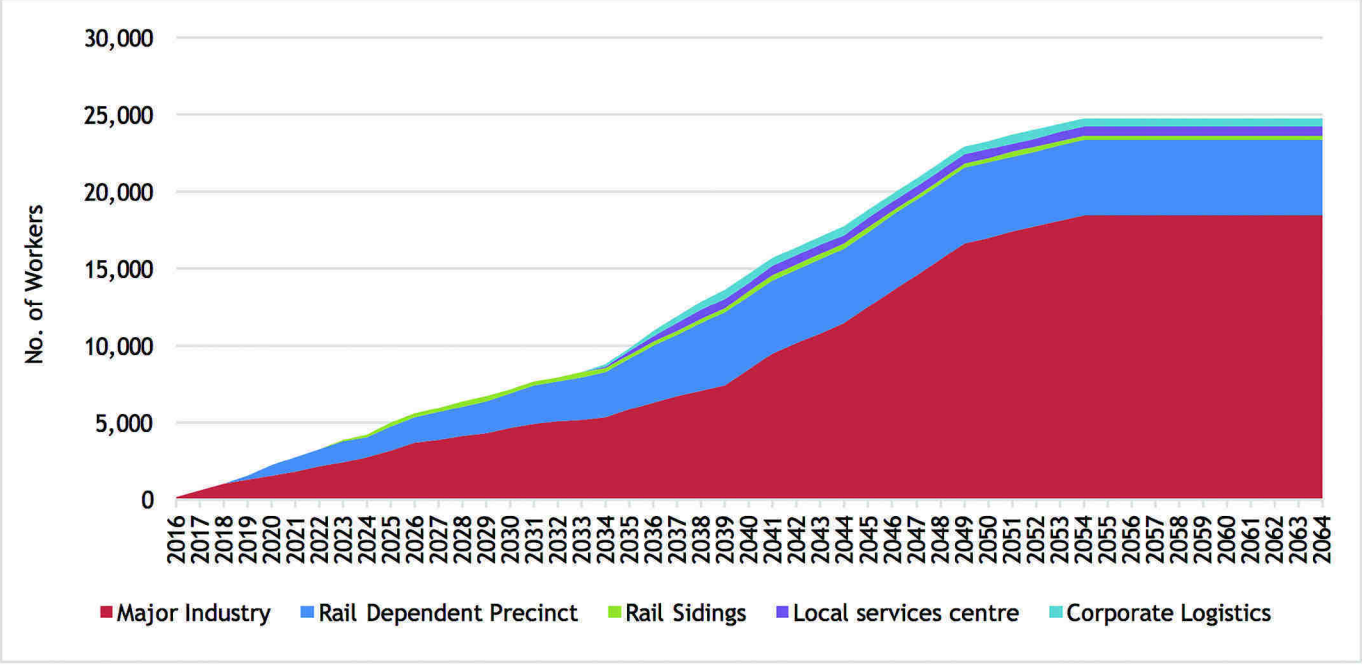
- Major Industry: employment commences in 2016, ten years earlier than anticipated under the main scenario;
- Rail Dependent Precinct: employment commences in 2019, five years earlier than anticipated under the main scenario;
- Rail Sidings: employment commences in 2022, a year earlier than anticipated under the main scenario;
- Local Services Centre: employment commences in 2034, a year earlier than anticipated under the main scenario; and
- Corporate Logistics Precinct: employment commences in 2034, a year earlier than anticipated under the main scenario.

Based on the above assumptions, the employment generated by the development of Bromelton occurs at a faster rate than anticipated under the main scenario with total employment peaking at 24,802 workers in 2054. Under the accelerated scenario, in 2026 total employment generated by Bromelton is estimated at 5,644 workers, increasing to 7,674 workers in 2031. By 2036, the total employment generated by Bromelton under the accelerated development scenario is anticipated to be 10,954 workers comprising:

- 6,329 workers within the Major Industry precinct;
- 3,652 workers within the Rail Dependant Industry precinct;
- 290 workers within the Rail Sidings precinct;
- 350 workers within the Local Services Centre; and
- 333 workers within the Corporate Logistics Precinct.

Table A.2 (in Appendix A) summarises the cumulative employment profile for the development of the Bromelton SDA by land use type under the accelerated development scenario. Figure 2.2 below illustrates the cumulative employment of the Bromelton SDA under the accelerated development scenario.

Figure 2.2: Cumulative Employment, Bromelton SDA, Accelerated Development Scenario



Source: Economic Associates Analysis

2.2.3 EXTENDED DEVELOPMENT SCENARIO

The extended development scenario assumes employment generated by the development of Bromelton occurs at a slower rate (i.e. total employment peaks at 24,802 workers ten years later than anticipated under the main scenario in 2074). Under the extended development scenario, the following has been assumed:

- Major Industry: employment commences in 2036, ten years later than anticipated under the main scenario;
- Rail Dependent Precinct: employment commences a year later in 2025, a year later than anticipated under the main scenario;
- Rail Sidings: employment commences in 2026, three years later than anticipated under the main scenario;
- Local Services Centre: employment commences in 2038, three years later than anticipated under the main scenario; and
- Corporate Logistics: employment commences in 2038, three years later than anticipated under the main scenario.

Based on the above assumptions, the employment generated by Bromelton occurs at a slower rate with the total employment generated by Bromelton peaking at 24,802 workers in 2074. Under the extended development scenario, in 2026 total employment generated by Bromelton is estimated at 706 workers, increasing to 1,793 workers by 2031. By 2036, the total employment generated by the Bromelton SDA is anticipated to be 2,729 workers under the extended development scenario comprising:

- 170 workers within the Major Industry precinct;
- 2,268 workers within the Rail Dependent Industry precinct; and
- 290 workers within the Rail Sidings precinct.

No workers are anticipated within the local services centre of corporate logistics precincts in 2036, with the first workers in these precincts anticipated in 2038 under the extended development scenario as detailed in Table A.3 in Appendix B. Figure 2.3 below illustrates the cumulative employment of the Bromelton SDA under the extended development scenario.

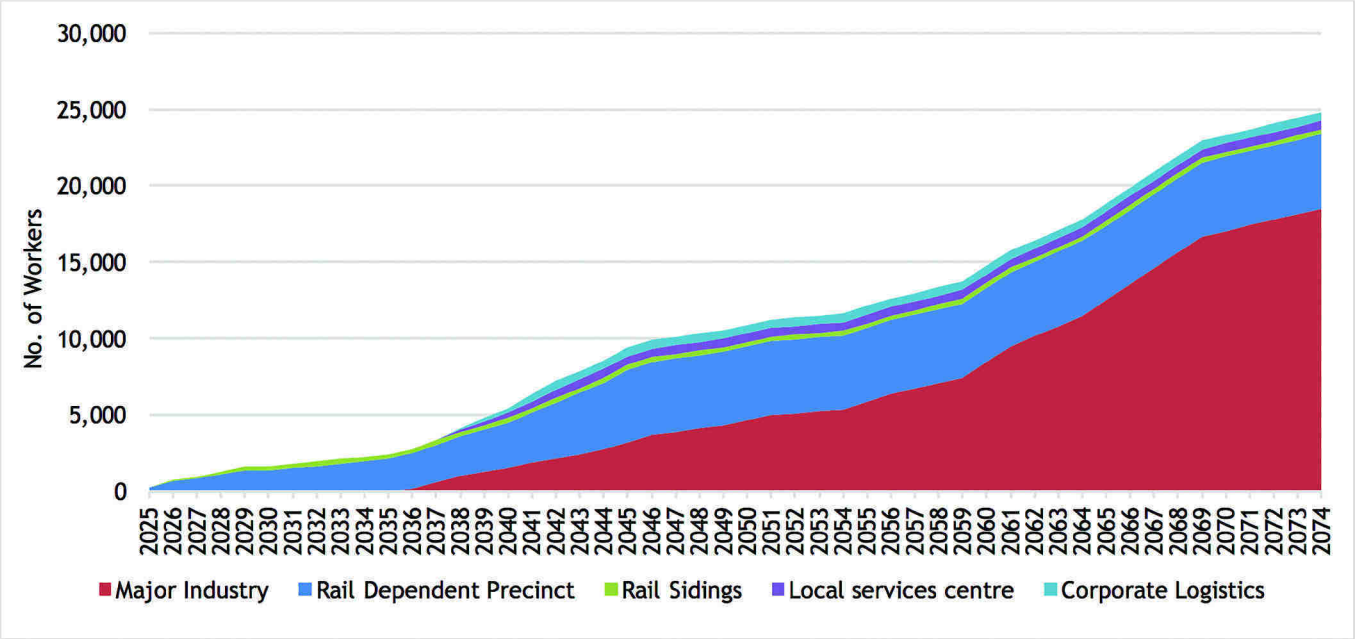


Figure 2.3: Cumulative Employment, Bromelton SDA, Extended Development Scenario

Source: Economic Associates Analysis

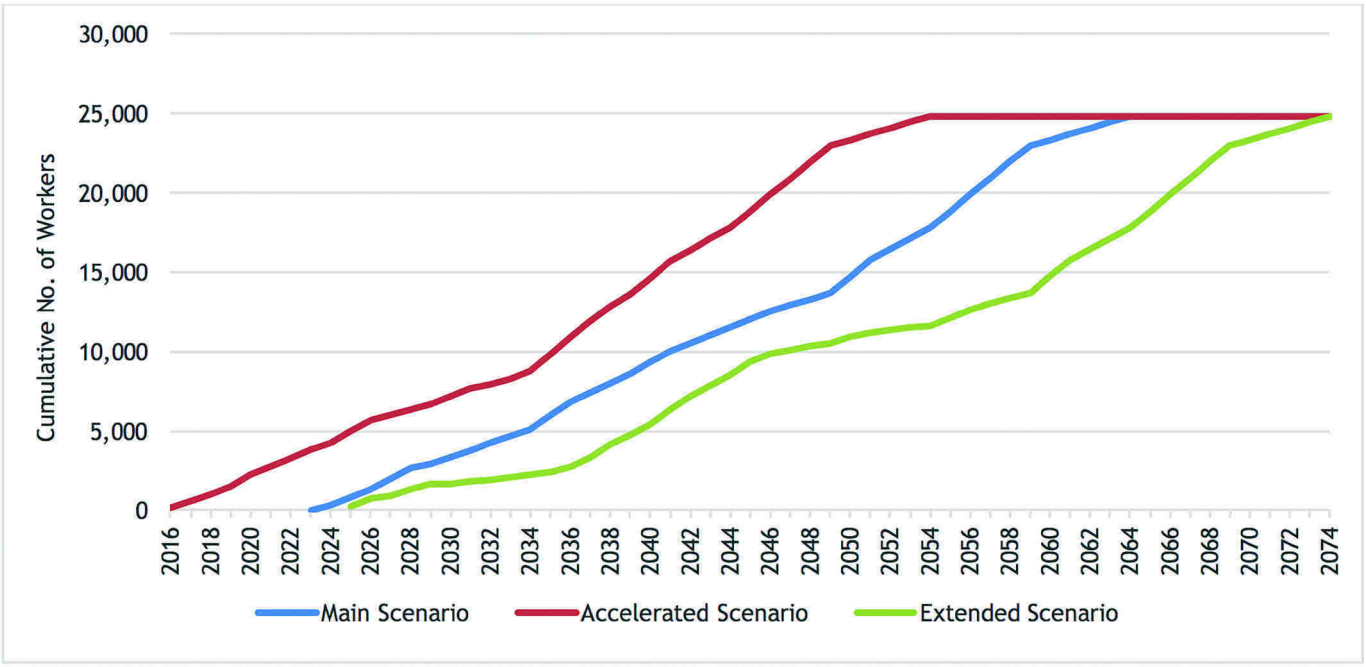
2.3 IMPLICATIONS FOR THE BROMELTON SDA AND THE SCENIC RIM

Employment within the Bromelton SDA is anticipated to peak at 24,802 workers once fully developed. The employment workforce is expected to peak in 2064 under the main scenario, in 2054 under the accelerated scenario and in 2074 under the extended scenario as illustrated in Figure 2.4.

Given the nature of development intended within the Bromelton SDA (as a major industrial node), the Bromelton SDA is likely to attract/require workers predominantly within industrial sectors such as transport, postal and warehousing. The establishment of the SCT Logistics freight terminal (currently under construction) is likely to serve as a catalyst for other potential logistics and warehousing businesses to develop a significant transport and logistics hub within the Bromelton SDA. The construction of the SCT Logistics freight terminal is expected to create 1,000 jobs onsite upon completion, indicating that at this stage development of the Bromelton SDA is in line with the accelerated development scenario.

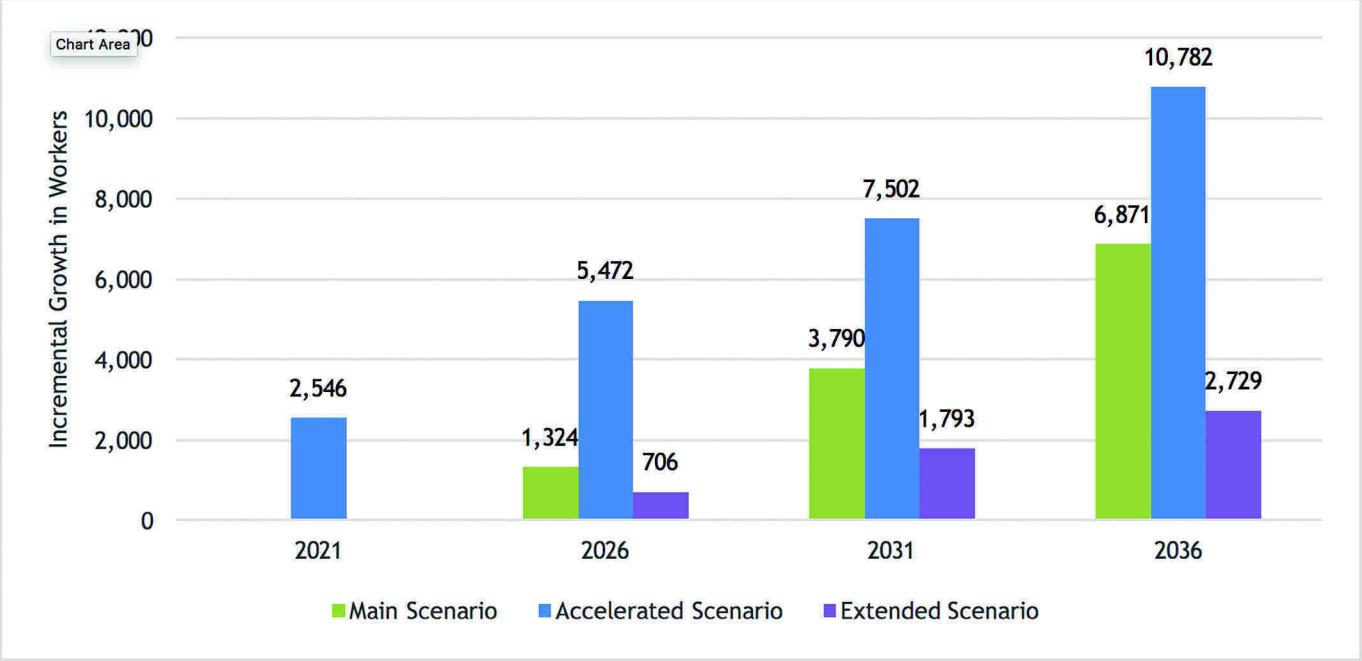
The ongoing development of the Bromelton SDA will generate significant demand for a skilled blue collar workforce, with the majority likely to be sourced from the two main centres of the Scenic Rim (i.e. Beaudesert and Boonah). Due to the proximity and connectivity of Beaudesert to Bromelton, Beaudesert would likely serve as the primary source of workers for the Bromelton SDA with Boonah providing a secondary source. However, with the Scenic Rim (including Beaudesert and Boonah) generally characterised by an older demographic, an increasing proportion of persons aged 65 years and older and a diminishing proportion of persons of working age (i.e. persons aged 15 years to 54 years), alternative sources of available workforce are likely to be required to supplement any shortfalls (in skills and/or number of workers) within the local workforce. This is further discussed in Chapter 3. Figure 2.5 illustrates the incremental growth in employment by development scenario for the Bromelton SDA in the short to medium term between 2021 and 2036.

Figure 2.4: Cumulative Total Employment by Development Scenario, Bromelton SDA



Source: Queensland Urban Utilities, Economic Associates Analysis

Figure 2.5: Incremental Growth in Employment by Development Scenario, Bromelton SDA, 2021 to 2036



Source: Economic Associates Analysis

3. AVAILABLE LOCAL WORKFORCE

In assessing the available local workforce to service the employment requirements of Bromelton, Economic Associates has assessed the demographic and employment characteristics of the resident workforce coupled with the anticipated population growth (in particular working age population growth) of the Beaudesert and Boonah SA2s as well as the Scenic Rim Local Government Area (LGA). As the largest centre within the Scenic Rim and the most proximate to the Bromelton SDA, Beaudesert is likely to experience the majority of flow-on effects derived from the development of the Bromelton SDA. As a secondary centre within the Scenic Rim with connectivity to the Bromelton SDA via the Beaudesert Boonah Road, Boonah is also likely to experience the flow-on effects derived from the Bromelton SDA (albeit to a lesser extent to Beaudesert).

Demographic data is based on historical data derived from the Australian Bureau of Statistics (ABS) Census of Population and Housing (2001, 2006 and 2011) with population projections derived from projections prepared by the Queensland Government Statistician's Office (QGSO). The development of Bromelton would necessitate a recasting of the QGSO projections.

3.1 LOCAL WORKFORCE PROFILE

A time series profile of the Beaudesert and Boonah SA2s between 2001 and 2011 (based on the results of the ABS Census of Population and Housing) has been undertaken to provide an overview of the demographic changes recorded within these communities. For comparison purposes, the demographic statistics of Boonah, Beaudesert and Scenic Rim Regional Council have been benchmarked to Greater Flagstone/Yarrabilba, Greater Springfield, Northern Gold Coast, North Lakes, South East Queensland and Queensland as summarised in Tables B.1 and B.2 in the Appendix B.

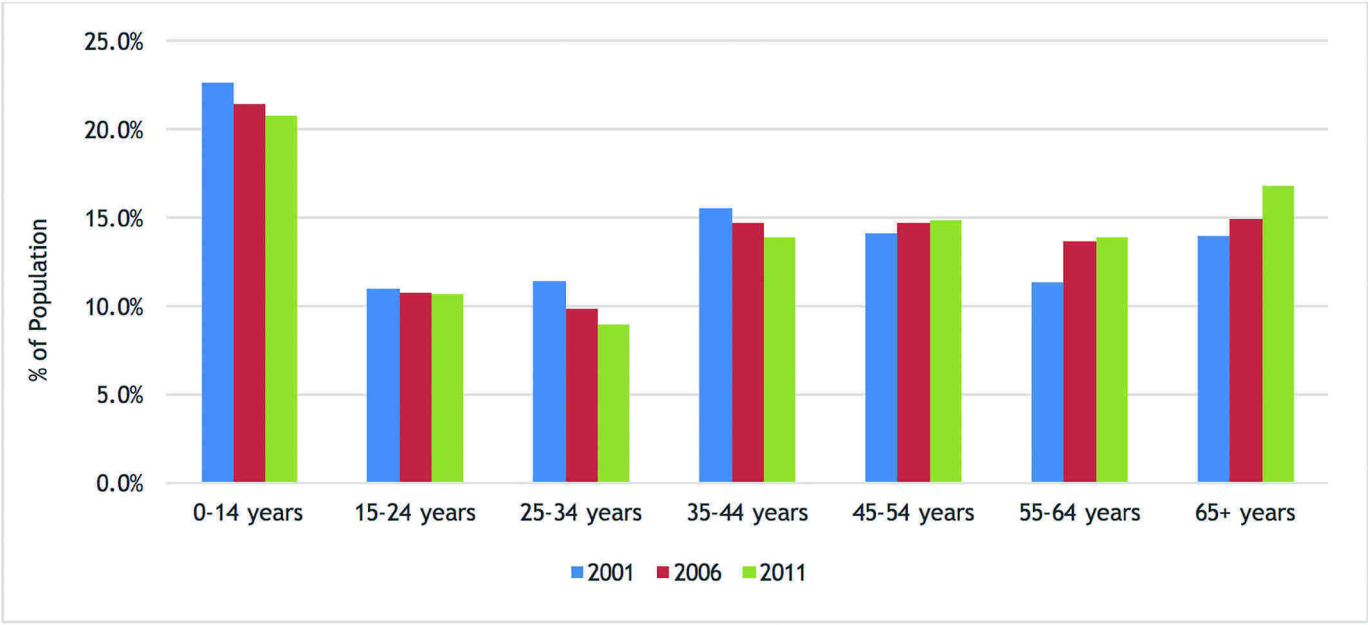
The demographic profile also provides a contextual overview of the characteristics of the local workforce population. The following provides a brief summary of the key characteristics of the Scenic Rim, Beaudesert and Boonah communities.

SCENIC RIM

The Scenic Rim is characterised by an older demographic with a high proportion of persons aged 65 years and older (increasing from

14.0% in 2001 to 16.8% in 2011) and a lower incidence of persons aged 25 to 34 years (decreasing from 11.4% in 2001 to 9.0% in 2011). Generally the proportion of persons aged 34 years and younger has been decreasing since 2001, whilst the proportion of persons aged 35 years and older has been increasing. The average age of residents within Scenic Rim has increased from 37.5 years in 2001 to 40.4 years in 2011. Figure 3.1 illustrates the age profile of the Scenic Rim by age cohort between the 2001 and 2011 censuses.

Figure 3.1: Age Profile by Age Cohort, Scenic Rim, 2001 to 2011



Source: ABS Census of Population and Housing, Economic Associates Analysis

Education attainment levels improved within the Scenic Rim, with the proportion of residents with a non-school qualification increasing from 29.0% in 2001 to 40.7% in 2011. The proportion of residents with a diploma/certificate increased from 20.7% to 28.0% between 2001 and 2011.

With a higher proportion of persons aged 65 years and older, the Scenic Rim recorded lower workforce participation rates to the exemplar locations (generally in excess of 70% in 2011). Workforce participation rates for the Scenic Rim marginally increased from 58.5% in 2001 to 59.6% in 2011.

Agriculture, forestry and fishing remains a key industry sector of employment for Scenic Rim residents although the proportion of residents employed within this sector has decreased from 13.3% in 2001 to 8.9% in 2011. Other key industry sectors of employment health care and social assistance, construction and retail trade. The proportion of persons employed in non-population serving sectors[4] (i.e. those sectors not considered to directly service the population) decreased from 45.6% to 43.5% between 2001 and 2006.

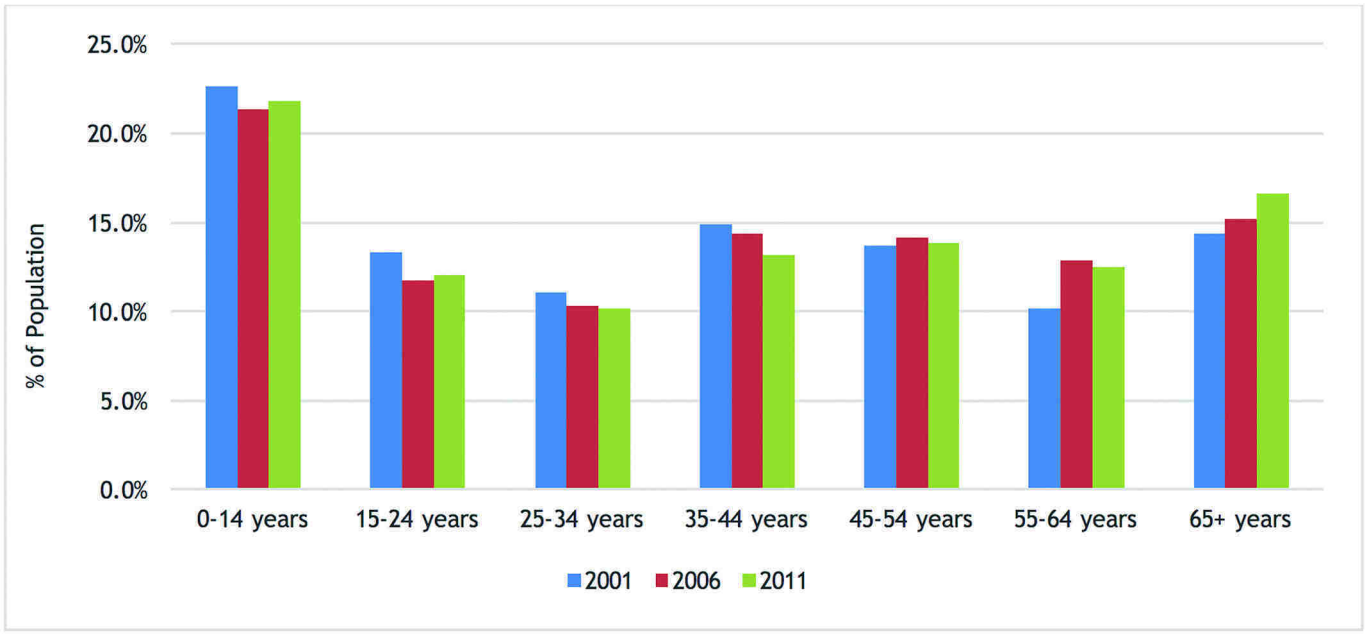
Overall, the Scenic Rim is anticipated to maintain an older demographic with lower levels of workforce participation rates and a lower proportion of a skilled workforce. The demographic characteristics of the Scenic Rim are unlikely to be sufficient to support the long term development of Bromelton as a significant industrial node. Consequently, alternative sources of available workforce are likely to be required to supplement shortfalls in skills within the available local workforce.

4 Non-population serving sectors have been defined to include Agriculture, forestry and fishing; mining; manufacturing; construction; wholesale trade; transport, postal and warehousing; professional, scientific and technical services; and administrative and support services.

BEAUDESERT

Beaudesert is generally characterised by an older demographic with an increasing prevalence of persons aged 65 years and older increasing from 14.3% to 16.6% between 2001 and 2011, with the proportion of persons aged 25-34 years decreasing from 11.1% in 2001 to 10.1% in 2011. The average age of Beaudesert residents increased from 37.4 years to 39.3 years. Figure 3.2 summarises the age profile of Beaudesert by age cohort between the 2001 and 2011 censuses.

Figure 3.2: Age Profile by Age Cohort, Beaudesert, 2001 to 2011



Source: ABS Census of Population and Housing, Economic Associates Analysis

Whilst education attainment levels within Beaudesert have increased between 2001 and 2011, only a third (33.3%) of residents attained a non-school qualification in 2011. The proportion of persons with a diploma/certificate increased from 17.5% to 26.0% between 2001 and 2011.

Between 2001 and 2011, workforce participation rates within Beaudesert marginally declined from 57.2% to 57.0%, which is much lower than the exemplar locations (in excess of 70% as of 2011) as well South East Queensland (63.2% in 2011) and Queensland (62.2% in 2011). This is reflective of the higher proportion of persons aged 65 years and older.

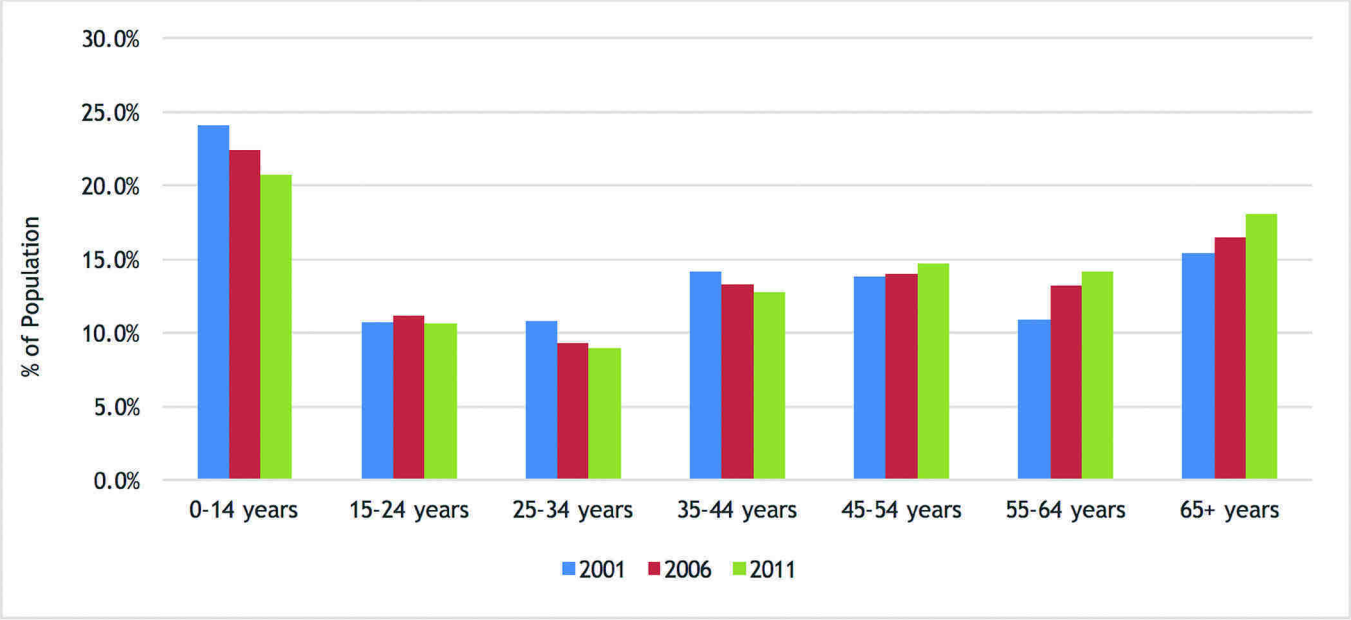
Agriculture, forestry and fishing is the main industry of employment of Beaudesert residents, with manufacturing, health care and social assistance and construction also key industry sectors of employment for local residents.

As an older demographic with a lower proportion of skilled workforce, Beaudesert is unlikely to have the necessary skills and available workforce to service the future development of Bromelton the long term. In the short to medium term, Beaudesert is likely to continue to comprise an older demographic with a lower proportion of a skilled blue collar workforce. In the longer term, the Beaudesert community has the potential to attract a slightly younger demographic as Bromelton develops and seeks access to a younger skilled demographic.

BOONAH

Boonah exhibits a similar demographic to Beaudesert, generally characterised by an older community with the proportion of persons aged 65 years and older in Boonah increasing from 15.4% to 18.0% between 2001 and 2011. Significantly, persons aged 25 to 34 years accounts for only a small proportion of Boonah residents decreasing from 10.8% in 2001 to 9.0% in 2011. The average age of Boonah residents increased from 32.4 years in 2001 to 40.9 years in 2011. Figure 3.3 illustrates the age profile of Boonah by age cohort between the 2001 and 2011 censuses.

Figure 3.3: Age Profile by Age Cohort, Boonah, 2001 to 2011



Source: ABS Census of Population and Housing, Economic Associates Analysis

Boonah exhibited slightly higher education attainment levels compared to Beaudesert, with the proportion of residents with a non-school qualification increasing from 24.1% in 2001 to 36.3% in 2011. The proportion of persons with a diploma/certificate increased from 12.5% to 26.8% between 2001 and 2011.

Workforce participation rates within Boonah increased from 58.1% to 59.6% between 2001 and 2011, although this remains much lower than the exemplar locations (in excess of 70% in 2011). The lower workforce participation rates are reflective of the higher proportion of persons aged 65 years and older within the Boonah community.

Agriculture, forestry and fishing has remained the main industry of employment for Boonah residents between 2001 and 2011, with health care and social assistance and retail trade also key industry sectors of employment of residents.

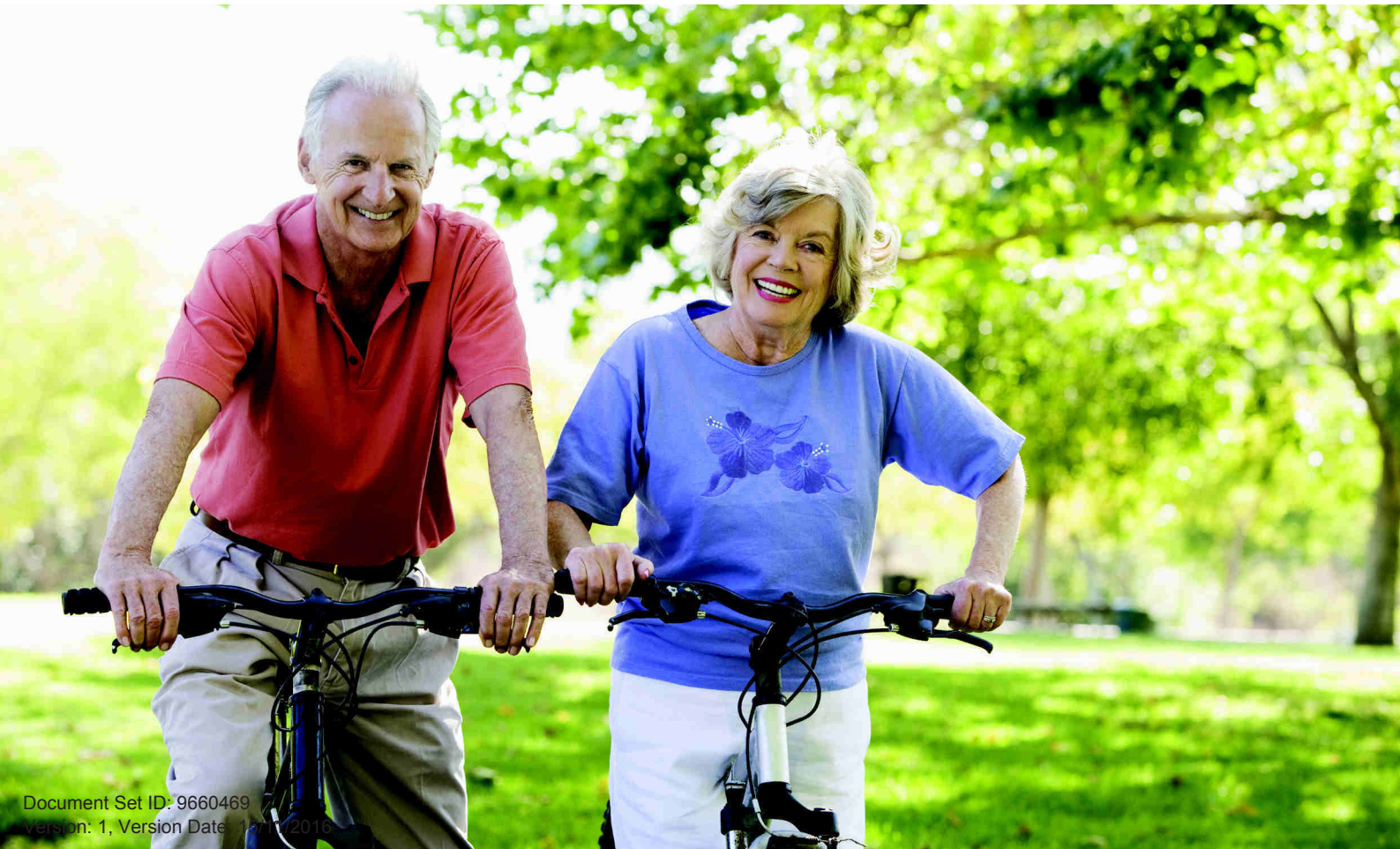
Boonah has traditionally had a higher incidence of older persons and is likely to maintain an older demographic in the long term. The older demographic and workforce characteristics (generally a lower proportion of skilled blue collar workers) is likely to be insufficient to support the long term development of Bromelton as a significant industrial node.

3.1.1 IMPLICATIONS FOR THE BROMELTON SDA AND THE SCENIC RIM

The Scenic Rim (including Beaudesert and Boonah) is characterised by an older demographic with lower levels of workforce participation (reflective of the high and increasing proportion of persons aged 65 years and older) and lower educational attainment levels. Consequently, the demographic characteristics of the available workforce suggests that alternative sources of a young skilled blue collar workforce will be required to support the long term development of the Bromelton SDA.

3.2 AVAILABLE LOCAL WORKFORCE POPULATION

The following examines the historic and projected total population, working age population (i.e. persons aged 15 to 64 years) and retiree population (i.e. persons aged 65 years and older) for the Scenic Rim, Beaudesert and Boonah, which are summarised in Table B.3 in Appendix B. Population projections for each of these areas are based on the 2015 edition QGSO population projections (medium series).



SCENIC RIM

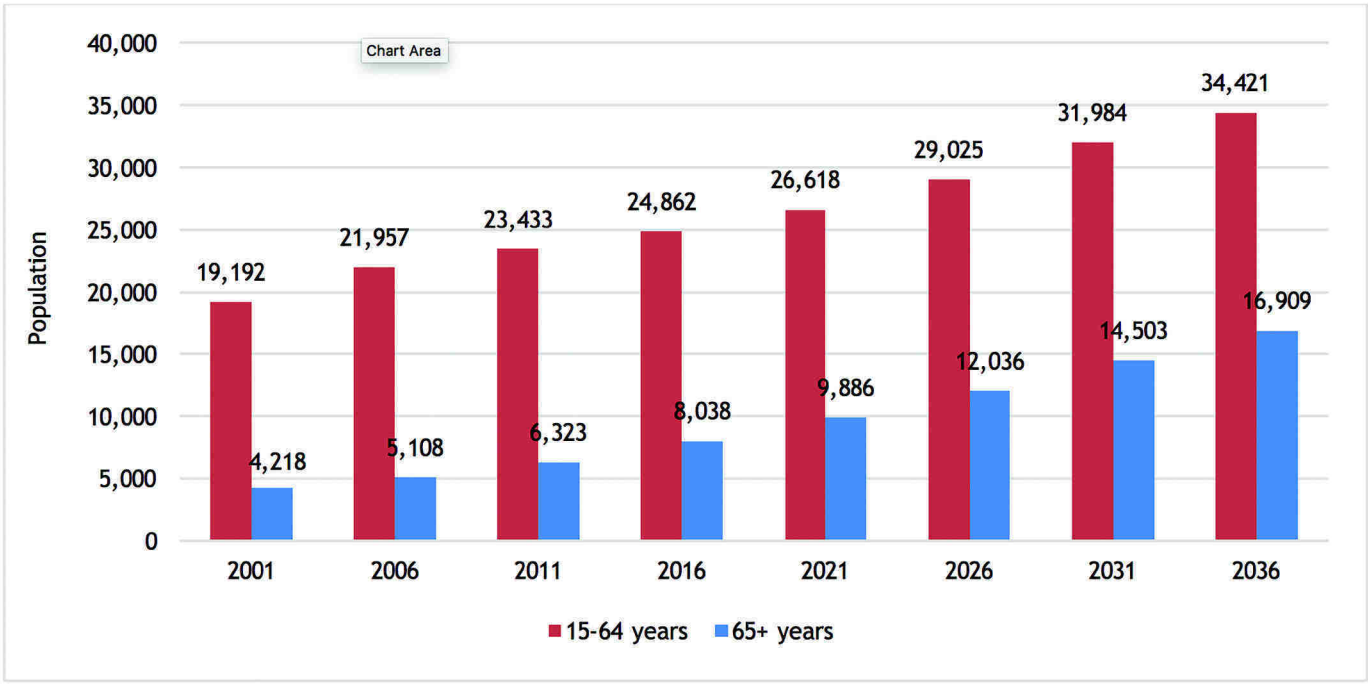
The Scenic Rim population increased from 34,231 persons in 2006 to 41,014 persons in 2016 average growth of 1.8% per annum). Between 2021 and 2036, the Scenic Rim population is projected to increase from 45,813 persons to 63,396 persons.

The working age population (i.e. persons aged 15-64 years) of the Scenic Rim was 21,957 persons in 2006 (accounting for 64.1% of the total Scenic Rim population) increasing to 24,862 persons by 2016 (accounting for 60.6% of the total Scenic Rim population). Between 2021 and 2036, the working age population of the Scenic Rim is projected to increase from 26,618 persons to 34,421 persons. The working age population of the Scenic Rim as a proportion of the total population is anticipated to decline from 59.6% in 2016 to 54.3% by 2036.

As a popular destination for older persons, the QGSO anticipates that the Scenic Rim would experience strong growth in the 65+ years age cohort increasing from 5,108 persons in 2006 (accounting for 14.9% of the total Scenic Rim population) to 8,038 persons by 2016 (accounting for 19.6% of the total Scenic Rim population). By 2036 the QGSO anticipates the retiree population to increase to 16,909 persons accounting for over a quarter of the total Scenic Rim population (26.7%).

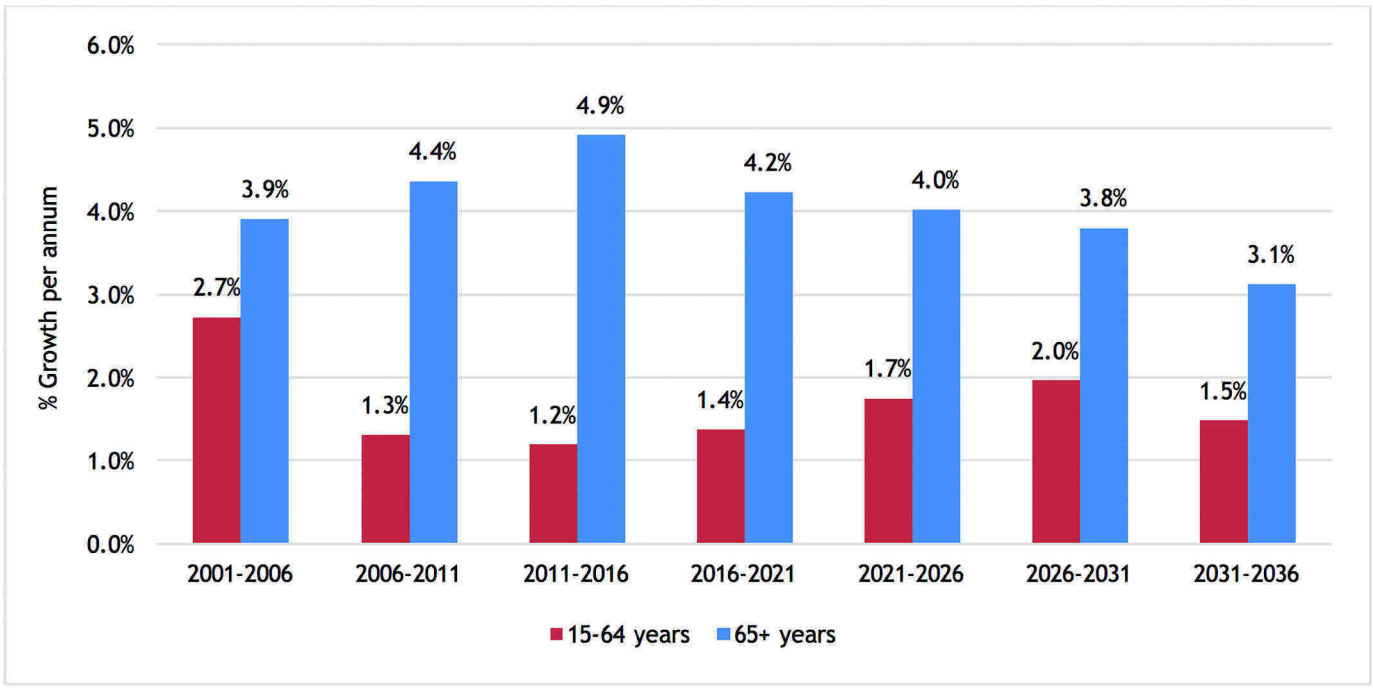
Figure 3.4 compares the projection population growth of the working age and retiree population for the Scenic Rim between 2001 and 2036. Figure 3.5 compares the average growth per annum for the working age population compared to the retiree population for the Scenic Rim between 2001 and 2036.

Figure 3.4: Working Age Population v Retiree Population, Scenic Rim, 2001 to 2036



Source: ABS, Queensland Government Statisticians Office (2015), Economic Associates Analysis

Figure 3.5: Working Age Population v Retiree Population, Average growth per annum, Scenic Rim, 2001 to 2036



Source: ABS, Queensland Government Statisticians Office (2015), Economic Associates Analysis

Three workforce scenarios have been developed to estimate the size of the available local workforce within the Scenic Rim based on the QGSO projections as follows:

- Total available workforce: this scenario assumes that the total available workforce (i.e. total employment multiplied by labour force participation rate)[5] equates to 55% of the total working age population;
- Workforce in employed non-population serving sectors: this scenario assumes on average 45% of the total available workforce is employed in non-population serving sectors[6]; and
- Workforce employed in industrial sectors: this workforce scenario assumes on average 28% of the total available workforce is employed in industrial sectors[7].

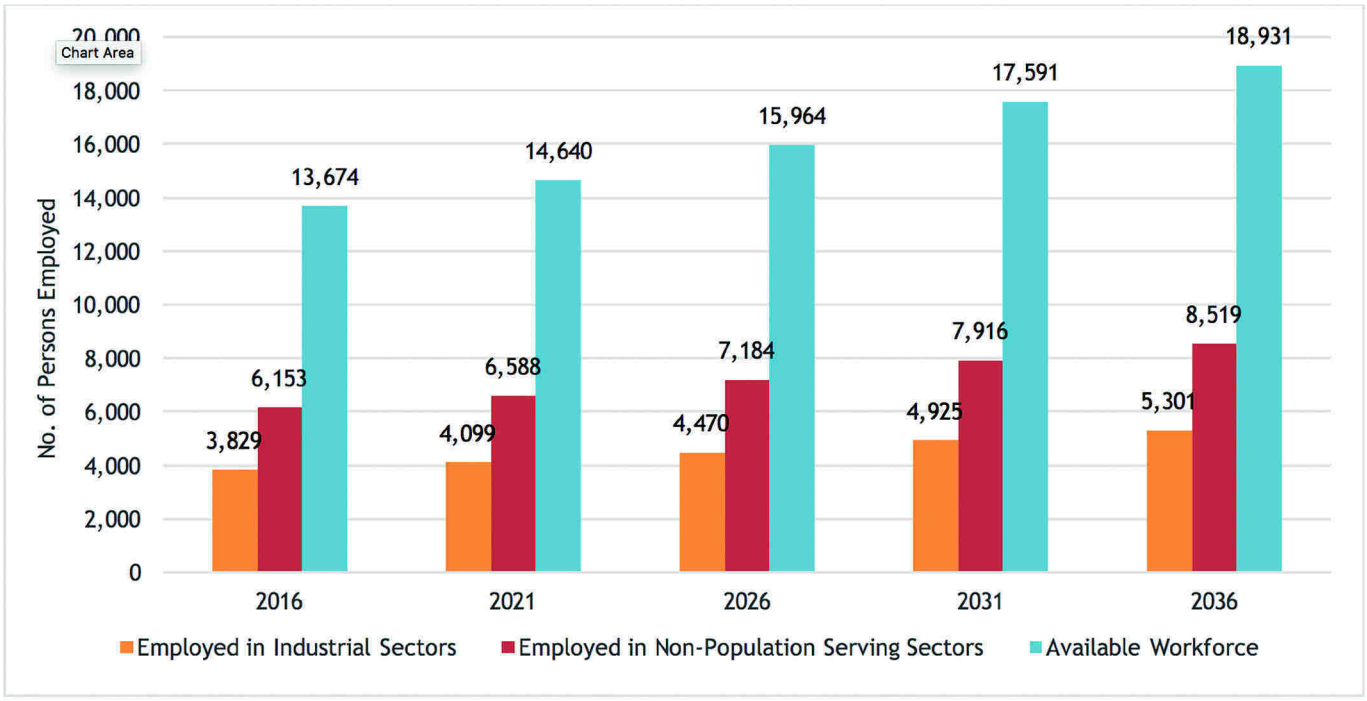
Figure 3.6 compares the available local workforce estimates based on the above workforce scenarios. Figure 3.7 illustrates the incremental growth for the three workforce scenarios. The total available workforce for the Scenic Rim is estimated to be 13,674 persons in 2016 increasing to 18,931 persons by 2036. Based on persons employed in non-population serving sectors, the workforce population is estimated to be 6,153 persons in 2016 increasing to 8,519 persons by 2036. In terms of persons employed in industrial sectors, the workforce population is estimated at 3,829 persons in 2016 increasing to 5,301 persons by 2036.

5 Based on ABS Census data, total employment in the Scenic Rim was 93.3% in 2001, 65.9% in 2006 and 94.1% in 2011. Labour force participation rates for the Scenic Rim was 58.5% in 2001, 59.4% in 2006 and 59.6% in 2011. Based on the above rates the average total available workforce (i.e. total employment multiplied by labour force participation) was 55.9%. For the purposes of this analysis, 55% has been adopted.

6 Average based on the 2001, 2006 and 2011 Census results, which indicate the proportion of persons employed in non-population serving sectors (including agriculture, forestry and fishing; mining; manufacturing; construction; wholesale trade; transport, postal and warehousing; professional, scientific and technical services; and administrative and support services) was 45.6% in 2001, 44.0% in 2006 and 43.5% in 2011, equating to an average of 44.3%. For the purposes of this analysis 45% has been adopted.

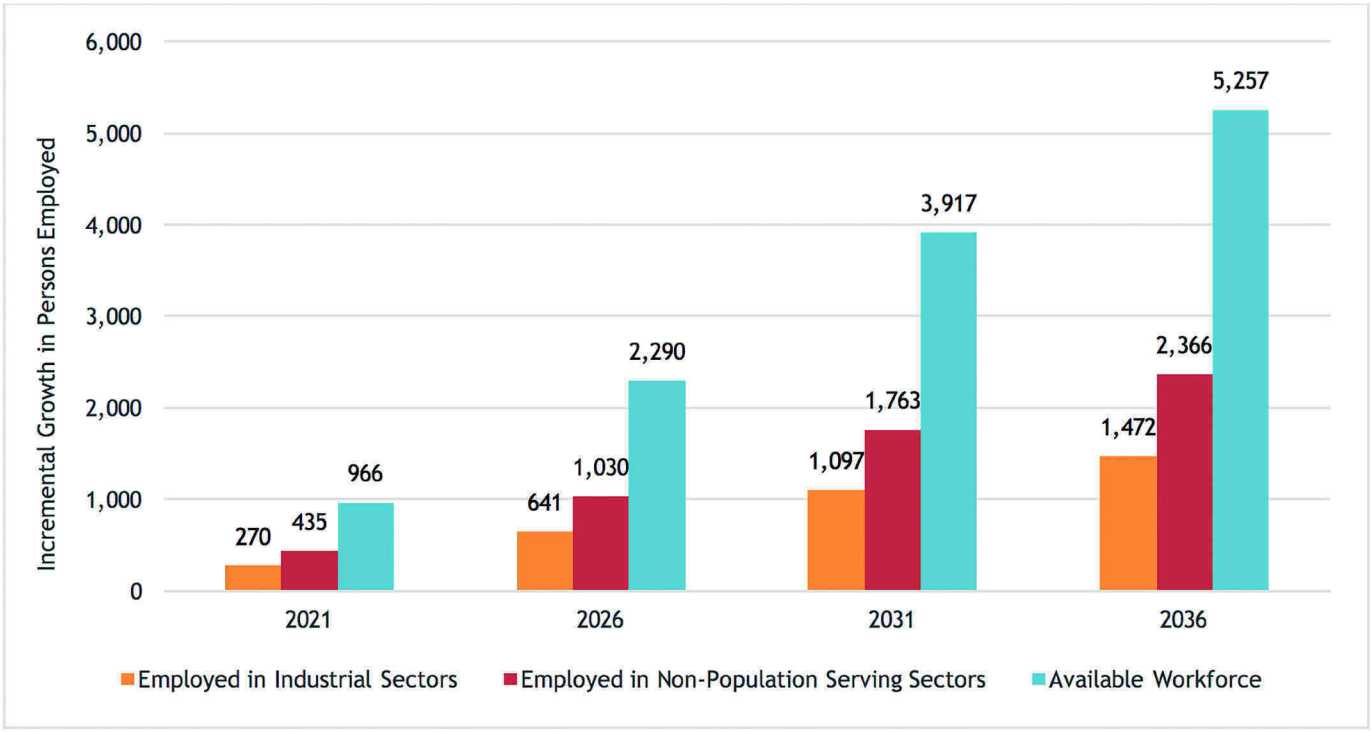
7 Average based on the 2001, 2006 and 2011 Census results which indicate the proportion of persons employed in industrial sectors (including mining, manufacturing, construction, wholesale trade and transport, postal and warehousing) was 26.5% in 2011, 28.1% in 2002 and 27.4% in 2011, equating to an average of 28.8%. For the purposes of this analysis 28% has been adopted.

Figure 3.6: Total Available Workforce v Persons Employed in Non-Population Serving Sectors v Persons Employed in Industrial Sectors, Scenic Rim, 2016 to 2036



Source: ABS Census of Population and Housing (Various Years) Economic Associates Analysis

Figure 3.7: Incremental Growth in Employed Persons, Scenic Rim, 2021 to 2036



Source: Economic Associates Analysis

BEAUDESERT

Between 2006 and 2015, the total resident population of Beaudesert increased from 11,314 persons to 13,735 persons. The Beaudesert population is anticipated to achieve strong population growth between 2016 and 2036 of 4.1% per annum. As at 2016, the Beaudesert population is estimated to be 14,305 persons increasing to 31,669 persons by 2036.

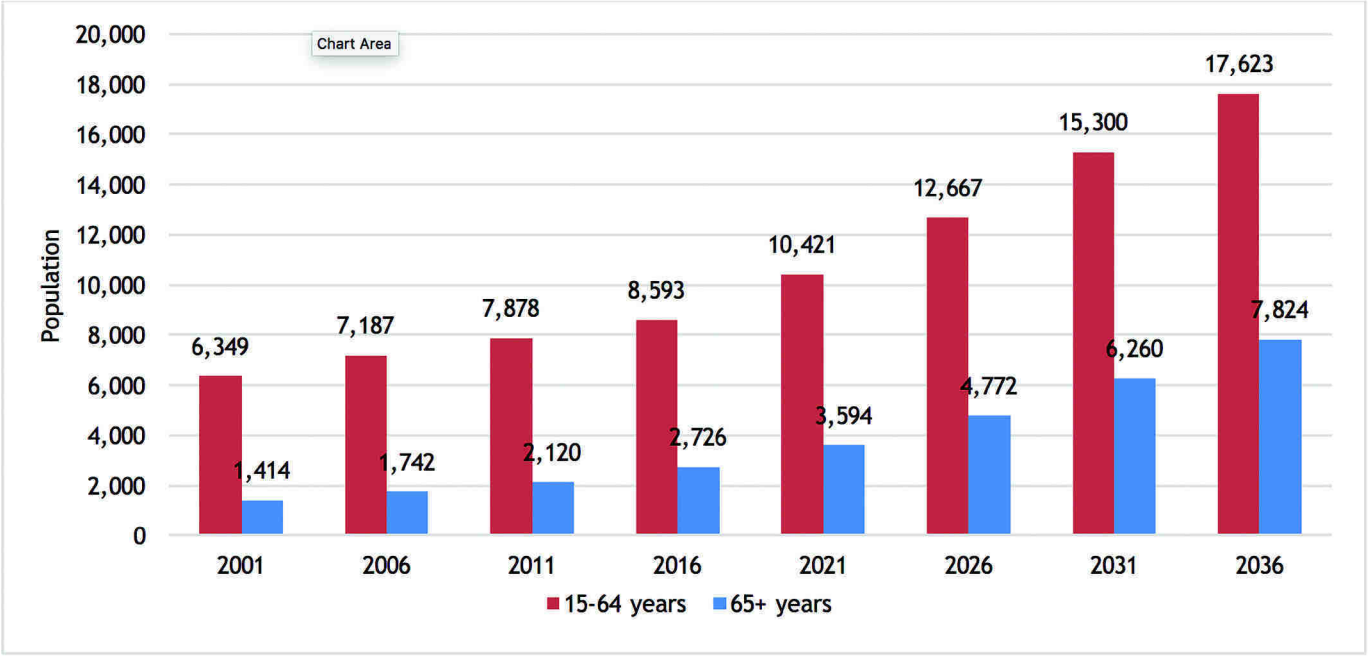
The working age population increased from 7,187 persons in 2006 to 8,438 persons in 2015. Based on QGSO projections, the working age population of Beaudesert is anticipated to achieve an average growth rate of 3.7% per annum between 2016 and 2036, increasing from 8,593 persons to 17,623 persons. Notwithstanding, QGSO anticipates the working age population as a proportion of the total Beaudesert population would decrease from 60.1% in 2016 to 55.6% in 2036.

The retiree population of Beaudesert is projected to achieve higher population growth rates than both the working age population and total population between 2016 and 2036 (5.4% per annum cf. 3.7% p.a working population and 4.1% p.a total population). The Beaudesert retiree population is projected to increase from 2,726 persons to 7,824 persons between 2016 and 2036.

The decrease in the proportion of working age population within Beaudesert reflects the higher incidence of persons aged 65 years and older (who typically have retired from the workforce) in this community. The decline in the working age population as a proportion of the total Beaudesert population poses a number of employment challenges in the long term, particularly in relation to the long term development of Bromelton. With an aging population coupled with a declining proportion of working age population, the local Beaudesert workforce is insufficient to support the employment growth and development of Bromelton in the long term.

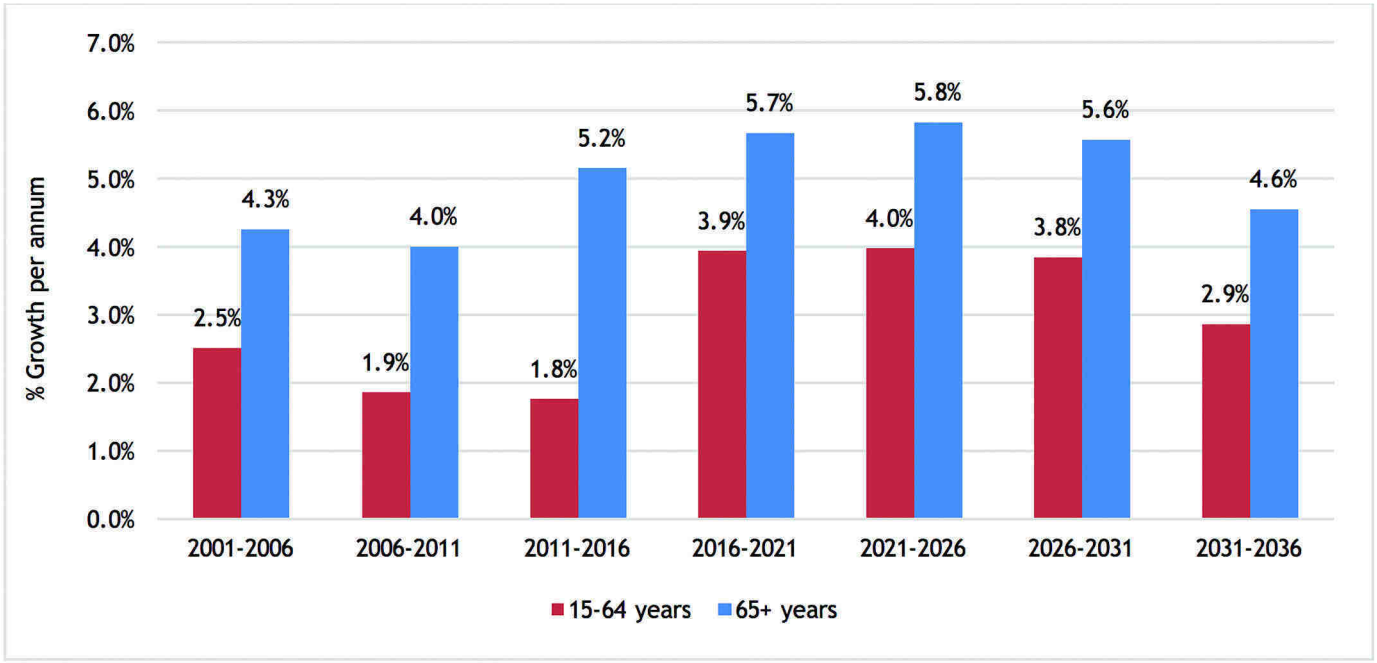
Figure 3.8 compares the working age population and retiree population between 2001 and 2036, whilst Figure 3.9 compares the average population growth per annum for working age and retiree population of Beaudesert.

Figure 3.8: Working Age Population v Retiree Population, Beaudesert, 2001 to 2036



Source: ABS, Queensland Government Statisticians Office (2015), Economic Associates Analysis

Figure 3.9: Working Age Population v Retiree Population, Average growth per annum, Beaudesert, 2001 to 2036



Source: ABS, Queensland Government Statisticians Office (2015), Economic Associates Analysis

As for the Scenic Rim as a whole, three workforce scenarios were developed to estimate that size of the available local workforce within Beaudesert based on the QGSO projections as follows:

- Total available workforce: this scenario assumes that the total available workforce (i.e. total employment multiplied by labour force participation rate)[8] equates to 55% of the total working age population;
- Workforce employed in non-population serving sectors: this scenario assumes on average 46% of the available workforce is employed in non-population serving sectors[9]; and
- Workforce employed in industrial sectors: assumes on average 29% of the available workforce is employed in industrial sectors[10].

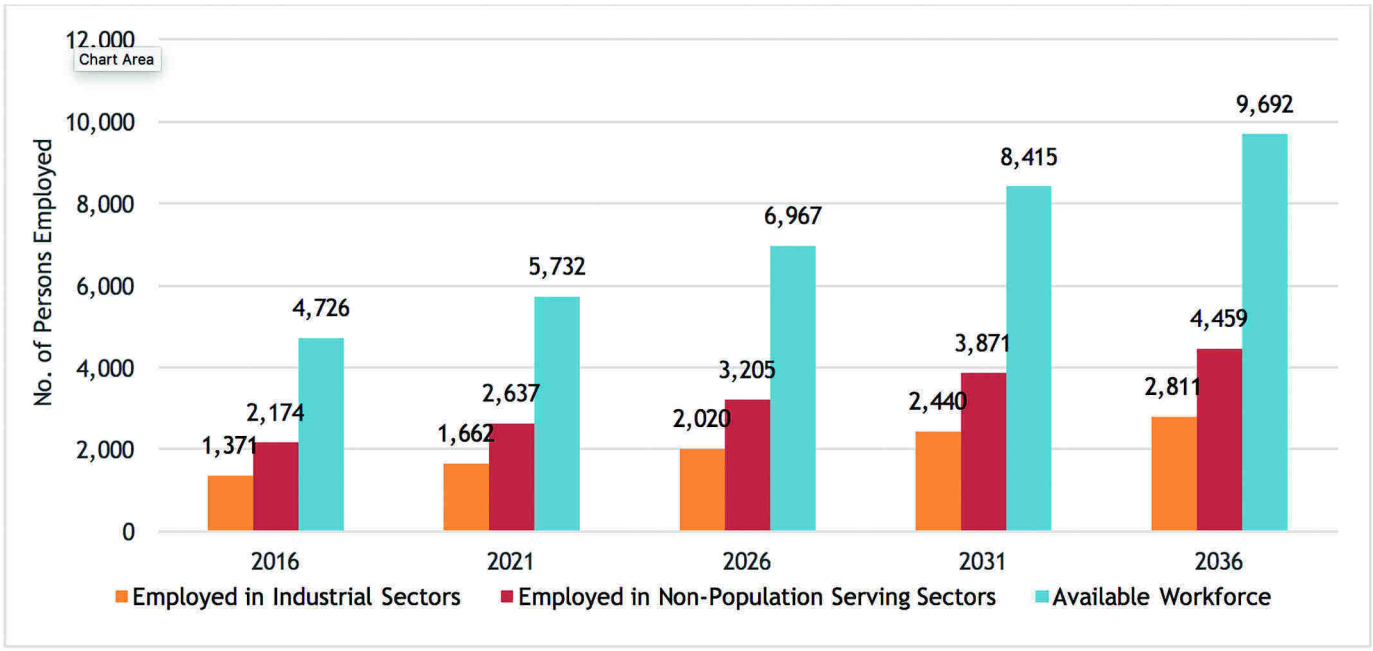
Based on the above workforce scenarios, total available workforce in Beaudesert is estimated to be 4,726 persons in 2016 increasing to 9,692 persons by 2036. Persons employed in non-population serving sectors are estimated to be 2,174 persons in 2016 increasing to 4,459 persons by 2036. Based on persons employed in industrial sectors the workforce population is estimated to be 1,371 persons in 2016 increasing to 2,811 2036. Figure 3.10 compares the three workforce scenarios for Beaudesert between 2016 and 2036. Figure 3.11 illustrates the incremental growth in workers under the three workforce scenarios between 2021 and 2036.

8 Based on ABS Census data, total employment in Beaudesert was 92.4% in 2001, 95.1% in 2006 and 93.1% in 2011. Labour force participation rates in Beaudesert was 57.2% in 2001, 56.6% in 2006 and 57.0% in 2011. Based on the above rates, the average total available workforce was 53.3% (i.e. total employment multiplied by labour force participation rate). For the purposes of this analysis, 55% has been adopted.

9 Average based on the 2001, 2006 and 2011 Census results, which indicate the proportion of persons employed in non-population serving sectors (including agriculture, forestry and fishing; mining; manufacturing; construction; wholesale trade; transport, postal and warehousing; professional, scientific and technical services; and administrative and support services) was 46.1% in 2001, 47.0% in 2006 and 45.9% in 2011, equating to an average of 46.4%. For the purposes of this analysis 46% has been adopted.

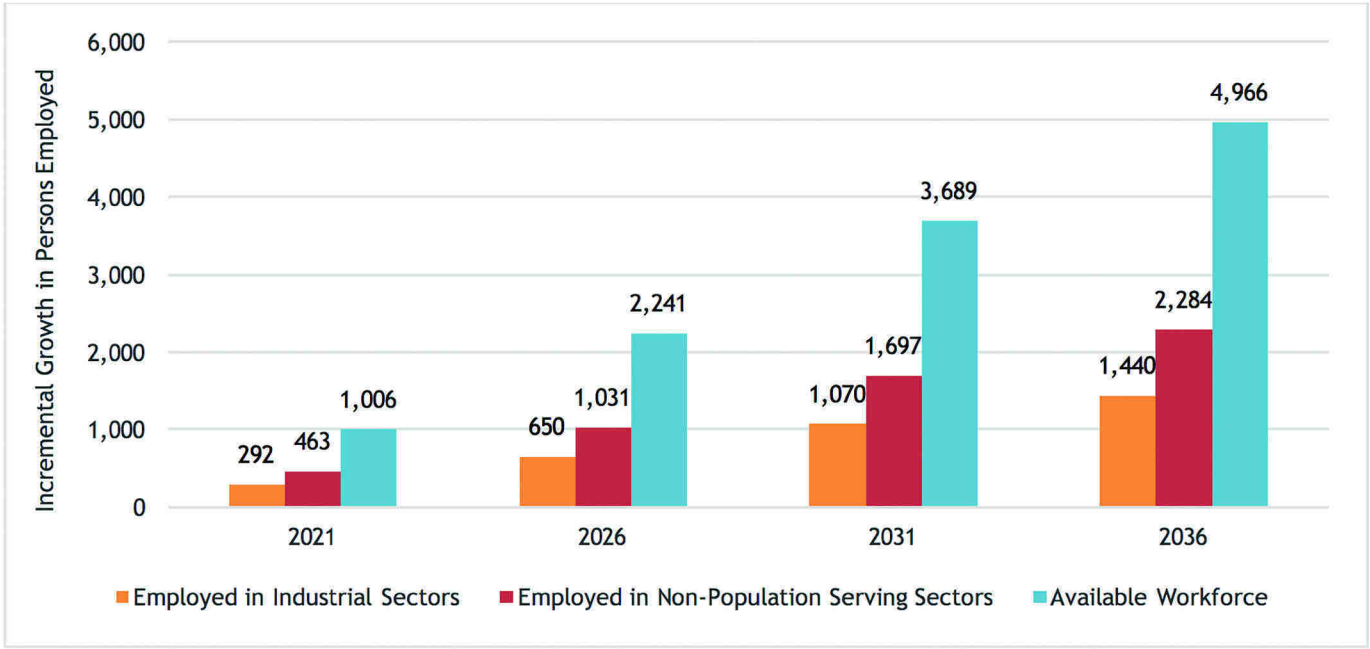
10 Average based on the 2011, 2006 and 2011 Census results, which indicate the proportion of persons employed in industrial sectors (including mining, manufacturing, construction, wholesale trade and transport, postal and warehousing) was 27.0% in 2011, 30.3% in 2006 and 29.2% in 2011, equating to an average of 29.0%. For the purposes of this analysis 29% has been adopted.

Figure 3.10: Total Available Workforce v Persons Employed in Non-Population Serving Sectors v Persons Employed in Industrial Sectors, Beaudesert, 2016 to 2036



Source: ABS Census of Population and Housing, Economic Associates Analysis

Figure 3.11: Incremental Growth in Employed Persons, Beaudesert, 2021 to 2036



Source: Economic Associates Analysis

BOONAH

Between 2006 and 2016, the population of Boonah increased from 10,419 persons to 12,020 persons. The population of Boonah is anticipated to achieve minimal population growth (1.4% per annum) between 2016 and 2036, increasing to 15,777 persons by 2036.

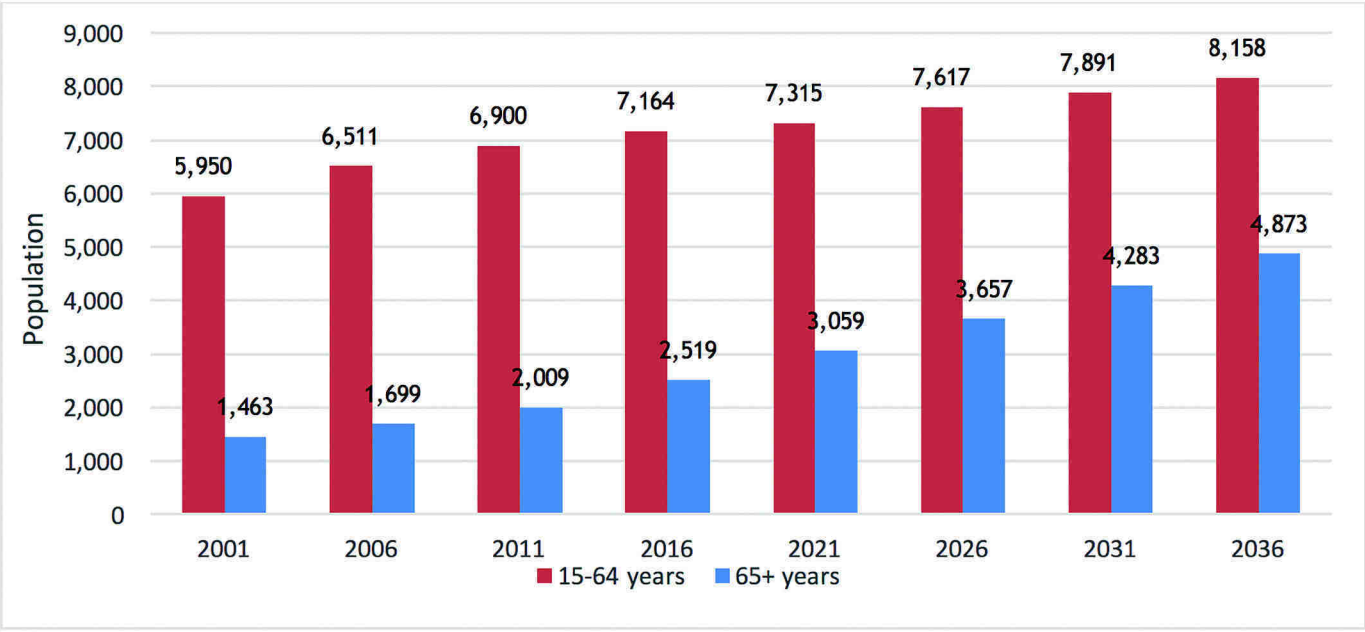
The working age population of Boonah, increased from 6,511 persons in 2006 to 7,164 persons in 2016. Between 2016 and 2036, the working age population of Boonah is anticipated to achieve marginal growth (0.7% per annum) increasing to 8,158 person by 2036. Consequently, the working age population as a proportion of the total Boonah population is anticipated to significantly decline from 59.6% in 2016 to 51.7% in 2036.

The retiree population of Boonah increased from 1,699 persons in 2006 to 2,519 persons 2016. Between 2016 and 2016, the retiree population of Boonah is projected to increase an average of 3.4% per annum (albeit lower than Beaudesert and the Scenic Rim averages of 5.1% and 4.1%, respectively) with the retiree population increasing to 4,873 persons by 2036.

Boonah has a high incidence of persons aged 65 years and older (who typically have retired from the workforce) resulting in a lower proportion of persons remaining within the workforce as reflected by the decrease in the proportion of the working age population. The working age population of Boonah is anticipated to achieve minimal growth between 2016 and 2036, accounting for less than half of the projected working age population of Beaudesert by 2036. While the local Boonah workforce may partly supplement shortfalls in the local Beaudesert available workforce, this is still unlikely to be sufficient to support the growth and development of Bromelton.

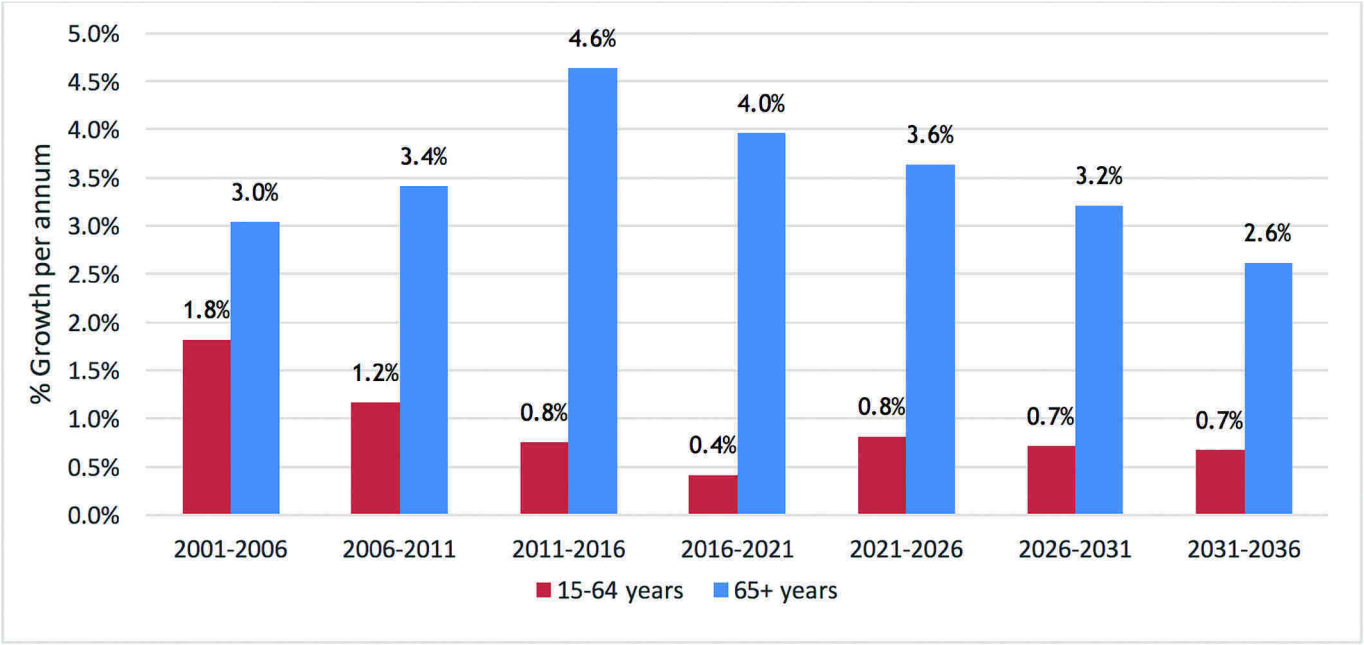
Figure 3.12 compares the working age population and retiree population between 2001 and 2036, whilst Figure 3.13 compares the average population growth per annum for working age and retiree population of Beaudesert.

Figure 3.12: Working Age Population v Retiree Population, Boonah, 2001 to 2011



Source: ABS, Queensland Governments Statisticians Office (2015), Economic Associates Analysis

Figure 3.13: Working Age Population v Retiree Population, Average growth per annum, Boonah, 2001 to 2036



Source: ABS, Queensland Government Statisticians Office (2015), Economic Associates Analysis

As for Beaudesert, three workforce scenarios were developed to estimate the size of the available local workforce within Boonah (derived from the QGSO projections) as follows:

- Total available workforce: this scenario assumes that the total available workforce (i.e. total employment multiplied by labour force participation rate)[11] equates to 60% of the total working age population;
- Workforce in non-population serving sectors: this scenario assumes on average 50% of the available workforce is employed in non-population serving sectors[12]; and
- Workforce in industrial sectors: assumes on average 27% of the available workforce is employed in industrial sectors[13].

Based on the above workforce scenarios, total available workforce in Boonah is projected to increase (derived from the QGSO projections) from 4,298 persons in 2016 to 4,895 persons in 2036. Persons employed in non-population serving sectors are projected to increase from 2,149 persons to 2,447 persons between 2016 and 2036, whilst persons employed in industrial sectors is projected to increase from 1,161 persons in 2016 to 1,322 persons by 2036.

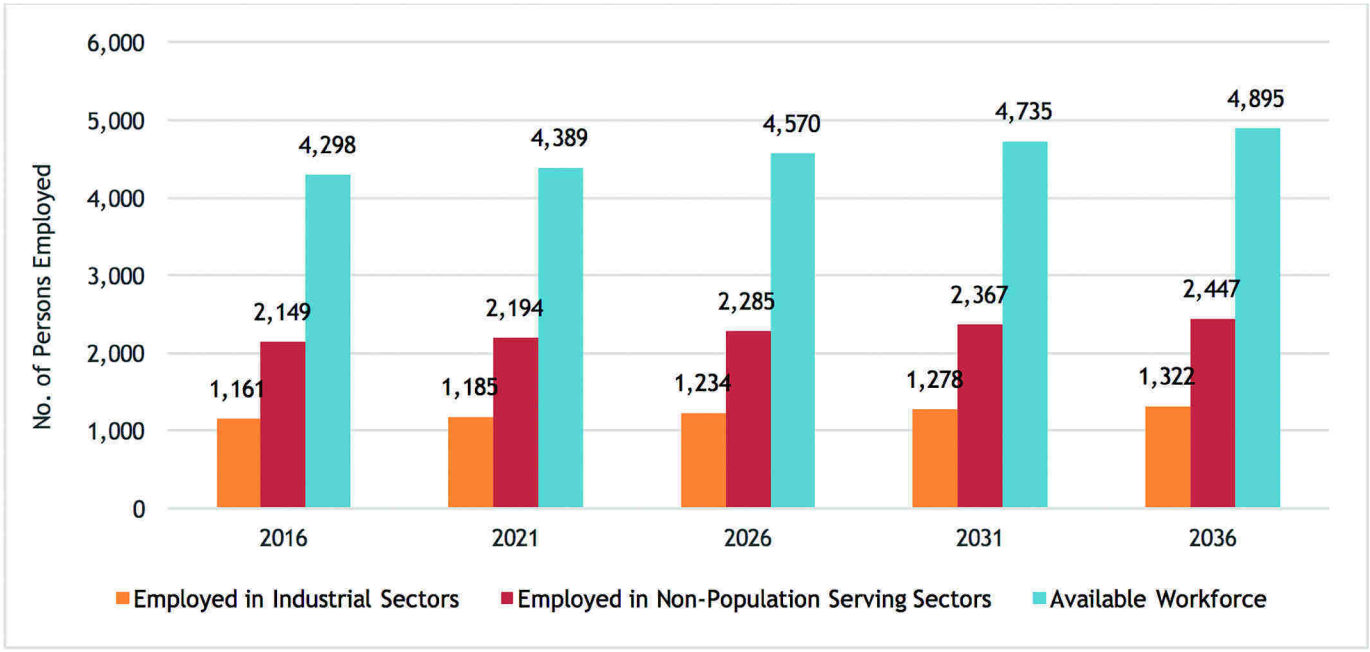
Figure 3.14 compares the three workforce scenarios for Boonah between 2016 and 2036. Figure 3.15 compares the incremental growth in workers under the three workforce scenarios.

11 Based on ABS Census data, total employment in Boonah was 95.3% in 2001, 96.4% in 2006 and 95.4% in 2011. Labour force participation rates in Boonah was 58.1% in 2001, 59.8% in 2006 and 59.6% in 2011. Based on the above rates, the average total available workforce was 56.6% (i.e. total employment multiplied by labour force participation rate). For the purposes of this analysis, 60% has been adopted.

12 Average based on the 2001, 2006 and 2011 Census results, which indicate the proportion of persons employed in non-population serving sectors (including agriculture, forestry and fishing; mining; manufacturing; construction; wholesale trade; transport, postal and warehousing; professional, scientific and technical services; and administrative and support services) was 54.0% in 2001, 49.0% in 2006 and 47.9% in 2011, equating to an average of 50.3%. For the purposes of this analysis 50% has been adopted.

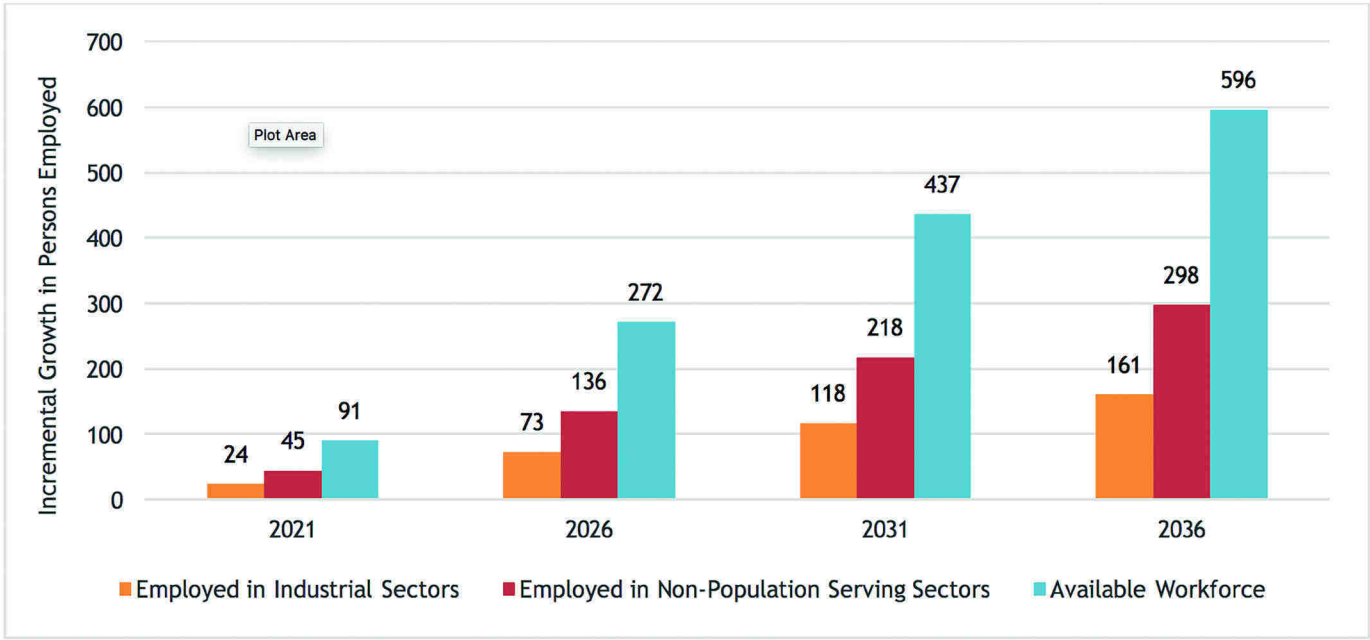
13 Average based on the 2001, 2006 and 2011 Census results, which indicate the proportion of persons employed in industrial sectors (including mining, manufacturing, construction, wholesale trade and transport, postal and warehousing) was 29.2% in 2001, 29.5% in 2006, and 28.3% in 2011, equating to an average of 27.3%. For the purposes of this analysis 27% has been adopted.

Figure 3.14: Total Available Workforce v Persons Employed in Non-Population Serving Sectors v Persons Employed in Industrial Sectors, Boonah, 2016 to 2036



Source: ABS Census of Population and Housing, Economic Associates Analysis

Figure 3.15: Incremental Growth in Employed Persons, Boonah, 2021 to 2036



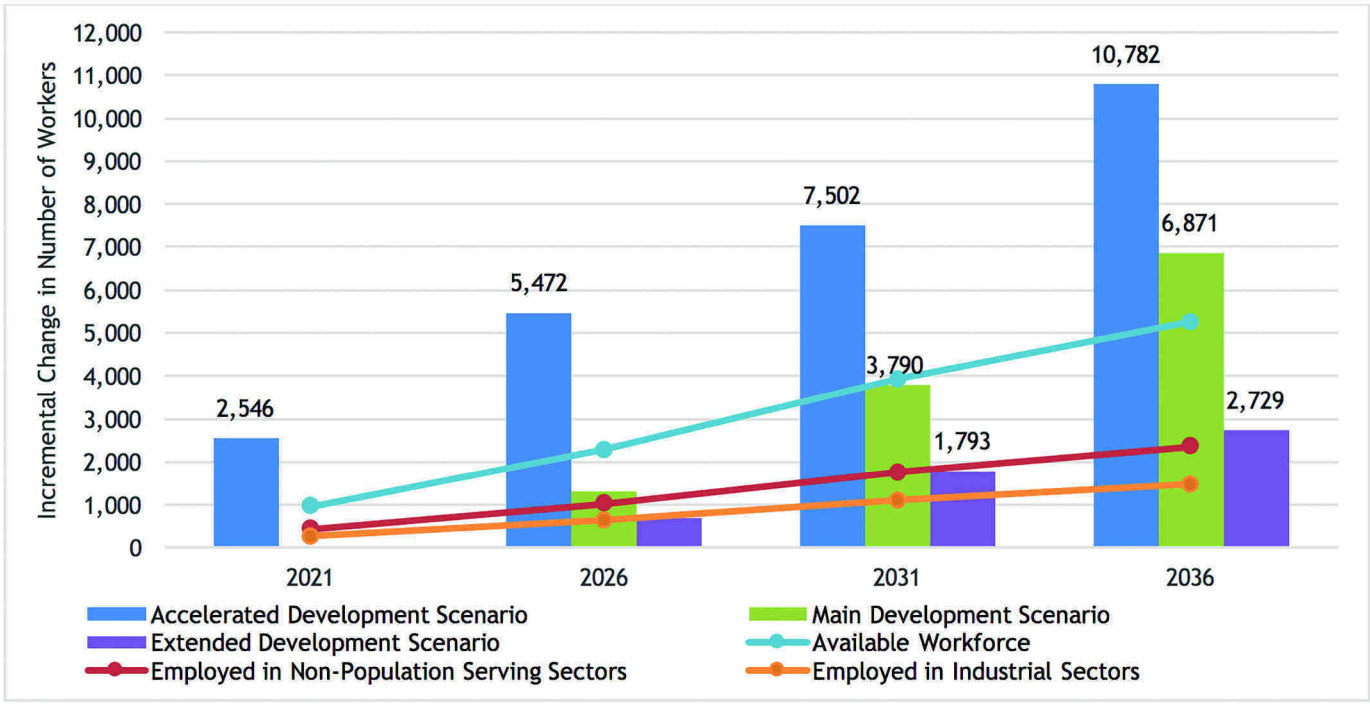
Source: Economic Associates Analysis

3.2.1 IMPLICATIONS FOR THE SCENIC RIM, BEAUDESERT AND BROMELTON SDA

With an older demographic comprising a higher incidence of persons aged 65+ years (and increasing) the working age population as a proportion of the total population is likely to continue to decline within the Scenic Rim (including Beaudesert and Boonah). Given the proximity of Bromelton to Beaudesert, Beaudesert could reasonably be expected to be the main source of available local workforce with Boonah likely to represent a secondary source.

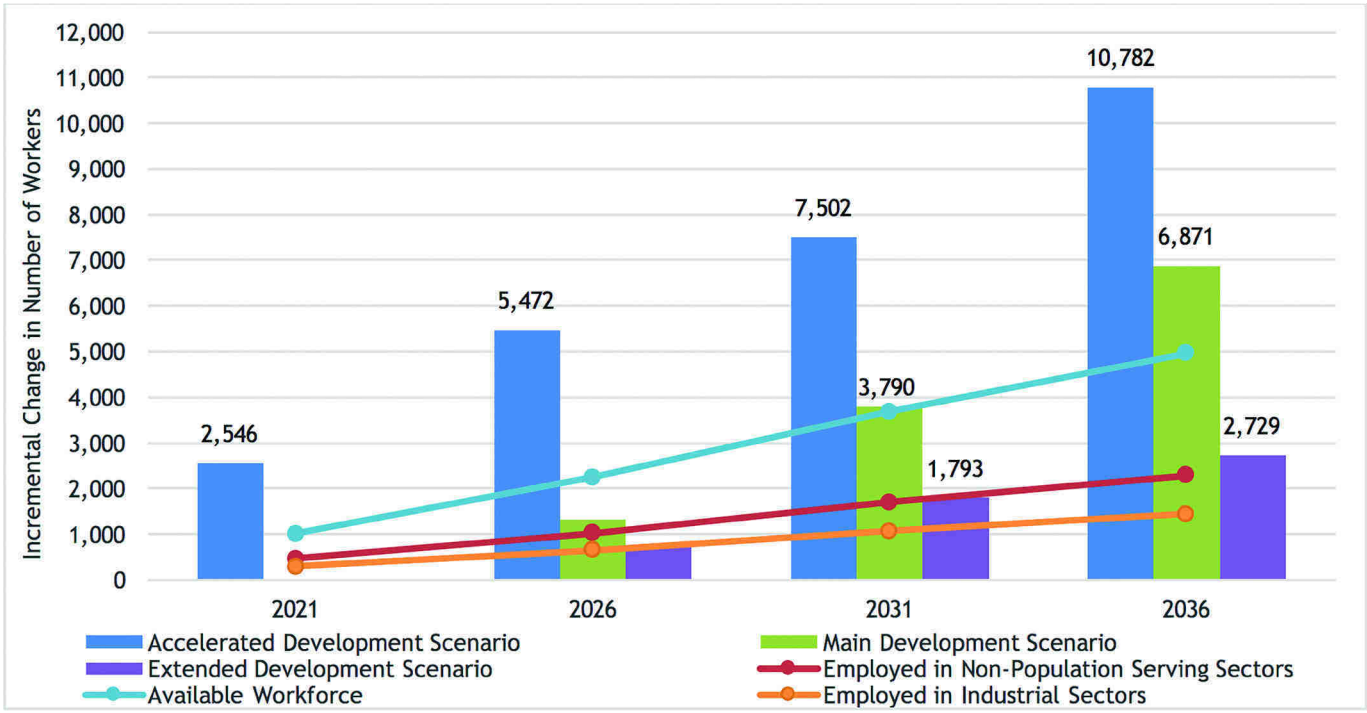
Comparison of the incremental growth in the Scenic Rim of employment (total available workforce, persons employed in non-population serving sectors and persons employed in industrial sectors) with the employment yield for Bromelton between 2016 and 2036 highlights a shortfall in workers to support development of the Bromelton SDA by 2036 under all three development scenarios. As previously discussed in Chapter 2, the development of the SCT Logistics freight terminal facility suggests development of Bromelton at this stage is in line with the accelerated development scenario. Assuming, development continues to align with the accelerated development scenario, there will be a shortfall in available local workforce by 2021 as illustrated in Figure 3.16. Figure 3.17 compares the incremental growth in available local workforce and each of the Bromelton SDA development scenarios for Beaudesert, which also highlights a deficit in available local workforce to support the development of the Bromelton SDA. Consequently, it is evident that there is a shortage in available local workforce to support the development of the Bromelton SDA as well as local businesses within the Scenic Rim.

Figure 3.16: Incremental Growth in Number of Workers, Available Workforce v Bromelton SDA Development Scenario, Scenic Rim, 2021 to 2036



Source: Economic Associates Analysis, Figures 2.5 and 3.7

Figure 3.17: Incremental Growth in Number of Workers, Available Workforce v Bromelton SDA Development Scenario, Beaudesert



Source: Economic Analysis, Figures 2.5 and 3.11

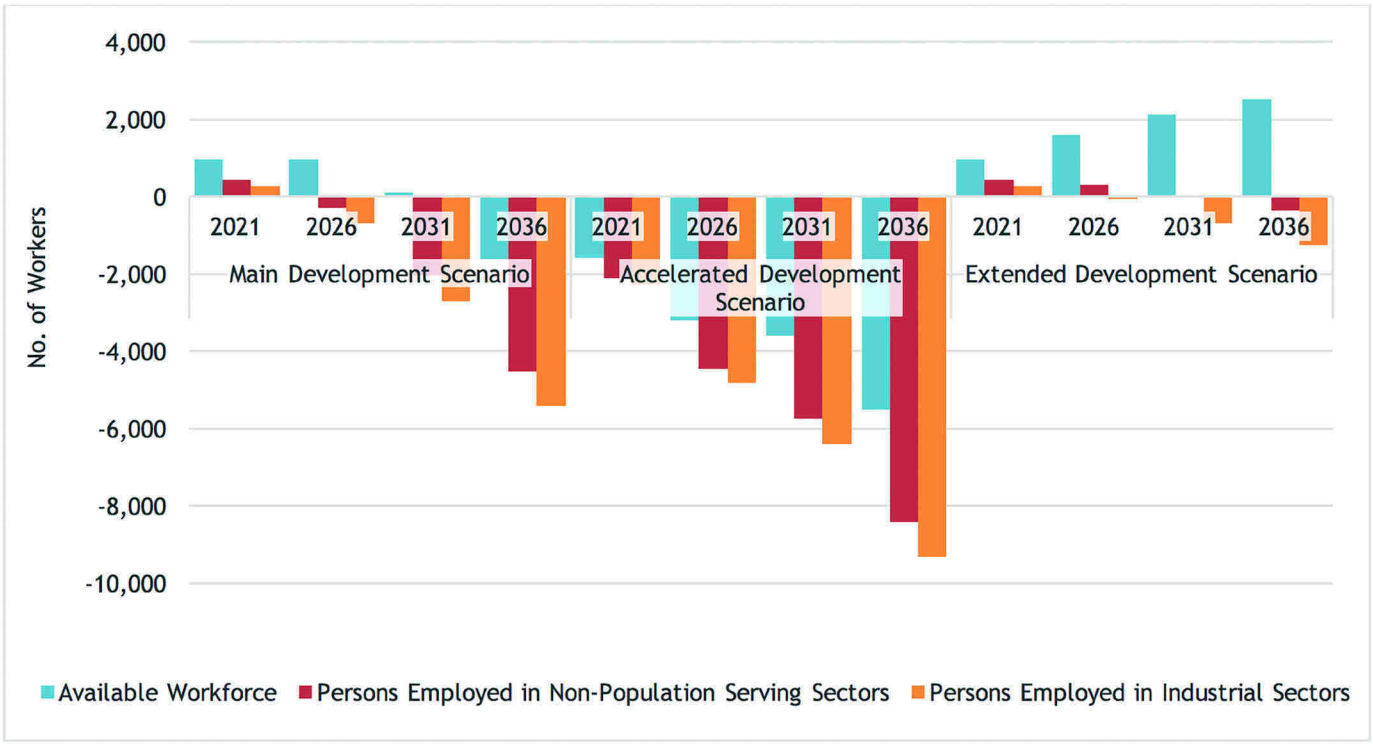
Based on the incremental growth in available workforce in the Scenic Rim with the three development scenarios for Bromelton indicates a shortfall in workers of between -1,580 workers (based on available workforce) and -2,275 workers (based on persons employed in industrial sectors) to support the development of Bromelton from 2021 under the accelerated development scenario, a shortfall in workers of between -294 (based on persons employed in non-population serving sectors) and -683 workers (based on persons employed in industrial sectors) in 2026 under the main development scenario and a shortfall of -65 workers (based on persons employed in industrial sectors) to support the development from 2026 under the extended development scenario as summarised in Table 3.1. Figure 3.18 illustrates the estimated shortfall in employment between 2021 and 2036 based on available workforce for the Scenic Rim.

Table 3.1: Estimated Employment Shortfall/Surplus, Available Workforce v Bromelton SDA Development Scenario, Scenic Rim, 2021 to 2036

	2016	2021	2026	2031	2036
Employment (No. of Workers)					
Available Workforce	13,674	14,640	15,964	17,591	18,931
Persons Employed in Non-Population Serving Sectors	6,153	6,588	7,184	7,916	8,519
Persons Employed in Industrial Sectors	3,829	4,099	4,470	4,925	5,301
Incremental Growth in Employment (No. of Workers)					
Available Workforce	-	966	2,290	3,917	5,257
Persons Employed in Non-Population Serving Sectors	-	435	1,030	1,763	2,366
Persons Employed in Industrial Sectors	-	270	641	1,097	1,472
Bromelton Employment by Development Scenario (No. of Workers)					
Main Development Scenario	0	0	1,324	3,790	6,871
Accelerated Development Scenario	172	2,718	5,644	7,674	10,954
Extended Development Scenario	0	0	706	1,793	2,729
Incremental Growth in Bromelton Employment (No. of Workers)					
Main Development Scenario	-	0	1,324	3,790	6,871
Accelerated Development Scenario	-	2,546	5,472	7,502	10,782
Extended Development Scenario	-	0	706	1,793	2,729
Employment Shortfall/Surplus (No. of Workers)		2021	2026	2031	2036
Main Development Scenario					
Available Workforce	-	966	966	127	-1,613
Persons Employed in Non-Population Serving Sectors	-	435	-294	-2,027	-4,505
Persons Employed in Industrial Sectors		270	-683	-2,693	-5,399
Accelerated Development Scenario					
Available Workforce	-	-1,580	-3,183	-3,585	-5,525
Persons Employed in Non-Population Serving Sectors	-	-2,111	-4,442	-5,739	-8,416
Persons Employed in Industrial Sectors		-2,275	-4,831	-6,405	-9,310
Extended Development Scenario					
Available Workforce	-	966	1,584	2,124	2,529
Persons Employed in Non-Population Serving Sectors	-	435	324	-30	-363
Persons Employed in Industrial Sectors	-	270	-65	-696	-1,256

Source: Economic Associates Analysis

Figure 3.18: Estimated Shortfall in Employment by Bromelton SDA Development Scenario, Scenic Rim



Source: Economic Associates Analysis, Table 3.1

As previously mentioned, Beaudesert could reasonably be expected to be the main source of available local workforce for the Bromelton SDA given its proximity. Based on the incremental growth in available workforce for Beaudesert with each of the development scenarios for the Bromelton SDA, suggests a shortfall of between -1,540 workers (available workforce) and -2,254 workers (persons employed in industrial sectors) in 2021 under the accelerated scenario, a shortfall of -293 workers (persons employed in non-population serving sectors) and -674 workers (persons employed in industrial sectors) by 2026 under the main scenario, and a shortfall of -56 workers (persons employed in the industrial sector) by 2026 under the extended scenario. Table 3.2 details the incremental growth of each workforce and development scenario, estimated shortfall in available workforce compared to the employment yield of Bromelton based on the Beaudesert available workforce and is also illustrated in Figure 3.19.

Based on the projected working age population of Boonah and Beaudesert coupled with the anticipated long term employment generated by Bromelton (24,802 workers in the long term to 2064 based on the main scenario) it is apparent that the available local workforce of these communities (in particular Beaudesert) are insufficient to support the employment requirements of the Bromelton SDA. Hence, alternative sources of available workforce (i.e. located beyond the Scenic Rim) will need to be sought to attract skilled workers to the Scenic Rim to support the development of the Bromelton SDA as well as flow-on employment within Beaudesert, Boonah and the broader Scenic Rim.

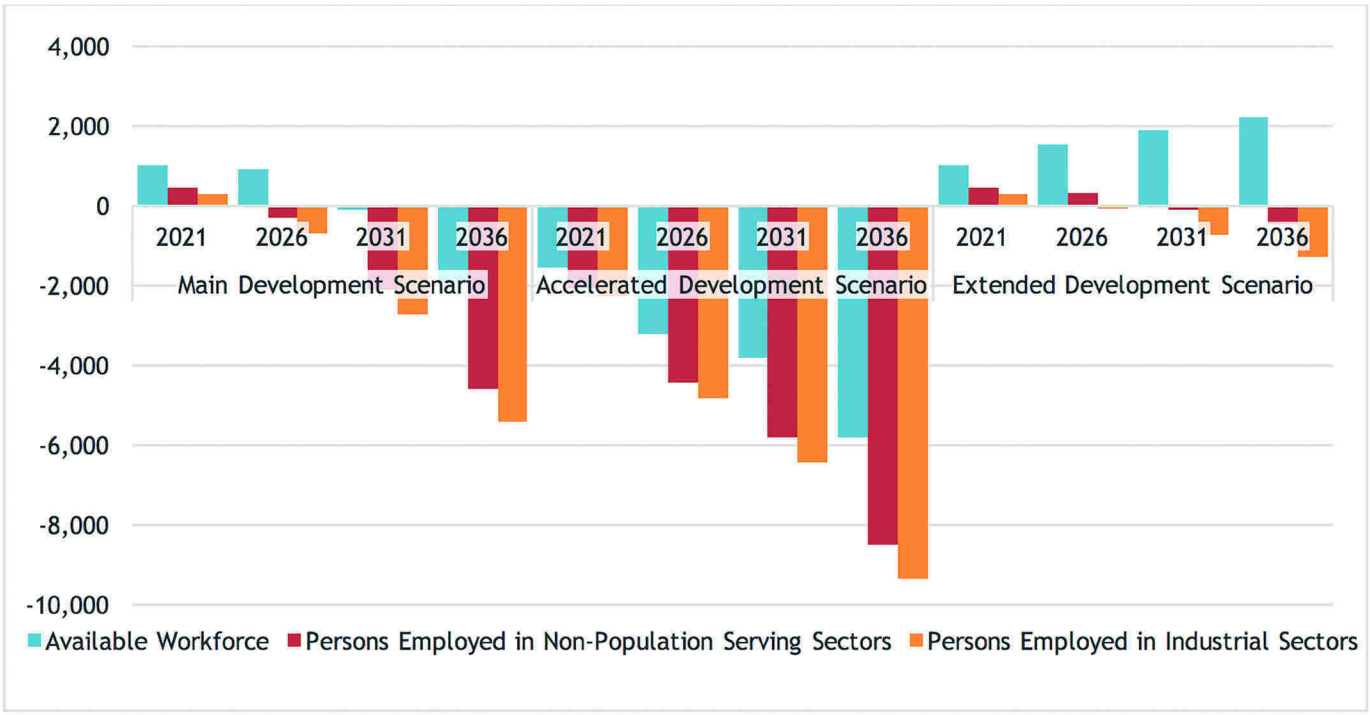
Table 3.2: Estimated Employment Shortfall/Surplus, Available Workforce v Bromelton SDA Development Scenario, Beaudesert, 2021 to 2036

	2016	2021	2026	2031	2036
Employment (No. of Workers)					
Available Workforce	4,726	5,732	6,967	8,415	9,692
Persons Employed in Non-Population Serving Sectors	2,174	2,637	3,205	3,871	4,459
Persons Employed in Industrial Sectors	1,371	1,662	2,020	2,440	2,811
Incremental Growth in Employment (No. of Workers)					
Available Workforce	-	1,006	2,241	3,689	4,966
Persons Employed in Non-Population Serving Sectors	-	463	1,031	1,697	2,284
Persons Employed in Industrial Sectors	-	292	650	1,070	1,440
Bromelton Employment by Development Scenario (No. of Workers)					
Main Development Scenario	0	0	1,324	3,790	6,871
Accelerated Development Scenario	172	2,718	5,644	7,674	10,954
Extended Development Scenario	0	0	706	1,793	2,729
Incremental Growth in Bromelton Employment (No. of Workers)					
Main Development Scenario	-	0	1,324	3,790	6,871
Accelerated Development Scenario	-	2,546	5,472	7,502	10,782
Extended Development Scenario	-	0	706	1,793	2,729
Employment Shortfall/Surplus (No. of Workers)					
Main Development Scenario					
Available Workforce	-	1,006	917	-101	-1,905
Persons Employed in Non-Population Serving Sectors	-	463	-293	-2,093	-4,586
Persons Employed in Industrial Sectors	-	292	-674	-2,720	-5,431
Accelerated Development Scenario					
Available Workforce	-	-1,540	-3,232	-3,813	-5,816

Persons Employed in Non-Population Serving Sectors	-	-2,083	-4,442	-5,805	-8,498
Persons Employed in Industrial Sectors	-	-2,254	-4,823	-6,432	-9,342
Extended Development Scenario					
Available Workforce	-	1,006	1,534	1,896	2,238
Persons Employed in Non-Population Serving Sectors	-	463	325	-96	-444
Persons Employed in Industrial Sectors	-	292	-56	-723	-1,288

Source: Economic Associates Analysis

Figure 3.19: Estimated Shortfall in Employment by Bromelton SDA Development Scenario, Beaudesert



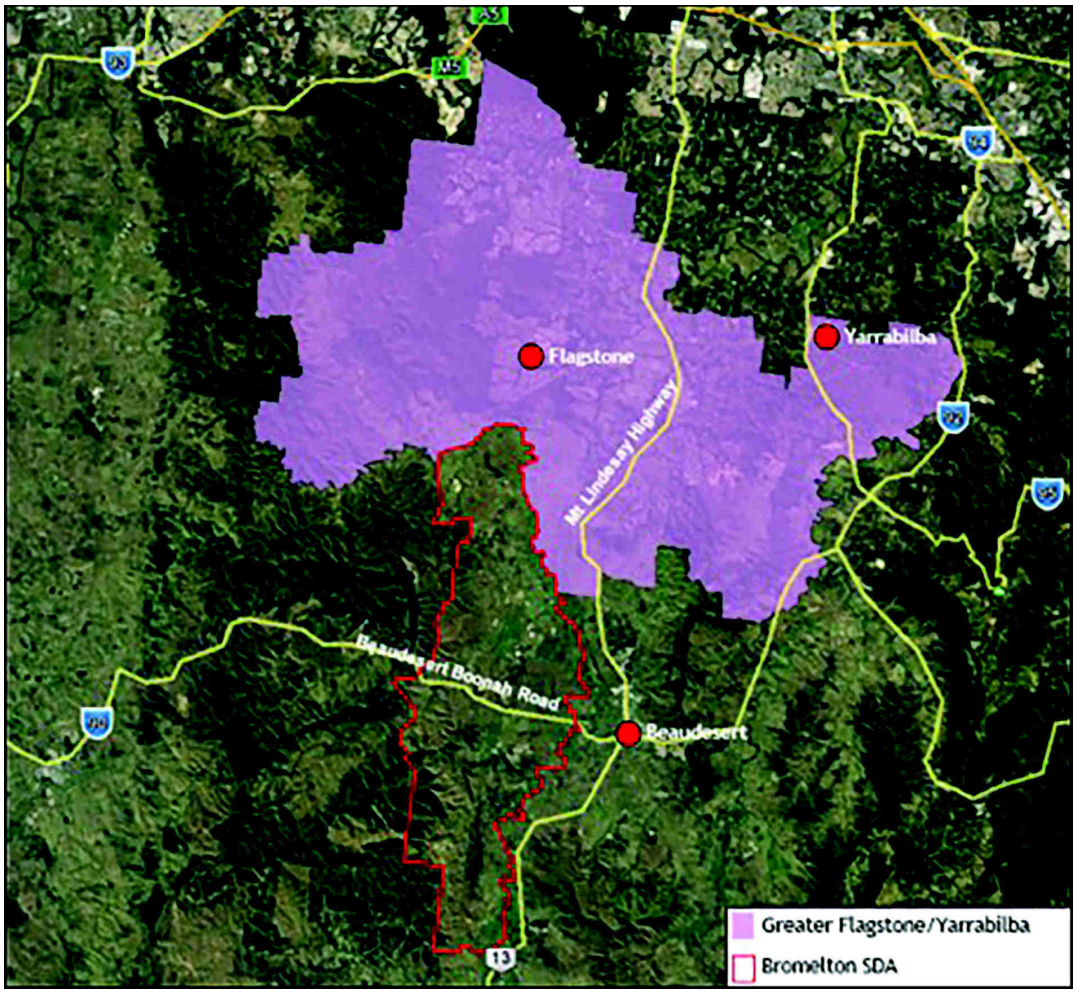
4. ALTERNATIVE SOURCE OF AVAILABLE WORKFORCE

4.1 GREATER FLAGSTONE/ YARRABILBA

With shortfalls anticipated (both in skills and number of workers) within the local workforce to support the long term development of Bromelton, alternative sources of available workforce are likely to be required. Greater Flagstone and Yarrabilba represent the most proximate alternative workforce to supplement the available local workforce. These areas area anticipated to achieve significant population growth underpinned by the Greater Flagstone Priority Development Area (PDA) and Yarrabilba. The Greater Flagstone PDA comprises 7,889 hectares and is anticipated to yield approximately 50,000 dwellings with a population of approximately 120,000 persons once fully developed. Yarrabilba is a master planned community covering 2,029 hectares and is expected to yield over 17,000 dwellings with a population of approximately 45,000 persons. As the development of both Greater Flagstone and Yarrabilba are both within their infancy, it is pertinent to note that the demographic characteristics of this community are likely to evolve as these communities continue to develop.

In determining the appropriateness of Greater Flagstone/Yarrabilba as an alternative source of available workforce, an examination of the demographic characteristics of this community between 2001 and 2011 has been undertaken (with Table B.1 summarising the key demographic characteristics). For the purposes of this analysis, the Greater Flagstone/Yarrabilba community is defined by the Greenbank (which encompasses part of the Greater Flagstone PDA) and Jimboomba SA2s (which encompasses the Yarrabilba PDA and part of the Greater Flagstone PDA) as illustrated in Figure 4.1.

Figure 4.1: Defined Greater Flagstone/Yarrabilba Community



Source: Google Earth

The following provides an overview of the population projections and demographic characteristics of the Greater Flagstone/Yarrabilba14 community based on the ABS Census of Population and Housing and QGSO projections. The population of Greater Flagstone/Yarrabilba increased from 26,171 persons in 2006 to 36,863 persons in 2016 (an average increase of 3.5% per annum), underpinned by the development of the Greater Flagstone PDA and Yarrabilba residential community being developed by Lend Lease. The Greater Flagstone/Yarrabilba community is anticipated to continue to achieve strong population growth increasing to 135,783 persons by 2036 (an average increase of 6.7% per annum between 2016 and 2036).

The working age population of the Greater Flagstone/Yarrabilba community also achieved strong growth between 2006 and 2016, increasing from 17,715 persons to 24,305 persons (an average growth rate of 3.2% per annum). By 2036, the working age population is projected to increase to 86,546 persons as summarised in Table 4.1. The retiree population of the Greater Flagstone/Yarrabilba is anticipated to significantly increase between 2016 and 2036 from 3,190 persons to 18,127 persons.

14 The Greater Flagstone/Yarrabilba community is defined by the Greenbank SA2 (which encompasses the Greater Flagstone PDA) and the Jimboomba SA2 (which encompasses the Yarrabilba PDA and parts of the Greater Flagstone PDA). To allow concordance with population data, the population estimates and demographic profile for the individual Greater Flagstone and Yarrabilba PDA has been undertaken. It is noted that the defined Greater Flagstone/Yarrabilba community includes the rural residential communities surrounding Jimboomba.

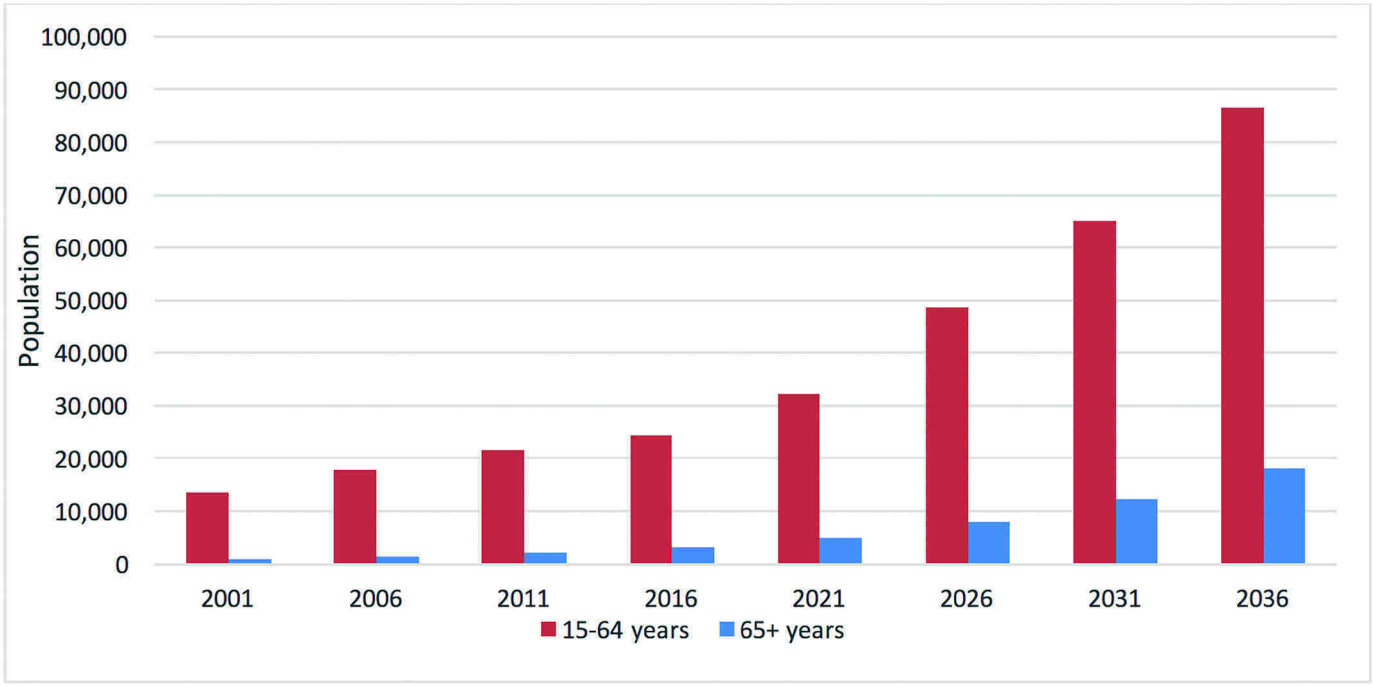
Table 4.1: Population Estimates, Greater Flagstone/Yarrabilba, 2006 to 2036

	2006	2011	2016	2021	2026	2031	2036	2006-36 % growth p.a
Total Population	26,171	32,308	36,863	49,352	74,911	100,920	135,783	5.6%
15-64 years (No.)	17,715	21,695	24,305	32,205	48,697	64,970	86,546	5.4%
15-64 years (% of Total Population)	67.7%	67.2%	65.9%	65.3%	65.0%	64.4%	63.7%	-
65+ years (No.)	1,274	2,116	3,190	4,880	8,036	12,165	18,127	9.3%
65+ years ($ of Total Population)	4.9%	6.5%	8.7%	9.9%	10.7%	12.1%	13.3%	-

Source: ABS, Queensland Government Statisticians Office (2015), Economic Associates Analysis

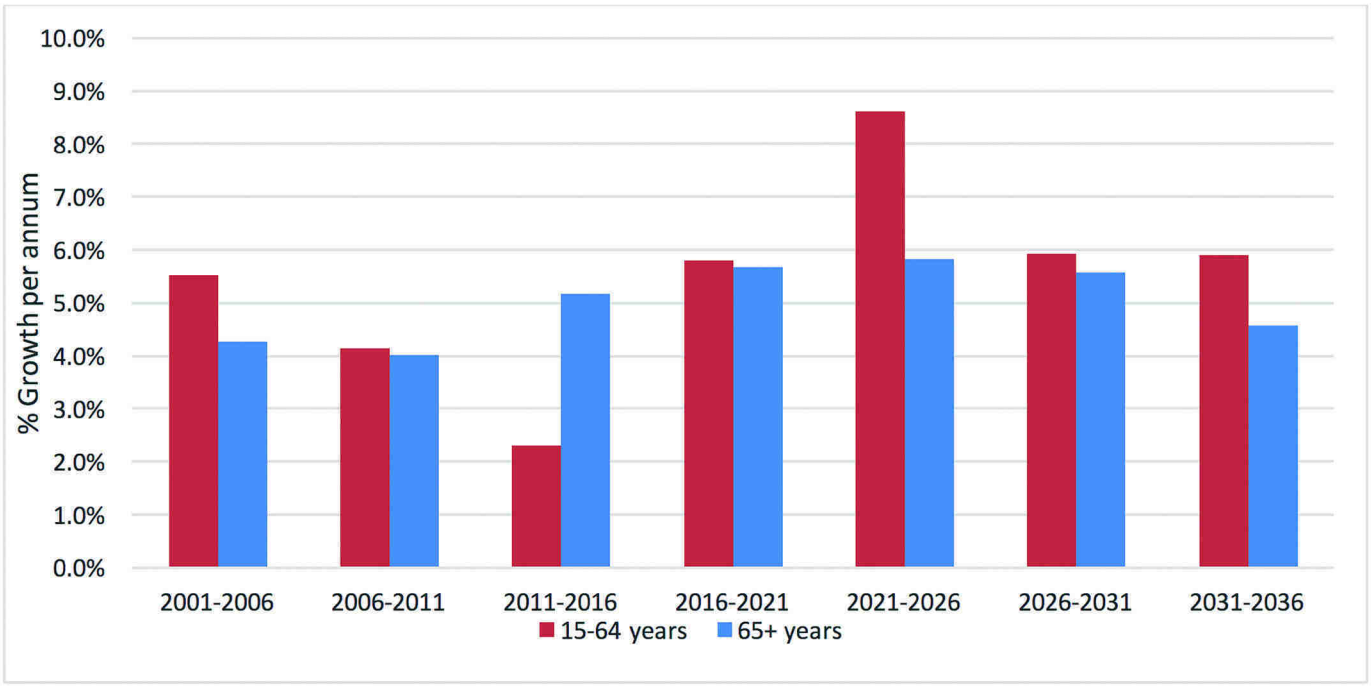
Figure 4.2 compares the working age population with the retiree population for the Greater Flagstone/Yarrabilba community between 2001 and 2036. Figure 4.3 compares the average population growth per annum for working age and retiree population of the Greater Flagstone/Yarrabilba community between 2001 and 2036.

Figure 4.2: Working Age Population v Retiree Population, Greater Flagstone/Yarrabilba, 2001 to 2036



Source: ABS, Queensland Government Statisticians Office (2015), Economic Associates Analysis

Figure 4.3: Working Age Population v Retiree Population, Average growth per annum, Greater Flagstone/Yarrabilba 2001 to 2036



Source: ABS, Queensland Government Statisticians Office (2015), Economic Associates Analysis

To estimate the size of available workforce derived from Greater Flagstone/Yarrabilba, three workforce scenarios were developed from the QGSO projections as follows:

- Total available workforce: this scenario assumes that the total available workforce (i.e. total employment multiplied by labour force participation rate)[15] equates to 65% of the total working age population;
- Workforce in non-population serving sectors: this scenario assumes on average 50% of the available workforce is employed in non-population serving sectors[16]; and
- Workforce in industrial sectors: assumes on average 42% of the available workforce is employed in industrial sectors[17].

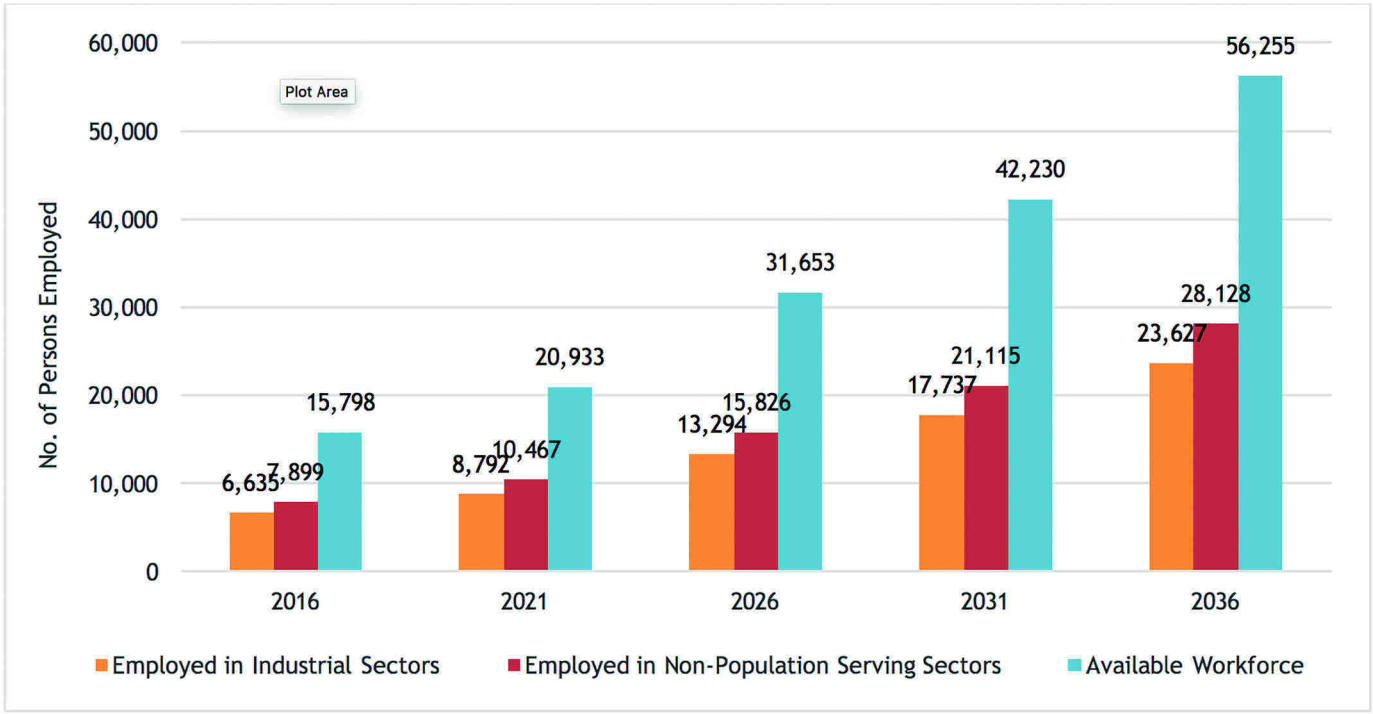
Based on the above workforce scenarios, total available workforce in Greater Flagstone/Yarrabilba is projected to increase (derived from the QGSO projections) from 15,798 persons in 2015 to 56,255 persons in 2036. Persons employed in non-population serving sectors is anticipated to increase from 7,899 persons to 28,128 persons between 2016 and 2036, whilst persons employed in industrial sectors is expected to increase from 6,635 persons to 23,627 persons between 2016 and 2036. Figure 4.4 illustrates the available workforce for Greater Flagstone/Yarrabilba between 2016 and 2036. Figure 4.5 illustrates the incremental growth in persons employed between 2021 and 2036 for Greater Flagstone/Yarrabilba.

15 Based on ABS Census data, total employment in Greater Flagstone/Yarrabilba was 93.0% in 2001, 96.4% in 2006 and 94.6% in 2011. Labour force participation rates in Greater Flagstone/Yarrabilba was 68.5% in 2001, 68.5% in 2006 and 70.7% in 2011. Based on the above rates, the average total available workforce was 65.5% (i.e. total employment multiplied by labour force participation rate). For the purposes of this analysis, 65% has been adopted.

16 Average based on the 2001, 2006 and 2011 Census results, which indicate the proportion of persons employed in non-population serving sectors (including agriculture, forestry and fishing; mining; manufacturing; construction; wholesale trade; transport, postal and warehousing; professional, scientific and technical services; and administrative and support services) was 52.0% in 2001, 51.1% in 2006 and 49.4% in 2011, equating to an average of 50.8%. For the purposes of this analysis 50% has been adopted.

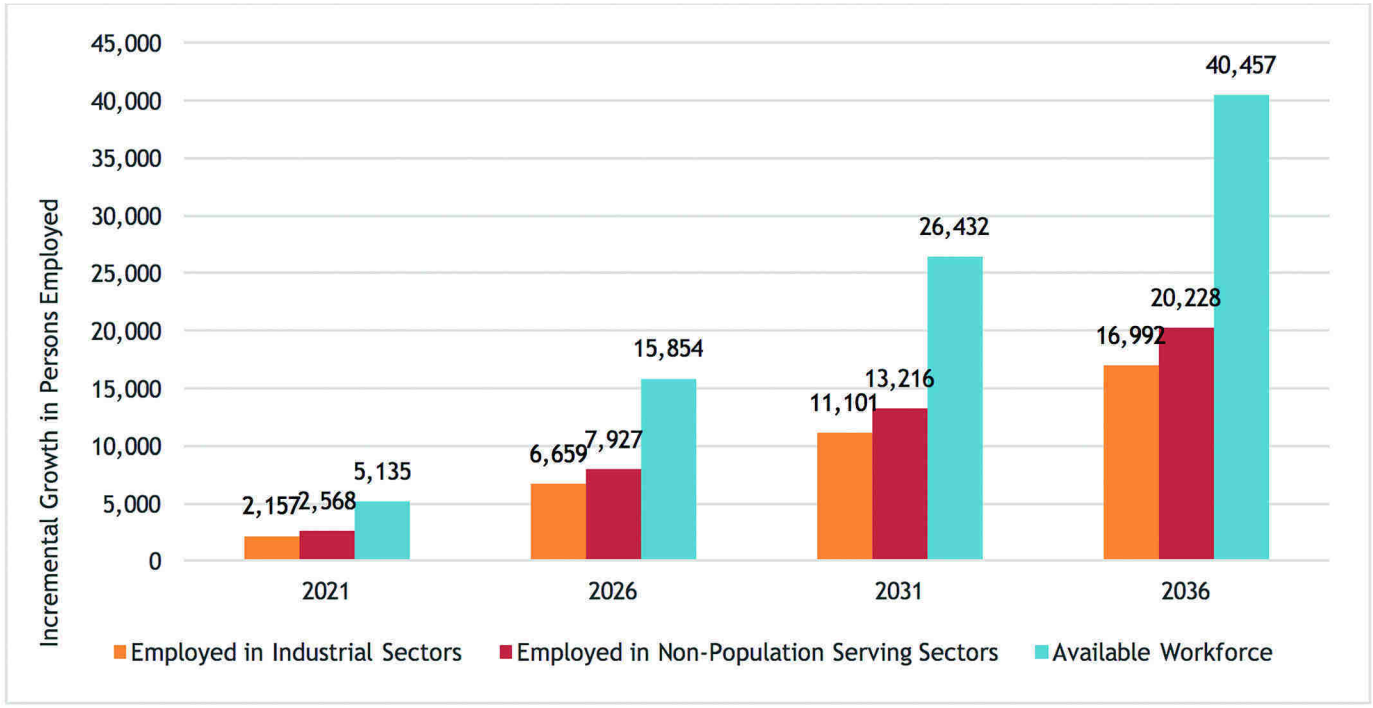
17 Average based on the 2001, 2006 and 2011 Census results, which indicate the proportion of persons employed in industrial sectors (including mining, manufacturing, construction, wholesale trade and transport, postal and warehousing) was 42.5% in 2001, 43.2% in 2006, and 40.9% in 2011, equating to an average of 42.2%. For the purposes of this analysis 42% has been adopted.

Figure 4.4: Total Available Workforce v Persons Employed in Non-Population Serving Sectors v Persons Employed in Industrial Sectors, Greater Flagstone/Yarabilba, 2016 to 2036



Source: Economic Associates Analysis

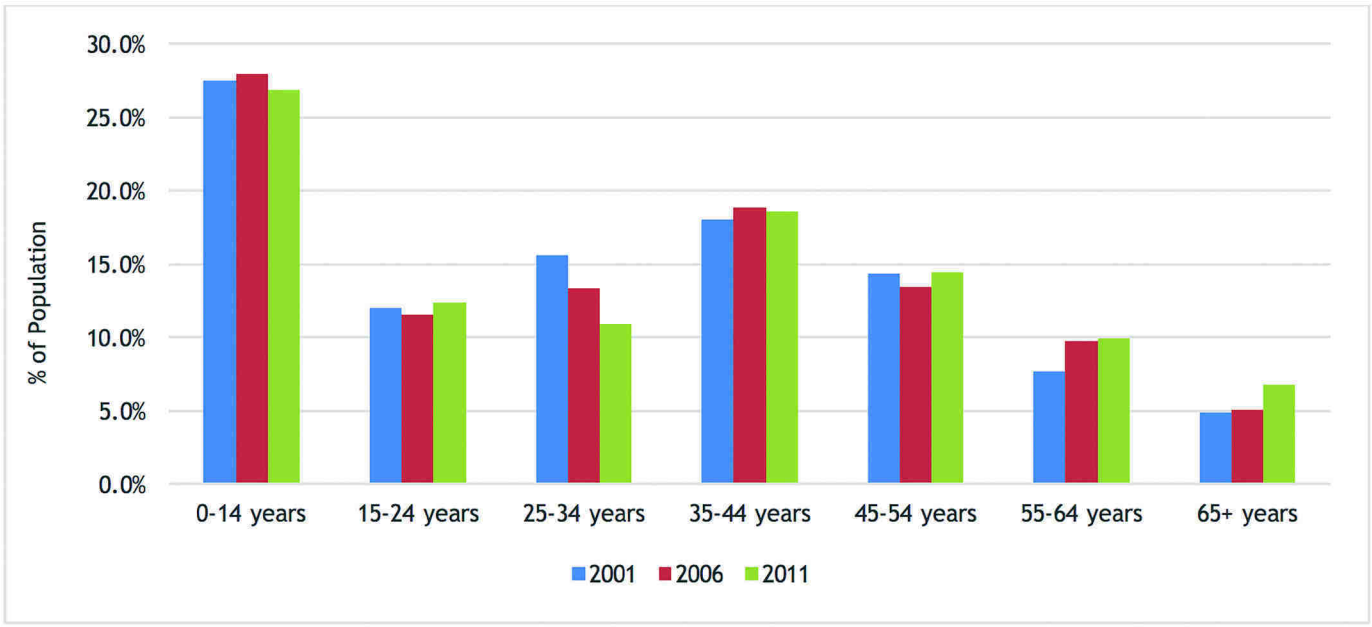
Figure 4.5: Incremental Growth in Employed Persons, Greater Flagstone/Yarrabilba, 2021 to 2036



Source: Economic Associates Analysis

The Greater Flagstone/Yarrabilba community is generally characterised by a younger demographic particularly compared to Boonah and Beaudesert, with the average age of residents increasing from 31.4 years in 2001 to 33.2 years in 2011. The proportion of persons aged 65 years and older increased from 4.9% to 6.8% between 2001 and 2011, whilst the proportion of persons aged 25 to 34 years decreased from 15.6% in 2001 to 11.0% in 2011. Figure 4.6 illustrates the age profile for the Greater Flagstone/Yarrabilba community between the 2001 and 2011 censuses.

Figure 4.6: Age Profile by Age Cohort Greater Flagstone/Yarrabilba, 2001 to 2011



Source: ABS Census of Population and Housing, Economic Associates Analysis

The proportion of residents attaining a non-school qualification increased between 2001 and 2011 from 30.6% to 41.5%. Residents with a diploma/certificated accounted for 25.0% in 2001 increasing to 32.9% in 2011, reflecting an increasing prevalence of a skilled workforce.

The Greater Flagstone/Yarrabilba community exhibited high workforce participation rates between 2001 and 2011 increasing from 68.5% to 70.7%, reflective of the higher proportion of persons within the working age cohorts (i.e. persons aged 15 to 64 years old).

Between 2001 and 2011, manufacturing, construction and transport, postal and warehousing have consistently been major industry sectors of employment of the Greater Flagstone/Yarrabilba community. The development of the Bromelton SDA is likely to generate significant demand for skilled workers in such industry sectors that could be sourced from the Greater Flagstone/Yarrabilba community as a supplementary source to available local workforce of Beaudesert.

The demographic characteristics of the Greater Flagstone/Yarrabilba community is likely to continue to evolve with the long term development of the Greater Flagstone PDA and Yarrabilba communities. In order to obtain an understanding of the potential future demographic characteristics of this community, a comparative analysis of other exemplar Greenfield communities has been undertaken as discussed in the following section 4.2.

4.2 COMPARATIVE DEMOGRAPHIC ANALYSIS

The Greater Flagstone/Yarrabilba community is anticipated to accommodate significant population growth underpinned by the Greenfield development of the Greater Flagstone PDA and Yarrabilba. The Greater Flagstone/Yarrabilba community represents a logical alternative source of available workforce to supplement anticipated workforce shortages within the Scenic Rim (and in particular Beaudesert) to support the growth and development of Bromelton. Hence, it is pertinent to obtain an understanding of the likely future demographic characteristics of the Greater Flagstone/Yarrabilba community as it continues to develop. Other major Greenfield communities across South East Queensland have been examined to provide an overview of the indicative demographic composition of the Greater Flagstone community in the long term. For the purpose of this analysis, exemplar locations examined include:

- Greater Springfield: comprising Springfield, Springfield Lakes, and Bellbird Park–Brookwater SA2s (illustrated in Figure 4.7);
- Northern Gold Coast: comprising Ormeau – Yatala, Pimpama, Upper Coomera–Willow Vale, and Coomera SA2s (illustrated in Figure 4.8); and
- North Lakes: comprising the North Lakes – Mango Hill SA2 (illustrated in Figure 4.9).

There communities provides examples of large Greenfield developments considered comparable to the development of the Greater Flagstone/Yarrabilba community. Each of these communities also service significant employment nodes within proximity to their locations. Table B.2 in Appendix B details the demographic characteristics of each of these communities with a brief summary provided below.

GREATER SPRINGFIELD

Greater Springfield is generally characterised by a young skilled blue collar workforce with high education attainment levels. Key demographic characteristics include:

- the average age of Greater Springfield residents increased from 29.4 years to 29.6 years between 2001 and 2011;
- Greater Springfield exhibited a higher incidence of persons aged 25 to 34 years increasing from 17.7% to 19.1% between 2001 and 2011, whilst the proportion of persons aged 65 years and older increased from 3.5% to 3.7% over the same period;
- Education attainment levels within Greater Springfield have increased between 2001 and 2011, with almost half (47.5%) of the resident workforce attaining a non-school qualification as of 2011 (cf. 32.3% in 2001);
- The proportion of those with a diploma/certificate has increased from 24.7% in 2011 to 31.4% in 2011; and
- Manufacturing, construction and transport, postal and warehousing are key industry sectors of employment of the Greater Springfield community.

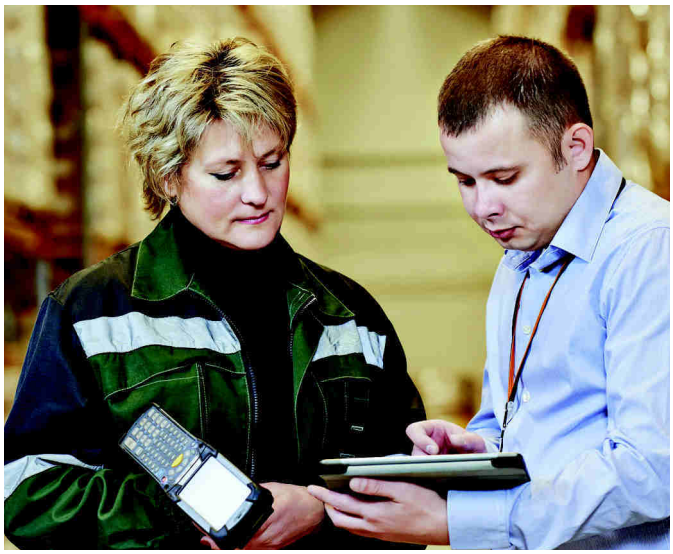
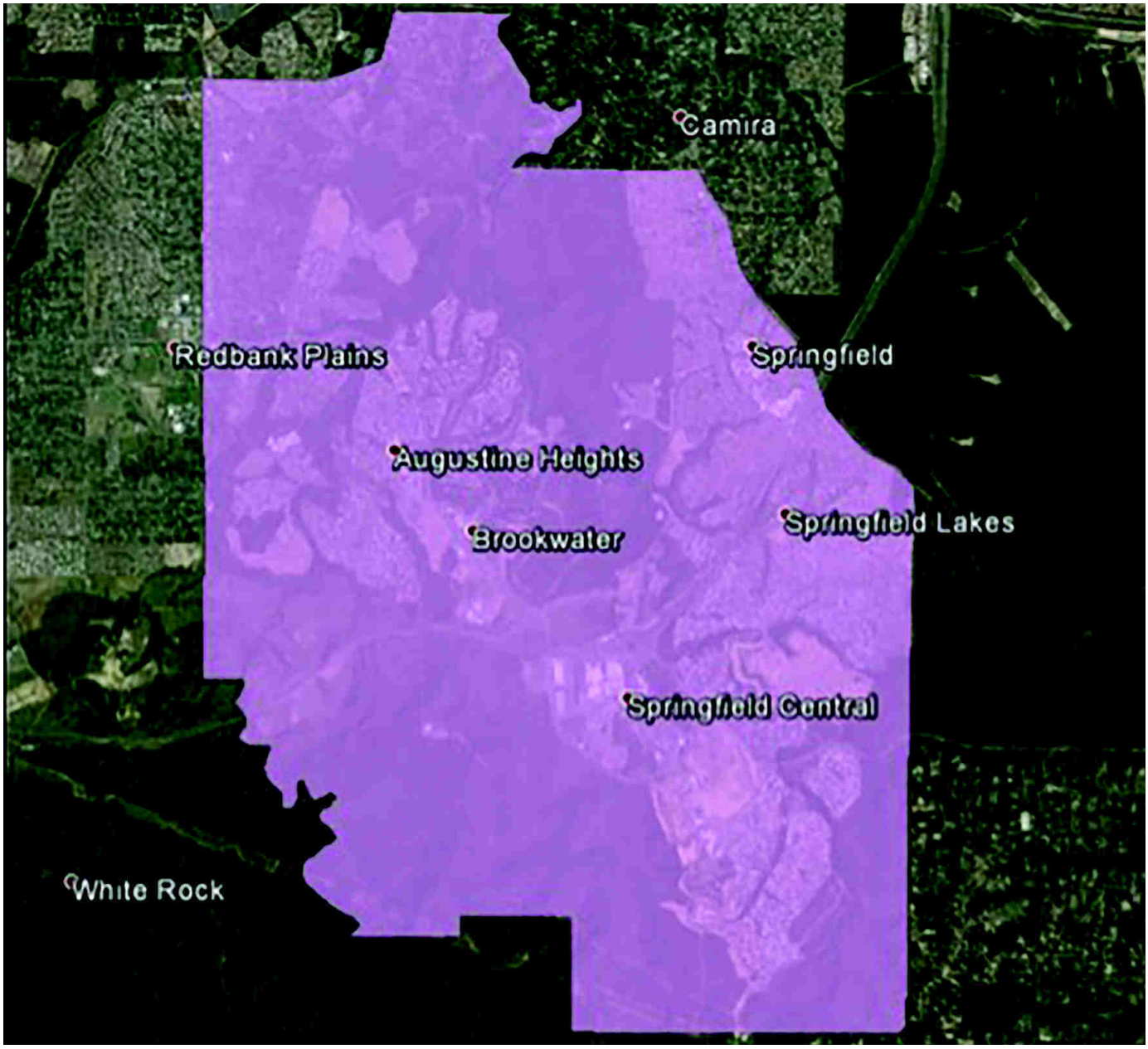


Figure 4.7: Defined Greater Springfield



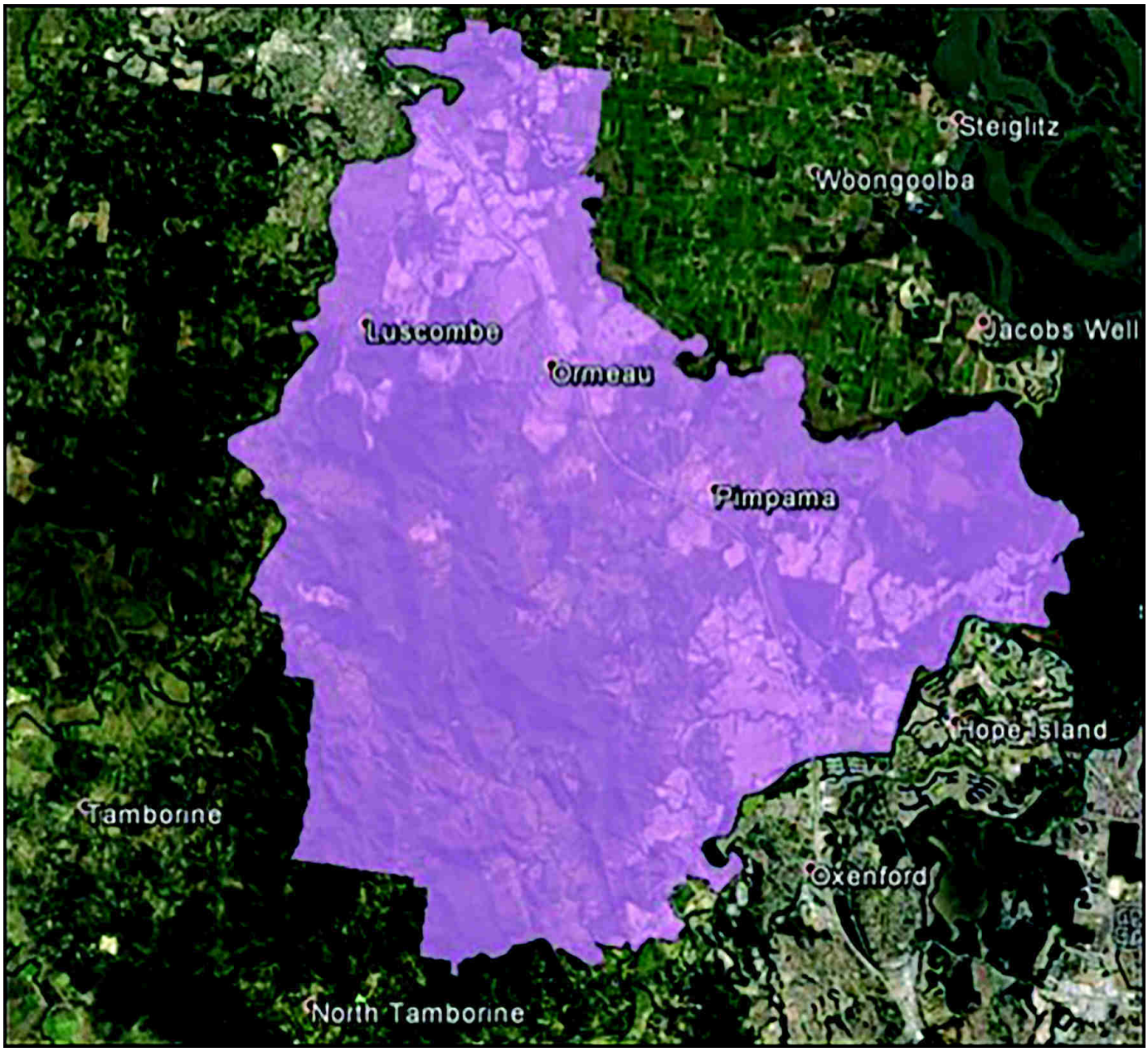
Source: Google Earth

NORTHERN GOLD COAST

The Northern Gold Coast includes extensive tracts of Greenfield land including Pimpama and Coomera, which is anticipated to achieve significant population growth. The Northern Gold Coast exhibited an older demographic in comparison to the other exemplar locations, albeit this is reflective of more established parts of the corridor, with areas such as Pimpama likely to exhibit a slightly younger demographic. Key characteristics noted are as follows:

- The proportion of persons aged 25 to 34 years old decreased slightly between 2001 and 2011 from 17.1% to 16.9%, whilst the proportion of persons aged 65 years and older increased slightly from 5.6% to 6.2% between 2001 and 2011.
- The average of residents within the Northern Gold Coast increased from 35 years to 36.2 years between 2001 and 2011.
- The North Gold Coast exhibited high education attainment levels with the proportion of residents achieving a non-school qualification increasing from 33.1% in 2011 to 45.6% in 2011. The proportion of persons with a diploma/certificate also increased between 2001 and 2011 from 25.6% to 33.6%.
- Similar to the other exemplar locations, manufacturing, construction and transport, postal and warehousing are key industry sectors of employment for the North Gold Coast corridor, reflective of this community's connectivity to the Yatala Enterprise Area.

Figure 4.8: Defined Northern Gold Coast



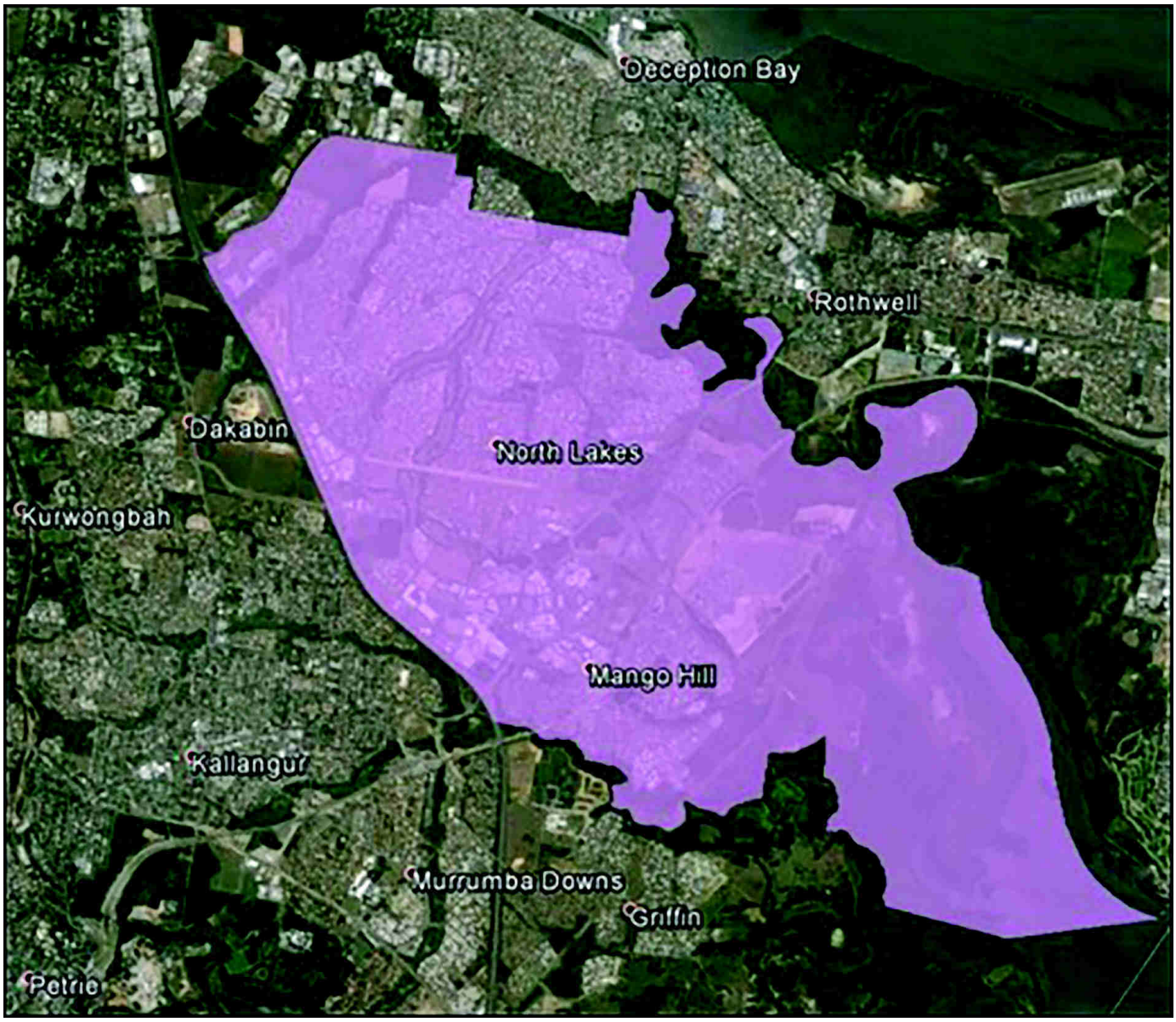
Source: Google Earth

NORTH LAKES

North Lakes is characterised by a younger demographic reflective of the intended master plan development of this Greenfield location. Key characteristics of North Lakes include:

- a high incidence of children aged 0 to 14 years (increasing from 39.0% in 2001 to 31.1% in 2011);
- The proportion of persons aged 65 years and older in North Lakes increased from 1.9% in 2001 to 3.4% in 2011, with the average age of North Lakes residents increasing from 28.7 years to 29 years between 2001 and 2011;
- The North Lakes community is well educated with over half (56.7%) of the community attaining a non-school qualification as of 2011. In 2011, 19.6% of North Lakes residents held a Bachelor degree of higher, with 37.2% attaining a diploma/certificate; and
- With the exception of retail trade and health care and social assistance, the manufacturing, construction and transport, postal and warehousing are dominant industry sectors of employment of the North Lakes community.

Figure 4.9: Defined North Lakes



Source: Google Earth

4.3 IMPLICATIONS FOR THE BROMELTON SDA AND THE SCENIC RIM

Bromelton is a long term development that is intended to become a significant industrial node not only for the Scenic Rim but the broader South East Queensland. Hence, it is pertinent to ensure that Bromelton has access to a suitable pool of skilled workers to support not only the long term development of Bromelton but the local businesses of the Scenic Rim (in particular Beaudesert). A review of the demographic characteristics of Beaudesert, Boonah and the Scenic Rim depicts the prevalence of an older demographic, with a high proportion of persons aged 65 years and older, lower workforce participation rates and lower educational attainment levels, which is anticipated by QGSO to continue in the long term. In addition the proportion of the working age population (i.e. persons aged 15-64 years) is projected to continue to decrease over the next 20 years (accounting for 55.6% Beaudesert, 51.7% Boonah and 54.3% Scenic Rim in 2036). Based on our analysis, it is apparent that the available local workforce is insufficient (both in terms of skills and number of workers) to support the long term development of Bromelton as a significant industrial node. Consequently, alternative sources of available workforce might be required to supplement the anticipated workforce shortages, particularly if Beaudesert does not change in response to rising labour demand at Bromelton. Greater Flagstone and Yarrabilba represents the most proximate and logical alternative.

Table 4.2 compares the working age population of Scenic Rim, Beaudesert and Boonah to Greater Flagstone/Yarrabilba and other Greenfield locations similar to Greater Flagstone/Yarrabilba at 2016 and 2036. Based on this comparison, the Scenic Rim, Beaudesert.

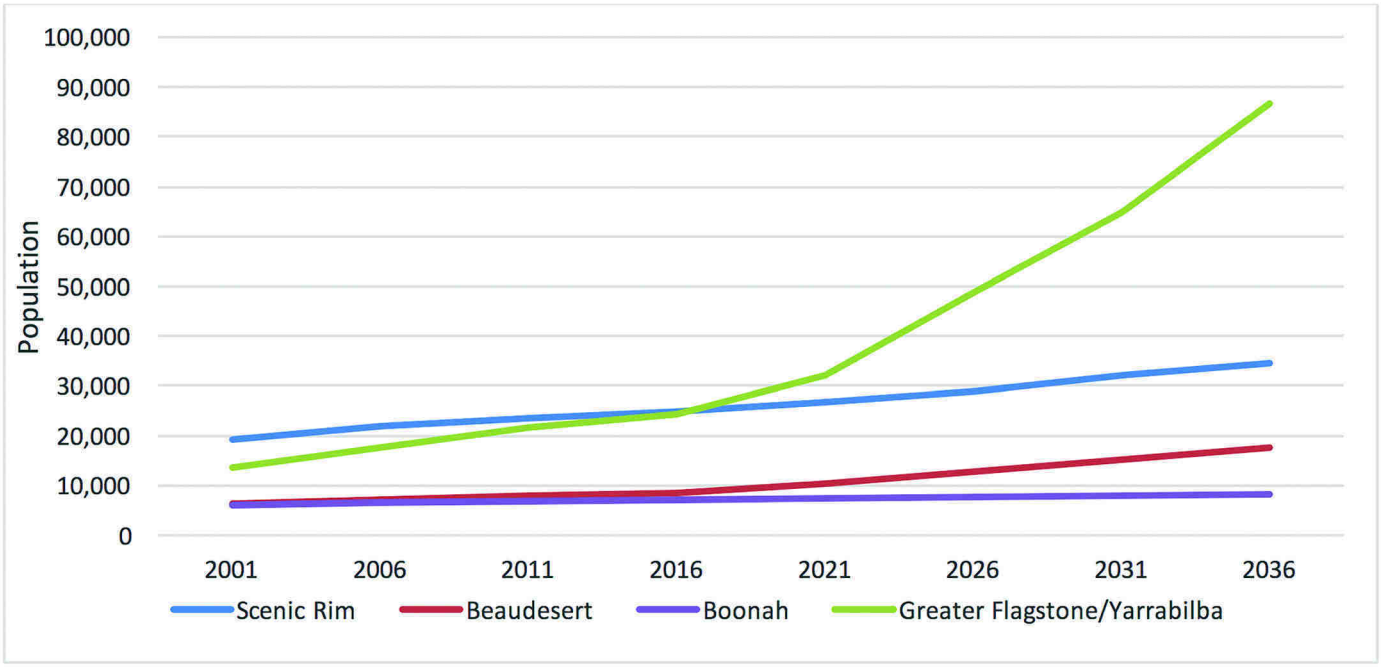
Table 4.2: Working Age Population Comparison, 2016 and 2036

Location	Total Population (No.)			Working Age Population 15 - 64 years (No.)			Working Age Population as a % of the Total Population	
	2016	2036	% growth 2016-36	2016	2036	% growth 2016-36	2016	2036
Scenic Rim	41,014	63,396	2.2%	24,862	34,421	1.6%	64.7%	54.3%
Beaudesert	14,305	31,669	4.1%	8,593	17,623	3.7%	45.2%	55.6%
Boonah	12,020	15,777	1.4%	7,164	8,158	0.7%	76.2%	51.7%
Greater Flagstone/ Yarrabilba	36,863	135,783	6.7%	24,305	86,546	6.6%	27.1%	63.7%
Greater Springfield	33,892	99,823	5.5%	23,412	66,798	5.4%	34.0%	66.9%
Northern Gold Coast	70,620	157,178	4.1%	46,790	101,867	4.0%	44.9%	64.8%
North Lakes	30,045	46,002	2.2%	19,226	28,017	1.9%	65.3%	60.9%

Source: Queensland Government Statisticians Office (2015), Economic Associates Analysis

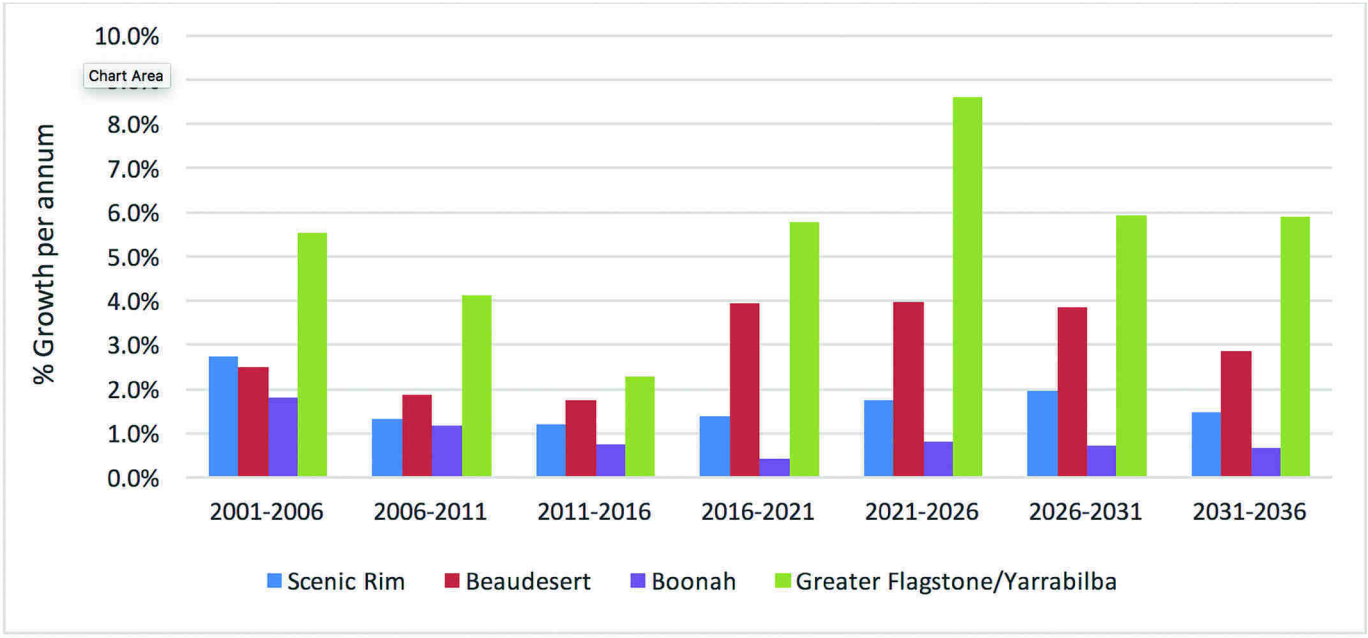
The working age population of the Greater Flagstone/Yarrabilba community is anticipated to experience significant population growth particularly in comparison to the Scenic Rim, Beaudesert and Boonah as illustrated in Figures 4.10 and 4.11. Figure 4.10 compares the working age population of the Scenic Rim, Beaudesert and Boonah to the proximate Greater Flagstone/ Yarrabilba community between 2001 and 2036. Figure 4.11 compares the average growth rate per annum of the working age population of the Greater Flagstone/Yarrabilba community compared to the Scenic Rim, Beaudesert and Boonah.

Figure 4.10: Working Age Population Comparison, 2001 to 2036



Source: ABS, Queensland Government Statisticians Office (2015), Economic Associates Analysis

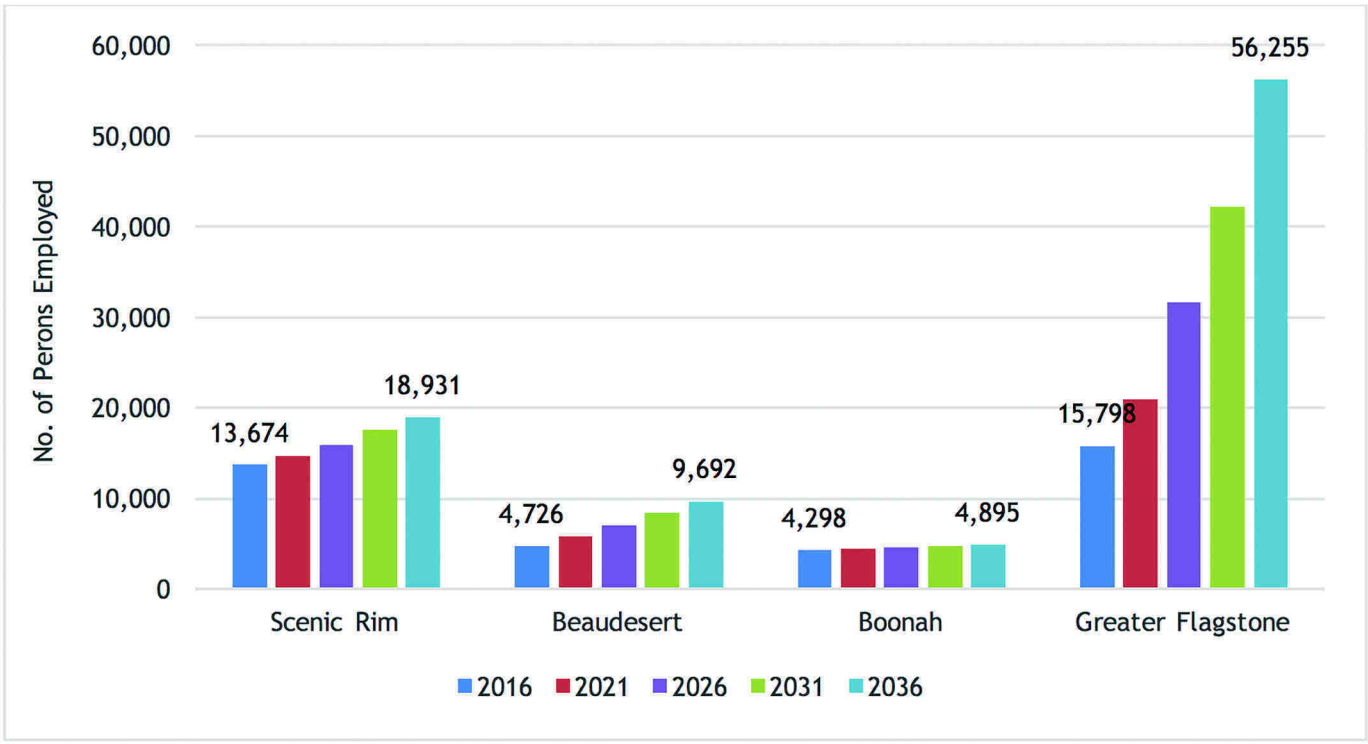
Figure 4.11: Working Age Population Comparison, Average growth per annum



Source: ABS, Queensland Government Statisticians Office (2015), Economic Associates Analysis

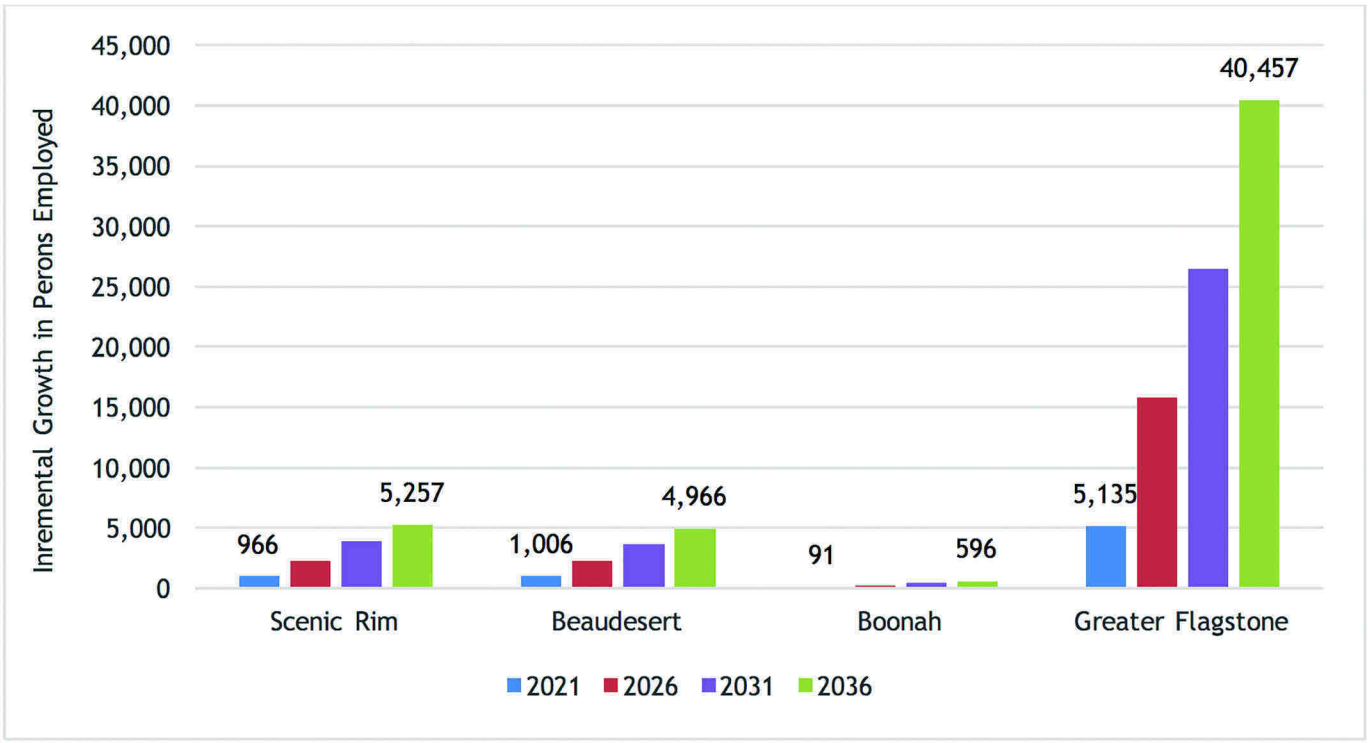
As previously discussed in section 3.2.1, it is anticipated that there is a shortfall in available local workforce within the Scenic Rim and Beaudesert to support the development of the Bromelton SDA. Greater Flagstone/Yarrabilba represents the most proximate and logical alternative available workforce, which is anticipated to experience significant growth over 2016 to 2036. Figure 4.12 compares the available workforce of Greater Flagstone/Yarrabilba with the Scenic Rim, Beaudesert and Boonah between 2016 and 2036. It is apparent that the Greater Flagstone/Yarrabilba would provide access to an alternative source of workers to supplement the anticipated shortfalls in the local available workforce of the Scenic Rim (in particular Beaudesert). Figure 4.13 compares the incremental growth in available workforce of Greater Flagstone/Yarrabilba with the Scenic Rim, Beaudesert and Boonah between 2021 and 2036.

Figure 4.12: Available Workforce Comparison, 2016 to 2036



Source: Economic Associates Analysis

Figure 4.13: Incremental Growth in Available Workforce Comparison, 2016 to 2036



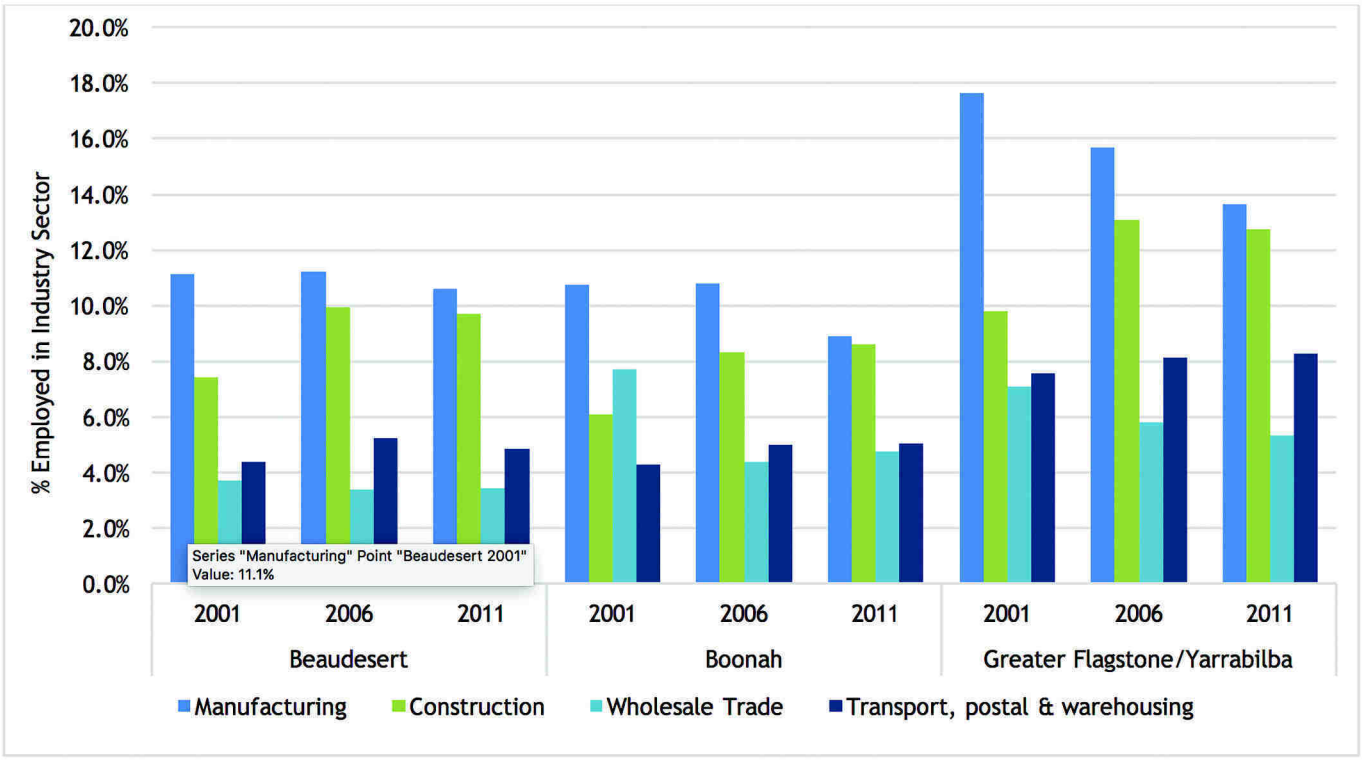
Source: Economic Associates Analysis

The Greater Flagstone/Yarrabilba community is anticipated to accommodate significant population growth underpinned by the Greenfield development of the Greater Flagstone PDA and Yarrabilba. The Greater Flagstone/Yarrabilba community represents a logical source of available workforce to supplement anticipated workforce shortages within the Scenic Rim to support the growth and development of Bromelton.

The demographic characteristics of the Greater Flagstone community is expected to evolve and reflect the similar demographic characteristics of other exemplar locations such as North Lakes and Greater Springfield. These communities are generally characterised by a skilled blue collar workforce with young families.

As a major industrial node, the Bromelton SDA is anticipated to generate employment predominantly within industrial sectors such as manufacturing, construction, wholesale trade and transport, postal and warehousing. Compared to Beaudesert and Boonah, the Greater Flagstone/Yarrabilba community exhibits a higher proportion of residents employed within the manufacturing, construction, wholesale trade and transport, postal and warehousing sectors as illustrated in Figure 4.10. Hence, the Greater Flagstone/Yarrabilba community represents a suitable alternative source of available workforce with the required skills to supplement the available local workforce and support the ongoing development of the Bromelton SDA.

Figure 4.14: Industry of Employment Comparison, Greater Flagstone/Yarrabilba, Beaudesert and Boonah, 2001 to 2011



Source: ABS Census of Population and Housing, Economic Associates Analysis

5. CONNECTIVITY WITH BROMELTON

As Bromelton develops, it is apparent that there is a shortfall in the location workforce population to not only support the employment requirements of Bromelton but also the local businesses of Beaudesert. With Greater Flagstone/ Yarrabilba representing the most logical and proximate alternative workforce source to supplement the anticipated shortfall in the supply of available workforce, it is pertinent to ensure sufficient connectivity is developed and maintained.

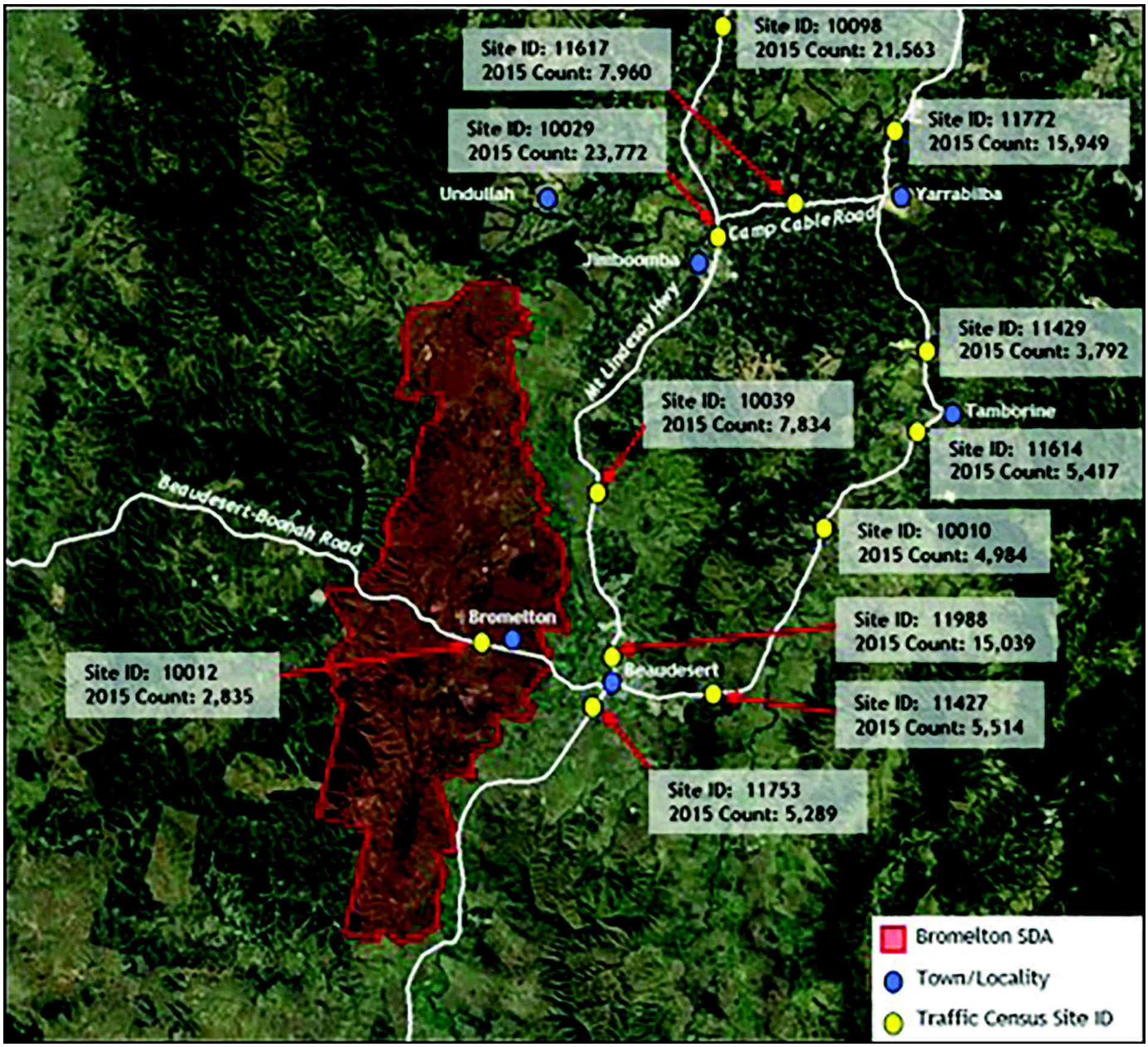
The Mount Lindesay Highway and Beaudesert-Boonah Road provide the main connectivity between the Bromelton SDA and Greater Flagstone/Yarrabilba region. Other key connector roads linking the Greater Flagstone/Yarrabilba region to the Bromelton SDA (via the Mount Lindesay Highway and Beaudesert-Boonah Road) include:

- Camp Cable Road (main road connecting Yarrabilba to the Mount Lindesay Highway);
- Waterford-Tamborine Road,
- Beaudesert-Beenleigh Road; and
- Beaudesert-Nerang Road.

Table 4.1 summarises traffic census data for the above roads between 2010 and 2015 with Figure 4.1 illustrating the location points of the traffic data. Between 2010 and 2015, traffic volumes along Camp Cable Road (Site ID11617) have increased an average of 6.2% per annum with traffic volumes along Mount Lindesay Highway south of Camp Cable Road increasing 4.4% per annum (Site ID10029). This is a likely reflection of the residential development of Yarrabilba. Within the Beaudesert Township traffic volumes along Mount Lindesay Highway between Birnam and Tubber Street (Site ID11988) increased 3.2% per annum between 2010 and 2015. Traffic volumes along the main arterial roads and connector roads are likely to increase over time as Bromelton SDA develops and attracts workers from the Greater Flagstone/Yarrabilba area.

Figure 4.1 illustrates the key roads providing connectivity to/from Beaudesert/Bromelton as well as the location of the identified traffic sites outlined in Table 5.1. The 2015 traffic counts for each identified site (outlined in Table 5.1) is also illustrated within Figure 5.1.

Figure 5.1: Key roads providing Connectivity to/from Beaudesert/Bromelton



Source: Google Earth, Department of Transport and Main Roads

Table 5.1: Traffic Census Data, Roads providing connectivity to Beaudesert/Bromelton, 2011 to 2015

Site ID	Road Name	Description	AADT						% growth p.a
			2010	2011	2012	2013	2014	2015	2010-15
11427	Beaudesert-Nerang Road	220m east of Brooklands Drive east	4,927	4,944	5,036	5,138	5,487	5,514	2.3%
11617	Camp Cable Road	590m west of Hotz Road	5,885	5,729	5,791	6,073	6,630	7,960	6.2%
10012	Beaudesert-Boonah Road	1.4km west of Sandy Creek Rd, Beaudesert	3,075	2,837	2,768	2,842	2,852	2,835	-1.6%
10098	Mount Lindesay Highway (Brisbane-Beaudesert)	700m south of Stoney Camp Rd, Munruben	16,542	17,773	17,787	18,969	20,030	21,563	5.4%
10029	Mount Lindesay Highway (Brisbane-Beaudesert)	460m south of Camp Cable Rd, Jimboomba	19,211	21,044	20,135	20,629	21,217	23,772	4.4%
10039	Mount Lindesay Highway (Brisbane-Beaudesert)	WiM Site Cyrus Creek	8,300	8,294	8,371	7,844	7,844	7,844	-1.1%
11988	Mount Lindesay Highway (Brisbane-Beaudesert)	Between Birnam St & Tubber St	12,818	12,677	13,416	13,331	13,687	15,039	3.2%
11753	Mount Lindesay Highway (Beaudesert-Border)	450m north of Cryna Rd	4,702	5,078	4,774	5,219	5,294	5,289	2.4%
10010	Beaudesert-Beenleigh Road	Intersection of Tremayne Rd, Mundoolun	1,806	4,418	4,494	4,649	4,783	4,984	22.5%
11614	Beaudesert-Beenleigh Road	230m south of Munstervale Rd	4,669	4,402	4,628	5,000	5,011	5,417	3.0%
11772	Waterford-Tamborine Road	Between Anzac Av & Stockleigh Rd	9,989	11,134	11,094	11,950	14,056	15,949	9.8%
11429	Waterford-Tamborine Road	Northern Abutment of Clutha Creek Bridge	2,564	2,689	3,038	3,485	3,581	3,792	8.1%

Source: Department of Transport and Main Roads Traffic Census (various years)

Upgrades to the Mount Lindesay Highway have commenced as part of the $4.1 million improvement works, which include the construction of a dedicated turning lane outside Gleneagle State School to allow a safer entry/exit for motorists. A dedicated right-turn land at the Veresdale Scrub intersection is also being constructed. Construction of a right-turn land at the Undullah Road intersection at Woodhill has also commenced, which includes pavement widening. Road improvement works have also commenced at the intersection of Camp Cable Road and the Mount Lindesay Highway, which is to include the installation of traffic signals.

Funding for the design and construction of the Beaudesert Town Centre Bypass was announced in early 2015 to divert heavy vehicles around the town centre. The town centre bypass is to being at the existing Mount Lindesay Highway and run west of the town centre with an intersection at Bromelton Street (Beaudesert-Boonah Road). The town centre bypass will include:

- A new 1.5 kilometre section of the Mount Lindesay Highway;
- A two land urban road that will provide a heavy vehicle bypass of the town centre;
- At grade signalised intersections at Helen Street and Bromelton Street; and
- Construction of a 50 metre bridge across Spring Creek as well as major drainage culverts particularly at Fisher's Gully[18].

Internal road connections between Greater Flagstone and Bromelton SDA are provided via Bromelton House Road, Allan Creek Road, Brookland Road and Undullah Road (which provides connectivity with the Mount Lindesay Highway). These roads are generally characterised by a six metre wide, single carriage way with a single lane seal with speed limits generally varying between 60 kph and 80 kph. The Ferguson Reserve Bridge along Brookland Road is a narrow bridge that functions as a slow point (due to its narrowness) as part of the internal road connection within the Bromelton SDA. The JS Cochrane Bridge is a narrow bridge (barely two lanes) located along Undullah Road (west of Brookland Road) that poses difficult for passing vehicles at speed. As an alternative route between Greater Flagstone and the Bromelton SDA, these internal road connections will need to be upgraded and managed accordingly to support the development of the Bromelton SDA as a significant employment node.

18 http://www.tmr.qld.gov.au/Projects/Name/M/Mount-Lindesay-Highway-Beaudesert-Town-Centre-Bypass.aspx

6. OVERALL IMPLICATIONS FOR THE SCENIC RIM

The Scenic Rim is generally characterised by an older demographic, reflective of the Region's appeal to retirees and the region's long affiliation with the agricultural sector. As the local community continues to age the growth in the local skilled workforce is likely to diminish placing increasing pressure to seek alternative sources of available workforce that not only support local businesses but also have the necessary skills base required. The long term development of Bromelton as a significant industrial node will contribute to the need for Scenic Rim businesses to have access to a skilled workforce to supplement anticipated shortfalls in the availability of the local workforce and/or skills. The intent of Bromelton as a key industrial node will underpin demand by local businesses to have access to a large employment pool of skilled blue collar workers beyond the Scenic Rim.

The development of the Bromelton SDA as a major industry node for the Scenic Rim and South East Queensland more broadly will have a number of implications on the future development, role and function of the Scenic Rim Region and particularly Beaudesert. Beaudesert is the largest centre of the Scenic Rim and is the most proximate to the Bromelton SDA, hence the flow-on effects from the development of the Bromelton SDA are likely to be most prevalent within Beaudesert.

The construction of the SCT Logistics freight terminal indicates that development of Bromelton at this stage is in line with the accelerated development scenario (which assumes development take-up is brought forward by 10 years). Upon completion, the SCT Logistics fa-

cility will provide 1,000 direct jobs on site. Assuming, development of the Bromelton SDA continues to align with the accelerated development scenario, there will be a shortfall in the available local workforce in the next five years (i.e. 2021). Hence, alternative sources of labour (primarily skilled blue collar workers) will need to be investigated to support the ongoing development of the Bromelton SDA as well as local businesses (particularly those located in Beaudesert). Greater Flagstone and Yarrabilba represent the most logical and proximate source of available workforce and these areas are anticipated to experience significant population growth. The ability to attract workers from the Greater Flagstone/Yarrabilba, will require appropriate planning of infrastructure provisions (particularly road connectivity) to provide safe and convenient access for workers.

The ongoing development of the Bromelton SDA will result in a number of flow-on effects to the local community. Beaudesert is likely to experience the most notable flow-on effects as already mentioned. Anticipated flow-on effects that are likely to manifest in Beaudesert include:

- Changes in the structure of the demographic profile particularly in regards to age, with younger families likely to be attracted to Beaudesert for employment opportunities within the Bromelton SDA;
- Compositional changes of the local workforce in terms of skills and industry of the workforce (particularly within the transport, postal and warehousing industry sectors), with the local workforce attaining the necessary skills and training likely to be required by businesses within the Bromelton SDA;
- Increase in household income levels as a result of the attraction of Bromelton SDA as a major employment node particularly for skilled blue collar workers; and
- Increases in the working age population compared to the retiree population as younger workers seek employment opportunities derived from the Bromelton SDA.

The structural and compositional changes of the employment and demographic profile of Beaudesert would also result in additional flow-on effects with respect to the provision of local services and infrastructure provided such as:

- Sufficient provision of retail and commercial services and facilities to cater for the needs of the local resident population as well as the workforce population. Demand for retail provision would result from the anticipated increase in household incomes and subsequent discretionary income;
- Provision of recreational (e.g. parks), community (e.g. libraries), educational (e.g. schools) and health (e.g. hospitals) infrastructure to support the local resident and workforce population; and
- Provision and maintenance of transport infrastructure (e.g. local roads, bridges, public transport etc.) to support the anticipated increases in traffic and workers within Beaudesert and surrounds.

APPENDIX A: BROMELTON EMPLOYMENT SCENARIOS

Table A. 1: Cumulative employment profile for Bromelton by land use type, Main Scenario

Year	Major Industry	Rail Dependent Precinct	Rail Sidings	Local services centre	Corporate Logistics	Total
2023	-	-	31	-	-	31
2024	-	240	62	-	-	302
2025	-	673	176	-	-	849
2026	168	866	290	-	-	1,324
2027	590	1,109	290	-	-	1,989
2028	1,012	1,352	290	-	-	2,654
2029	1,266	1,352	290	-	-	2,908
2030	1,557	1,502	290	-	-	3,349
2031	1,847	1,653	290	-	-	3,790
2032	2,138	1,803	290	-	-	4,231
2033	2,428	1,954	290	-	-	4,672
2034	2,719	2,104	290	-	-	5,113
2035	3,208	2,268	290	116	110	5,992
2036	3,697	2,431	290	232	221	6,871
2037	3,895	2,595	290	348	331	7,459
2038	4,094	2,758	290	464	442	8,048
2039	4,292	2,922	290	580	552	8,636
2040	4,620	3,287	290	580	552	9,329
2041	4,948	3,652	290	580	552	10,021
2042	5,077	4,016	290	580	552	10,516
2043	5,207	4,381	290	580	552	11,010
2044	5,336	4,746	290	580	552	11,504
2045	5,831	4,767	290	580	552	12,020
2046	6,325	4,788	290	580	552	12,535
2047	6,690	4,808	290	580	552	12,921
2048	7,056	4,829	290	580	552	13,307
2049	7,421	4,850	290	580	552	13,693
2050	8,454	4,854	290	580	552	14,730
2051	9,487	4,858	290	580	552	15,767
2052	10,155	4,862	290	580	552	16,439
2053	10,823	4,866	290	580	552	17,111
2054	11,492	4,870	290	580	552	17,784
2055	12,527	4,870	290	580	552	18,819
2056	13,563	4,870	290	580	552	19,855
2057	14,599	4,870	290	580	552	20,891
2058	15,635	4,870	290	580	552	21,927
2059	16,671	4,870	290	580	552	22,963
2060	17,039	4,870	290	580	552	23,331
2061	17,407	4,870	290	580	552	23,699
2062	17,774	4,870	290	580	552	24,066
2063	18,142	4,870	290	580	552	24,434
2064	18,510	4,870	290	580	552	24,802

Source: Queensland Utilities, Economic Associates Analysis

Table A. 2: Cumulative employment profile for Bromelton by land use type, Accelerated Scenario

Year	Major Industry	Rail Dependent Precinct	Rail Sidings	Local services centre	Corporate Logistics	Total
2016	172	-	-	-	-	172
2017	594	-	-	-	-	594
2018	1,016	-	-	-	-	1,016
2019	1,270	241	-	-	-	1,511
2020	1,561	674	-	-	-	2,234
2021	1,851	867	-	-	-	2,718
2022	2,142	1,110	36	-	-	3,287
2023	2,432	1,353	67	-	-	3,852
2024	2,723	1,353	181	-	-	4,256
2025	3,212	1,503	290	-	-	5,005
2026	3,701	1,654	290	-	-	5,644
2027	3,899	1,804	290	-	-	5,993
2028	4,098	1,954	290	-	-	6,342
2029	4,296	2,105	290	-	-	6,691
2030	4,624	2,268	290	-	-	7,182
2031	4,952	2,432	290	-	-	7,674
2032	5,081	2,596	290	-	-	7,967
2033	5,211	2,759	290	-	-	8,260
2034	5,340	2,923	290	118	112	8,783
2035	5,835	3,288	290	234	222	9,868
2036	6,329	3,652	290	350	333	10,954
2037	6,694	4,017	290	466	443	11,911
2038	7,060	4,382	290	580	552	12,864
2039	7,425	4,747	290	580	552	13,593
2040	8,458	4,768	290	580	552	14,648
2041	9,491	4,788	290	580	552	15,702
2042	10,159	4,809	290	580	552	16,390
2043	10,827	4,830	290	580	552	17,079
2044	11,495	4,851	290	580	552	17,768
2045	12,531	4,855	290	580	552	18,808
2046	13,567	4,859	290	580	552	19,848
2047	14,603	4,863	290	580	552	20,888
2048	15,639	4,867	290	580	552	21,928
2049	16,675	4,870	290	580	552	22,967
2050	17,043	4,870	290	580	552	23,335
2051	17,411	4,870	290	580	552	23,703
2052	17,778	4,870	290	580	552	24,070
2053	18,146	4,870	290	580	552	24,438
2054	18,510	4,870	290	580	552	24,802
2055	18,510	4,870	290	580	552	24,802
2056	18,510	4,870	290	580	552	24,802
2057	18,510	4,870	290	580	552	24,802
2058	18,510	4,870	290	580	552	24,802
2059	18,510	4,870	290	580	552	24,802
2060	18,510	4,870	290	580	552	24,802
2061	18,510	4,870	290	580	552	24,802
2062	18,510	4,870	290	580	552	24,802
2063	18,510	4,870	290	580	552	24,802
2064	18,510	4,870	290	580	552	24,802

Source: Economic Associates Analysis

Table A. 3: Cumulative employment profile for Bromelton by land use type, Extended Scenario

Year	Major Industry	Rail Dependent Precinct	Rail Sidings	Local services centre	Corporate Logistics	Total
2025	-	241	-	-	-	241
2026	-	674	33	-	-	706
2027	-	867	64	-	-	930
2028	-	1,110	178	-	-	1,287
2029	-	1,353	290	-	-	1,643
2030	-	1,353	290	-	-	1,643
2031	-	1,503	290	-	-	1,793
2032	-	1,653	290	-	-	1,943
2033	-	1,804	290	-	-	2,094
2034	-	1,954	290	-	-	2,244
2035	-	2,105	290	-	-	2,395
2036	170	2,268	290	-	-	2,729
2037	592	2,432	290	-	-	3,314
2038	1,014	2,595	290	117	111	4,128
2039	1,268	2,759	290	233	222	4,772
2040	1,559	2,923	290	349	332	5,452
2041	1,849	3,287	290	465	442	6,334
2042	2,140	3,652	290	580	552	7,214
2043	2,431	4,017	290	580	552	7,870
2044	2,721	4,382	290	580	552	8,525
2045	3,210	4,747	290	580	552	9,379
2046	3,699	4,767	290	580	552	9,889
2047	3,898	4,788	290	580	552	10,108
2048	4,096	4,809	290	580	552	10,327
2049	4,294	4,830	290	580	552	10,546
2050	4,622	4,851	290	580	552	10,895
2051	4,950	4,855	290	580	552	11,227
2052	5,080	4,859	290	580	552	11,360
2053	5,209	4,863	290	580	552	11,494
2054	5,338	4,867	290	580	552	11,627
2055	5,833	4,870	290	580	552	12,125
2056	6,328	4,870	290	580	552	12,620
2057	6,693	4,870	290	580	552	12,985
2058	7,058	4,870	290	580	552	13,350
2059	7,423	4,870	290	580	552	13,715
2060	8,456	4,870	290	580	552	14,748
2061	9,489	4,870	290	580	552	15,781
2062	10,158	4,870	290	580	552	16,450
2063	10,826	4,870	290	580	552	17,118
2064	11,494	4,870	290	580	552	17,786
2065	12,530	4,870	290	580	552	18,822
2066	13,566	4,870	290	580	552	19,858
2067	14,601	4,870	290	580	552	20,893
2068	15,637	4,870	290	580	552	21,929
2069	16,673	4,870	290	580	552	22,965
2070	17,041	4,870	290	580	552	23,333
2071	17,409	4,870	290	580	552	23,701
2072	17,777	4,870	290	580	552	24,069
2073	18,144	4,870	290	580	552	24,436
2074	18,510	4,870	290	580	552	24,802

Source: Economic Associates Analysis

APPENDIX B: POPULATION AND DEMOGRAPHIC PROFILE

Table B. 1: Demographic Profile Comparison, Scenic Rim, Beaudesert, Boonah and Greater Flagstone/Yarrabilba 2001 to 2011

	Beaudesert SA2			Boonah SA2			Scenic Rim Regional Council			Greater Flagstone/Yarrabilba		
	2001	2006	2011	2001	2006	2011	2001	2006	2011	2001	2006	2011
Population (2011 Counted at Home)	9,651	10,911	12,219	9,179	9,829	10,899	29,635	33,106	36,399	19,478	25,308	30,968
Ave. Annual Population Growth (%)	-	2.5%	2.3%	-	1.4%	2.1%	-	2.2%	1.9%	-	5.4%	4.1%
Age Distribution												
0-14 years	22.6%	21.4%	21.8%	24.1%	22.4%	20.7%	22.6%	21.4%	20.8%	27.5%	28.0%	26.9%
15-24 years	13.3%	11.7%	12.0%	10.7%	11.2%	10.7%	11.0%	10.8%	10.7%	12.0%	11.6%	12.3%
25-34 years	11.1%	10.3%	10.1%	10.8%	9.4%	9.0%	11.4%	9.8%	9.0%	15.6%	13.3%	11.0%
35-44 years	14.9%	14.4%	13.2%	14.2%	13.3%	12.7%	15.6%	14.7%	13.9%	18.1%	18.8%	18.6%
45-54 years	13.7%	14.1%	13.8%	13.8%	14.0%	14.7%	14.1%	14.7%	14.9%	14.3%	13.5%	14.4%
55-64 years	10.1%	12.9%	12.5%	10.9%	13.2%	14.2%	11.4%	13.7%	13.9%	7.7%	9.8%	10.0%
65+ years	14.3%	15.2%	16.6%	15.4%	16.5%	18.0%	14.0%	14.9%	16.8%	4.9%	5.0%	6.8%
Average age (years)	37.4	39.2	39.3	32.4	39.5	40.9	37.9	39.4	40.4	31.4	32.0	33.2
Labour Market												
Full-time employment (% labour force)	60.0%	60.3%	57.7%	63.7%	61.5%	59.8%	60.2%	60.0%	57.3%	62.5%	65.1%	62.3%
Part-time employment (% labour force)	25.5%	28.7%	29.0%	25.8%	29.2%	29.4%	26.5%	30.0%	30.8%	23.8%	24.8%	26.6%
Total employment (% labour force)	92.4%	95.4%	93.1%	95.3%	96.4%	95.4%	93.3%	95.9%	94.1%	93.0%	96.4%	94.6%
Unemployment rate (% labour force)	7.6%	4.6%	6.9%	4.7%	3.6%	4.6%	6.7%	4.1%	5.9%	7.0%	3.6%	5.4%
Participation rate (% of population > 15 years)	57.2%	56.6%	57.0%	58.1%	59.8%	59.6%	58.5%	59.4%	59.6%	68.5%	68.5%	70.7%
Qualifications												
% of persons with a non-school qualification	23.4%	27.7%	33.3%	24.1%	30.2%	36.3%	29.0%	34.7%	40.7%	30.6%	35.8%	41.5%
% of persons with Bachelor or higher	5.8%	5.1%	7.3%	6.5%	7.8%	9.5%	8.3%	9.9%	11.8%	5.6%	5.8%	8.6%
% of persons with Diploma	3.9%	4.7%	5.5%	4.2%	5.3%	6.4%	5.6%	6.4%	7.5%	4.8%	6.0%	6.9%
% of persons with Certificate	13.6%	16.8%	20.5%	13.3%	17.0%	20.4%	15.1%	18.4%	21.5%	20.2%	23.1%	26.0%
Occupation												
Upper White Collar												
Managers	18.6%	15.6%	15.1%	22.4%	18.9%	19.3%	19.1%	16.5%	16.3%	10.7%	10.4%	11.0%
Professionals	10.2%	10.8%	11.1%	11.0%	11.0%	10.9%	13.4%	14.1%	14.6%	9.4%	9.9%	11.2%
Subtotal	28.7%	26.4%	26.2%	33.4%	29.9%	30.2%	32.5%	30.5%	30.9%	20.1%	20.3%	22.1%
Lower White Collar												

Continued... Table B. 1: Demographic Profile Comparison, Scenic Rim, Beaudesert, Boonah and Greater Flagstone/Yarrabilba 2001 to 2011

	Beaudesert SA2			Boonah SA2			Scenic Rim Regional Council			Greater Flagstone/Yarrabilba		
	2001	2006	2011	2001	2006	2011	2001	2006	2011	2001	2006	2011
Community & Personal Service Workers	9.6%	9.2%	10.6%	8.0%	9.0%	9.9%	10.1%	9.8%	10.6%	7.8%	7.9%	8.6%
Clerical and Admin Workers	11.4%	11.4%	12.7%	10.6%	11.3%	11.5%	11.3%	11.4%	12.3%	16.8%	16.5%	17.1%
Sales Workers	7.3%	7.9%	8.1%	6.9%	8.2%	8.0%	7.2%	7.8%	7.7%	9.8%	9.3%	9.1%
Subtotal	28.2%	28.5%	31.4%	25.5%	28.5%	29.5%	28.6%	29.0%	30.7%	34.4%	33.7%	34.8%
Upper Blue Collar												
Technicians & Trades Workers	14.1%	16.4%	15.7%	14.1%	14.8%	15.9%	14.6%	16.5%	16.2%	19.5%	20.3%	19.4%
Subtotal	14.1%	16.4%	15.7%	14.1%	14.8%	15.9%	14.6%	16.5%	16.2%	19.5%	20.3%	19.4%
Lower Blue Collar												
Machinery Operators & Drivers	8.6%	9.0%	9.4%	8.1%	8.6%	8.6%	7.4%	7.5%	7.6%	12.5%	11.7%	11.2%
Labourers	17.9%	17.7%	15.6%	17.4%	16.8%	14.5%	14.8%	14.6%	12.9%	11.2%	12.2%	10.4%
Subtotal	26.6%	26.7%	25.0%	25.5%	25.4%	23.1%	22.2%	22.2%	20.5%	23.8%	23.9%	21.6%
Employment by Industry (% of employees)												
Agriculture, forestry & fishing	14.6%	11.6%	10.6%	20.3%	15.8%	14.4%	13.3%	9.7%	8.9%	2.6%	1.8%	1.3%
Mining	0.3%	0.5%	0.6%	0.6%	0.6%	1.0%	0.4%	0.5%	0.7%	0.4%	0.5%	0.9%
Manufacturing	11.1%	11.2%	10.6%	10.8%	10.8%	8.9%	9.9%	9.8%	8.7%	17.7%	15.7%	13.6%
Electricity, gas, water & waste services	1.1%	0.8%	1.3%	1.1%	1.6%	2.0%	0.9%	1.0%	1.4%	1.1%	1.0%	1.2%
Construction	7.4%	9.9%	9.7%	6.1%	8.3%	8.6%	7.4%	10.0%	9.9%	9.8%	13.1%	12.7%
Wholesale trade	3.7%	3.4%	3.5%	7.7%	4.4%	4.7%	4.8%	3.4%	3.6%	7.1%	5.8%	5.3%
Retail trade	8.4%	9.9%	9.3%	9.3%	10.8%	10.1%	8.7%	10.2%	9.4%	11.5%	11.6%	10.9%
Accommodation & food services	7.9%	5.9%	6.3%	3.4%	4.4%	5.4%	6.6%	6.9%	7.0%	3.6%	3.4%	3.9%
Transport, postal & warehousing	4.4%	5.3%	4.9%	4.3%	5.0%	5.0%	3.9%	4.5%	4.4%	7.6%	8.2%	8.3%
Information media & telecommunications	1.3%	1.1%	1.1%	1.0%	0.6%	0.6%	1.5%	1.1%	1.0%	1.3%	1.2%	0.8%
Financial & insurance services	1.3%	1.3%	1.1%	1.5%	1.5%	1.4%	1.3%	1.5%	1.5%	1.9%	1.9%	1.9%
Rental, hiring & real estate services	1.6%	1.4%	1.3%	0.8%	1.0%	1.0%	1.5%	1.6%	1.5%	1.5%	1.8%	1.4%
Professional, scientific & technical services	2.5%	3.1%	3.6%	2.5%	2.9%	3.4%	3.2%	4.0%	4.6%	3.8%	3.5%	4.4%
Administrative & support services	2.0%	2.0%	2.5%	1.7%	1.3%	1.8%	2.6%	2.2%	2.7%	3.1%	2.6%	2.8%
Public administration & safety	6.0%	7.3%	6.5%	4.2%	6.3%	6.2%	8.2%	7.8%	7.3%	4.8%	5.5%	5.3%
Education & training	9.1%	7.5%	7.9%	8.8%	8.6%	7.8%	8.9%	8.3%	8.4%	5.8%	6.0%	6.7%
Health care & social assistance	8.3%	9.1%	10.5%	9.3%	9.3%	10.5%	8.5%	9.4%	10.6%	7.8%	7.8%	9.3%
Arts & recreation services	1.9%	2.0%	1.8%	1.0%	0.9%	0.8%	1.8%	1.9%	1.7%	0.8%	0.9%	1.0%
Other services	4.1%	3.6%	4.2%	3.6%	3.6%	4.0%	3.8%	3.7%	4.0%	5.3%	4.8%	5.3%

Source: ABS Census of Population and Housing, Economic Associates Analysis

Table B. 2: Demographic Profile Comparison, Greater Springfield, Northern Gold Coast, North Lakes, SEQ and Queensland, 2001 to 2011

	Greater Springfield			Northern Gold Coast			North Lakes			South East Queensland			Queensland		
	2001	2006	2011	2001	2006	2011	2001	2006	2011	2001	2006	2011	2001	2006	2011
Population (2011 Counted at Home)	7,464	15,381	25,086	17,452	30,801	51,160	2,510	8,321	17,710	2,248,251	2,526,825	2,810,109	3,585,639	3,973,958	4,392,097
Ave. Annual Population Growth (%)	-	15.6%	10.3%	-	12.0%	10.7%	-	27.1%	16.3%	-	2.4%	2.1%	-	2.1%	2.0%
Age Distribution															
0-14 years	29.2%	28.7%	27.8%	28.2%	27.3%	28.3%	29.0%	31.3%	31.1%	20.6%	19.8%	19.6%	21.3%	20.4%	20.0%
15-24 years	15.0%	14.4%	14.5%	12.3%	12.5%	12.8%	12.0%	9.9%	12.9%	14.2%	14.1%	13.9%	13.8%	13.6%	13.4%
25-34 years	17.7%	18.4%	19.1%	17.1%	16.5%	16.9%	21.9%	18.8%	15.5%	14.6%	13.8%	14.1%	14.2%	13.3%	13.4%
35-44 years	15.9%	16.8%	17.0%	16.3%	17.3%	16.9%	18.2%	19.9%	20.9%	14.9%	14.8%	14.6%	14.9%	14.6%	14.2%
45-54 years	12.0%	11.0%	11.3%	13.2%	11.5%	11.3%	12.8%	10.9%	11.7%	13.7%	13.5%	13.3%	13.7%	13.7%	13.6%
55-64 years	6.6%	7.1%	6.6%	7.3%	8.6%	7.6%	4.2%	6.3%	4.6%	9.5%	11.1%	11.2%	9.7%	11.4%	11.7%
65+ years	3.5%	3.7%	3.7%	5.6%	6.3%	6.2%	1.9%	2.8%	3.4%	12.6%	12.9%	13.3%	12.4%	13.0%	13.7%
Average age (years)	29.4	29.5	29.6	35.0	36.1	36.2	28.7	29.2	29.0	36.7	37.5	37.7	36.6	37.6	38.0
Labour Market															
Full-time employment (% labour force)	62.2%	67.6%	66.8%	59.2%	62.9%	62.0%	64.3%	65.2%	64.0%	58.0%	60.9%	59.0%	58.6%	61.4%	59.9%
Part-time employment (% labour force)	24.2%	22.0%	22.3%	25.9%	26.1%	26.5%	24.6%	25.5%	25.4%	27.3%	28.5%	29.2%	26.6%	27.7%	28.1%
Total employment (% labour force)	92.7%	95.5%	94.5%	91.1%	94.6%	93.5%	95.4%	96.4%	94.9%	91.6%	95.3%	93.7%	91.8%	95.3%	93.9%
Unemployment rate (% labour force)	7.3%	4.5%	5.5%	8.9%	5.4%	6.5%	4.6%	3.6%	5.1%	8.4%	4.7%	6.3%	8.2%	4.7%	6.1%
Participation rate (% of population > 15 years)	70.9%	72.6%	75.9%	68.1%	70.0%	71.0%	72.1%	71.9%	73.2%	60.8%	61.7%	63.2%	60.6%	61.1%	62.2%
Qualifications															
% of persons with a non-school qualification	32.3%	38.4%	47.5%	33.1%	39.4%	45.6%	38.7%	50.6%	56.7%	34.1%	39.5%	45.6%	32.3%	37.5%	43.3%
% of persons with Bachelor or higher	7.5%	3.6%	16.1%	7.5%	8.3%	12.0%	9.3%	15.9%	19.6%	12.4%	15.2%	18.6%	10.8%	13.1%	15.9%
% of persons with Diploma	5.2%	7.2%	9.2%	6.1%	7.3%	9.2%	7.6%	10.3%	12.2%	6.0%	7.2%	8.2%	5.5%	6.6%	7.6%
% of persons with Certificate	19.5%	20.5%	22.2%	19.5%	22.6%	24.4%	21.8%	24.3%	25.0%	15.7%	17.1%	18.8%	16.0%	17.8%	19.8%
Occupation															
Upper White Collar															
Managers	8.0%	10.4%	11.9%	13.3%	11.9%	12.4%	10.8%	13.3%	13.4%	11.7%	11.9%	11.9%	12.9%	12.4%	12.1%
Professionals	11.1%	13.4%	17.5%	12.2%	13.2%	14.8%	14.7%	17.9%	19.9%	18.1%	19.1%	21.1%	16.4%	17.2%	19.0%
Subtotal	19.1%	23.8%	29.4%	25.5%	25.1%	27.2%	25.5%	31.2%	33.3%	29.9%	31.0%	33.0%	29.3%	29.6%	31.1%
Lower White Collar															

	Greater Springfield			Northern Gold Coast			North Lakes			South East Queensland			Queensland		
	2001	2006	2011	2001	2006	2011	2001	2006	2011	2001	2006	2011	2001	2006	2011
Community & Personal Service Workers	10.5%	9.5%	10.3%	8.2%	8.3%	9.6%	7.8%	8.0%	10.4%	9.0%	9.1%	10.0%	8.9%	9.1%	9.9%
Clerical and Admin Workers	18.1%	17.9%	17.3%	15.8%	15.8%	15.6%	18.9%	19.3%	17.4%	16.3%	15.8%	15.6%	15.0%	14.8%	14.7%
Sales Workers	10.0%	9.7%	9.7%	11.8%	11.4%	11.0%	12.0%	11.7%	11.4%	11.4%	10.8%	10.2%	10.7%	10.3%	9.8%
Subtotal	38.6%	37.1%	37.3%	35.8%	35.5%	36.2%	38.7%	39.0%	39.2%	36.7%	35.7%	35.8%	34.7%	34.2%	34.4%
Upper Blue Collar															
Technicians & Trades Workers	17.3%	17.1%	14.6%	17.5%	18.8%	17.2%	16.3%	15.7%	13.7%	14.4%	14.7%	13.9%	14.7%	15.3%	14.9%
Subtotal	17.3%	17.1%	14.6%	17.5%	18.8%	17.2%	16.3%	15.7%	13.7%	14.4%	14.7%	13.9%	14.7%	15.3%	14.9%
Lower Blue Collar															
Machinery Operators & Drivers	10.2%	8.8%	8.0%	8.6%	7.4%	7.4%	8.7%	5.0%	4.8%	6.9%	6.2%	6.0%	7.8%	7.2%	7.3%
Labourers	12.7%	11.5%	8.9%	10.8%	11.3%	10.2%	9.5%	7.6%	7.3%	10.2%	10.7%	9.5%	11.5%	11.9%	10.5%
Subtotal	22.9%	20.3%	16.9%	19.4%	18.7%	17.6%	18.2%	12.6%	12.2%	17.1%	16.9%	15.5%	19.3%	19.1%	17.8%
Employment by Industry (% of employees)															
Agriculture, forestry & fishing	0.5%	0.4%	0.1%	2.3%	0.7%	0.4%	1.1%	0.2%	0.2%	1.9%	1.3%	1.0%	4.9%	3.4%	2.8%
Mining	0.4%	0.4%	1.0%	0.5%	0.5%	0.9%	0.0%	0.4%	1.1%	0.4%	0.5%	1.0%	1.2%	1.7%	2.6%
Manufacturing	20.6%	17.7%	13.8%	13.5%	13.9%	11.3%	15.0%	11.9%	9.1%	11.2%	10.3%	8.6%	10.5%	9.9%	8.4%
Electricity, gas, water & waste services	1.1%	1.0%	1.3%	0.7%	0.8%	0.9%	1.4%	1.1%	1.5%	0.8%	0.9%	1.1%	1.0%	1.0%	1.2%
Construction	6.3%	8.0%	7.8%	11.3%	13.9%	13.4%	7.8%	8.9%	8.9%	7.1%	9.1%	8.9%	6.9%	9.0%	9.0%
Wholesale trade	5.6%	5.7%	5.2%	5.2%	5.0%	4.8%	5.9%	5.1%	4.1%	5.0%	4.2%	3.9%	4.9%	3.9%	3.6%
Retail trade	11.2%	11.4%	10.7%	12.0%	11.9%	11.7%	13.3%	12.8%	11.6%	11.7%	11.8%	10.7%	11.5%	11.6%	10.6%
Accommodation & food services	4.3%	4.4%	4.6%	6.3%	6.3%	6.0%	3.5%	4.0%	5.3%	7.4%	6.9%	7.0%	7.4%	7.0%	6.9%
Transport, postal & warehousing	5.8%	6.3%	6.2%	4.8%	4.7%	4.8%	7.3%	6.7%	6.8%	5.0%	5.0%	5.2%	5.2%	5.1%	5.2%
Information media & telecommunications	1.8%	1.3%	1.1%	2.3%	1.6%	1.6%	2.0%	1.7%	1.1%	2.2%	1.7%	1.5%	1.9%	1.4%	1.2%
Financial & insurance services	3.1%	3.2%	3.5%	2.5%	2.7%	2.8%	4.5%	4.9%	3.9%	3.4%	3.4%	3.2%	2.8%	2.9%	2.7%
Rental, hiring & real estate services	1.6%	2.0%	1.8%	2.6%	2.6%	2.1%	1.7%	2.6%	2.3%	2.2%	2.3%	2.0%	2.0%	2.1%	1.8%
Professional, scientific & technical services	3.3%	5.1%	6.1%	4.8%	4.5%	5.7%	5.4%	5.6%	6.6%	6.5%	6.7%	7.8%	5.4%	5.6%	6.5%
Administrative & support services	3.4%	3.6%	3.1%	3.2%	3.3%	3.5%	4.2%	2.7%	3.4%	3.5%	3.3%	3.4%	3.2%	3.0%	3.2%
Public administration & safety	7.4%	7.3%	9.4%	4.2%	3.9%	4.6%	5.1%	6.5%	7.3%	5.9%	6.4%	6.7%	6.2%	6.7%	6.7%
Education & training	6.0%	5.8%	6.5%	6.6%	6.0%	6.4%	6.3%	6.7%	6.7%	8.0%	7.6%	8.0%	8.0%	7.6%	7.9%
Health care & social assistance	10.1%	9.6%	11.3%	6.9%	7.6%	9.7%	8.9%	10.4%	13.3%	9.8%	10.6%	12.3%	9.5%	10.2%	11.9%
Arts & recreation services	0.8%	1.2%	1.0%	3.8%	2.9%	2.6%	1.0%	1.2%	0.8%	1.7%	1.6%	1.6%	1.5%	1.4%	1.4%
Other services	4.7%	3.7%	3.6%	3.9%	3.9%	4.1%	4.6%	4.2%	3.8%	4.1%	3.8%	3.8%	4.0%	3.7%	3.9%

Source: ABS Census of Population and Housing, Economic Associates Analysis

Table B. 3: Population Projections, Scenic Rim, Beaudesert and Boonah 2006 to 2036

	2006	2011	2016	2021	2026	2031	2036	2006-2036 % growth p.a
Total Population								
Scenic Rim	34,231	37,437	41,014	45,813	51,205	57,662	63,396	2.1%
Beaudesert	11,314	12,705	14,305	17,724	21,934	26,964	31,669	3.5%
Boonah	10,419	11,168	12,020	12,856	13,834	14,820	15,777	1.4%
Population 15-64 years (No.)								
Scenic Rim	21,957	23,433	24,862	26,618	29,025	31,984	34,421	1.5%
Beaudesert	7,187	7,878	8,593	10,421	12,667	15,300	17,623	3.0%
Boonah	6,511	6,900	7,164	7,315	7,617	7,891	8,158	0.8%
Population 15-64 years (% of Total Population)								
Scenic Rim	64.1%	62.6%	60.6%	58.1%	56.7%	55.5%	54.3%	-
Beaudesert	63.5%	62.0%	60.1%	58.8%	57.8%	56.7%	55.6%	-
Boonah	62.5%	61.8%	59.6%	56.9%	55.1%	53.2%	51.7%	-
Population 65+ years (No.)								
Scenic Rim	5,108	6,323	8,038	9,886	12,036	14,503	16,909	4.1%
Beaudesert	1,742	2,120	2,726	3,594	4,772	6,260	7,824	5.1%
Boonah	1,699	2,009	2,519	3,059	3,657	4,283	4,873	3.6%
Population 65+ years (% of Total Population)								
Scenic Rim	14.9%	16.9%	19.6%	21.6%	23.5%	25.2%	26.7%	-
Beaudesert	15.4%	16.7%	19.1%	20.3%	21.8%	23.2%	24.7%	-
Boonah	16.3%	18.0%	21.0%	23.8%	26.4%	28.9%	30.9%	-

Source: ABS Regional Population Growth data (Catalogue No. 3218.0), Queensland Government Statisticians Office (2015)

EMPLOYMENT IMPLICATIONS OF THE DEVELOPMENT OF BROMELTON

Draft Report

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ECONOMIC ASSOCIATES

SCENIC RIM
Regional Council

SEQ Employment and Economic Activity Forecasting Project

LGA Summary Report: Scenic Rim Regional Council

February 2015

Prepared by the National Institute of Economic and Industry Research for the Council of Mayors (SEQ)

While the National Institute endeavours to provide reliable forecasts and believes the material is accurate it will not be liable for any claim by any party acting on such information.

Foreword

As we enter the mid-point of the second decade of the 21st century, and come to understand the long-term effects of the global financial crisis, increasing globalisation, and the rise of the Asian region as an economic powerhouse, the South East Queensland (SEQ) Region faces new opportunities and challenges.

On one hand, we need to continue to manage both population growth and ageing, whilst maintaining the quality lifestyle for which our region is famous. On the other, we need to increase our productivity and capability to secure future employment growth and meet the intensifying global competition which is already impacting our local businesses. It goes without saying that we need to work within the constraints of our financial means and maximise the efficiency of our infrastructure and resources.

To better understand how the SEQ Region is positioned for growth, the Council of Mayors (SEQ), in partnership with the Queensland Government, commissioned the National Institute of Economic and Industry Research (NIEIR) to undertake a project to provide sub-local government area (LGA) employment and industry projections and to explore the relationship between population growth and employment growth.

The resulting *SEQ Employment and Economic Activity Forecasting* report explores the prospects for SEQ Councils to deliver a stronger regional economy, improve standards of living and develop their potential. The project's outcomes show how we may maximise local income and growth opportunities through an efficient infrastructure spend and by targeting the industries that will achieve the best growth and jobs outcomes. There is no doubt that in advanced economies like ours population is but one, partial driver of economic growth. Strategic land use and infrastructure planning must ensure that future communities are served by both high quality living and diverse employment choices within an acceptable travel time.

Over the course of this project, NIEIR defined four scenarios. The Primary Scenario was generated by taking Queensland Treasury and Trade (QTT) LGA employment and industry projections and 'synthetically' allocating these to sub-LGA areas. This allocation assumes infrastructure will be provided to ensure that residents are able to access employment and is based on a NIEIR assessment of the historically demonstrated growth potential of sub-LGA employment areas.

Two additional scenarios generated by NIEIR explore the employment implications of population growth under a more constrained infrastructure assumption. Scenario 1 assumes the QTT sub-LGA population distribution and explores hypothetically where jobs growth is likely to occur. Scenario 1A assumes total SEQ population growth from the QTT projections, but models a settlement pattern that is responsive to employment accessibility and travel time sensitivity.

The final stand-alone, NIEIR Scenario 2 explores employment growth and economic performance in a scenario which is infrastructure constrained (in comparison with the Primary Scenario) and models population settlement patterns and growth that are responsive to employment accessibility.

The scenarios provide an indication of the challenges Councils may face to achieve their currently projected population growth whilst providing the high levels of infrastructure investment necessary to ensure that new residents are able to access jobs and incomes to meet their lifestyle expectations.

Without transformative infrastructure investment that will deliver the same or better access to jobs in the future than is currently achieved in SEQ, the anticipated population growth for the region will be difficult to achieve.

There is an answer inherent in this report: the challenge for the SEQ Region and its Councils is to grow the quality of our economy as a primary target. The first priority is to ensure rather than assume access to employment for new and emerging communities.

Clearly, each of these scenarios provides very long term projections with the endpoint a generation away. The success of the strategies for long term growth illuminated by these forecasts will not be apparent over the short or medium terms. However, unless we set out on the right path towards an end point that is 30 years away, it is unlikely that we will be able to meet the challenges of the intensifying regional and global competition for jobs and resources. In the short term, any mistakes will not be apparent, but each investment in a sub-optimal strategy will ultimately constrain SEQ's long term growth.

This forecasting project has been the most ambitious attempt made in Australia to apply a strategic perspective to long term land use and infrastructure planning. It offers a chance to avoid the infrastructure and planning errors made by other Australian communities. The Council of Mayors (SEQ) commends this work to all SEQ Councils and looks forward to working together in building a stronger future for South East Queensland.

Peter Olah
Executive Director
Council of Mayors (SEQ)

23 February 2015

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Executive summary

In undertaking long-term strategic planning for SEQ, the Queensland Government and the Councils of the region aim to provide for a prosperous and growing population. Decisions on both infrastructure investment and statutory planning taken now will have consequences lasting for decades, indeed centuries, and the range of options is very wide. Projections of the future location of residential population and employment have a major role to play in informing planning decisions.

In a market economy, employment is generated mainly by private enterprise. Similarly, residential areas are developed when it is profitable to do so. Projections are therefore based on anticipated market behaviour. Though technological and social change can affect major shifts in market behaviour, the best guide we have to the assessment of projections is market behaviour in the recent past. This report prepares and assesses four closely-related market-based scenarios for the growth and distribution of population and employment across SEQ over the next three decades. The SEQ context is summarised and the consequences for Scenic Rim LGA are detailed.

This report is based on a Primary Scenario in which small area outputs provide a 'synthetic' allocation of top-down Queensland Government projections that were prepared to inform the SEQ Regional Plan. The Primary Scenario aligns with the Queensland Government's employment (at the LGA by Industry) and population projections (by SA2). In preparing the Primary Scenario, NIEIR allocated the top down projections by assigning growth to small areas based on a detailed assessment of their growth potential. This allocation does not take into consideration the capacity of the regional transport infrastructure network to support the distribution of employment and population proposed by the Queensland Government projections. To meet the Government projections some areas were allocated greater employment growth than was considered achievable given market expectations about their growth and the level of infrastructure required to support it.

To illustrate some of the challenges at the small area level of achieving the Primary Scenario projections, Scenario 2 was prepared to explore an employment and population projection that can be achieved through utilising and building on the current economic strengths of sub-LGA economies and utilising infrastructure capacity efficiently. A key principle underpinning Scenario 2 is that the local demand generated by a given population will only deliver a small portion of the jobs needed by that population. To sustain a near 'full employment' outcome, it is necessary to consider the current and future infrastructure arrangements that will enable residents to access suitable employment opportunities within acceptable travel times.

Key findings for Scenic Rim are as follows.

- The scale of population growth assumed in the Primary Scenario projections for Scenic Rim of just under 58,000 between 2011 and 2041 will be difficult to achieve without major diversification in the economic base of the LGA. Incremental growth in population-serving industries, as proposed in the Primary Scenario, is unlikely to yield the employment required to support the envisaged population growth for the area. Agriculture, in which the LGA currently specialises, provides a firm economic base but is under pressure from rural residential development with further job losses expected from continuing productivity improvements.
- Scenic Rim's second major export industry is tourism, for which moderate growth is projected but in which there may be further opportunities to be opened up by suitable infrastructure investment. Growth is also projected in transport, particularly if the pattern of infrastructure investment allows the region to capitalise on its location immediately south of the Brisbane metropolitan area.

- Though market forces cannot be relied on to generate the employment growth envisaged in the Primary Scenario, it is possible that the population growth target may be achieved through retirement migration to rural residential developments. This can benefit construction employment over the short term but will not lead to higher value sustained employment within the LGA. However, it will generate employment in Healthcare and Social Assistance.
- It is also possible that Scenic Rim will become a residential area of choice for people who can tolerate long commuting distances, including those who drive in to Brisbane on selected days but otherwise work at home, those who drive into Brisbane and stay overnight, drive-in drive-out workers and fly-in fly-out workers. These forms of employment are not covered in the present report but may form part of the future economic base of the LGA. Delivery of high quality telecommunications could be important in future to support substantial part-time commuting to and from the strategic employment hubs elsewhere in SEQ.

1. Introduction

This report presents the findings of the Economic Activity and Employment Forecasts project undertaken for the Councils of South East Queensland (SEQ). Broadly this work explores the relationship between population and employment growth in driving future economic prosperity for the residents of SEQ. A basic assumption underpinning this work is that SEQ essentially operates as a single economic region with considerable economic interdependence between the Local Government Areas (LGAs) that make up the region. As a result, the prospects for the future growth of smaller sub-LGA regions are influenced by what happens in the rest of the region, particularly in the way that labour markets are formed and in the way that clusters of export generating industries are established.

The project explores a set of four scenarios in relation to both employment/industry growth assumptions and population growth assumptions. First, a Primary Scenario allocates employment and industry projections prepared by the Queensland Government at LGA level to small areas. The allocation was completed by NIEIR based on NIEIR's analysis of the historic and current industry mix of small regions. The implications of the Queensland Government population projections and their relationship with employment growth potential at the sub-LGA level were undertaken in two additional population focused scenarios, Scenarios 1 and 1A.

Scenario 1 considers the employment that can be generated if the Queensland Government population projections are adopted both in terms of scale and distribution. It reveals that if the population distribution prevails as projected, employment growth is likely to be substantially lower than projected in the Primary Scenario and some areas will face an unacceptably high level of unemployment due to residents not being able to find jobs. Similarly, some potential jobs will go unfilled. Scenario 1A explores this imbalance by assuming that the level of population projected by the Queensland Government is achieved and looking at where population should settle to maximise its employment opportunities, given the constraints of existing land-use zoning and infrastructure. Employment growth is higher under Scenario 1A than under Scenario 1 but not as high as assumed in the Primary Scenario.

Scenario 2 attempts to balance both population and employment growth within the constraints of existing infrastructure patterns and the productive capacity of existing industry clusters to grow at above average rates. Rather than adopting a population target, Scenario 2 models the population growth and distribution that would match job opportunities in the locations where they currently exist and demonstrate growth potential. Though the reduced population target results in weaker employment growth than is projected under Scenario 1A, the overall result is a higher standard of living. This is achieved because the proportion of high-productivity jobs is higher and the proportion of low-wage jobs in the population-servicing sectors is reduced. There is nothing pre-ordained about this distribution; it is designed to provide insights into the economic strategies that may be required to achieve a more desirable economic, employment and wealth outcome.

2. Project overview

South East Queensland (SEQ) is one of the fastest growing regions in Australia. Historically, population has been a major driver of its growth. Today, with a growing penetration of global products and services into Queensland markets, the future economic success of SEQ is increasingly linked to its capacity to generate wealth by selling into regional and global markets.

To better understand the future growth story for SEQ, the Council of Mayors for South East Queensland (COM (SEQ)), in partnership with the Department of State Development, Infrastructure and Planning (DSDIP) and the Department of Transport and Main Roads (DTMR), commissioned the National Institute of Economic and Industry Research (NIEIR) to undertake small area employment and economic activity projections for SEQ.

In completing this project, NIEIR has generated four scenario projections for small areas in SEQ. A principal output, hereby referred as the Primary Scenario, is a NIEIR-generated small area allocation of 'top down' Local Government Area (LGA) employment projections prepared by Queensland Treasury and Trade (QTT).

The other three scenarios have been derived from NIEIR's customised small-area model of the SEQ economy. Two of these explore the implications on employment of the QTT medium series population projections, with Scenario 1 adopting QTT's distribution of future population for small areas and Scenario 1A exploring the employment implications if the same total population is redistributed across SEQ to maximise accessibility to future employment. A third, NIEIR-only Scenario, Scenario 2, provides small area employment projections based on the capacity of SEQ's small areas to grow both population and employment, subject to a travel time constraint that links population growth in each specific area to places where suitable employment can be accessed.

This report provides an analysis of findings for Scenic Rim LGA from 2011 to 2041.The Primary Scenario outputs align directly with the employment projections prepared by QTT to inform the SEQ Regional Plan. The Primary Scenario output provides a tool for Councils to use in relation to any planning and evaluation work relevant to the SEQ Regional Plan.

It should be noted that all long term projections are indicative of future potential based on current and recent performance mixed with expectations about the major drivers of the future economy. No one projection is likely to be fulfilled, rather the projections are developed to explore the policies and investments required to move in any desired direction.

2.1 Purpose and objectives of the project

As outlined above the primary objective of this project is to understand the potential future growth story of SEQ. To achieve this objective a strategic understanding of the likely scale and location of future employment and population growth is required. This strategic understanding of growth within SEQ can be used to inform the planning framework for the SEQ Regional Plan and ensure that planning and infrastructure investment decisions made today will optimise economic conditions in the future.

This project developed a set of small-area economic and employment forecasts for periods between 2011 and 2041 to assist the Queensland Government and the Councils of SEQ with:

- regional and local planning;
- long term regional and infrastructure planning;
- transport planning;
- identification of economic development priorities for sub-regions of SEQ;
- insights into the capacity of specific small areas within SEQ to attract and develop economic activity and employment growth; and
- insights into future economic challenges and opportunities for maximising economic prosperity across SEQ.

The scenarios provide a guide to the future based on the present. It is anticipated that Councils will be able to use this information to understand the local competitiveness and future growth opportunities of their economic regions. Through this work, Councils should be able to identify opportunities and challenges that will impact on their progress in achieving desired outcomes for their regions.

Although there is always uncertainty about the future, this work is based on the premise that decisions, policies and investments made or shaped by governments today will affect the future direction and growth of the SEQ economy. Hence, though the impact of appropriate policies or strategies may not be clearly visible over the short or even medium term, a failure to put the right settings in place today will constrain the outcomes that can be achieved over the long run.

2.2 Methodology and assumptions

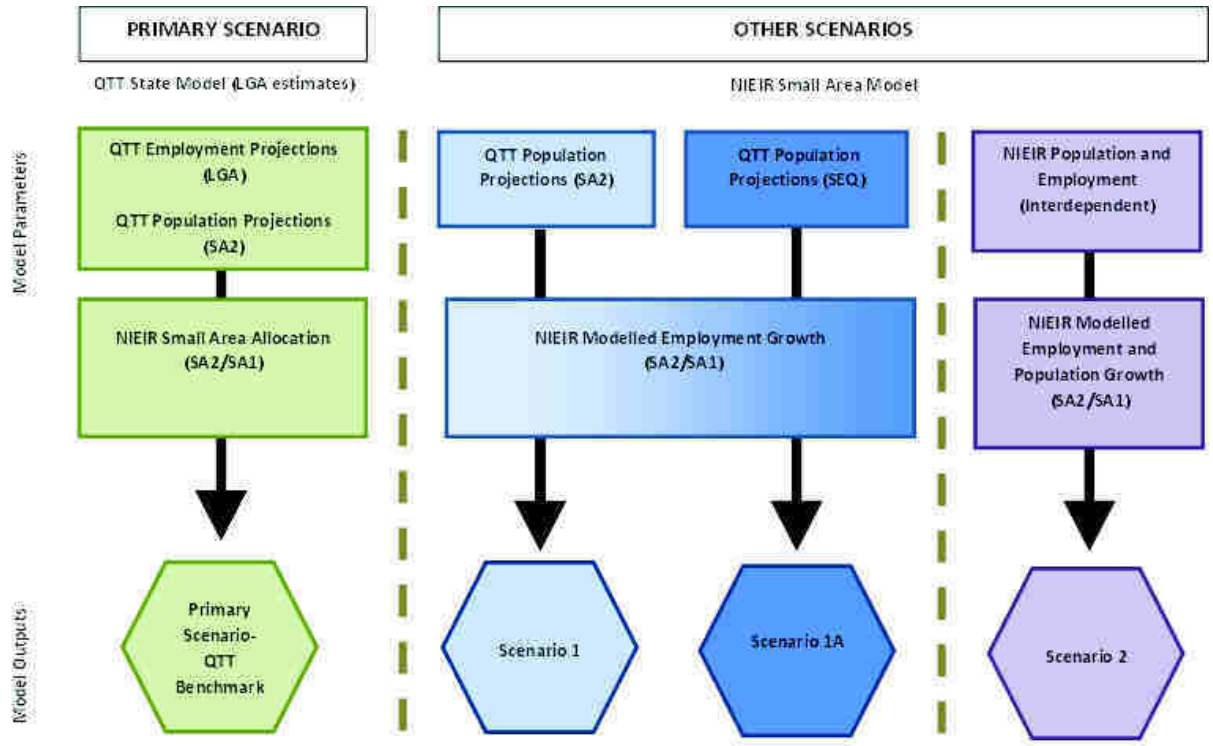
Forecasting economic and employment growth at the small area level is a complex task. Two different methodologies underpin the development of the economic projections that have been prepared for SEQ Councils:

- The Queensland Government (QTT) prepared industry employment, resident employment and population projections by local government area (LGA). Population projections were prepared independently of employment projections using a demographic model with the distribution of population informed by local government estimates of housing supply capacity. The employment projections were developed from a State model of the Queensland economy, with State employment and industry projections disaggregated to SEQ and to LGAs.
- To generate the Primary Scenario, the QTT LGA projections were disaggregated by NIEIR to small areas (ABS SA1 and SA2 geographies). This allocation was generated using the same NIEIR model structure that has been used to develop the three additional scenarios. The NIEIR model projected local area output, house prices and labour force characteristics using a range of primary data and then allocated the QTT employment projections for each LGA as best it could to achieve an overall result that aligned with the QTT industry and employment projections. It is important to note that the resulting small-area allocations do not necessarily reflect the capacity of each small area to generate the scale of employment and population growth being projected for it, or indeed for the LGA when all of its small areas are aggregated.

- The NIEIR small area model was used to develop Scenarios 1, 1A and 2. This model allocates employment and economic activity to small areas based on a complex range of locally-defined drivers including historic local economic performance since 2001 (tied to an expectation of future growth potential based on current local industry mix and performance) and expectations of significant new investment. Scenarios 1 and 1A impose QTT population projections, providing insights on the extent to which population growth can be supported by employment growth. Scenario 1 maintains the QTT population projections by SA2 but recalculates employment in line with the employment-generation opportunities present in each SA2. Scenario 1A maintains the overall QTT population target for SEQ but allows people to locate to areas where they can best satisfy their needs for employment and affordable housing. Scenario 2 dispenses with the population target and projects the population growth and settlement pattern that can be achieved when local employment accessibility, wages and mortgage affordability are taken into account. In this Scenario population growth follows economic growth.

Figure 1 below provides a visual representation of the four scenarios and their outputs.

Figure 1: Project outputs framework



Note: SA1s are small geographic areas defined by the Australian Bureau of Statistics, and SA2s are combinations of these areas.

In relation to the employment and population growth outcomes from the four scenarios, Table 1 below presents a summary of the expected outcomes of the four scenarios as different modelling assumptions are applied. As will be revealed in the data output from this project, the key driver affecting the outcomes of each scenario is the way that population is treated. This is the contrast between the Primary Scenario, where it is assumed that employment will increase to satisfy the requirements of additional residents irrespective of the local competitiveness of industries, through to Scenario 2, where a satisfactory employment outcome will require the faster growth of market driven industry sectors and increasing productivity in medium to high technology sectors.

Table 1 Scenario summary			
Primary scenario	**Scenario 1**	**Scenario 1A**	**Scenario 2**
Achieves highest overall employment and population growth; Assumes that employment growth will satisfy employment requirements of the residential population.	Lower employment growth with same population growth; Allocates jobs growth in accordance with growth capacity of sub-LGA economies; Results in some areas with high population growth not able to satisfy jobs demand.	Higher employment growth than Scenario 1 based on assumption that population will settle to maximise job accessibility; Demonstrates preferred population distribution arrangements to achieve stronger employment outcomes.	Lower population growth outcome driven by employment growth potential within sub-LGA areas; Results in lowest population and employment growth outcome but achieves higher per capita incomes (living standards) and uses existing infrastructure to its maximum potential.

As can be seen above, the Primary Scenario was derived from QTT employment and population projections. NIEIR allocated small-area estimates of the place of work employment taking into account the relative historic performance of small areas across SEQ in their competition for market-driven growth. The other three scenarios were generated using the NIEIR model to project employment with three different assumptions about future population growth.

A key difference between the Primary Scenario small-area projections and the NIEIR Scenario 2 small-area projections is that the Scenario 2 projections estimate the level of population growth which can be satisfied by the employment opportunities accessible from each small area and by their suitability to the resident workforce. The LGA results for Scenario 2 aggregate these small area estimates.

In the NIEIR methodology, industry employment will tend to slowly evolve from the current competitive strengths and strategic nodes of the SEQ economy. New population growth will seek to live within the catchments of the evolving strategic nodes. Though people will want to live within the catchments of these nodes, supply constraints such as land availability, population density controls and transport infrastructure will limit the construction of new housing in in these desired locations and high house prices will force population growth into less desirable locations.

The NIEIR modelling approach reflects the empirical evidence that population growth, by itself, does not generate satisfactory employment and economic outcomes. No more than 30 per cent of the jobs and incomes required to support outer suburban population growth are directly generated in servicing that community, either in response to community expenditures (retail and the like) or from taxes (schools and the like). Population based projections of local employment assume that a combination of low land prices and low real wage rates will generate the remaining required jobs and incomes required to support outer suburban population growth. This was never the case, and in modern economies even less so. With globalisation and the enhanced role of economies of scale and scope in driving competitiveness, low relative prices (housing costs and wage rates) cannot by themselves make low-cost regions more attractive to investment than high-cost regions. Regional inequality tends to persist, such that regions with low wage rates tend to report high unemployment rates and, conversely, regions with high wage rates tend to have low unemployment rates. This dynamic is further reinforced by the fact that high cost regions tend to drive out low and medium-skilled workers to lower cost regions. Lower cost regions attract less productive businesses utilising lower skilled labour. Business in lower cost regions are less competitive, therefore less able to grow rapidly than their counterparts in the high cost, high wage regions. In general, high-wage businesses are more competitive, attract investment and use higher technology.

In the NIEIR modelling approach, investment location decisions are only weakly influenced by real wage rates, especially for high technology industry employment and medium to high value added employment. For these industries, the following criteria are important:

- the local economic and labour market catchment should have significant scale in related industry clusters and significant choice, that is scale in the available labour force;
- there should be significant availability of high skilled workers;
- significant scale in knowledge creation capacity such as universities and hospitals;
- significant export effort indicating regional competitiveness in out-of-region markets including foreign markets; and
- high levels of productivity and therefore profitability.

Regions with high unemployment are expected to remain trapped with high unemployment levels and low population growth unless they can become more competitive with the low-unemployment regions in terms of the indicators listed above. This is a difficult task and requires significant strategic intervention.

The ability of a low-unemployment region, or more accurately, a low-unemployment catchment to remain successful will depend on its starting conditions such as its industry scale, export effort and productivity and on whether the rules of regional development continue to operate in its favour. The initial starting conditions will tend to dominate economic outcomes over at least the first decade.

For many small regions in SEQ, long term prosperity can be ensured by improving their transport connectivity to nearby strategic employment nodes. As these employment areas are able to connect more effectively with each other and with a suitably skilled workforce, their industries will be in a better position to build scale and increase productivity.

In Scenarios 1 and 1A, and even more in Scenario 2, the regions targeted for high population growth in the current QTT projection are not neglected. However, where their population growth is not associated with employment growth generated by a strategic node, it will be less than what is currently expected. In Scenario 2 the result is that population growth for SEQ as a whole is less than that expected in the Primary Scenario, even though employment growth in the current strategic nodes is greater.

2.3 Developing the project outputs

A significant part of the project involved the preparation of an historical database tracking industry performance and employment at the sub-LGA level from 2001 to 2011. This empirical evidence informed the modelling. The modelling structure, consisting of sets of equations, reflects the operation of the rules of regional development which in turn determine the probability that a region will grow in excess of the SEQ average, near the SEQ average, or substantially below the SEQ average. For a detailed discussion of the rules of regional development, see the separate report – *Regional Development Rules and Implications for Planning in the 21st Century*, included in the data pack.

The 330 ABS-defined SA2 sub regions comprised the core database of this study, with the much more numerous SA1 regions also documented. As the SA1 and SA2 geographies were not available for the 2001 and 2006 Censuses, consistent time series had to be derived by concording the previous Census geographies to the new ABS geographies. The historical estimates for some of the sub regions are therefore uncertain. For some smaller regions there is likely to be significant measurement error due

to the absence of primary data at the small area level and arising from the mass integration of different data sets presented for different geographies.[1]

Table 2 below outlines the range of indicators delivered by this project, both historical data and projections.

Table 2 Scenario outputs

Primary scenario – QTT benchmark	Additional NIEIR scenarios
❖ QTT small area employment by place of work (POW) allocation (2011 – 2041) (ANZSIC level 1 and 2). ❖ QTT small area employment by usual residence (URE) allocation (2011 – 2041) (ANZSIC level 1 and 2). ❖ QTT SA1 population projection allocation (2011 – 2041).	❖ Small area employment by place of work (POW) (2011 – 2041) (ANZSIC level 1 and 2). ❖ Small area employment by usual residence (URE) (2011 – 2041) (ANZSIC level 1 and 2). ❖ NIEIR forecast population projections (2011 – 2041). ❖ Small area Gross Regional Product (GRP) estimates. (POW) (2011 – 2041) (ANZSIC level 1 and 2). ❖ Small area out of region export value (ANZSIC level 1 and 2). ❖ Small area regional competitiveness indicators.

Historical estimates were also used in developing regional competitiveness indicators for each SA2. These provided the historical foundation for capturing the dynamic relationships within and between regions. A description of key employment nodes and their growth potential measured in relation to their regional competitiveness is provided in Chapter 3.

The first stage of this project was to generate the Primary Scenario in which the small-area outcomes were constrained to the QTT LGA projections for industry employment by both place of work and place of residence and also fixed to QTT population projections at the SA2 level. A further disaggregation to SA1 geographies was undertaken by generating SA1 population projections constrained to the QTT SA2 targets[1]. The SA1 allocation was undertaken to provide the micro detail required by transport planners when assessing future infrastructure requirements.

To provide SEQ Councils with a deeper understanding of how market driven forces are likely to play out in SEQ local economies, three additional scenarios were developed.

Scenario 1 held constant the QTT population level and structure across the SA2 regions but allowed the model structure, capturing the rules of economic development underpinning the NIEIR model, to assess whether the employment outcomes were likely to be achieved in aggregate and whether or not over or underachievement was likely at the individual SA2 level.

Scenario 1A maintained the global QTT population target for SEQ but asked how the employment results of Scenario 1 are likely to impact on the distribution of population amongst the SA2 regions. If the labour market catchment for the targeted fast-growing population regions cannot provide an adequate income for households to service the mortgage required to finance new dwelling construction, population growth in these regions will fall short of the targeted level. Instead, the population will tend to concentrate within the SA2s that offer access to employment, namely SA2s with high employment to working age population ratios compared to the SEQ average. This means that the population projections for Scenario 1A for these SA2s rise above the QTT projection while for others the projected population projection may be significantly below.

[1] For analysis of land use, it is strongly advised to aggregate three or four adjoining SA1s to get a more reliable population and employment projection.

It is important to note that Scenario 1A does not incorporate any changes to land use policy compared with Scenario 1. To develop Scenario 1A outputs, the model evaluated those SA2 regions subject to the greatest population pressure compared to the Primary Scenario projection and marginally increased population densities at a rate plausibly consistent with existing land use planning, including by infill, subdivision of existing blocks and conversion of existing buildings to multiple dwellings. The population projections in Scenario 1A should not be interpreted as the maximum that could be achieved. Radical land use changes to increase population densities in specific areas could result in larger population increases than are projected in Scenario 1A.

Scenario 2 releases the global population constraint and allows for a projection which achieves reasonable balance between the resident population and place of work employment distributions across SEQ, including reasonable equality in the ratios of resident employment to resident working age population between SA2s.

The data from all scenarios is included in the data pack that is available with this report.

In summary, the outputs of the project are designed to create a strategic understanding of the dynamics of population and economic growth across SEQ and how this relates to the economic regions within the LGA boundaries.

2.4 How to use and interpret these outputs

How to use the results of this report is best illustrated by comparing certain outputs to evaluate where growth in population and employment are most likely to be achieved and where they might be more difficult to achieve.

First and foremost the Primary Scenario carries down the QTT projections to the SA1 and SA2 levels. This data will enable the efficient design of small area studies and efficient planning outcomes that align with the information prepared for the SEQ Regional Plan. Scenario 2 provides an alternative scenario that reflects a number of capacity constraints to growth at the small area level including housing affordability, the labour market catchment, the accessibility of strategic employment nodes and industry type. The results of Scenario 2 can be used to judge the size of the task that might be required to achieve the Primary Scenario or some other desired outcome.

Where the SA2 population projections in Scenario 2 fall below those in the Primary Scenario the main reason is likely to be that the resident employment projections fall short of those in the Primary Scenario. This could be due to two main factors.

1. In combination with its neighbours which share the same labour catchment, accessible employment generation (place of work employment) in the shortfall SA2 region is less than that expected under the Primary Scenario. This generally reflects lack of opportunities for businesses and industries to generate economies of scale and scope, most likely because they are in low technology sectors and they are not exporting. Where these opportunities are lacking, market forces alone are unlikely to be sufficient to reach the Primary Scenario place of work employment projections.
2. New dwelling construction, if required to meet the population targets, will only be achieved if the resident employment projection of the Primary Scenario can be achieved. If not, the population projection for the SA2 will fall short.

If it is anticipated that the Primary Scenario population projection will be difficult to achieve in a particular SA2, two policy responses could be considered.

1. Secure additional transport infrastructure to widen the labour market catchment of the SA2 and so allow residents to commute to better-performing SA2s.

2. Improve place of work employment growth within the SA2 or nearby SA2s by introducing policies to increase the capital invested in these regions over and above what would be expected from the operation of market forces. This could include local area infrastructure initiatives, region-wide infrastructure initiatives, industry investment grants and subsidies, policies to improve the liveability of regions to attract high skilled workers and investors; education and training initiatives, the installation of major knowledge-creation infrastructure including universities and research organisations, and targeting particular types of private sector activity, especially high technology and high value adding activity.

Less than satisfactory SA2 performance under Scenario 2 is not irreversible. It simply means that, if nothing is done, the levels of resident population, resident employment and place of work employment envisaged in the Primary Scenario are unlikely to be achieved and/or effective unemployment rates will be unacceptably high.

In those regions where Scenario 2 projects stronger growth in resident population than in the Primary Scenario and resident employment and place of work employment is also projected to grow more strongly, the implication is that the SA2 possesses a solid foundation for market forces to continue its superior economic performance, providing land use policies and available resources are adequate to sustain future development in line with the operation of market forces. This is a reflection of a combination of factors including industry mix, infrastructure investment, export performance, skills, size of the labour market catchment and other local advantages.

Land use planning can support the continued success of such regions by mitigating the rise in real house prices and allowing increased population densities so that the labour market catchments of the successful SA2s do not stagnate to the point where high skilled households leave for other areas or regions – quite possibly outside SEQ. Secondly, given the optimistic infrastructure scenario adopted in Scenario 2 it will be necessary to ensure that additional infrastructure necessary to support the growth in these regions is assessed and provided in a timely manner.

The continued economic success of those SA2s which, in Scenario 2, have stronger population and resident employment growth but lower place of work employment growth than in the Primary Scenario will largely depend on the success of the key employment-generating SA2s to which their residents commute. To support the future residents of these SA2s, it will be important to recognise and support sustained growth in nearby employment-generating SA2s as well as maintaining transport connectivity.

For those SA2s which have outcomes near those projected under the Primary Scenario, infrastructure provision remains a challenge. The optimistic infrastructure assumption of this study (constant inter-regional travel times) simply means that the core objective must be to secure the level of infrastructure that prevents any further increase in travel times throughout SEQ over the next 30 years. If this cannot be done, the performance of these SA2s is likely to fall below the Primary Scenario projection. The risks of technological trends stemming from digital disruption could also reduce resident employment below desired levels. Thus a secondary policy objective must be to support the growth of place of work employment so as to provide a degree of employment security.

It follows from this discussion that the projections prepared under these Scenarios are not forecasts of the future. They are designed to guide policymakers in designing policies and providing resources so that future outcomes may, in many instances, be better than what is being projected. In some parts of SEQ a lack of response to the projections of this report may guarantee long term outcomes that fall well below the projections in any of the scenarios.

3. Scenic Rim: Key findings and issues for consideration

This section provides an overview of the scenario outcomes for Scenic Rim, how the core drivers of the outcomes operate and the implications of the outcomes for policy.

3.1 LGA overview

3.1.1 The SEQ context

The Primary Scenario projects a total SEQ population of 5.5 million by 2041. Scenario 2 contends that by 2041 the total SEQ population will reach 4.9 million. NIEIR modelling suggests that the projected population distribution under the Primary Scenario is incompatible with the structure required to achieve realistic employment levels within sub-regions that are compatible with reasonable unemployment rates.

In the absence of a large-scale transport investment program to improve significantly the internal connectivity of SEQ and/or a program to increase significantly population densities in the inner and middle SA2s of SEQ, the response in Scenario 2 is to lower the population target to a level which can be achieved, given the fairly optimistic infrastructure assumption of unchanged travel times compared to 2011.

Lower population growth in Scenario 2 means that 440,000 fewer jobs are projected for SEQ in 2041 than under the Primary Scenario. Between 2011 and 2041 the employment increase for the Primary Scenario is 1.1 million as against an increase of 0.65 million for Scenario 2. These employment outcomes are compatible with the capacity of SA2s to sustain the Scenario 2 projected population growth levels. Under Scenario 2 many SA2s achieve higher employment rates than in the Primary Scenario or in the population-constrained Scenarios 1 and 1A. For the purposes of this analysis, a near or full employment rate is one where the ratio of employed workers to the available resident workforce is around 0.8 or higher.

3.1.2 Scenic Rim LGA

Table 3 presents an overview of the outcomes of the Primary Scenario and Scenario 2. There are two major differences between the Scenarios. Population growth is a little slower in Scenario 2 (an average of 2.7 per cent a year between 2011 and 2041, compared with 3.2 per cent under the Primary Scenario) and productivity growth is considerably higher (an average of 1.1 per cent a year, compared with 0.52 per cent).

Both Scenarios envisage that the rate of growth of employment located in Scenic Rim will lag population growth. Scenic Rim has an export-oriented economic base in agriculture and related manufacturing, but productivity increases are likely to limit employment growth in these industries – in the Primary Scenario employment in these industries grows slowly while in Scenario 2 it declines. It has a secondary export base in tourism, which is projected to grow quite rapidly in the Primary Scenario but not as strongly in Scenario 2.

In the Primary Scenario moderate employment growth is also expected in all other industries, resulting in growth in place of work employment at 2.1 per cent a year which, combined with productivity growth, generates growth in GRP at 2.7 per cent a year. Scenario 2 adjusts the employment growth downwards, but this is associated with higher productivity growth. It also

argues that the lack of major urban centres in the region will militate against job generation in Retail, though not in Education and Training or Health and Social Assistance. As a result, employment growth is projected at a low rate of 0.2 per cent a year which, when combined with productivity growth, generates GRP growth at 1.3 per cent a year. It should be noted that the QTT and NIEIR estimates of GRP are not strictly comparable since they derive from different methodologies; however, the divergent trends are significant.

In 2011 the ratio of employed residents to total population was 47 per cent, lower than SEQ as a whole due largely to demographics (children and retirees). In the Primary Scenario this ratio declines to 44 per cent and in Scenario 2 it declines even more to 35 per cent, mainly due to a prediction that the region will attract early retirees.

Despite lower growth than in the Primary Scenario, Scenario 2 projects the potential for Scenic Rim to grow employment in Health Care and Social Assistance (rising to an 18.3 per cent share of all employment) and also in Education and Training. Opportunities in tourism are reflected in growth in Accommodation and Food Services in both Scenarios. It is possible that mooted transport/logistics and tourism developments not included in the present projections will raise the rate of employment growth above that predicted in Scenario 2.

Table 3 Scenic Rim LGA growth overview (2011 to 2041)

	Primary Scenario			Scenario 2		
	2011	2041	Growth	2011	2041	Growth
Population	37,437	95,262	57,825	37,437	83,137	45,700
Place of work employment	13,824	26,057	12,233	13,871	14,536	665
Usual resident employment (URE)	17,414	42,750	24,092	17,746	29,108	11,362
GRP ($mill)	$901	$1,984	$1,083	$1,097	$1,594	$497
GRP/capita	$24,067	$20,827	-$3,240	$29,313	$19,177	-$10,136
GRP/URE	$51,740	$46,409	-$5,331	$61,838	$54,771	-$7,066
Top 3 industries by employment in Scenic Rim at 2041	1. Health Care and Social Assistance (16.9%). 2. Education and Training (11.7%). 3. Accommodation and food services (10.2%).			1. Health Care and Social Assistance (18.3%). 2. Education and Training (12.8%). 3. Accommodation and food services (10.7%).		
SEQ top 3 industries by employment at 2041	4. Health Care and Social Assistance (16.6%). 5. Education and Training (9.8%). 6. Retail Trade (8.8%).			1. Health Care and Social Assistance (15.3%). 2. Professional, Scientific and Technical Services (10.3%). 3. Education and Training (10.2%).		

Notes: Gross Regional Product (GRP) estimates for the two scenarios have been generated by QTT and NIEIR using different modelling methodologies. QTT applies State-wide productivity growth projections for industries. NIEIR measures productivity in relation to the scale and technological sophistication of the industry at the local level such that faster productivity growth is attributed to higher employment clusters in more technology intensive sectors. The GRP estimates are therefore not strictly comparable but only give an indication of the growth implied within each model.

3.2 Economic competitiveness

This project explores the potential for employment growth in sub-LGA regions. It emphasises small area competitiveness, the relationship between population and employment growth and localised productivity growth parameters to generate a range of scenario outputs.

The small area analysis of competitiveness described in this section is applied fully in the Scenario 2 modelling and partially in the other Scenarios.

The Scenario 1, 1A and 2 outputs reflect and test the contribution to employment that can be provided by population growth and then explore the potential to general a satisfactory employment level within a sub-LGA region. These tests are based on assumptions about how much additional employment a region can achieve beyond what is required simply to serve the demands of a growing population. This section describes some of these aspects that drive competitiveness in regions and inform the development of Scenario 2.

Population growth in itself generates jobs in retail and similar services, but at best these provide 15 to 20 per cent of the employment necessary to sustain a given level of population growth. This could increase to 25 to 30 per cent if the majority of the public services, including administrative, education and health services required by the increasing population, are provided within the region. Even with this extension, at least 70 per cent of the employment increase must come from businesses selling goods and services to export markets, defined as markets outside the particular SA2, especially outside the LGA and indeed interstate and overseas.

To be able to export beyond the LGA, businesses have to be competitive against a large pool of competing businesses. For this to be achieved, industries must be profitable (that is, productive, with a high value add per hour worked), have a dense labour market catchment and scale which allows them to drive down costs. Regionally, it helps to have a proportion of high technology industries which attract high skilled employees to the region and an industry cluster density such that quality and cost-competitive input goods and services can be procured. It also helps to have good access to logistics and transport infrastructure. In a number of industries it is important to have professional contacts located within walking distance.

The scenario outputs are informed by an assessment of the competitive performance (historical and current) of each of the 330 SA2s in the SEQ region. The methodology for measuring competitiveness is outlined in Chapter 7 of this report.

Scenic Rim is not well placed to compete for employment in industries where economies of scale and scope are important at the local level, hence its specialisation in agriculture and tourism. It is an unlikely site for high-technology production, except where that is closely related to the local resource base. However, it may be able to use its combination of rural lifestyle and proximity to Brisbane to attract small-scale professional businesses where the proprietor values the semi-rural setting and does not need to recruit a specialised workforce. Scenario 2 includes a small allowance for this.

The present study is based on the current transport system, minimally augmented. Though the Cunningham Highway and the interstate railway from Brisbane to Casino and Sydney currently cross the region, it is at present something of a transport backwater. Should this change as a result of investment in new transport connections and terminals it is possible that the region could become a centre for logistics. Scenario 2 also includes a small allowance for this.

3.3 Scenic Rim: Strategic economic nodes

One of the major contributions of this study has been to identify SA2s which can be considered strategic economic nodes, in the sense that they demonstrate strong potential for future growth. The criteria used to identify these zones are more applicable to urban areas than they are to rural areas. All four SA2s in Scenic Rim are peri-urban rather than urban.

The concept of a strategic economic node is developed in this analysis to distinguish between SA2s with high potential for employment growth and other SA2s which may be employment centres but have weak growth potential. For more information about how regional competitiveness indicators have been measured and applied to identify strategic nodes, refer to Chapter 7 in this report.

The definition of a strategic SA2, from the perspective of the SEQ region, is one that satisfies all three of the following criteria:

(i) an average rank for the regional competitiveness indicator of less than 132 (NIEIR strategic node);

(ii) more than 0.75 per cent of SEQ total employment; and

(iii) more than a 25 per cent export to GRP ratio.

An SA2 that is considered strategic for an LGA is one that satisfies (i) and (iii) above and has more than 10 per cent of total employment in the LGA. Tables 4 and 5 below list the SA2s which satisfy these criteria at 2011 and 2041, respectively, using output from Scenario 2.

Due to its small population and peri-urban nature, Scenic Rim has no strategic nodes of SEQ significance, and due to its peripheral location in SEQ it does not score highly on the regional competiveness index, which ranks area highly for their accessibility. Though the results of the regional competitiveness analysis for Scenic Rim are included in this report, it should be noted that this index was developed largely with urban industries in mind and provides less insight into rural regions other than demonstrating opportunities for growth through linkages to the urban centres. Though rural areas generally attract weak scores, Scenic Rim has the advantage of relatively high accessibility to the urban services of SEQ. This underlies its advantages in such peri-urban activities as equine agistment.

Tables 4 and 5 (below) indicate that Beaudesert and Tamborine-Canungra provided concentrations of employment in the Scenic Rim LGA. The projections suggest that by 2041, Beaudesert will remain strategically significant but Tamborine-Canungra is not expected to strengthen as a regional centre.

In 2011 Beaudesert SA2 accounted for 43 per cent of employment in the region (much of it in Beaudesert town), followed by 29 per cent in Tamborine-Canungra and 28 per cent in Boonah. By 2041 it is projected that Beaudesert SA2 will account for 45 per cent of total employment in the region. This outcome reflects the assumption that employment growth in Tamborine-Canungra will be limited by environmental restrictions and also that defence employment will not increase, coupled with the expectation that the town of Beaudesert will gradually strengthen as a centre for the region. Boonah may also strengthen gradually as a supply centre for the western part of the region.

Table 4 Strategic nodes with respect to SEQ and the LGA – Scenic Rim (R) – 2011

SA2	Average Rank 2011	POW Emp Share %	Export Ratio %
Strategic SA2s with respect to SEQ			
N/A			
Strategic SA2s with respect to the LGA			
N/A			
NIEIR strategic nodes with respect to the LGA			
Beaudesert	192	42.7	54.05
Tamborine – Canungra	231	29.3	54.85

Notes: Average rank is a measure of the SA2's competitiveness in SEQ with a low rank indicating higher competitiveness. POW Emp Share refers to the share of employment generated within each SA2 as a share of total LGA employment. Export ratio % measures the export sales of the SA2 as a percentage of its GRP.

Table 5 Strategic nodes with respect to SEQ and the LGA – Scenic Rim (R) – 2041			
SA2	**Average Rank**	**POW Emp Share %**	**Export Ratio %**
Strategic SA2s with respect to SEQ			
N/A			
Strategic SA2s with respect to the LGA			
N/A			
NIEIR strategic nodes with respect to the LGA			
Beaudesert	213	44.99	63.40

Notes: Average rank is a measure of the SA2's competitiveness in SEQ with a low rank indicating higher competitiveness. POW Emp Share refers to the share of employment generated within each SA2 as a share of total LGA employment. Export ratio % measures the export sales of the SA2 as a percentage of its GRP.

3.4 Issues for consideration

Growing demand for rural residential property coupled with pressures on the agricultural sector (including dairy industry deregulation) has changed the economy and growth potential of Scenic Rim. Despite high rainfall and fertile soils, its further development as an agricultural area is hindered by the high land prices resulting from urban proximity. This same proximity increases its attractiveness as a retirement area and also supports tourism. Market trends are pointing the region towards tourism and rural residential developments peopled in part by retirees and in part by long-distance commuters who work in the urban concentrations to its north and east. Scenic Rim faces some complex choices on whether to build on its established strength in agriculture and related manufacturing and its potential strength in logistics or whether to focus on rural property development, retiree accommodation and tourism investment.

These choices are both possible but pose quite different implications for the future needs of the Scenic Rim economy and how they can be supported.

4. Primary Scenario – QTT Benchmark

This Chapter summarises the implications for small areas of the LGA projections prepared by QTT.

4.1 Place of work

Place of work (POW) employment projections report the number of people working within a particular sub-region irrespective of where they live. This provides the most important indicator of where future jobs growth is expected to occur. The place of work projections assume the QTT place of work projections by LGA. These totals are allocated to SA2s using the NIEIR model which considers the strength of the local labour market catchment within the LGA and the relative capacity of each SA2 to absorb additional employment.

Table 6 below lists the Primary Scenario allocations of place of work employment growth projected by QTT for Scenic Rim.

Table 6 Primary Scenario – Small area employment growth (2011-2041)

	2011		2041		Change	
SA2	Workers	% of LGA	Workers	% of LGA	Total	AAGR%
Beaudesert	5,901	42.7	16,330	62.7	10,429	3.5
Tamborine – Canungra	4,054	29.3	4,677	18.0	623	0.5
Boonah	3,873	28.0	5,047	19.4	1,174	0.9
Total Scenic Rim (R)	**13,828**	**100.0**	**26,054**	**100.0**	**12,226**	**2.1**

Note: AAGR is the average annual rate of growth of employment between 2011 and 2041.

4.2 Employment growth by industry

Employment growth by industry splits the place of work data into industry sectors. This is reported below at ANZSIC 1 digit but is also available in the data pack at a 2 digit disaggregation. The industry mix provides insights into the drivers of employment growth within sub-regions with some industries primarily servicing the local population and other industries competing across broader regional, state, national and global markets. Table 7 below outlines the Primary Scenario's employment growth by industry for Scenic Rim.

In the Primary Scenario agriculture and tourism remain the backbone of the economy of Scenic Rim though Health Care and Social Assistance and Education, all of them financed largely from taxation, are projected to grow in importance as employing sectors.

The growth in employment in Health Care and Social Assistance is driven partly by population ageing but is potentially a by-product of how health services might be delivered in future. Greater use of digital applications could lead to increased employment for low-paid carers in delivering a range of services for individuals. This role expansion, generating increased employment of low-paid health and welfare carers rather than for highly-paid personnel, could account for the increased demand for health sector employment in delivering a range of services that would previously have been classified as other industries. In the Scenario 2 projection, employment growth in this industry is still strong but lower than in the Primary Scenario across SEQ. However, in Scenic Rim, the reverse is true with Scenario 2 assigning higher proportionate employment growth to Health Care and Social Assistance,

making it the largest employing sector by 2041. This reflects the nature of the Scenic Rim economy and its appeal to retirees.

The share of construction employment will depend on the growth of construction output immediately preceding 2041 and therefore cannot be taken as an indicator of the construction industry share over the entire projection period. This is because construction depends on the rate of growth of output and population which will vary over the projection period.

Table 7 Primary Scenario – Employment growth by industry (2011-2041)

	2011			2041			2011-2041
	Scenic Rim (R)			Scenic Rim (R)			Scenic Rim (R)
ANZSIC 1	Workers	% of LGA	% of SEQ	Workers	% of LGA	% of SEQ	Workers
Agriculture, Forestry and Fishing	1,743	12.6	12.4	2,421	9.3	12.4	679
Mining	94	0.7	0.7	131	0.5	0.7	37
Manufacturing	862	6.2	0.6	1,243	4.8	0.6	382
Electricity, Gas, Water and Waste Services	158	1.1	0.9	252	1.0	1.0	94
Construction	1,365	9.9	0.9	2,403	9.2	1.1	1,038
Wholesale Trade	370	2.7	0.6	447	1.7	0.6	77
Retail Trade	1,435	10.4	0.8	2,429	9.3	1.0	994
Accommodation and Food Services	1,337	9.7	1.2	2,655	10.2	1.3	1,317
Transport, Postal and Warehousing	479	3.5	0.6	836	3.2	0.6	357
Information Media and Telecommunications	150	1.1	0.6	152	0.6	0.6	2
Financial and Insurance Services	145	1.0	0.3	141	0.5	0.2	-4
Rental, Hiring and Real Estate Services	196	1.4	0.6	349	1.3	0.6	153
Professional, Scientific and Technical Services	543	3.9	0.4	955	3.7	0.4	412
Administrative and Support Services	324	2.3	0.6	706	2.7	0.7	382
Public Administration and Safety	1,026	7.4	1.0	1,834	7.0	1.0	808
Education and Training	1,277	9.2	1.0	3,047	11.7	1.2	1,769
Health Care and Social Assistance	1,517	11.0	0.8	4,416	16.9	1.0	2,899
Arts and Recreation Services	253	1.8	1.0	489	1.9	1.0	236
Other Services	551	4.0	0.9	1,146	4.4	1.1	594
Total Scenic Rim (R)	**13,828**	**100.0**	**0.9**	**26,054**	**100.0**	**1.0**	**12,226**

4.3 Industry specialisation

The industry specialisation ratio, shown in Table 8, is the ratio of the share of a specific industry in LGA employment to its share of employment in SEQ. A ratio above 1 implies that the LGA has an above average share of employment in that the industry compared to SEQ as a whole. Conversely a ratio below 1 implies that the industry is less prominent in the region than in SEQ as a whole. The rules of regional development would suggest that it is desirable to have ratios above 1 for tradable goods and high technology services, given the general growth potential of these industries (see the report *Regional Development Rules and Implications for Planning in the 21st Century*, provided in the data pack).

Table 8	Primary Scenario – POW industry specialisation ratios for Scenic Rim against SEQ (2011-2041)	
ANZSIC 1	**2011**	**2041**
Agriculture, Forestry and Fishing	14.12	12.61
Mining	0.77	0.69
Manufacturing	0.69	0.61
Electricity, Gas, Water and Waste Services	1.02	1.06
Construction	1.07	1.07
Wholesale Trade	0.66	0.59
Retail Trade	0.92	1.05
Accommodation and Food Services	1.35	1.28
Transport, Postal and Warehousing	0.64	0.58
Information Media and Telecommunications	0.74	0.56
Financial and Insurance Services	0.32	0.25
Rental, Hiring and Real Estate Services	0.71	0.62
Professional, Scientific and Technical Services	0.50	0.44
Administrative and Support Services	0.66	0.70
Public Administration and Safety	1.10	1.06
Education and Training	1.12	1.18
Health Care and Social Assistance	0.86	1.02
Arts and Recreation Services	1.10	1.03
Other Services	1.00	1.15

Note: The industry specialisation ratio is a measure of the industry mix in a particular LGA. A value above 100 per cent indicates that the industry has a concentration that is above the average for SEQ within that LGA.

Table 8 confirms that Scenic Rim specialises very strongly in agricultural employment and is projected to continue to do so. Its other speciality is accommodation and food services, reflecting the tourism industry impact.

4.4 Usual resident employment

Usual resident employment (URE) data refers to the number and type of workers in the resident population of an LGA or sub-LGA region. It is closely correlated with population size. At a sub-regional level, URE data provides an indication of the size and quality of the local workforce. When compared with place of work data, URE provides an indication of how many workers would potentially find employment within their local area and how many might need to travel elsewhere for a job. In reality, the number of commuters in a region tends to be substantially greater than the difference between URE and place of work because local jobs are not exclusively held by local resident workers but may attract inbound commuting as well.

The allocation of URE data to SA2s under the Primary Scenario is included in the data pack. It is not discussed further here as it simply reflects the QTT SA2 population projections. In the Scenario 2 discussion presented in Chapter 6, URE distribution within the LGA becomes more relevant because it is derived from a model where the accessibility to employment is incorporated as a driver of local population growth.

At the LGA level, it is useful to understand the characteristics of the resident workforce in relation to the industry sectors it is suitable for. Table 9 presents the Primary Scenario industry of employment projections for the Scenic Rim resident workforce between 2011 and 2041.

Table 9 Primary Scenario: URE growth by industry (2011-2041)					
	2011		2041		Change
ANZSIC 1	Workers	% of LGA	Workers	% of LGA	Workers
Agriculture, Forestry and Fishing	2,616	14.7	2,196	5.2	-420
Mining	233	1.3	219	0.5	-14
Manufacturing	1,231	6.9	1,827	4.4	596
Electricity, Gas, Water and Waste Services	226	1.3	512	1.2	286
Construction	1,844	10.4	2,225	5.3	380
Wholesale Trade	820	4.6	653	1.6	-167
Retail Trade	1,752	9.9	3,041	7.3	1,290
Accommodation and Food Services	1,254	7.1	3,992	9.5	2,738
Transport, Postal and Warehousing	908	5.1	2,593	6.2	1,685
Information Media and Telecommunications	160	0.9	513	1.2	353
Financial and Insurance Services	244	1.4	809	1.9	565
Rental, Hiring and Real Estate Services	314	1.8	570	1.4	256
Professional, Scientific and Technical Services	824	4.6	3,375	8.1	2,552
Administrative and Support Services	391	2.2	1,980	4.7	1,589
Public Administration and Safety	1,195	6.7	5,083	12.2	3,888
Education and Training	1,514	8.5	3,977	9.5	2,463
Health Care and Social Assistance	1,247	7.0	6,050	14.5	4,803
Arts and Recreation Services	200	1.1	754	1.8	554
Other Services	773	4.4	1,468	3.5	694
Total Scenic Rim (R)	**17,746**	**100.0**	**41,838**	**100.0**	**24,092**

Table 9 indicates that there will be substantial growth in residents employed in Professional, Scientific and Technical Services and in Public Administration and Safety by 2041. When comparing this with Table 7 on place of work employment, the implication is that a large number of these residents will be employed somewhere else in SEQ. The extent to which this will result in large increases in outbound commuting will depend on employment arrangements in these industry sectors evolve and the extent to which telecommuting becomes a common practice in knowledge-based service employment.

5. NIEIR additional scenarios – SC1 and SC1A

Scenarios 1 and 1A were developed to test the impact of QTT population projections on the distribution of employment. Scenario 1 relaxed the employment target in the government projection with the location of employment now determined by the NIEIR modelling framework incorporating the rules for regional development. Scenario 1A relaxed both employment and population projections for LGAs and SA2s in the QTT projections but maintained the total SEQ population projection. The NIEIR evaluations of employment growth potential in sub-LGA regions suggest that the QTT population projections are unlikely to be achieved if the capacity of SEQ sub-regions to grow employment has been estimated with any degree of accuracy.

5.1 Place of work

For SEQ as a whole, under Scenario 1, the shortfall in employment by 2041 compared to the Primary Scenario is of the order of 360,000 or 14 per cent. The main reason for this is that the assumed distribution of the working age population across SEQ is too dispersed to enable the rules of economic development to operate in a way that will allow a significant proportion of the population to obtain quality employment. This of course implies a lower level of economic activity in SEQ as a whole and lower employment most SA2s, the exception being the strategic nodes.

Lower employment growth across SEQ also results from under-supply of workers to strategic nodes. It is fair to assume that full employment of resident workers is achieved when employment reaches 80 per cent of the available workforce in an SA2[2]. For many SA2s, especially for those SA2s in catchments with high rankings for competitiveness, this was achieved before 2041. These employment constraints place capacity bottlenecks on what can be achieved in the SEQ strategic nodes, and therefore on overall employment levels, since the residential location of the workforce in the QTT projections limits the ability of the strategic nodes to access the workers they require, given current expectations concerning transport infrastructure.

Table 10 outlines the employment projections for major employing SA2s in Scenic Rim for the Primary Scenario and Scenarios 1 and 1A between 2011 and 2041.

Table 10 NIEIR additional scenarios: POW employment growth by small area (2011- 2041)

	2011		2041			Change			AAGR%		
SA2	Primary	SC1 & SC1A	Primary	SC1	SC1A	Primary	SC1	SC1A	Primary	SC1	SC1A
Beaudesert	5,901	5,839	16,330	6,601	6,622	10,429	762	783	3.5	0.4	0.4
Tamborine - Canungra	4,054	4,049	4,677	4,573	4,674	623	524	625	0.5	0.4	0.5
Boonah	3,873	3,983	5,047	3,445	3,530	1,174	-538	-453	0.9	-0.5	-0.4
Total Scenic Rim (R)	**13,828**	**13,871**	**26,054**	**14,620**	**14,826**	**12,226**	**749**	**955**	**2.1**	**0.2**	**0.2**

Notes: Primary Scenario employment estimates for 2011 align with QTT estimated employment totals for each LGA in 2011. The different 2011 jump-off evident in SC1 and SC1A is the NIEIR modelled estimate of small area employment in 2011 aggregated to the LGA level. The variation between the two lies well within the margin of error that characterises such adjustments and is not considered significant in its impact on the overall projections under the three Scenarios. AAGR is the average annual rate of growth of employment between 2011 and 2041.

[2] Defined as the population aged 18 to 64 plus 40 per cent of the population aged over 64.

Employment projected for 2041 in Scenic Rim LGA in Scenario 1 and 1A is around 11,000 less than in the Primary Scenario. The difference between the Primary Scenario and Scenarios 1 and 1A reflects the following: Scenarios 1 and 1A project employment to be reflective of higher productivity improvements in certain sectors such as Health Care and Education; lower growth in other sectors such as Retail due to digital transformation, and NIEIR's detailed small area assessment of the 2011 capacity of the employment nodes of Scenic Rim to generate additional place of work employment in response to population growth.

By itself, population growth generates 20 to 30 per cent of the additional jobs required to support any given addition to population. As presently structured, the Scenic Rim economy has limited capacity to generate the additional 70 to 80 per cent by market driven employment growth, which, after population-serving opportunities are exhausted, must come from exporting businesses. Looking to the future, Scenarios 1 and 1A are also based on the assumption that agriculture and related manufacturing industries are likely to shed jobs rather than generate them and in Scenario 2 (discussed in Chapter 6) growth in population-serving employment barely compensates for this loss.

Under Scenario 1A, where population is allowed to settle in locations that are better connected to employment opportunities, the redistribution of the population does little to improve the competitiveness of Scenic Rim and employment growth, though slightly more rapid than in Scenario 1, Scenario 1A still falls far short of the levels assumed in the Primary Scenario.

The overall implication of Scenarios 1 and 1A is that high population growth is unlikely to generate enough jobs within the Scenic Rim region to satisfy the income requirements for living there and population growth is likely to depend largely on retirees and commuters.

5.2 Labour force utilisation and unemployment

Table 11 provides the key to understanding the different population and employment outcomes across SA2s. It shows the variation in the employment rate, as measured by the ratio of resident employment to the available workforce across Scenarios 1 and 1A, for the main residential SA2s in the LGA, taking into account both employment within the LGA and employment accessed by commuters who work in nearby LGAs. It is considered that full employment is reached at a ratio of 0.8 or greater. Where the ratio of URE to potential workforce falls below 80 per cent this is generally due to job inaccessibility and indicates that the SA2 is located inconveniently distant from employment opportunities.

The ratio of URE to potential workforce may be affected by demographic and economic factors, such as the proportions of mothers of young children and of self-funded early retirees in the population. However, the chief factor considered here is the effect of job accessibility; the ease with which workers can reach places of employment. In constructing labour catchments for SA2s, the NIEIR model applies a travel time gradient which decays the share of the workforce willing to travel as times increase. For travel times of 30 minutes or less, 100 per cent of residents are assumed willing to commute to a job and this declines progressively through to 70 minutes, beyond which it is assumed no resident is willing to travel. Though in reality, some individuals may exhibit different behaviour, for the purposes of calculating a labour force catchment area, this travel time assumption is assumed to provide a realistic estimate of the connectivity required by residents to achieve satisfactory employment outcomes.

This approach has been used to calculate the numbers reported in Table 11.

Table 11 NIEIR Additional scenarios: Small area ratio of URE to potential workforce (2011-2041)			
SA2 Name	**2011**	**2041 – SC1**	**2041 – SC1A**
Tamborine - Canungra	0.73	0.73	0.71
Beaudesert	0.72	0.45	0.47
Boonah	0.74	0.52	0.53

Notes: Ratio of URE to resident population of workforce age, defined as all residents aged between 18 and 64 years and 40 per cent of residents 64 and above. A ratio above 0.8 is indicative of near or full employment, though the full employment ratio could be lower in SA2s with numerous young adults or older residents. In some SA2s the ratio has been adjusted to take this into account.

It can be seen from Table 11 that in 2011 all three SA2s in Scenic Rim came close to full employment. In Scenario 1 this is projected to be maintained in Tamborine-Canungra but in the other two SA2s the ratio of employed residents to the population of workforce age is projected to fall due to the construction of semi-rural housing in locations with poor job accessibility. This could be interpreted as a rise in unemployment but could also be the result of an influx of non-working adults (e.g. early retirees). Trends are very similar in Scenario 1A. Overall the two Scenarios demonstrate the limited capacity of Scenic Rim to generate the employment required to satisfy the population projections developed by QTT.

5.3 Implications for population distribution

Table 12 compares the projected population growth of the major residential SA2s in Scenic Rim over the 2011 to 2041 period for the Primary Scenario and for Scenarios 1 and 1A. The Table accordingly compares the projected population of the Scenic Rim SA2s in 2041 and provides the associated average annual rate of growth.

Table 12 Additional scenarios: Population growth by small area (2011-2041)										
	2011	**2041**			**Change**			**AAGR%**		
SA2		**Primary**	**SC1**	**SC1A**	**Primary**	**SC1**	**SC1A**	**Primary**	**SC1**	**SC1A**
Tamborine - Canungra	13,564	16,830	16,830	17,778	3,266	3,266	4,214	0.7	0.7	0.9
Beaudesert	12,705	58,981	58,981	52,452	46,276	46,276	39,747	5.3	5.3	4.8
Boonah	11,168	19,451	19,451	18,469	8,283	8,283	7,301	1.9	1.9	1.7
Total Scenic Rim (R)	**37,437**	**95,262**	**95,262**	**88,699**	**57,825**	**57,825**	**51,262**	**3.2**	**3.2**	**2.9**

Note: AAGR is the average annual rate of growth of population between 2011 and 2041.

In both the Primary Scenario and in Scenario 1 the SA2 populations are fixed by QTT. In Scenario 1A, only the SEQ population total is fixed but population is allowed to settle in SEQ in a pattern that maximises its access to employment over the projection period. As can be seen above, under a flexible population distribution scenario for SEQ, Scenic Rim would attract almost 7 per cent fewer residents than have been projected. This is because these additional residents would be able to live in other SEQ locations where they would be better served by employment opportunities. Under Scenario 1A, Beaudesert is the SA2 most affected by reduced population growth while Tamborine - Canungra attracts a higher share of population, reflecting its greater accessibility to employment centres outside the Scenic Rim LGA.

6. Scenario 2

This section describes the historical and projected outcomes for industry employment, Gross Regional Product and exports for the Scenic Rim SA2s under Scenario 2. In Scenario 2, population growth is adjusted to the capacity of the SEQ SA2s to generate employment. To generate this projection, NIEIR first generated employment projections based on its assessment of SA2 capacity and then generated a pattern of population growth distributed across SA2s according to the accessibility of these jobs from each SA2. This in turn created further employment opportunity and further population growth.

6.1 Place of work

NIEIR applied localised productivity assessments to assess the competitiveness and employment growth potential of the industries located in each SA2. These were expressed as regional competitiveness indicators and are described in detail in Chapter 7. In the NIEIR model, if an SA2 has a low ranking in the competitiveness indices, its potential for job generation is assessed as low. This is not always a matter for concern: many established SA2s rely on jobs in neighbouring SA2s. However, it becomes of concern when the population growth projected for a SA2 under the Primary Scenario exceeds the growth of employment which market forces are expected to provide in areas accessible from that SA2.

Table 13 presents the Scenario 2 projections for employment growth within the major employment SA2s of the LGA between 2011 and 2041.

Table 13 Scenario 2: POW employment growth by small area (2011-2041)

	2011		2041		Change	
SA2	Workers	% of LGA	Workers	% of LGA	Total	AAGR%
Beaudesert	5,839	42.1	6,540	45.0	701	0.4
Tamborine - Canungra	4,049	29.2	4,568	31.4	519	0.4
Boonah	3,983	28.7	3,428	23.6	-555	-0.5
Total Scenic Rim (R)	**13,871**	**100.0**	**14,536**	**100.0**	**665**	**0.2**

Note: AAGR is the average annual rate of growth of population between 2011 and 2041.

In Scenario 2 employment within Scenic Rim LGA grows slowly, at the average rate of 0.2 per cent a year. This is in line with trends in agriculture, where the emphasis has long been on growth in productivity rather than in employment, accompanied by the assessment that growth in retail is likely to be low due to competition from centres located in other LGAs.

6.2 Employment growth by industry

Table 14 presents the Scenario 2 place of work employment growth by industry for Scenic Rim between 2011 and 2041.

Table 14 Scenario 2: POW employment growth by industry (2011-2041)

	2011			2041			2011-2041
	Scenic Rim (R)			Scenic Rim (R)			Scenic Rim (R)
ANZSIC 1	Workers	% of LGA	% of SEQ	Workers	% of LGA	% of SEQ	Workers
Agriculture, Forestry and Fishing	2,539	18.3	14.4	1,221	8.4	8.4	-1,319
Mining	102	0.7	0.7	15	0.1	0.1	-87
Manufacturing	705	5.1	0.5	514	3.5	0.4	-191
Electricity, Gas, Water and Waste Services	148	1.1	0.7	114	0.8	0.6	-34
Construction	1,431	10.3	0.9	1,238	8.5	0.7	-193
Wholesale Trade	415	3.0	0.7	154	1.1	0.3	-262
Retail Trade	1,432	10.3	0.8	1,017	7.0	0.5	-416
Accommodation and Food Services	1,293	9.3	1.1	1,559	10.7	0.9	266
Transport, Postal and Warehousing	568	4.1	0.6	933	6.4	0.7	365
Information Media & Telecommunications	120	0.9	0.5	96	0.7	0.4	-24
Financial and Insurance Services	145	1.0	0.3	128	0.9	0.2	-17
Rental, Hiring and Real Estate Services	230	1.7	0.6	238	1.6	0.5	7
Professional, Scientific & Technical Services	526	3.8	0.4	782	5.4	0.3	256
Administrative and Support Services	300	2.2	0.5	529	3.6	0.5	229
Public Administration and Safety	766	5.5	0.7	766	5.3	0.5	-1
Education and Training	1,285	9.3	1.0	1,865	12.8	0.8	580
Health Care and Social Assistance	1,116	8.0	0.6	2,665	18.3	0.8	1,548
Arts and Recreation Services	207	1.5	0.7	256	1.8	0.5	48
Other Services	541	3.9	0.9	449	3.1	0.6	-92
Total Scenic Rim (R)	**13,871**	**100.0**	**0.9**	**14,536**	**100.0**	**0.7**	**665**

As documented in Table 14, in Scenario 2 agriculture and tourism continue to provide the economic base of Scenic Rim. However, as productivity increases and rural residential areas spread employment in agriculture declines and the LGA must look elsewhere for growth in employment. In Scenario 2 this is projected to arise mainly from health care and social assistance, reflecting an ageing retiree population, plus a secondary increase in education – not all of the new residents will be retirees; some will be commuters with young families.

6.3 Industry specialisation and productivity

The industry specialisation ratio, shown in Table 15, is the ratio of the share of a specific industry in LGA employment to its share of employment in SEQ. A ratio above 1 implies that the LGA has an above average share of employment in that the industry compared to SEQ as a whole. Conversely a ratio below 1 implies that the industry is less prominent in the region than in SEQ as a whole. The rules of regional development would suggest that it is desirable to have ratios above 1 for tradable goods and high technology services, given the general growth potential of these industries (see the report *Regional Development Rules and Implications for Planning in the 21st Century*, included in the data pack.

Table 15 Scenario 2: POW industry specialisation ratios by industry (2011-2041)		
ANZSIC 1	**2011**	**2041**
Agriculture, Forestry and Fishing	16.39	12.83
Mining	0.81	0.12
Manufacturing	0.60	0.62
Electricity, Gas, Water and Waste Services	0.80	0.93
Construction	1.02	1.00
Wholesale Trade	0.83	0.46
Retail Trade	0.91	0.81
Accommodation and Food Services	1.25	1.43
Transport, Postal and Warehousing	0.72	1.13
Information Media and Telecommunications	0.55	0.61
Financial and Insurance Services	0.36	0.31
Rental, Hiring and Real Estate Services	0.67	0.73
Professional, Scientific and Technical Services	0.50	0.52
Administrative and Support Services	0.58	0.81
Public Administration and Safety	0.84	0.71
Education and Training	1.18	1.26
Health Care and Social Assistance	0.66	1.19
Arts and Recreation Services	0.77	0.83
Other Services	1.00	0.84

Table 15 highlights the specialisation of Scenic Rim in agriculture and tourism (accommodation and food services), which is similar to the Primary Scenario. Specialisation in retail trade is projected to decline due to competition from outside the LGA, and low specialisation in urban industries like professional, scientific and technical services is projected to continue. The Scenario projects increased concentration in health care and social assistance, reflecting an ageing population and the inflow of retirees.

6.4 Gross regional product

This section considers gross regional product (GRP) outcomes over the projection period. GRP is a commonly used measure of true economic prosperity of a region. When considered on a wealth per person basis it provides a way to distinguish between the size of the economy and the wealth of the economy as it corrects for the number of people that have to be supported by a given level of wealth. Though QTT has provided estimates of GRP at the LGA level, these cannot be distributed to SA2s – the allocation method used for employment is not appropriate for GRP. In Scenario 2, GRP is one of the outputs of the model. In Table 16 this is shown for the major employment SA2s in the LGA.

In conjunction with employment estimates, the GRP estimates allow the calculation of a measure of labour productivity – gross regional product, or value added, per worker. This is an important indicator of the income-generating capacity of the industries located in each SA2, and also of their potential to support further growth in employment and income.

Table 16 Scenario 2 – Small area GRP growth at factor cost (2011-2041)						
	GRP ($m)		GRP/Worker ($)		AAGR%	
SA2	2011	2041	2011	2041	GRP	GRP/worker
Beaudesert	471.1	748.9	80,686.4	114,518.2	1.6	1.2
Tamborine - Canungra	339.2	499.9	83,776.4	109,430.0	1.3	0.9
Boonah	287.1	345.4	72,065.9	100,767.0	0.6	1.1
Total Scenic Rim (R)	**1,097.4**	**1,594.3**	**79,113.0**	**109,676.2**	**1.3**	**1.1**

Notes: GRP in 2011 estimated by NIEIR in 2011 dollars. The estimate includes wages and salaries paid and the mixed income (labour and capital returns) of small businesses. AAGR is the average annual rate of growth between 2011 and 2041.

As shown in Table 16, in Scenario 2 Scenic Rim LGA experiences an average annual GRP growth rate of approximately 1.1 per cent a year. This is expected to be most rapid in Beaudesert and slowest in Boonah.

Table 17 outlines GRP growth by industry for Scenic Rim between 2011 and 2041. The Table provides an alternative measure to Table 14 of the importance of the various industries to the LGA economy.

Table 17 Scenario 2: GRP growth by industry (2011-2041)					
	2011		2041		2011-2041
ANZSIC 1	GRP ($m)	% of LGA	GRP ($m)	% of LGA	Growth ($m)
Agriculture, Forestry and Fishing	161.2	14.7	91.3	5.7	-69.9
Mining	22.5	2.0	20.4	1.3	-2.1
Manufacturing	90.3	8.2	78.7	4.9	-11.6
Electricity, Gas, Water and Waste Services	29.4	2.7	49.8	3.1	20.4
Construction	150.5	13.7	161.2	10.1	10.7
Wholesale Trade	56.7	5.2	21.5	1.4	-35.2
Retail Trade	76.4	7.0	58.6	3.7	-17.8
Accommodation and Food Services	49.3	4.5	90.2	5.7	40.9
Transport, Postal and Warehousing	44.9	4.1	125.4	7.9	80.5
Information Media and Telecommunications	21.0	1.9	19.0	1.2	-2.0
Financial and Insurance Services	40.6	3.7	36.6	2.3	-4.0
Rental, Hiring and Real Estate Services	24.6	2.2	39.7	2.5	-15.1
Professional, Scientific and Technical Services	47.1	4.3	106.5	6.7	59.4
Administrative and Support Services	20.1	1.8	59.2	3.7	39.1
Public Administration and Safety	87.5	8.0	144.6	9.1	57.1
Education and Training	67.9	6.2	160.7	10.1	92.8
Health Care and Social Assistance	72.5	6.6	279.5	17.5	207.0
Arts and Recreation Services	9.8	0.9	21.3	1.3	11.5
Other Services	25.2	2.3	30.1	1.9	4.9
Total Scenic Rim (R)	**1,097.4**	**100.0**	**1,594.3**	**100.0**	**496.9**

Note: GRP in 2011 estimated by NIEIR in 2011 dollars. The estimate includes wages and salaries paid and the mixed income (labour and capital returns) of small businesses.

As shown above, Health Care, Social Assistance and Education have potential to increase their contribution to GRP over the projection period, reflecting SEQ trends. Value added in agriculture is projected to decline as land is converted to rural residential, but value added in transport is projected to increase as the region capitalises on its location, and value added in professional, scientific and technical services is projected to increase, largely to provide services for the increasing population.

6.5 Exports

In Scenario 2, exports are defined as the value of goods and services that are exported from each SA2 to any destination ***outside the LGA***, (i.e. including elsewhere in SEQ, Queensland, interstate and overseas). This definition of exports captures the basic principle that the sale of goods and services outside the local market provides a means of generating wealth from more distant communities, with the LGA being adopted as the relevant export area boundary. Exporting industries must also demonstrate sufficient competitiveness and productivity to compete with any other businesses serving the same market.

For the three SA2s in the LGA, Table 18 shows estimated export sales. This is greater than the level of value added in export industries, since it includes all costs of production (including imports) embodied in export sales; if all of the output of an export industry is exported the value of export sales will therefore exceed value added in that industry (i.e. its contribution to GRP). If an SA2 has a high proportion of export industries in which value added is small in proportion to sales, it is possible for exports to exceed GRP for the SA2 as a whole. The important point here is that, given the need for SEQ to generate additional export income, the presence of export-oriented industries is an important indicator of growth potential at the SA2 level.

Table 18 Scenario 2 – Exports growth by small area (2011-2041)

	Exports ($m)		Export to GRP (%)	
SA2	**2011**	**2041**	**2011**	**2041**
Beaudesert	254.6	474.9	54.1	63.4
Tamborine - Canungra	186.1	274.6	54.9	54.9
Boonah	146.9	113.7	51.2	32.9
Total Scenic Rim (R)	**587.5**	**863.1**	**78.7**	**54.1**

Notes: Exports is estimated by NIEIR using input-output tables and an inter-regional trade matrix. The export to GRP percentage is a measure of exports of each SA2 as a proportion of SA2 GRP. Values are in 2011 dollars.

Table 18 shows that export orientation is relatively strong in the eastern part of the LGA.

Table 19 outlines the exports by industry for Scenic Rim between 2011 and 2041.

Table 19 documents the continuing role of agriculture and related manufacturing in generating export income for Scenic Rim, despite the projected contraction of these industries. The increase in tourism exports is much smaller, but has a higher rate of spinoff into local employment.

Table 19 Scenario 2 – Export growth by industry (2011-2041)				
	2011		2041	
ANZSIC 1	Exports ($m)	% of LGA	GRP ($m)	% of LGA
Agriculture, Forestry and Fishing	266.0	45.3	332.9	38.6
Mining	19.3	3.3	48.0	5.6
Manufacturing	89.3	15.2	143.7	16.7
Electricity, Gas, Water and Waste Services	1.9	0.3	3.3	0.4
Construction	0.0	0.0	0.0	0.0
Wholesale Trade	3.7	0.6	3.5	0.4
Retail Trade	4.8	0.8	5.1	0.6
Accommodation and Food Services	48.7	8.3	82.5	9.6
Transport, Postal and Warehousing	41.6	7.1	63.5	7.4
Information Media and Telecommunications	9.8	1.7	21.6	2.5
Financial and Insurance Services	0.0	0.0	0.0	0.0
Rental, Hiring and Real Estate Services	34.5	5.9	57.1	6.6
Professional, Scientific and Technical Services	0.0	0.0	0.0	0.0
Administrative and Support Services	0.3	0.1	0.5	0.1
Public Administration and Safety	41.2	7.0	59.0	6.8
Education and Training	9.4	1.6	12.9	1.5
Health Care and Social Assistance	15.8	2.7	27.0	3.1
Arts and Recreation Services	0.6	0.1	1.1	0.1
Other Services	0.7	0.1	1.2	0.1
Total Scenic Rim (R)	**587.5**	**100.0**	**863.1**	**100.0**

Notes: Exports captures the value of exports to other LGAs, including within SEQ, intrastate, interstate and overseas. It is estimated by NIEIR using input-output tables and an inter-regional trade matrix. Values are in 2011 dollars.

6.6 Profile of workers working in Scenic Rim

The industry mix projected for 2041 implies a mix of occupations and skills. Employment growth will be hindered if these skills are not available within the local labour catchment; conversely employers can be attracted to areas where the skills they require are readily available. Table 20 indicates the broad mix of skills likely to be in demand in Scenic Rim, which has implications for the kinds of residential development and other infrastructure that will be required to ensure that the skilled workforce grows to meet business requirements.

Expected structural change in how the economy is likely to develop over the next 30 years will place greater emphasis on acquiring and retaining higher skilled workers. No matter what the industry profile and how it changes over the next 30 years there will be a growing tendency for all industries, whether low medium or high technology, to increase higher skilled employment as a share of total employment.

Table 20 Scenario 2: POW occupation growth (2011-2041)						
	2011		2041			
ANZSCO 1	Workers	% of LGA	Workers	% of LGA	Change	AAGR
Managers	2,520	18.4	1,959	13.5	-561	-0.8
Professionals	1,887	13.8	2,792	19.2	905	1.3
Technicians and Trades Workers	2,003	14.6	1,737	11.9	-266	-0.5
Community and Personal Service Workers	1,690	12.3	2,903	20.0	1,213	1.8
Clerical and Administrative Workers	1,560	11.4	1,633	11.2	72	0.2
Sales Workers	1,178	8.6	946	6.5	-232	-0.7
Machinery Operators and Drivers	920	6.7	899	6.2	-21	-0.1
Labourers	1,961	14.3	1,668	11.5	-293	-0.5
Total Scenic Rim (R)	**13,720**	**100.0**	**14,536**	**100.0**	**816**	**0.2**

Note: AAGR is the average annual rate of growth of occupations between 2011 and 2041.

The growth in employment of workers with professional skills shown in Table 20 is what would be expected, given general trends. As in much of SEQ, the most rapidly growing occupations are likely to be in the community and personal services growth required to meet the needs of a growing and ageing population.

An important recent labour market trend has been growth in part-time employment. The trend has reflected several factors, including the desire of some workers to work part-time and the desire of some employers to employ only at times of peak activity. Table 21 projects the full-time part-time split for the major employment SA2s of the LGA.

Table 21 Scenario 2: POW full-time/part-time employment growth (2011-2041)

	2011		2041	
SA2	**FT (%)**	**PT (%)**	**FT (%)**	**PT (%)**
Beaudesert	64.3	35.7	69.4	30.6
Tamborine - Canungra	53.3	46.7	61.0	39.0
Boonah	63.7	36.3	69.1	30.9
Total Scenic Rim (R)	**60.9**	**39.1**	**66.7**	**33.3**

Notes: Full-time work is defined by the ABS as working more than 35 hours a week. Part-time employment is defined by the ABS as working less than 35 hours a week.

Table 21 reports that the proportion of full-time jobs is lower in Tamborine- Canungra, reflecting the needs of the tourism industry. In Scenario 2 the proportion of full-time jobs increases across the board due to long-term demographic trends with a reduction in the proportion of people of workforce age in the population.

6.7 Profile of workers residing in Scenic Rim (usual resident employment)

This section considers the industries that residents are employed in, irrespective of where they work. Exploring the usual resident employment industry data helps to define labour force catchments that will drive the growth of specific industries in some regions.

In the Primary Scenario, the growth of workers resident in Scenic Rim outpaces the growth of jobs generated within the LGA. In Scenario 2 population growth is moderated but is matched by slower growth in jobs. Overall, the results of the two Scenarios for Scenic Rim are similar, with an expectation that many residents will commute to neighbouring LGAs for work. This is desirable from a regional perspective since, providing the infrastructure supports reasonable commuting times, it increases the labour catchment area for the neighbouring employment nodes (thus strengthening their performance) and increases the employment opportunities for Scenic Rim residents.

From an industry perspective, Table 22 also shows the shift in the future resident workforce out of agriculture and wholesale trade employment into accommodation, professional services, public administration and education. Reflecting local population ageing, the shift into health care and social assistance is more rapid than in SEQ as a whole.

Table 23 shows projected growth in the major occupation groups of Scenic Rim residents.

Table 22 Scenario 2: URE growth by industry (2011-2041)					
	2011		2041		2011-2041
ANZSIC 1	Persons	% of LGA	Persons	% of LGA	Persons
Agriculture, Forestry and Fishing	2,616	14.7	2,037	7.0	-579
Mining	233	1.3	233	0.8	1
Manufacturing	1,231	6.9	1,359	4.7	128
Electricity, Gas, Water and Waste Services	226	1.3	369	1.3	143
Construction	1,844	10.4	1,876	6.4	32
Wholesale Trade	820	4.6	0	0.0	-820
Retail Trade	1,752	9.9	2,291	7.9	540
Accommodation and Food Services	1,254	7.1	2,766	9.5	1,512
Transport, Postal and Warehousing	908	5.1	1,653	5.7	745
Information Media and Telecommunications	160	0.9	326	1.1	166
Financial and Insurance Services	244	1.4	473	1.6	229
Rental, Hiring and Real Estate Services	314	1.8	426	1.5	112
Professional, Scientific and Technical Services	824	4.6	2,037	7.0	1,213
Administrative and Support Services	391	2.2	1,329	4.6	938
Public Administration and Safety	1,195	6.7	3,296	11.3	2,101
Education and Training	1,514	8.5	2,913	10.0	1,399
Health Care and Social Assistance	1,247	7.0	4,111	14.1	2,863
Arts and Recreation Services	200	1.1	555	1.9	355
Other Services	773	4.4	1,058	3.6	284
Total Scenic Rim (R)	**17,746**	**100.0**	**29,108**	**100.0**	**11,362**

Note: Usual resident employment refers to the characteristics of the resident workforce, irrespective of where they work.

Table 23 Scenario 2: URE occupation growth (2011-2041)						
	2011		2041			
ANZSCO 1	Persons	% of LGA	Persons	% of LGA	Change	AAGR (%)
Managers	2,948	16.6	2,947	10.1	-1	0.0
Professionals	2,578	14.5	4,245	14.6	1,667	1.7
Technicians and trades workers	2,970	16.7	3,938	13.5	968	0.9
Community and personal service workers	1,821	10.3	6,952	23.9	5,131	4.6
Clerical and administrative workers	2,232	12.6	2,908	10.0	676	0.9
Sales workers	1,399	7.9	1,960	6.7	561	1.1
Machinery operators and drivers	1,402	7.9	2,666	9.2	1,264	2.2
Labourers	2,395	13.5	3,492	12.0	1,097	1.3
Total Scenic Rim (R)	**17,746**	**100.0**	**29,108**	**100.0**	**11,362**	**1.7**

Note: AAGR is the average annual rate of growth of occupations between 2011 and 2041.

The proportion of managers is projected to decline, associated with declining employment in agriculture and the consolidation of farms (farm owners are classified as managers). The countervailing growth in transport shows up in an increase in the employment of machinery operators and drivers. However, as all across SEQ, the most rapidly growing occupational group is community and personal service workers.

Table 24 below outlines the forecast usual resident employment growth by SA2 in Scenic Rim from 2011 – 2041 for Scenario 2.

Table 24 Scenario 2 – Usual resident employment growth by small area (2011-2041)						
	2011		2041		Change	
SA2	Persons	% of LGA	Persons	% of LGA	Total	AAGR%
Tamborine - Canungra	6,585	37.1	7,488	25.7	904	0.4
Beaudesert	5,828	32.8	15,879	54.6	10,051	3.4
Boonah	5,334	30.1	5,741	19.7	408	0.2
Total Scenic Rim (R)	**17,746**	**100.0**	**29,108**	**100.0**	**11,362**	**1.7**

Notes: Usual resident employment refers to the characteristics of the resident workforce, irrespective of where they work. AAGR is the average annual rate of growth of occupations between 2011 and 2041.

The slow growth of resident employment in Tamborine- Canungra reflects slow population growth due to lack of residential development sites. The slow growth in Boonah reflects lack of accessibility to employment opportunities. The result is that employment growth among residents is concentrated in Beaudesert.

Table 25 below presents the employment outcomes for SA2 residents over the projection period, defined as the ratio of employed residents to the size of the resident workforce within each LGA.

Table 25 Scenario 2: Small area ratio of URE to potential workforce (2011-2041)		
SA2 Name	2011	2041 – SC2
Tamborine - Canungra	0.73	0.75
Beaudesert	0.72	0.53
Boonah	0.74	0.54

As shown in Table 25, in 2011 the ratio of employed persons to the available workforce was reasonably satisfactory in all three SA2s of Scenic Rim. As reported in Table 11, in Scenario 1 this ratio is projected to deteriorate in Beaudesert and Boonah but not in Tamborine-Canungra. In Table 25 it is reported that similar, though marginally smaller, deteriorations are also present in Scenario 2. This is due to rural residential development in areas with poor job accessibility, including an influx of early retirees.

6.8 Conclusion

This chapter has highlighted some challenges for Scenic Rim to generate local employment for a growing population. Though export-oriented employment is expected to increase in tourism and transport, the region faces a decline in agricultural employment due to a combination of pressure from rural residential developments and increasing productivity. The region is, however, within reasonable commuting distance of employment in Gold Coast, Logan and Ipswich and provides opportunities to combine semi-rural living with bearable though moderately long commuting times. These commuting opportunities are also likely to hinder the development of retail employment in the LGA, but will not prevent an influx of early retirees who will, in their turn, generate a rather rapid increase in local employment in health care and social assistance.

7. Technical underpinnings of the NIEIR modelling approach: Indicators of regional competitiveness

This chapter explains how NIEIR evaluates and models SA2 competitiveness. It covers some technical aspects of the NIEIR modelling approach with further supporting information provided in the data pack – *Regional Development Rules and Implications for Planning in the 21st Century*.

At the core of the regional development rules is the observation that there is a tendency over time for successful regions to increase their success while unsuccessful regions lag further behind. The market does not resolve this because in today's economy very few local industries are safe from being outcompeted by more efficient, more productive businesses located elsewhere. Very few markets are isolated and left for local businesses to serve – localised population-servicing sectors are estimated to provide only 20 to 30 per cent of the jobs required to sustain acceptable living standards and full employment.

This chapter describes the competitiveness indicators which NIEIR takes into account when projecting employment generation by SA2. The indicators are designated competitiveness indicators because they summarise the relative performance of each SA2 in terms of the rules of regional economic development.

In analysing the competitiveness indicators, those SA2s which, from 2011 to 2041, produce above average relative movement in their indicators can be expected to produce above average growth in employment. For these SA2s, resident employment to population ratios will tend towards full employment and real incomes will increase relative to the SEQ average.

The reverse will be true for those SA2s in which the indicators deteriorate compared to the average. For these regions, catchment hours of work from accessible place of work employment will be relatively low and unemployment rates for residents will increase over the projection period, possibly reaching high levels at the end.

The objective here is to select a relatively small number of indicators which capture the force or dynamics of the operation of the rules.

One important finding of the rules is that the appropriate benchmark for all SEQ SA2s, or at least those regions within 70 to 90 kilometres of the metropolitan centre, is Brisbane City. In many industries, including those most important for economic growth, growth and productivity in Brisbane City SA2 will determine the growth potential of other regions, because it sets the limit of technological possibilities for businesses that do not fall directly within Brisbane City's immediate catchment. This is exactly the same dynamic as that visible in world development, where the most productive economy in the world sets the productivity and growth potential of all other economies as they attempt to converge their indicators to that of the dominant economic power. As would be expected, the most productive economy in the global league is the one which has the biggest scale (in terms of economic output, if not population) – at present the United States. Therefore, all indicators of the competitiveness of SEQ SA2s should be expressed relative to the indicator values of Brisbane City SA2.

Competitiveness is measured in terms of two metrics, namely raw indicator values and the rank of the indicator value among the 330 SA2s in SEQ. Regions in the first quintile will have a rank less than 66 while regions in the second quintile will rank between 66 and 132 and so on.

Regions in the first or second quintile of rankings are likely to be above or at least near threshold competitiveness levels. In these regions the market is likely to deliver above-average export effort and hence above-average non-population driven employment growth. Regions in the third or higher (worse) quintile of rankings, that is rank values of 132 and above, are likely to struggle to provide adequate employment if their populations are growing significantly, with the medium-term implication that either population will stop growing and/or unemployment rates will increase.

Regions which are in the higher quintiles of competitive rankings (third or higher) will be reliant on distribution trades (retail and food services), construction, care services (though not high value added health services), education, low value added business services and personal services to drive growth. Regions which are in the first or second quintiles of competitive rankings will be regions where growth is being driven by exports of tradable goods (agriculture, mining, manufacturing), transport services, logistic services, high value added business and financial services, hospitals, research, accommodation and tertiary education services.

7.1 Regional Competitiveness Indicator 1: Relative workforce catchment scale to Brisbane City SA2

The first indicator measures relative scale of workforce catchment. Two metrics are given; the value of the indicator itself (expressed as a percentage of the value for the SA2 catchment compared to Brisbane City SA2) and its rank out of 330. This indicator is designed to quantify the development rule which suggests that the capacity of a sub-region to grow relative to the central region will be its catchment scale as measured by the working age population in its catchment relative to the central region catchment. The implication is that the greater a SA2's workforce catchment relative to Brisbane City SA2, the greater the economies of scale and scope and hence realised productivity employers can achieve relative to Brisbane City SA2.

The larger the catchment, the more likely that employers can achieve maximum productivity by selecting an appropriately qualified and experienced workforce at competitive wage rates. Employers in regions with small catchments relative to Brisbane City SA2 will have limited choice in employee selection. In these regions, to attract suitable employees, they will have to pay relatively higher wages to attract skilled employees who will, in all probability, have excessive journey to work travel times. This is likely to be in most instances an unsustainable arrangement which will limit the growth potential of establishments.

This does not mean that medium technology industries which have a competitive advantage from the specific geography of a particular SA2, will not be established and grow there. However, it does mean that where specific competitive advantages are absent, it will be more difficult to develop medium and high technology industries in which competitiveness is largely determined by the skills, experience and knowledge base of the workforce. Such firms are unlikely to flourish unless regions pass a benchmark relative to Brisbane City SA2 both as regards scale and growth in scale.

Table 26 Scenario 2 – Labour catchment competitiveness indicator (2011-2041

SA2	2011	2041	2011 Rank in SEQ	2041 Rank in SEQ
Beaudesert	4	9	295	266
Tamborine - Canungra	4	3	291	304
Boonah	3	3	302	298

Notes: The labour catchment is defined as the number of potential employees living within a range of travel time-distances to the SA2. Time distances are from a matrix provided by the Queensland Department of Transport and Main Roads. The matrix includes time-distances by public transport when they are faster than road transport. Cut-off times follow a sliding scale between 30 minutes and 70 minutes, with the potential employees located at the further distances given lower weight than those located within 30 minutes.

As outlined in Table 26, the labour catchment indicator for SA2s in Scenic Rim LGA reflects their location at the edge of the greater Brisbane area. It is a fact of geography that SA2s located beyond the edge of a metropolitan area will have small labour catchments compared to those located near the centre. In Scenario 2 this competitiveness indicator changes little to 2041.

7.2 Regional Competitiveness Indicator 2: Growth in relative scale

The second indicator measures growth in relative scale over a five year period. It is calculated by dividing the value of Indicator 1 in year t by the corresponding value five years earlier. Those SA2s with a value of Indicator 1 above a threshold value of, say, 35 to 40, and a value for Indicator 2 near or above 100, would be attractive to investment in export oriented projects and, provided land was available, would be likely to grow their industry employment faster than the SEQ average. As this indicator relates to year by year change it is best viewed in the data pack.

7.3 Regional Competitiveness Indicator 3: Relative productivity to Brisbane City SA2

Productivity is both a driver and an outcome of the rules of development. Successful export growth is reflected in higher productivity, but higher productivity is required for export success. Thus, the higher the initial productivity of an SA2 the more likely that its industry growth will be higher and, therefore, by the end of the period, that its productivity will further increase in relative terms since its productivity growth will be higher. The development rules indicate that the higher its initial productivity, the more likely a SA2 will at least maintain and probably increase its share of SEQ economic activity and exports and also maintain a high future productivity growth rate. This virtuous cycle develops because the higher the level of productivity, the higher the profitability, and the more likely enterprises will be able to maintain a higher level of investment effort and marketing expense to expand export markets. For those regions with low productivity, targeted initiatives to raise productivity are required to avoid a reverse vicious cycle with a widening productivity gap developing with best practice regions.

This does not mean that regions are necessarily locked into a low productivity trap in perpetuity. Low-productivity regions can increase their productivity by a variety of measures, such as:

(i) attracting working age population via planning decisions driving Indicators 1 and 2;

(ii) attracting higher skilled households by improving liveability conditions; and

(iii) increasing the diversity of institutions offering education, training and knowledge creation services along with closely allied institutions, such as hospitals.

The success of these measures will be reflected in higher exports and productivity growth. For the scenarios provided in this report, factors of this type that are likely to generate productivity enhancements within a particular SA2 have been imposed exogenously from information gathered through direct consultations with the SEQ regional councils.

The rule in applying this indicator is that the greater the improvement in relative productivity, the greater will be the potential for higher local industry growth relative to Brisbane City SA2, provided the SA2 has sufficient capacity in industry infrastructure (land and/or building site potential) to allow the growth to occur.

Table 27	Scenario 2: Ratio of regional productivity to Brisbane City SA2 by small area (2011-2041)			
SA2	2011	2041	2011 Rank in SEQ	2041 Rank in SEQ
Beaudesert	54	60	231	179
Tamborine - Canungra	60	61	133	161
Boonah	48	53	293	289

Notes: Regional productivity is defined as gross regional product per hour worked as estimated by NIEIR. Note that this definition is different from that used in Table 15 where the denominator is the number of employed people unadjusted for hours.

The value of this indicator for SA2s in Scenic Rim is shown in Table 27. The values are low in Boonah and higher in the east, reflecting the location of higher productivity industries in that area.

7.4 Regional Competitiveness Indicator 4: Catchment productivity

The rules for economic development suggest that in general the competitiveness of industry within an SA2 will depend on the productivity and scale of economic activity in the surrounding catchment, not just on the productivity of industry within the SA2 boundaries. This is because the quality of the supply chain supporting an industry in a given SA2 will depend on the productivity of the surrounding catchment as well as the productivity of the Central region, namely Brisbane City SA2. If the productivity of the surrounding catchment is relatively low, it will be difficult for industry to generate sustainable growth in a given SA2 unless productivity depends on the specific geography of the sub-region or availability of strategic infrastructure such as airports, ports etc. Indicator four is therefore defined as GRP per capita of the working age population in the catchment for each SA2 relative to the same indicator for Brisbane City SA2.

Indicators three and four should be used together. If an SA2 has high productivity, as per the previous indicator, but low catchment economic activity in relation to working age population, it is likely that it is dependent on one or a small number of export enterprises which draw little of their competitiveness from the surrounding catchment. The growth prospects for such an SA2 will depend critically on the prospects of the enterprises themselves. Growth could continue to be satisfactory or it could cease if one or two enterprises ceased operations.

Table 28	Scenario 2: Catchment GRP per capita of working age population relative to Brisbane City SA2 by small area (2011-2041)			
SA2	2011	2041	2011 Rank in SEQ	2041 Rank in SEQ
Beaudesert	29	9	148	321
Tamborine - Canungra	19	19	263	253
Boonah	20	12	247	309

Notes: For the purpose of this table, the catchment is defined as for indicator 1 Table 24. Catchment productivity is accordingly gross regional product of the catchment per hour worked, weighted so that SA2s within a short time-distance are more significant than those at a distance.

As shown in Table 28, in 2011 the values for this indicator in the Scenic Rim SA2s were low when compared with Brisbane City SA2. The influx of retirees is expected to be most noticeable in Beaudesert and causes the indicator for this SA2 to deteriorate considerably by 2041. Change in competitiveness relative to population helps to explain the reductions in workforce participation projected in Table 25.

7.5 Regional Competitiveness Indicator 5: High technology industry employment share

The high technology industry share is again a driver, as well as an outcome of the development process. The higher the initial high technology industry share the higher the growth potential. Alternatively, the more effort, via policy initiatives, to attract high technology industries, the higher the growth potential of a given SA2.

Table 29 Scenario 2: Employment share of high technology industry relative to Brisbane City SA2 by small area (2011-2041)

SA2	2011	2041	2011 Rank in SEQ	2041 Rank in SEQ
Beaudesert	26	28	280	297
Tamborine - Canungra	41	46	164	177
Boonah	25	36	281	254

Note: High technology industries comprise a conventional list given in the accompanying paper *Regional Development Rules and Implications for Planning in the 21st Century*.

Table 29 shows that, ranked by this indicator, Scenic Rim is not strong in its share of high technology industry, though Tamborine- Canungra has a higher rank, possibly related to defence employment. In general, the LGA does not specialise in industries where rapid growth in productivity is expected from technical innovation.

7.6 Regional Competitiveness Indicator 6: Composite Index

The composite index is a summary of the five indices covered above, indexed to 100 for 2011 and weighted equally at 20 per cent each for 2041. The results Scenic Rim LGA are given in Table 30. In Scenario 2 overall competiveness improves for Tamborine-Canungra and Boonah but declines for Beaudesert.

Table 30 Scenario 2: Change from 2011 to 2041 in the composite regional competitiveness indicator by SA2 – Scenic Rim

SA2	2011	2041
Beaudesert	42.4	31.2
Tamborine - Canungra	44.7	52.0
Boonah	39.3	41.3

7.7 Regional Competitiveness indices: The key indicator

The key indicator for assessing the growth potential of a SA2 to produce satisfactory employment outcomes for residents is the Composite Indicator (Table 30) divided by Indicator 1 (relative workforce catchment scale). In this context, the Composite Indicator measures the capacity of the SA2 to generate employment while the relative workforce catchment measures the number of people likely to be competing for the jobs generated, with both indicators benchmarked to Brisbane City. In Table 31 we do not report the results of this division, but rather the change from 2011 to 2041. The greater the value this indicator takes above 100 the more likely that a region will be able

to grow its employment at levels required to absorb the targeted or projected growth in the working age population. On the other hand, if the indicator falls below 100, with steady increases in the difference between 100 and its value, the employment growth potential of the catchment is deteriorating. It means that effective unemployment rates for the resident population could increase.

Scenario 2 is deliberately constructed to improve workplace/residence balance across SEQ and it should therefore cause no surprise that the indicator shows an improvement in three-quarters of all SEQ SA2s. This leaves a worrying group of 79 SA2s for which the indicator deteriorates. The policy solution for regions with steadily falling values of this indicator is to:

(i) plan for a slower rate of population growth, and/or

(ii) increase physical, community and social infrastructure investment to attract employment opportunities to the catchment.

Table 31 Change in the composite competitiveness indicator relative to working population, 2041 (2011 = 100)

SA2	2041 Score relative to 2011
Beaudesert	49
Tamborine - Canungra	131
Boonah	102

This indicator remains reasonably satisfactory in Tamborine-Canungra and in Boonah, but deteriorates seriously in Beaudesert, indicating a threat that population growth will outrun job-generation capacity in Beaudesert's catchment.

8. Conclusion

Australia and Queensland are entering a period where growth will be less and less driven by resources and low to medium technology production (as these activities will be more and more supplied by emerging economies or by the consumer via digital disruption) with high technology industry becoming an increasingly important driver of growth. If these considerations are not taken into account in the planning process, both overall growth and population growth will be lower than potential and the unemployment rate will increase steadily. An outcome which disperses economic activity in accordance with a population distribution resulting from incremental land development will not address the issues of scale and productivity while potentially creating dormitory suburbs with unsatisfactory employment prospects for their residents.

This report considers four scenarios. One scenario was the Primary Scenario with the outcomes for Local Government Areas (LGAs) determined by Queensland Government projections with the small area detail "filled-in" by NIEIR. The three other scenarios were prepared using a regional competitive indicators analysis of small area growth potential.

The regional competitiveness indicators reflect regional characteristics which benefit potential growth industries characterised by economies of scale and scope. As a LGA located on the fringe of the Brisbane Metropolitan Area, Scenic Rim scores poorly on these indicators. Given these limitations, and given its natural wealth in the form of soil and water, Scenic Rim historically developed a strong agricultural economy. Though it scores poorly on the competitiveness indicators, it actually scores quite highly in relation to other agricultural areas, and is in a position to take advantage of its location within SEQ and close to major urban areas. However, the natural attractions of its agricultural areas are causing agriculture to decline in favour of rural residential areas, peopled partly by commuters and partly by retirees.

Though market forces cannot be relied on to generate the employment growth envisaged in the Primary Scenario, it is possible that the population growth target may be achieved through retirement migration to rural residential developments. This may benefit construction employment over the short term but will not generate higher value sustained employment within the LGA.

It is also possible that Scenic Rim will become a residential area of choice for people who work well outside regular commuting distance, including those who drive in to Brisbane on selected days but otherwise work at home; those who drive into Brisbane and stay overnight, drive-in drive-out workers and fly-in fly-out workers. These forms of employment are not covered in the present report but may form part of the future economic base of the LGA. It should be remembered that high quality telecommunications are important for a future in which there is substantial part-time commuting to and from the strategic employment hubs elsewhere in SEQ.

Glossary

QTT – Queensland Department of Treasury and Trade

ABS – Australian Bureau of Statistics

ANZSCO – ABS Australian and New Zealand Standard Classification of Occupations

ANZSIC – ABS Australian and New Zealand Standard Classification of Industries

Place of Work (POW) – The address at which a person works. In the case of mobile occupations, this will generally be the place where the person signs-on; where there is no sign-on point it will be the residence.

Usual Resident Employment (URE) – Employment attributed to place of residence.

Population – Population as attributed to usual place of residence by the ABS in the Census.

Exports – Estimated value of sales by producers in a local area to purchasers located outside the area (place of residence for household purchasers, place of business for business purchasers).

Australian Statistical Geography Standard (ASGS) – Geographic areas defined by the ABS.

Productivity – In this report, refers to Gross Regional Product (QV) divided by labour input for a similar area and/or industry. At the SA2 level labour input is generally measured by number of jobs, but in more detailed calculations it is measured by hours worked.

Employed –

Catchment – The area readily accessible to and from a geographic location using readily-available means of transport, in this study generally a motor vehicle. The catchment is defined as all points within half an hour by motor vehicle plus a sliding-scale proportion of points up to an hour away. Where public transport is faster than driving, the public transport time is substituted.

Export serving economy – Generalised term for a local economy in which a high proportion of GRP (QV) derives from exports (QV). No precise definition.

Population serving economy – Generalised term for a local economy in which a high proportion of GRP derives from the demands of local households. Such an economy lacks exports and frequently depends on incomes generated by commuting, tax-financed transfers or asset incomes. No precise definition.

Per capita – a head, per person.

Blue collar – Generalised term for open-air and other occupations which are not drawn to major employment nodes such as Brisbane City. No precise definition.

White collar – Generalised term of office-based and other occupations which are drawn to major employment nodes such as Brisbane City. No precise definition.

Unemployment – Conceptually, a person is considered unemployed when they cannot find work at going wages and conditions. Though precise statistical definitions are available, they are not used in this study, which instead uses the ratio of employed residents to residents of workforce age as a proxy for unsatisfactory labour market conditions.

Labour Force – Conceptually, people available for paid work. This study uses 80 per cent of residents of workforce age as a proxy for the labour force.

Full Time – 35 or more hours per week.

Part Time – less than 35 hours a week.

Strategic Node – An employment location well placed to take advantage of economies of scale and scope, both within itself and by linkages to other locations. Linkages can involve commuting, sale and purchase of goods and services, personal contacts and information flows.

Empirical – derived from experience

Inequality – Economic inequality arises when individuals and/or households differ in income, access to resources and opportunities, etc. This study does not attempt to measure inequality.

Skilled – An occupation requiring training; in the upper ranks of the ANSCO hierarchy (QV).

Unskilled – An occupation requiring little or no training; in the lower ranks of the ANSCO hierarchy (QV).

Regional Economic Development Rules – Empirical relationships established over the past decade and documented in equations estimating the effect of factors influencing growth in employment and gross regional product.

Out-of-region market – Purchasers of goods and services located outside the local area – QV exports.

Primary Scenario –Projections of population and employment prepared by QTT, extended to local areas by NIEIR.

Scenario 1A – Projections of population and employment prepared by NIEIR using the QTT population target for SEQ but otherwise based on the regional economic development rules (QV).

Scenario 2 – Projections of population and employment prepared by NIEIR based on the regional economic development rules (QV).

Scenario 1 – Projections of population and employment prepared by NIEIR using the QTT population target for each SA2 but otherwise based on the regional economic development rules (QV).

Labour market – Conceptual term for the institutions involved in matching employers and employees, including the participants in such institutions.

Labour catchment – Catchment (QV) from an employer point of view; catchment from which workers can be recruited.

Working age population – population aged 18-64 plus 40 per cent of population aged 65 and over.

Gross Regional Product at factor cost – Valued added in a geographic area, possibly further defined by industry. In this study this comprises wages plus the mixed income (labour and capital returns) of non-corporate business (ABS definition); it excludes value added through corporate profits.