

ECONOMIC AND POPULATION REVIEW 2023

ISAAC LOCAL GOVERNMENT AREA

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1. INTRODUCTION

1.1 Background and Study Objectives

Foresight Partners Pty Ltd was commissioned by Isaac Regional Council to prepare this study. This report reviews economic drivers and provides population projections for the Isaac Local Government Area (LGA) to inform future planning. It is intended to supersede a similar report prepared in 2016 by Norling Consulting Pty Ltd.

The key elements/objectives are to prepare a report which:

- Reviews economic drivers relevant to the Isaac LGA and broad national and emerging trends which may influence regional economic growth and prosperity.
- Utilises the latest available population, workforce, and other relevant data to derive forecasts of the resident and non-resident working population in the region.
- Provides population projections that will be used to update the population assumptions component of Council's Local Government Infrastructure Plan (LGIP).
- Provides a temporal analysis highlighting similarities and differences from the findings of the 2016 Economic and Population Review study.

The purpose of this study is to provide Council with a thorough understanding of key factors which will influence economic growth and potential future population changes in the region.

1.2 Methodology

Several investigations were undertaken to inform this study, including the following:

- Review of the 2016 Economic and Population Review study.
- Consultation with key Council officers.
- Research and discussion of emerging industry trends where relevant to key employment sectors in the Isaac region. This included consultation with external sources such as senior mining engineers employed in Central Queensland.
- Examination of the latest Australian Bureau of Statistics (ABS) Census data to analyse changes in the demographic profile of the LGA and its sub-regions.
- Review of historic population growth and employment profiles of the region.
- Evaluation of non-resident workforce projections prepared by the Queensland Government Statistician's Office (QGSO) and preparation of long-range forecasts.
- Preparation of resident population projections at the sub-region level.
- Comparison of findings with the 2016 Economic and Population Review Isaac Region study prepared by Norling Consulting Pty Ltd.

These investigations form the basis of this report.

2. ECONOMIC PROFILE

This section provides an overview of the economic and population profile of the Isaac LGA to establish a baseline.

2.1 Value Added by Sector

Value added is a measure of business productivity equivalent to how productive each industry sector is at increasing the value of its inputs. It is defined as the value of sales minus the cost of inputs (intermediate consumption).

In 2020-21, the Isaac LGA generated an estimated \$13.176 billion value added, representing 3.1% of Queensland's total value added. Mining is by far the most dominant sector in the region in terms of value added, contributing 85.7% to the total value added.

By SA2, the most significant economic generator is Broadsound-Nebo (\$5.965b) followed by Moranbah (\$5.372b), and Clermont (\$1.835b).

Table 2.1: Value Added, Isaac LGA, 2020-2021

	Industry	Value Added (\$M)	% of total
1	Mining	11,287.2	85.7%
2	Construction	422.5	3.2%
3	Rental, Hiring & Real Estate Services	335.3	2.5%
4	Administrative & Support Services	208.4	1.6%
5	Agriculture, Forestry & Fishing	187.4	1.4%
6	Transport, Postal & Warehousing	122.7	0.9%
7	Manufacturing	104.9	0.8%
8	Public Administration & Safety	87.7	0.7%
9	Education & Training	73.1	0.6%
10	Accommodation & Food Services	62.5	0.5%
11	Health Care & Social Assistance	57.0	0.4%
12	Electricity, Gas, Water & Waste Services	55.0	0.4%
13	Retail Trade	43.4	0.3%
14	Other Services	39.2	0.3%
15	Wholesale Trade	38.0	0.3%
16	Professional, Scientific & Technical Services	32.7	0.2%
17	Financial & Insurance Services	8.5	0.1%
18	Information Media & Telecommunications	7.0	0.1%
19	Arts & Recreation Services	4.0	0.0%
	Total Industry Value Added	13,176.3	100.0%

Source: REMPLAN – Isaac Region.

2.2 Historic Population

Historically, the resident population of Isaac LGA has risen and fallen in response to employment opportunities in the region as illustrated in Table 2.2 and Table 2.3.

Recently, the LGA population declined by around 1,645 people between 2011 and 2016, falling from 23,188 residents to 21,543 residents. Since 2016, population growth has gradually recovered, increasing by around 885 people in the five years to 2021.

Table 2.2: Historic Population, Isaac LGA, 1996 to 2021

	1996	2001	2006	2011	2016	2021	Incr. 1996- 2021
Isaac LGA Population	20,397	18,169	20,372	23,188	21,543	22,426	2,029

Source: ABS Regional Population Growth, ABS Census, and Foresight Partners.

2.3 Employment Profile

Table 2.3 sets out the number of Isaac LGA residents that were employed at the time of each Census.

The number of employed residents in the Isaac LGA has fluctuated from 2006 to 2021 and has generally represented around 50% of the total population. From 2006 to 2021 the number of resident workers has increased by only 425 persons, with a notable peak in 2011 and a low in 2016.

Table 2.3: Employed Residents, Isaac LGA, 2006 to 2021

	2006	p.a. change	2011	p.a. change	2016	p.a. change	2021
Employed Residents	10,196	3.41%	12,059	-3.74%	9,964	1.29%	10,621
% of Population	50.0%		52.0%		46.3%		47.4%

Source: ABS Census, 2006-2021 via Tablebuilder, by place of usual residence.

2.3.1 Resident Employment by Industry

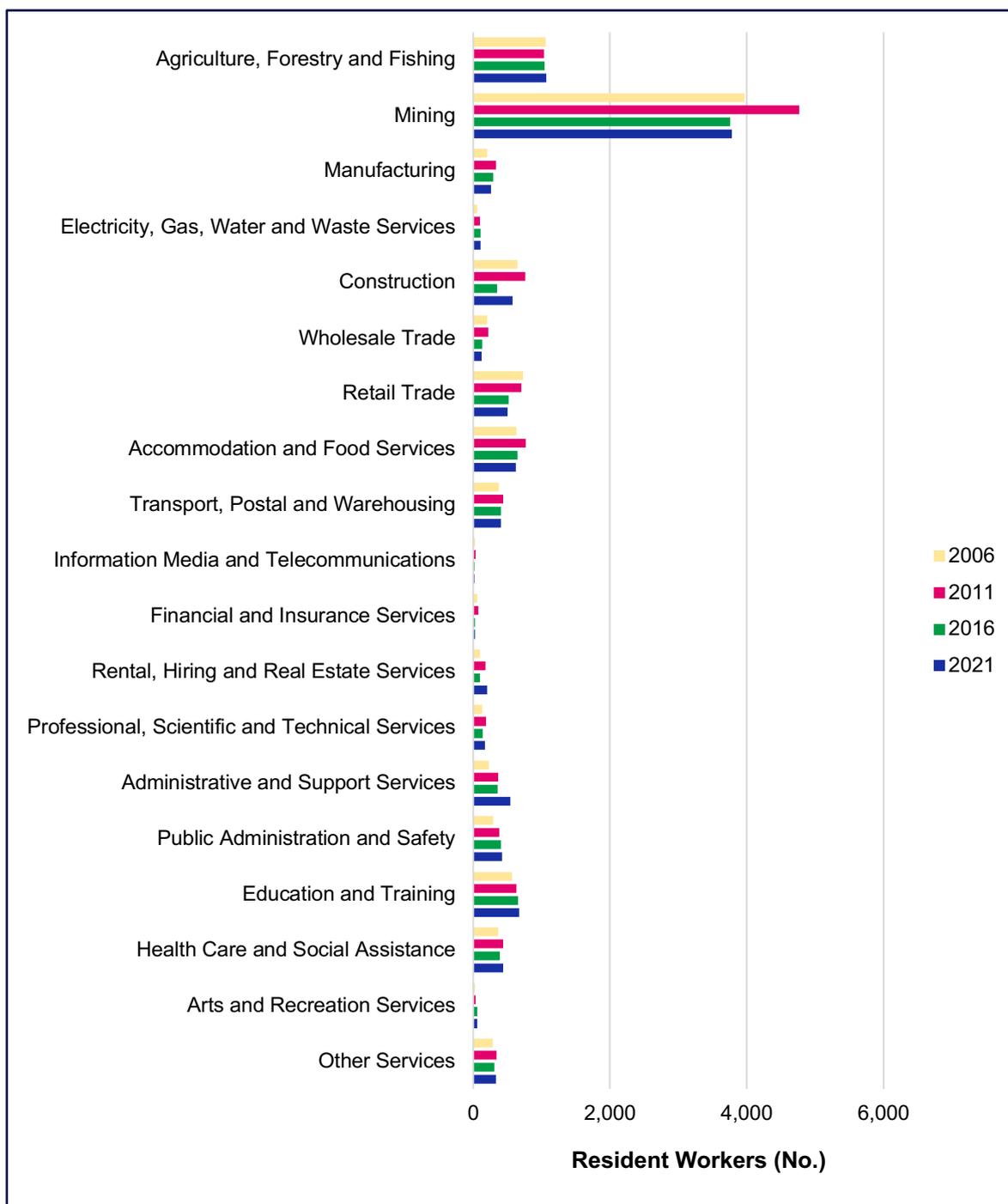
Resident employment by industry sector is set out in Figure 2.1 and Table 2.4. This data includes employed Isaac LGA residents regardless of where they work.

The mining sector accounts for the greatest number of employed residents at around 3,780 or 36% of employed residents. However, this number has fallen by around 20.6% (-983 employed residents) since 2011 (during the mining boom). For residents, the second greater employer is Agriculture, Forestry and Fishing which accounts for around 10% of total resident employment in 2021.

Notable growth in resident employment was observed in the sectors of Administrative and Support Services (+319), Public Administration and Safety (+128), and Rental, Hiring and Real Estate Services (+104) between 2006 and 2021.

Sectors such as Retail Trade, Wholesale Trade, and Construction experienced losses in resident employment of 221, 83, and 69 workers respectively between 2006 and 2021.

Figure 2.1: Resident Employment by Industry, Isaac LGA, 2006, 2011, 2016, 2021



Source: ABS Census via Tablebuilder. Note: not all residents work within Isaac LGA.

Table 2.4: Resident Employment by Industry, Isaac LGA, 2006 to 2021

	2006	2011	2016	2021	Change 2006-2021
Agriculture, Forestry and Fishing	1,062	1,032	1,042	1,066	4
Mining	3,966	4,763	3,759	3,780	-186
Manufacturing	202	335	292	259	57
Electricity, Gas, Water and Waste Services	55	100	104	108	53
Construction	645	757	347	576	-69
Wholesale Trade	203	223	133	120	-83
Retail Trade	725	702	515	504	-221
Accommodation and Food Services	630	769	649	621	-9
Transport, Postal and Warehousing	376	440	404	409	33
Information Media and Telecommunications	25	35	21	21	-4
Financial and Insurance Services	56	75	24	23	-33
Rental, Hiring and Real Estate Services	96	175	99	200	104
Professional, Scientific and Technical Services	132	191	142	167	35
Administrative and Support Services	226	362	359	545	319
Public Administration and Safety	294	382	407	422	128
Education and Training	569	632	657	668	99
Health Care and Social Assistance	368	435	386	435	67
Arts and Recreation Services	28	35	55	59	31
Other Services	282	344	309	331	49
Inadequately described	123	149	185	184	61
Not stated	133	123	75	123	-10
Total	10,196	12,059	9,964	10,621	425

Source: ABS Census, 2006-2021 via Tablebuilder, by place of usual residence. Note: not all residents work within Isaac LGA.

2.3.2 Jobs by Industry Sector

Table 2.4 sets out the number of jobs in the Isaac LGA, irrespective of the place of residence of workers, at each Census year between 2006 and 2021.

In 2021, the Mining industry employed 13,071 workers, constituting around 56% of the total jobs in the Isaac Region. Despite 2011 being close to the peak of the 'mining boom', a substantial number of Mining jobs were added (2,292) between 2011 and 2021, representing a 21% increase in employment levels.

This expansion persisted even as the Isaac residents employed in this sector declined by ~21% highlighting the growing prevalence of FIFO (Fly-in-Fly-Out) and DIDO (Drive-In-Drive-Out) workers over local residents within mining operations.

While well-behind Mining, the sector with the next greatest number of jobs was Construction supplying 1,600 jobs in 2021. As evident in the notable fluctuations in employment levels between 2006 and 2021, Construction employment is cyclical, and moves in response to the commencement of major projects.

Several industries experienced a minor decline in the number of jobs between 2006 and 2021 such as Retail Trade (-182) and Financial and Insurance Services (-33).

Notable increases in jobs in Administrative and Support Services (+956) as well as Rental, Hiring and Real Estate Services (+272) emerged between 2006 and 2021.

Table 2.5: Jobs by Industry Sector, Isaac LGA, 2006 to 2021

	2006*	2011	2016	2021	Change 2006-2021
Agriculture, Forestry and Fishing	1,060	915	1,081	1,106	46
Mining	6,369	10,779	11,919	13,071	6,702
Manufacturing	228	468	417	440	212
Electricity, Gas, Water and Waste Services	53	111	145	139	86
Construction	1,064	1,786	665	1,600	536
Wholesale Trade	185	261	186	192	7
Retail Trade	710	664	514	528	-182
Accommodation and Food Services	702	1,068	902	926	224
Transport, Postal and Warehousing	397	498	555	614	217
Information Media and Telecommunications	14	35	25	25	11
Financial and Insurance Services	59	80	27	26	-33
Rental, Hiring and Real Estate Services	120	186	133	392	272
Professional, Scientific and Technical Services	195	307	217	213	18
Administrative and Support Services	220	478	622	1,176	956
Public Administration and Safety	296	416	458	499	203
Education and Training	547	609	762	675	128
Health Care and Social Assistance	359	433	457	524	165
Arts and Recreation Services	25	37	59	61	36

	2006*	2011	2016	2021	Change 2006-2021
Other Services	336	497	401	450	114
Inadequately described	127	138	287	315	188
Not stated	7	915	1,081	1,106	244
Total	13,073	19,769	20,022	23,223	10,150

Source: ABS Census 2006-2021 via Tablebuilder - Counting Employed Persons, by Place of Work. *2006 data comprises an aggregate of Broadsound, Belyando, Nebo LGA data. Note: includes non-resident workers.

2.3.3 Jobs Balance

Jobs Balance is defined as the number of jobs in an area divided by the resident workforce of the same area. A rate of 100% implies that there is the same number of jobs as there are resident workers, regardless of where workers filling those jobs actually reside. A rate below 100% implies a net outflow of workers from an area, and a rate above 100% implies that there are more jobs in an area than there are resident workers resulting in a net inflow of workers.

Table 2.6 sets out the jobs balance in the Isaac LGA and other regions for comparison at 2016 and 2021. Isaac's 2021 jobs balance was 218.48% indicating that a large number of workers from outside Isaac LGA travel to the region for work.

Comparatively, regions such as Central Highlands, Mackay, Rockhampton and Whitsunday have a lower jobs balance. Isaac's job balance increased by 17.4 percentage points from 2016 to 2021, indicating that the number of jobs grew faster than the number of employed residents.

Table 2.6: Jobs Balance, Isaac and nearby LGAs, 2016 and 2021

Jobs Balance	Isaac LGA	Central Highlands LGA	Mackay LGA	Rockhampton LGA	Whitsunday LGA
2016	201.06%	119.60%	86.67%	106.56%	96.29%
2021	218.48%	126.61%	88.26%	105.79%	94.95%

Source: ABS Census via Tablebuilder, 2016, 2021.

2.3.4 Employment Self-Sufficiency

Also known as job containment, employment self-sufficiency is defined as the number of people who live and work in an area, divided by the total number of jobs in that area. It is interpreted as the percentage of jobs filled by local residents.

A rate of 100% (the maximum) implies all jobs in the area are filled by residents of the area, and there is no inflow of workers from other areas. A rate less than 100% implies an inflow of workers residing elsewhere are filling some of the jobs in the area.

Table 2.7 sets out employment self-sufficiency in the Isaac and nearby LGAs and Figure 2.2 illustrates this metric by industry sector.

Isaac's employment self-sufficiency level was around 41% in 2021 indicating a large inflow of non-resident workers into the region. The greatest drivers of this inflow were from the Mining (26.3% self-sufficiency) and Construction industries (28.7% self-sufficiency).

Other sectors with employment self-sufficiency levels below 50% include Administrative and Support Services (39.63%), Wholesale Trade (45.31%), and Rental, Hiring and Real Estate Services (45.92%). It is likely that the strong local presence of the mining industry has flow-on effects that are contributing to the low employment self-sufficiency levels in these sectors (and others).

The employment self-sufficiency level is far higher in the nearby regions of Central Highlands (71.92%), Mackay (96.23%), Rockhampton (79.83%) and Whitsunday (89.22%) due to the lower prevalence of FIFO/DIDO workers.

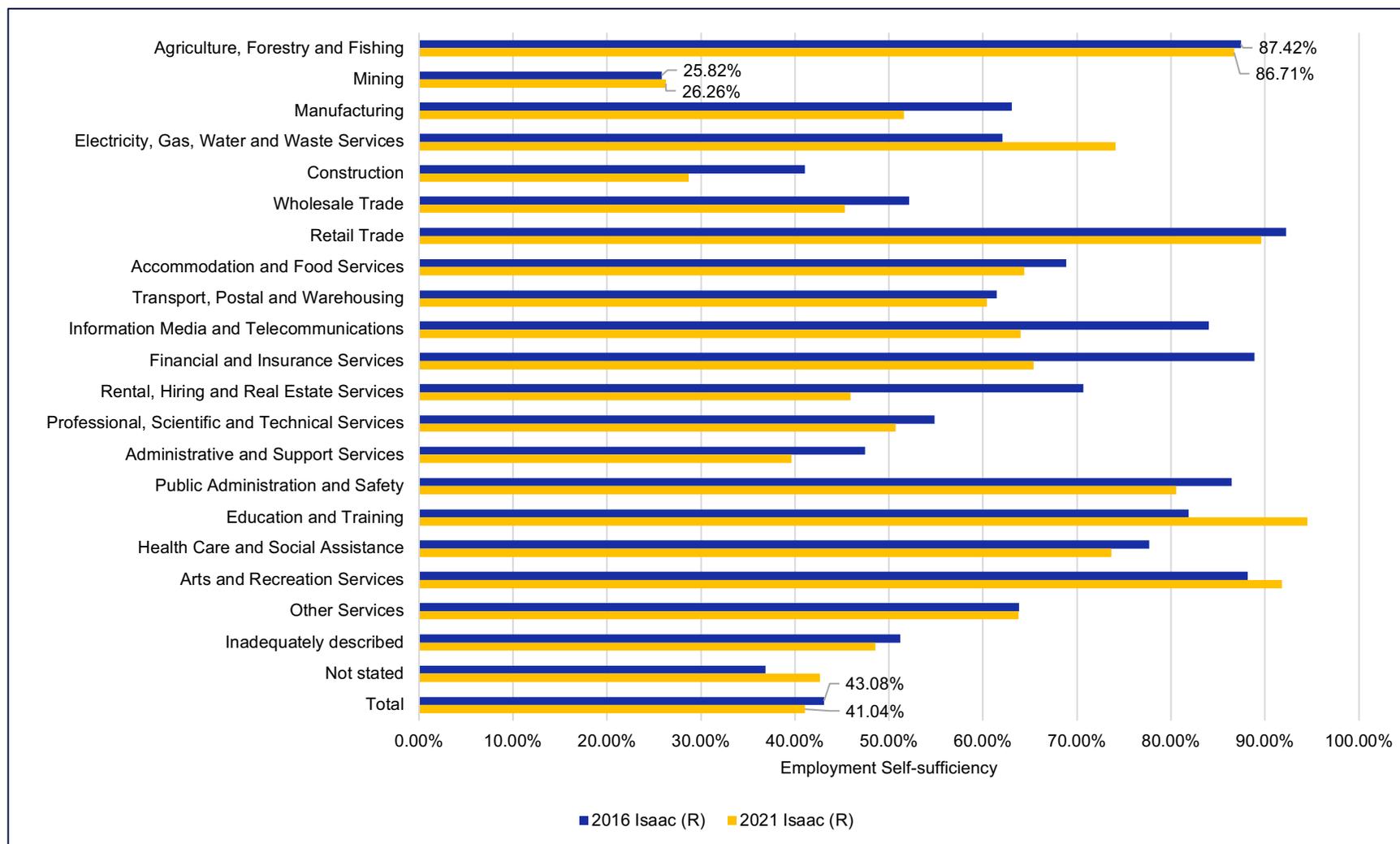
Isaac's employment self-sufficiency level fell by just below 2 percentage points from 2016 to 2021. Sectors including Professional, Scientific and Technical Services (-24.8 percentage points), Rental, Hiring and Real Estate Services (-23.5 points), and Information Media and Telecommunications (-20 points) experienced the greatest decrease in employment self-sufficiency. The Education and Training and Electricity, Gas, Water and Waste Services sectors experienced the greatest increases (+12.6 points and +12.0 points respectively).

Table 2.7: Employment Self-Sufficiency, Isaac LGA, 2016 and 2021

	Isaac LGA	Central Highlands LGA	Mackay LGA	Rockhampton LGA	Whitsunday LGA
2016	43.08%	71.92%	96.27%	78.12%	88.91%
2021	41.04%	70.59%	96.23%	79.83%	89.22%

Source: ABS Census via Tablebuilder, 2016, 2021.

Figure 2.2: Employment Self-Sufficiency by Sector, Isaac LGA, 2016 and 2021



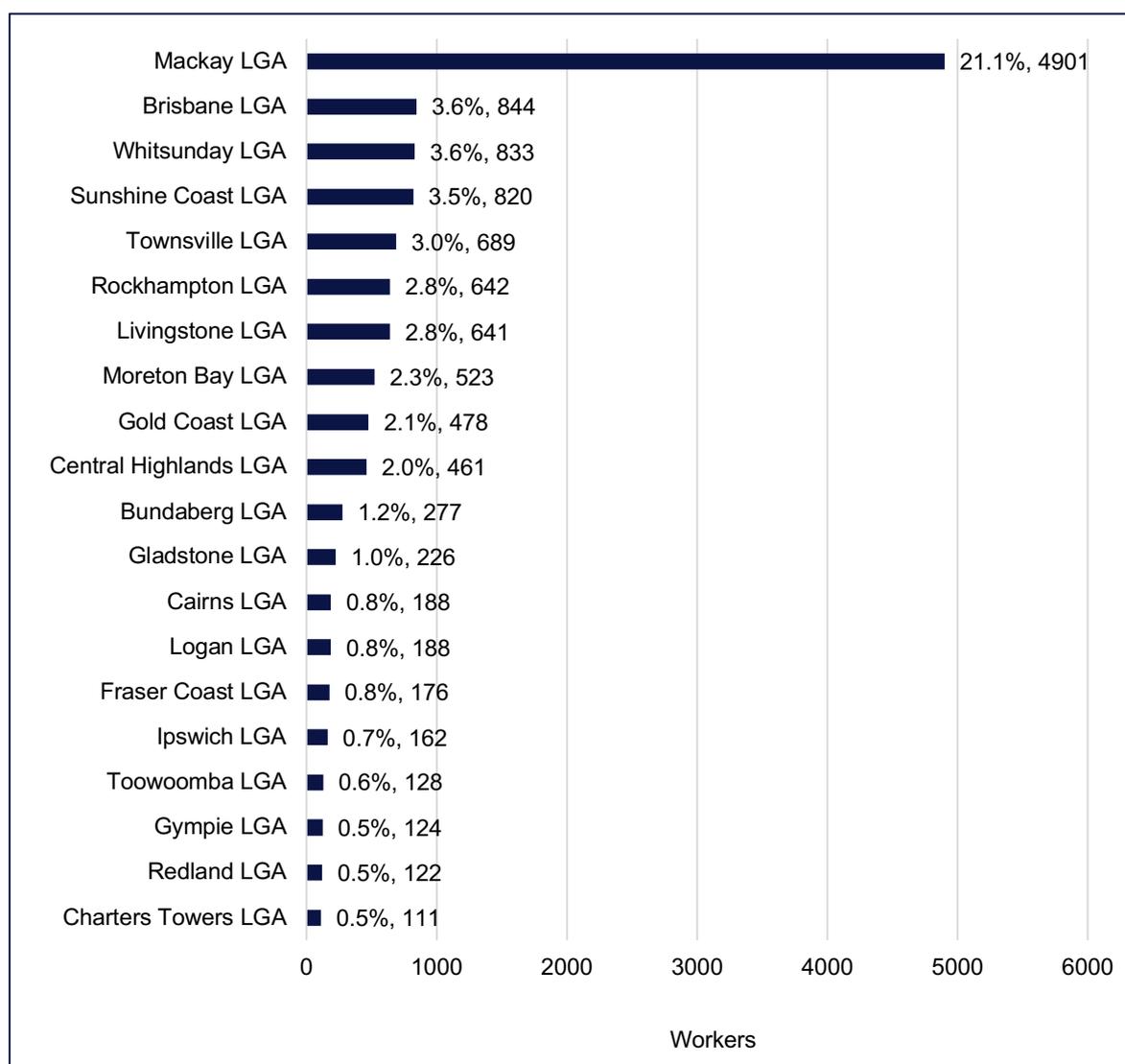
Source: ABS Census via Tablebuilder, 2016, 2021.

2.3.5 Non-resident Worker Origins

As discussed in the previous section, the non-resident workforce in the Isaac LGA is significant. Figure 2.3 below sets out the top 20 places of residence (LGAs) for non-resident workers employed in the Isaac LGA as at the 2021 Census. Key insights revealed from this analysis include:

- Around 41% of persons employed in the Isaac LGA also reside in the Isaac LGA.
- Around 21.1% of Isaac LGA’s workers reside in Mackay LGA, accounting for the single greatest inflow by far.
- Around 13.5% of Isaac LGA’s workers reside in SEQ including the Brisbane, Sunshine Coast, Gold Coast, Moreton Bay, Redland, and Logan LGAs. This has grown from 10.9% from SEQ in 2016.

Figure 2.3: Top Queensland LGAs of Residence of Isaac LGA Non-resident Workers, 2021



Source: ABS Census 2021 via Tablebuilder.

3. KEY FACTORS INFLUENCING POPULATION GROWTH

3.1 The Mining Industry

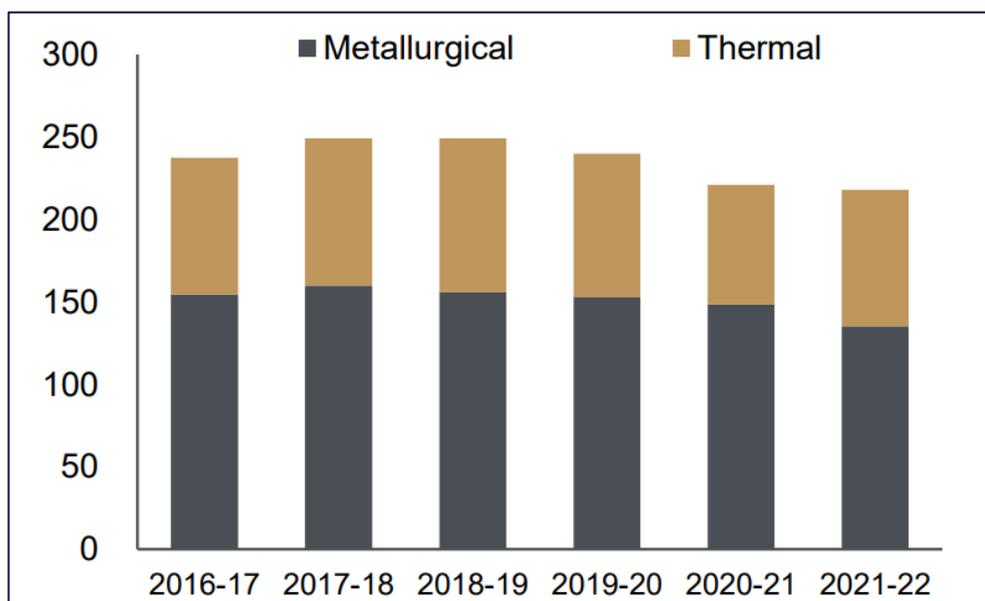
The mining industry (specifically coal mining) is a key driver of the Isaac Region’s economy.

Mining accounts for around 56% of jobs in the Isaac LGA as of August 2021 and the number of jobs in the sector has more than doubled since 2006. Driven by the mining sector, the Isaac LGA has a very high proportion of jobs filled by non-resident workers (~59% in 2021), among the highest of any LGA in Queensland.

At the time of writing, there are 32 active coal mines (Appendix 3), four related infrastructure operations and one gas operation within the Isaac Region. It is of note that the Broadlea and Millennium coal mines have recommenced operations, and three new mines (Aquila, Carmichael and Vulcan Mine complex) had recently commenced production (since June 2022)¹. Three mines (Broadmeadow East, Ironbark No.1 and Olive Downs) commenced operations between June 2022 and November 2023.

At a state level, it is important to recognise that metallurgical (met) coal (also known as coking coal and used in steel production) represented around 62% of the saleable coal produced in Queensland in 2021-22 (217.9 Mt total), with the remainder being thermal coal (Figure 3.1). In the Isaac region, the majority of coal being produced is met coal, which is some of the highest quality met coal in the world (and therefore highly sought after).

Figure 3.1: Queensland Saleable Coal Production (Mt)



Source: Department of Resources Coal Industry Review Statistical Tables.

¹ Bowen Basin Resource Industry Workforce 2022

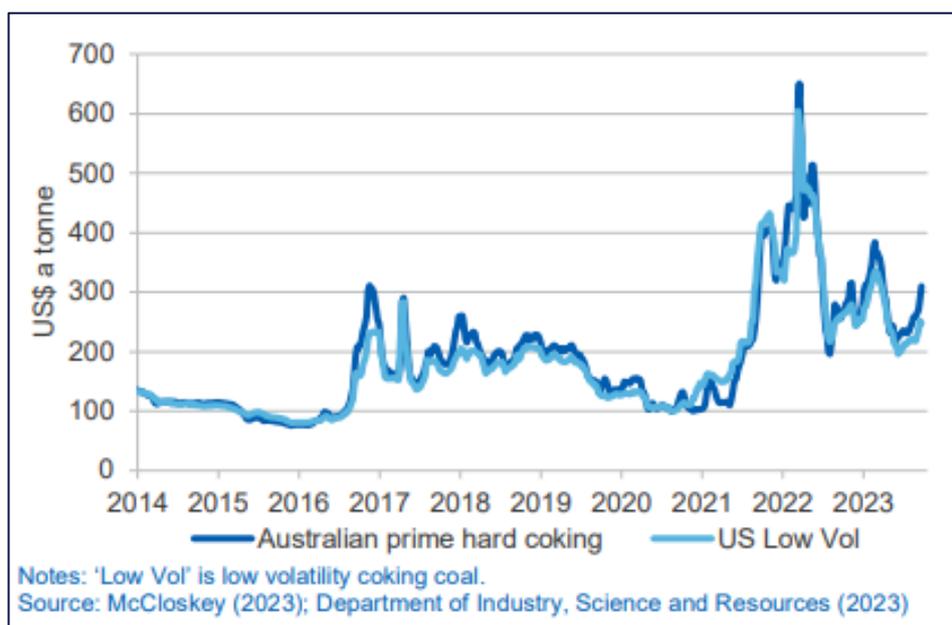
3.1.1 Historic and Future Coal Prices

The global coal price was relatively stable between 2013 to 2016. During this period, China purchased roughly a quarter of Australian exports of met and thermal coal². Some turbulence in prices was observed between 2017 and 2020. In 2020, global demand temporarily decreased due to reduced energy consumption and economic uncertainties during the beginnings of the COVID-19 pandemic. China also placed trade restrictions on Australian coal imports which have since been lifted in early 2023.

In 2021, the coal price (both met and thermal) began to rise rapidly as global demand rebounded due to the unanticipated economic recovery coupled with disruptions to coal supply chains and workforce shortages (Figure 3.2 and Figure 3.3).

The Russia-Ukraine conflict exacerbated coal (and other commodity) price pressures leading to all-time highs. The premium hard coking (metallurgical) coal spot price peaked at US\$670.50/t in March 2022, while the premium thermal coal spot price peaked at US\$457.80/t in September 2022³. Since then, metallurgical coal spot price was \$312/t⁴ in September 2023 and the thermal coal spot price was US\$142/t in October 2023⁵.

Figure 3.2: Metallurgical Coal Prices, Australian vs USA



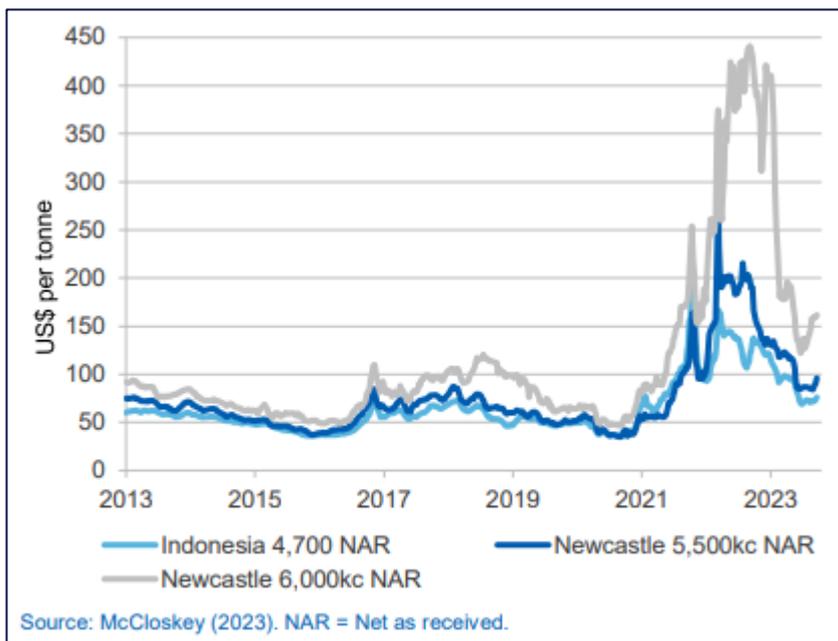
² <https://theconversation.com/chinas-demand-for-coal-is-set-to-drop-fast-australia-should-take-note-181552>

³ QLD Treasury, Queensland's Coal Industry and Long-term Global Coal Demand, Nov 2022.

⁴ Australian premium coking coal prices rise sharply d-o-d on availability concerns* | SteelMint

⁵ https://ycharts.com/indicators/australia_coal_price

Figure 3.3: Thermal Coal Prices, Australian vs Indonesian



Future Coal Prices and Demand

Following record highs, the metallurgical coal price is expected to normalise in the short-term but remain above the 2015-20 average (Figure 3.4). Demand for Australian metallurgical coal exports are expected to remain strong to 2028 due to its high quality and healthy production levels (Figure 3.5).

Due to the very high quality of met coal in the Isaac region, production is expected to remain strong for the foreseeable future and likely to be among the longest operating coal production areas.

With emerging global policies to increase reliance on renewable energy sources, demand for thermal coal is expected to wane over the long term. In particular, China is expected to demand less Australian coal imports due to policies to reduce emissions, increased usage of recycled steel, and greater reliance on Russian and Mongolian coal [2 and 6].

Domestically, the Queensland Government’s Energy and Jobs Plan is expected to lead to reduced demand for thermal coal over the long term. With this plan the Queensland Government aims to operate all publicly owned coal-fired power stations as ‘clean energy hubs’ and achieve 80% renewable energy by 2035. Consequently, the usage of thermal coal in Australia is expected to decrease.

⁶ <https://www.mining-technology.com/news/china-lifts-australia-coal-ban/?cf-view>

Figure 3.4: Forecast Coal Prices

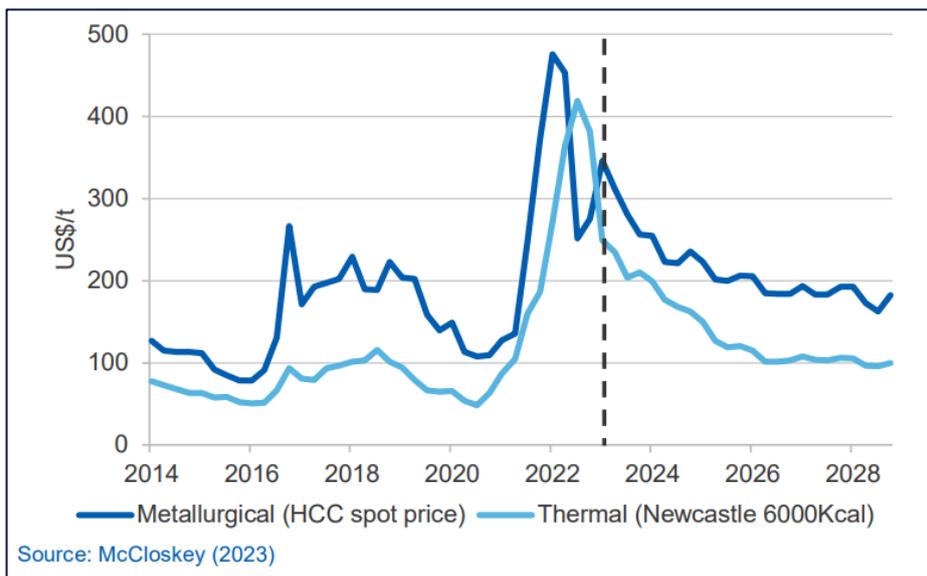
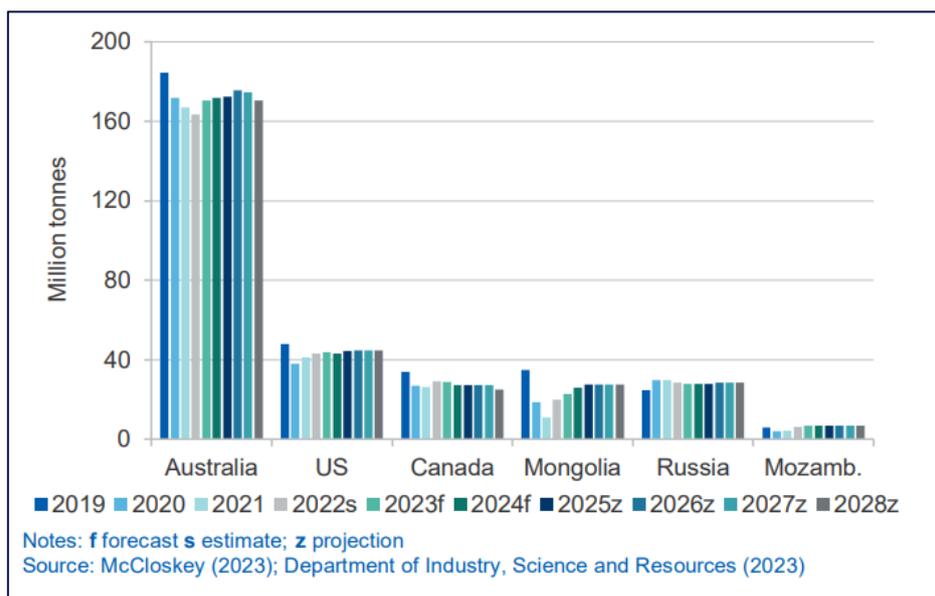


Figure 3.5: Forecast Metallurgical Coal Exports



3.1.2 New Mining Projects in the Isaac Region

As mentioned in the 2016 Economic and Population Review study, there are several mining projects which may influence, positively or negatively, mining output and labour requirements in the Isaac region.

These include (but are not limited to):

- **Blair Athol** coal mine located in Clermont was acquired by TerraCom in 2017. Blair Athol exports 2.2Mt of thermal coal per annum⁷ and employed 185 workers as at 31 March 2021⁸. The Mine's life was extended another 10 years in August 2021⁷.
- **Broughton** was a proposed coal mine 27km north-west of Nebo. However, the proposal was withdrawn after U & D Mining Industry (Australia) Pty Ltd failed to submit an Environmental Impact Statement (EIS) in 2017.
- **Byerwen** mine located 20km west of Glenden commenced operations in 2017 and is expected to produce up to 10Mt of met coal per annum. It has an expected life span of 50 years and could potentially support up to 920 employees at peak production. The mine is owned by QCoal. Under legislative changes, QCoal will be granted a mining lease to operate a temporary workers camp for its Byerwen coal mine. However, the company will be required to move workers out of the camp and progressively house them in Glenden from 2025, with no workers to remain at the camp after 2029⁹.
- **Codrilla Coal Mine Project** located 45 km south-east of Nebo was cancelled after gaining approval in 2009. Peabody Energy sold the property as a large-scale cattle farm in 2022¹⁰.
- **Eagle Downs** is a proposed met coal mine located 25km south of Moranbah with projected output of 4.5Mt to 5Mt p.a. and around 700 workers¹¹. It remains stagnant in 2023 with South32 seeking to divest their 50% interest¹². With no development over the last 2 years, its future is uncertain.
- **Hillalong Coal** met coal mine, owned by Bowen Coking Coal is located 10km north of Burton. The Hillalong project is currently in an exploration stage and is estimated to produce 106Mt (lifetime)¹³. This mine has an expected life of 17 years and could employ approximately 436 workers¹⁴.
- **Ironbark No. 1** met coal mine formerly known as the Ellenfield Coal Project is located 35 kilometres north-east of Moranbah. Ironbark No. 1 produces an average

⁷ <https://terracomresources.com/our-business/australian-operations/>

⁸ https://www.daf.qld.gov.au/__data/assets/pdf_file/0004/1736878/21-469b.pdf

⁹ <https://statements.qld.gov.au/statements/98523>

¹⁰ <https://www.afr.com/property/commercial/former-rich-lister-jim-gorman-pays-27m-for-peabody-cattle-farm-20220527-p5ap34>

¹¹ <https://www.aquilaresources.com.au/projects/eagle-downs-metallurgical-coal-project>

¹² <https://www.mining.com/south32-hasnt-found-buyer-for-eagle-downs-coal-project/>

¹³ <https://www.investi.com.au/api/announcements/bcb/2ddfc483-a03.pdf>

¹⁴ <https://www.qld.gov.au/environment/management/environmental/eis-process/projects/completed/hillalong-coal-project>

of 2.5Mt ROM coal per annum and has an average operational workforce of 271¹⁵. The life span of the mine is approximately 20 years¹⁶.

- **Isaac Downs** met coal mine (also in the Isaac Plains Complex) is located 7km east of Moranbah and owned by Stanmore. Stanmore acquired mining leases and began project development in FY 2021. The mine is projected to yield approximately 35Mt of run-of-mine (ROM) coal over its lifespan of 16 years¹⁷ and employ approximately 550 workers¹⁸ (250 construction and 300 operational).
- **Isaac Plains** met coal mine recommenced operations in 2016 and has transitioned operations Isaac Plains East from 2018-19. Mining here ceased in early 2022¹⁹.
- **Lake Vermont Meadowbrook Project** proposes an extension to the existing Lake Vermont mine located 30km northeast of Dysart. This project involves the development of an underground longwall and open cut mine pits. The proponent (Bowen Basin Coal Pty Ltd) is currently in the “responding to submissions” stage of the EIS assessment process. The project will add 20-25 years to the life of the mine and around 5.5Mt of met coal will be produced per annum²⁰. Moreover, the project will create 350-400 operational and approximately 200 construction jobs²⁰.
- **Moranbah South** coal project is a proposed met mine near Moranbah. It was intended to commence operation in 2017 but was paused. Its potential is being reconsidered in 2022²¹ and it is projected to employ around 1,300 operational workers if developed²².
- **New Lenton Coal Project** was a proposed mining project 65km north of Moranbah. However, the proposal was withdrawn in 2018 after New Lenton Coal Pty Ltd failed to submit an EIS.
- **Newlands** thermal and met coal mine near Glenden closed in 2023 and has commenced the rehabilitation and closure phase²³.
- **Norwich Park** coal mine ceased operations in 2012 and has not been reopened since.

¹⁵ https://www.qld.gov.au/__data/assets/pdf_file/0019/108352/ellensfield-eis-assessment-report.pdf

¹⁶ https://www.miningnewsfeed.com/reports/Irionbark_1_Coal_Mine_Project_Initial_Development_Plan_10252017.pdf

¹⁷ <https://stanmore.net.au/assets/operations/>

¹⁸ <https://www.qld.gov.au/environment/management/environmental/eis-process/projects/completed/isaac-downs-project>

¹⁹ Stanmore Annual report 2021.

²⁰ <https://www.qld.gov.au/environment/management/environmental/eis-process/projects/current-projects/lake-vermont-meadowbrook-project>

²¹ <https://industryqld.com.au/anglo-revisits-moranbah-south-mine-proposal/>

²² <https://www.mininglink.com.au/mine-details/moranbah-south>

²³ <https://www.glencore.com.au/operations-and-projects/coal/current-operations/newlands-coal>

- **Olive Downs** is a met coal mine project recently commenced at a site located 40km southeast of Moranbah. It is expected to employ around 1,000 workers at full production (up from 500-700 workers during construction)²⁴.
- **Red Hill** met coal mine, located 20 km north of Moranbah was approved in 2015 and was expected to produce around 14Mt of coal per annum²⁵. However, the project has since been shelved by BHP.
- **Saraji East Mining Lease Project** proposes the development of an underground met coal mine. The mine will be located approximately 30km north of Dysart and produce 11Mt of mine coal per annum²⁶. The proponent, BM Alliance Coal Operations, is currently in the responding to submissions stage of the EIS assessment process. The mines lifespan will be approximately 25-30 years and create 1,000 construction and 500 operational jobs²⁶.

3.1.3 Technological Advancements in the Mining Industry

A range of technological advancements and emerging trends will shape the future of the mining sector. These are discussed at a high level below.

Automation, Robotics, and Remote Operation

The implementation of automation, robotics, and remote operation technologies can provide benefits such as improving safety and productivity. Moreover, these technologies typically decrease long-term operational costs and the variability of projects.

Other implications of remote and/or autonomous operations include:

- Improved safety conditions by reducing human presence in hazardous conditions.
- The potential to dramatically decrease labour costs as well as operational and capital expenditures (i.e. predictive maintenance through improved monitoring and sensors).
- Reduced on-site workforce and, in turn, reduced need for some supporting infrastructure and lower transportation costs.
- Boosted productivity and minimisation of collisions.

The adoption of autonomous equipment such as hauling trucks and drillers has rapidly increased over recent years. Of the total of around 460 autonomous haul trucks in surface mines globally in 2020, Australia accounted for around 80% of these²⁷. The number of autonomous trucks in Australian surface mines has increased dramatically from 381 in 2020

²⁴ <https://www.worldcoal.com/coal/08042022/pembroke-resources-breaks-ground-at-olive-downs/>

²⁵ https://www.gem.wiki/Red_Hill_coal_project#cite_note-3

²⁶ <https://www.qld.gov.au/environment/management/environmental/eis-process/projects/current-projects/saraji-east-mining-lease-project>

²⁷ <https://www.mining-technology.com/comment/australia-autonomous-haul-trucks-use/>

to 706 in May 2022²⁸. Examples in the Isaac region include Riverside Goonyella (BMA) which operates a fully automated haulage fleet and Olive Downs (Pembroke and Thiess) which uses automated haulage and drilling²⁹.

Internet of Things (IoT)

The Internet of Things is a network of devices with the ability to exchange data with each other. Recent technological innovation has enabled the implementation of low-cost networks between mining sensors, equipment, and machinery. This increase in data availability and analysis facilitates superior decision-making processes and the efficiency of equipment and the performance of tires and components.

Data Analytics and Artificial Intelligence (AI)

Mining companies are able to obtain a vast amount of data relating to machine performance and production processes due to advancements in digitalisation, the IoT and real time data capture technologies. This data can be utilised to improve the decision-making process by applying advanced analytical techniques. Moreover, artificial intelligence can be employed to develop predictive models to improve equipment maintenance schedules resulting in increased productivity. AI also possesses the capability to enhance prospection and exploration activities by decreasing data processing costs and increasing accuracy.

Digital Twinning

Digital Twinning involves the fabrication of a digital model of a physical mining operation. This is achieved by utilising real-time sensor data, geological and engineering information. Such simulations can be used to predict potential failures or decreases in equipment performance/efficiency. Thus, this technology has the potential to reduce operational costs and improve the planning of mining operations.

3.1.4 Future Outlook and Implications

Online research along with structured discussions held with senior mining engineers (employed in Central Queensland coal mines) informed the following evaluation of the future outlook and drivers of the Queensland coal mining sector (generally and within the Isaac region).

Key insights include:

- The Queensland Government's recent increase to coal royalties is perceived to influence mining investment decisions in Central Queensland. Due to the combination of royalty policy adjustment (June 2022³⁰) and high commodity prices, the Queensland Government attracted a record \$18.3 billion of coal and LNG

²⁸ <https://www.mining-technology.com/comment/australia-autonomous-haul-trucks/>

²⁹ At The Coal Face: Nov 2023

³⁰ <https://statements.qld.gov.au/statements/95467>

royalties and land rents in 2022-23, around double that recorded in 2021-22³¹. It is reported that Queensland is the highest coal taxing environment globally³².

- Recently, the BHP CEO publicly stated that “*we will not be investing in any further growth in Queensland; however, we will sustain and optimise our existing operations*”³³ citing the impact of increased coal royalties. Furthermore, in October 2023, BHP announced the divestment of its Blackwater (not in Isaac LGA) and Daunia (40km from Moranbah) coal mines (held under BMA). This is particularly important given the scale and presence of BHP (and subsidiaries) in Isaac LGA (and Queensland) and its ability to ‘weather the storm’ during periods of low coal prices relative to smaller, and perhaps more vulnerable, companies.
- Greater reliance on renewable energy sources in Australia (and globally) is expected to lessen demand for thermal coal over the long term. The State Government has committed around \$19b over four years in its Energy and Jobs Plan (2022) and in effort to deliver its target of 80% renewable energy supply by 2035, up from 25% currently³⁴.
- ‘Global thermal coal imports are likely at their peak’ is the message from Australia’s Department of Industry Science and Resources publication *Resources and Energy Quarterly* (March 2023). However, there may be a short to medium-term opportunity for Australia to focus on increasing thermal coal exports to India (rather than Japan, South Korea, Taiwan historically), subject to the Indian Government’s policy ambitions to increase reliance on domestic production and even begin coal exports³⁵.
- Currently, coal mining productivity in the region is low (cost price to produce 1 tonne). This is largely due to a lack of supply of skilled/experienced workers and high wages for lower skilled workers, meaning that mining operations must spend more on labour costs to produce the same amount of coal (all other variables held constant). In the current climate of high coal prices, this is feasible, but may not be sustainable subject to decreases in the coal price (and other factors).
- The next phase anticipated in the Queensland coal mining industry is a period focusing on improving productivity with the potential for lower capital expenditure (e.g. less expansions/new mines) and possible cuts to the workforce (where feasible) or a push to increase efficiency.
- Currently, manned fleet operations (haulage) are slightly more productive than automated fleets but are at their ceiling. In the medium term, automated fleets are expected to out-perform manned fleets (in productivity) and will become the status

³¹ <https://www.theguardian.com/commentisfree/2023/jun/16/a-coal-royalties-revamp-delivered-a-record-surplus-in-queensland-heres-why-nsw-must-follow-suit>

³² <https://www.coalage.com/breaking-news/bhp-queensland-is-a-sovereign-risk/>

³³ BHP Operational Review for the year ended 30 June 2023.

³⁴ <https://statements.qld.gov.au/statements/98416>

³⁵ *Australian government forecasts peak thermal coal exports in three years but further downside risks for Asian seaborne market remain*, iefea.org, published April 2023.

quo. Despite some Central Queensland coal mines having already transitioned to automated operations, new investment in automated fleets in Isaac LGA may be hampered by the reduced competitiveness of Queensland coal operations due to royalty increases.

- The proposed ‘same job same pay’ or ‘close the loopholes’ changes to workplace laws are expected to be tabled in parliament prior to 2024. The proposed changes would entitle contractors to the same rate of pay as full-time workers including base rates, bonuses, incentive-based payments, allowances and overtime. The reliance on contract labour by the mining sector implies that labour costs may increase substantially if the changes were passed³⁶. This is a key concern of mining firms. On the other hand, unions say that the changes would incentivise mining companies to provide more full-time positions, thereby providing job security to workers.

The mining sector in the Isaac region is a significant economic and employment generator but is not without its challenges. It can be impacted by a range of external economic factors and policy settings.

Based on the findings of this assessment, we expect that coal mining will remain dominate in the Isaac regional economy for some time. Technological and automation improvements are likely to generate the most significant changes to the regional workforce over the medium to long term.

3.2 The Agricultural Industry

The agricultural sector accounted for 4.8% of all jobs in the Isaac LGA in 2021 and is the second greatest employer of local residents after mining. Agricultural production for the Isaac Region was \$577 million as of 2021, with livestock accounting for 76.7% and crops representing 23.3%³⁷.

The Isaac Region Industry Profile recognises agriculture (and related sectors) as key industries for the region to complement the significant value added generated by the mining sector. Climate change and related policy settings are likely to have implications for the region’s agriculture sector, likely over the longer term.

Crops

Broadacre crops made a significant contribution to the Isaac region’s agricultural gross value, totaling approximately \$128.1 million in 2020-21. Among these crops, sorghum for grain comprised the largest share at 39%. Other broadacre crops with significant proportions included pulses and legumes for chickpeas (24%), sugar cane (20%) and wheat for grain (14%)³⁷.

Queensland winter crop production is forecast to decline by 28% in 2023-24 due to below average levels of rainfall and soil moisture levels as well as a poor climate outlook according

³⁶ <https://smallcaps.com.au/mining-industry-labels-new-same-job-same-pay-ir-proposal-dangerous/>

³⁷ Value of Agricultural Commodities Produced by Local Government Area - 2020-21.

to the Department of Agriculture, Fisheries and Forestry (ABARES). However, change in total crop production still lies 3% above the 10-year average³⁸.

Summer crop production is projected to decline by 36% in Queensland to around the 10-year average. Sorghum production is forecast to decline by 38% due to below average soil moisture levels and rainfall.

Livestock

Global demand for Australian beef is anticipated to remain at current levels in 2023-24 as declining demand in Japan and the Republic of Korea balances rising demand from China and the US⁴⁰. While global demand for Australian sheep meat is expected to increase as increased demand from China, the Middle East and the Republic of Korea will outweigh decreased demand from the US⁴¹.

Queensland meat prices reached historic heights in FY 2022 however, have fallen in FY 2023 and are predicted to further decline in 2024³⁹. This decline in prices is due to an increase in the supply of Australian meat production from livestock resulting from drier seasonal conditions^{40,41}.

A breakdown of changes in the prices of steer, mutton and lamb is provided below:

- Queensland steer prices increased by 64% from 319 cents/kilogram (c/kg) in FY 2020 to 524 c/kg in FY 2022, before falling by 20% to 419 c/kg in FY 2023.
- The price of mutton in Queensland fell by 51% from 523 c/kg in FY 2020 to 254 c/kg in FY 2023.
- The price of lamb in Queensland fell by 28% from 783 c/kg in FY 2020 to 567c/kg in FY 2023.
- Queensland steer, mutton and lamb prices are forecast to decrease by a further 33%, 50% and 52% respectively from FY 2023-24.

Biosecurity continues to pose a significant risk to the livestock industry. Indonesia recently, on 28 July 2023 reported cases of lumpy skin disease from Australian exported cattle. Consequently, Indonesian and Malaysian Governments suspended exports from Australian cattle facilities. Lasting export suspensions could significantly impact the Australian cattle industry.

Trade

³⁸ <https://www.agriculture.gov.au/abares/research-topics/agricultural-outlook/australian-crop-report/queensland>

³⁹ National Livestock Reporting Service

⁴⁰ <https://www.agriculture.gov.au/abares/research-topics/agricultural-outlook/beef-and-veal#value-of-exports-to-rise-with-higher-export-volumes>

⁴¹ <https://www.agriculture.gov.au/abares/research-topics/agricultural-outlook/sheep-meat#rising-turnoff-and-drier-conditions-to-drive-down-prices>

The Australia-UK Free Trade Agreement took effect on 31 May 2023 and is expected to significantly benefit the Australian Agricultural Industry. This free trade agreement immediately eliminated tariffs on goods such as wine, grain rice, honey, nuts and olive oil⁴². Moreover, the agreement provided immediate access to duty free transitional quotas for key agriculture products including beef and sheep meat, sugar and dairy with eventual full tariff elimination.

Labour Shortages

Like many industries, labour shortages in agriculture are contributing to difficulties of profitability and sustainability of farming operations. The Queensland Department of Fisheries (DAF) estimates that labour shortages for production horticulture were up to 20% of total labour demand as at 2021⁴³.

The Australian National Skills Commission (NSC) released a Skills Priority List in 2021 which groups jobs into categories based whether there is a current shortage and if future demand is strong, moderate or soft. Agricultural jobs are listed below within their respective categories⁴⁴:

- Occupations in shortage with strong future demand – agriculture consultant, agriculture scientist, agricultural veterinarian, and horticultural mobile plant operator.
- Occupations in shortage with moderate future demand – agriculture technician, farrier, and nurseryperson.
- Occupations in shortage with soft future demand – mixed crop farmer, pig farmer, grape grower, and poultry farmer.

Resident Employment in Agriculture by Age-Group

The level of Isaac LGA resident employment in Agriculture, Forestry, Fishing by age group was investigated to provide an understanding of the region’s agricultural workforce.

Figure 3.6 illustrates the number of Isaac residents employed in Agriculture, Forestry, Fishing by age group in 2016 and 2021. Key insights include:

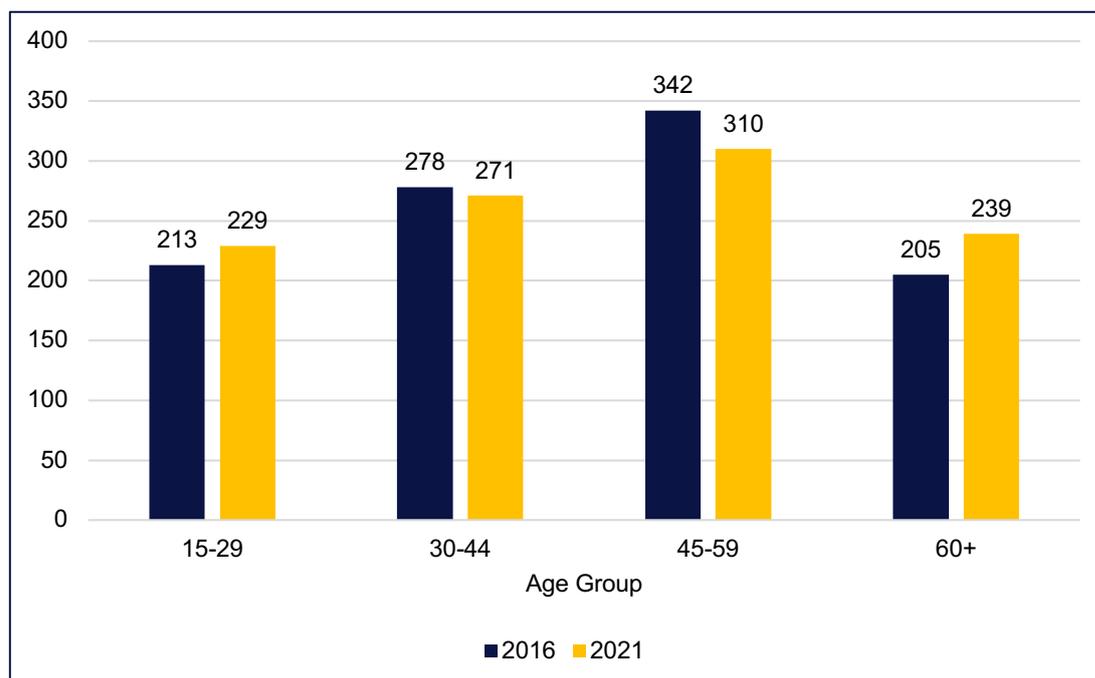
- The 45-59 age group contained the greatest number of residents of any age group working in the Agriculture, Forestry, Fishing sector in 2021.
- The change in the number of residents working in the sector across age groups was minor from 2016 to 2021.
- Despite possible preconceptions that the sector is being sustained by older working residents, the number of Agriculture, Forestry, and Fishing resident workers aged 15-44 (500 resident workers at 2021) is only slightly lower than those aged 45+ (549 resident workers at 2021).

⁴² <https://www.dfat.gov.au/trade/agreements/in-force/ukfta-outcomes-documents/trade-and-investment/benefits-farmers>

⁴³ Queensland AgTrends 2020-21

⁴⁴ Queensland Agriculture Environmental Scan: Labour and skills supply and demand profile

Figure 3.6: Isaac Residents Employed in Agriculture, Forestry, Fishing by Age Group, 2016 and 2021



Source: ABS Census via Tablebuilder.

3.3 Visitation

Along with the resources and agricultural sectors, the visitor market is recognised as an economic driver for the Isaac region.

The number of domestic overnight visitors to the Isaac Region increased by 131% from 166,000 visitors to 384,000 visitors between 2012 and 2019⁴⁵. Moreover, the number of domestic visitor nights stayed increased from 591,000 nights to 1,827,000 nights. International visitors represent only a small percentage of visitors (~3% of visitor nights) to the region, which is unlikely to grow significantly.

There were increases in the proportion of domestic visitors travelling to the region for business (69% of visitors in 2012 up to 80% in 2019) as well as those visiting for holidays (11% of visitors in 2012 up to 13% in 2019). Conversely, the proportion of domestic tourists visiting friends and family fell from 13% of visitors in 2012 to 6% in 2019.

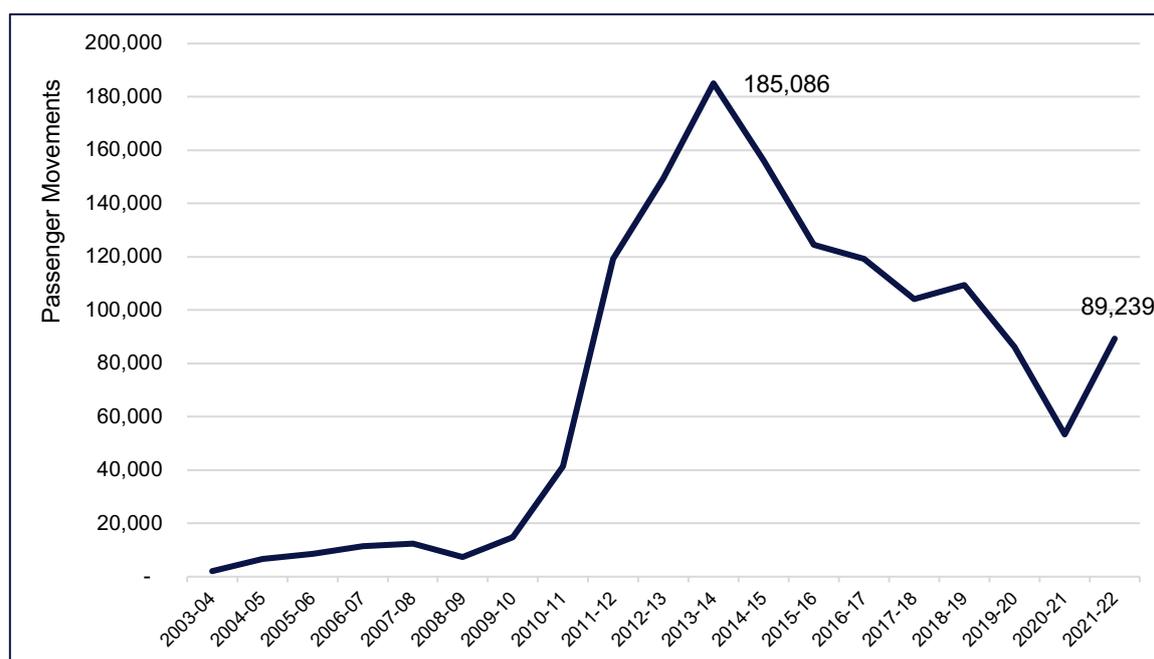
Total passenger movements for the Moranbah Airport are set in Figure 3.7. This data indicates that passenger movements peaked in 2013-14 at 185,086 movements. Comparatively, data for 2021-22 shows 89,239 movements or an average of 1,716 passengers per week. Movements are likely driven primarily by FIFO workers however the data does not include charter flights (data not publicly available). Based on discussions with Council, the increased usage of charter flights is likely playing a role in the observed decrease in passenger movements at Moranbah Airport from 2013-14 to present (Figure 3.7).

⁴⁵ Tourism Research Australia data based on averages between 2009-12 and 2016-19.

As was the case in the 2016 study, the latest data suggests that DIDO mining employees and associated business visitors account for the majority of domestic overnight visitation.

Overall, the local visitor market is likely to continue to be dominated by business visitors due to the scale of the local resources sector. Visitation for the purpose of holidays is unlikely to grow substantially over the short to medium term without investment in attractions, events, and marketing.

Figure 3.7: Passenger Movements, Moranbah Airport, 2003-04 to 2021-22



Source: Bureau of Infrastructure and Transport Research Economics. Note: data is compiled for International and Domestic (including Regional) airline RPT services, and does not include charter or other non-scheduled activity.

3.4 Housing Availability and Affordability

Like other regions in Queensland, housing affordability and availability issues are likely to impact population and economic growth in Isaac LGA. Key insights from our research include:

- As shown in Figure 3.8, the median detached house price within the Isaac LGA has fallen significantly over the past decade (38%) from \$450,000 in March 2013 to \$280,000 in March 2023. However, the median house price has increased by \$155,000 (124%) since it reached its lowest value of \$125,000 in September 2016.
- The trends for the median house price (decreasing 2013 to 2016 then increasing from 2016) is reflected in annual changes in the Isaac LGA’s population (Figure 3.8).
- The number of public school enrolments in the Isaac LGA (shown in Figure 3.10) also follows a similar trend to the median house price.

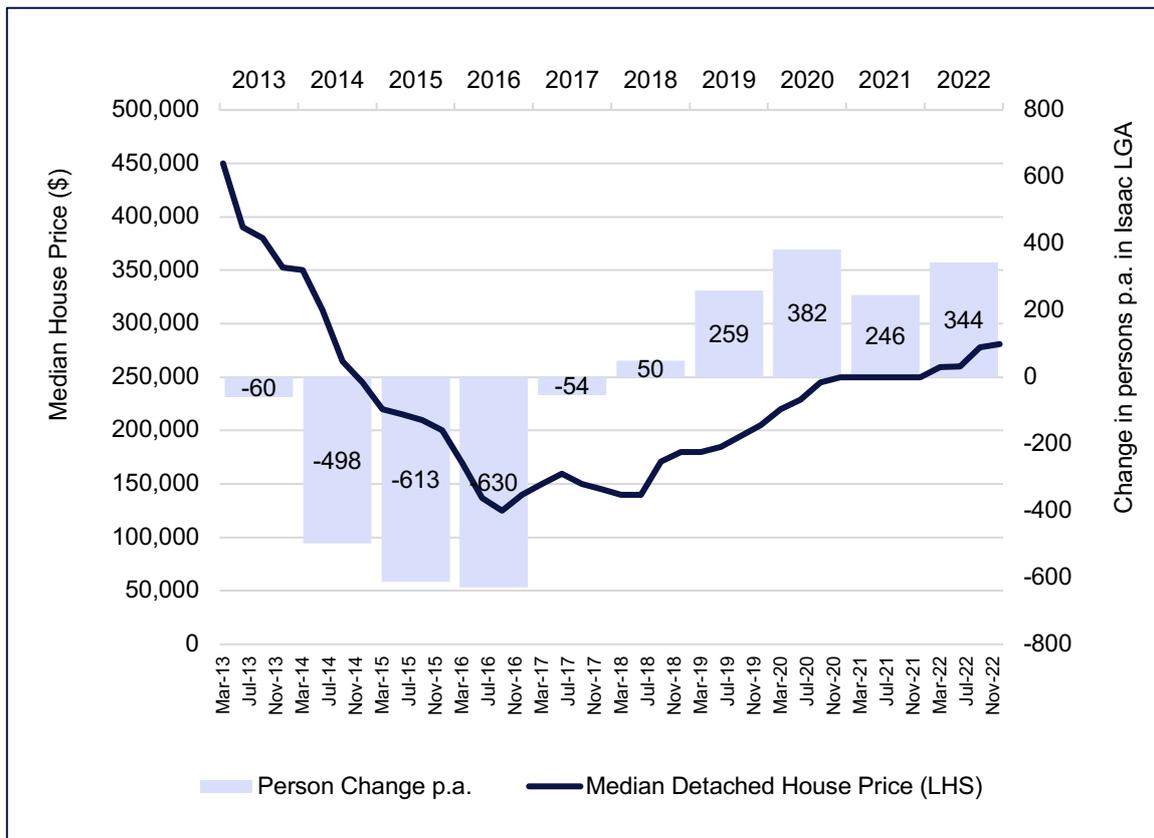
- As shown in Figure 3.9, median weekly rent within the Isaac LGA has declined to a lesser degree over the past decade (-12%) from \$450pw in March 2013 to \$395pw in June 2023. The median rent has also recovered over the past 5-10 years, increasing by around 80% since its minimum of \$220pw in December 2015.
- Table 3.1 indicates that residential rental vacancy rates across the region are very low to nil as of August 2023. The identified postcode areas have experienced a decrease in vacancy rates, particularly over the past 5-10 years.
- Ensuring the availability of rental housing is critical to support new entrants to the regional workforce (persons aged 15-20), the relocation of skilled workers, and retention of young residents. If the rental housing shortage is not addressed, there may be long term adverse impacts to regional economic development, productivity, and labour force renewal.
- Housing availability is likely to be a more significant issue in the region than affordability. Both of these factors are likely to impact low income and other vulnerable community segments.

Table 3.1: Rental Vacancy Rates, Aug 2013 and Aug 2023

Postcode Area	Aug-13	Aug-23
Moranbah (4744)	8.2%	0.0%
Clermont (4721)	6.7%	0.2%
Ilbilbie (4738)	5.1%	0.0%
Nebo (4742)	n.a.	5.5%
Middlemount (4746)	2.1%	1.0%
Dysart (4745)	16.5%	0.7%

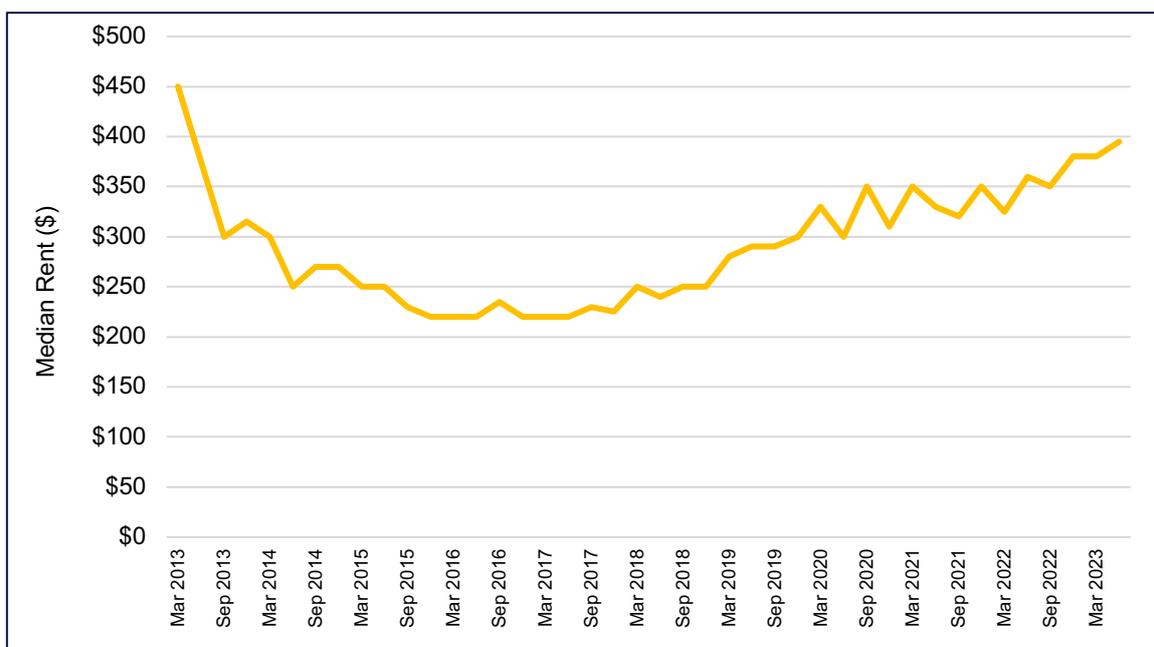
Source: SQM Research.

Figure 3.8: Median Price Detached Houses and Annual Population Change, Isaac LGA, 2013 to 2023



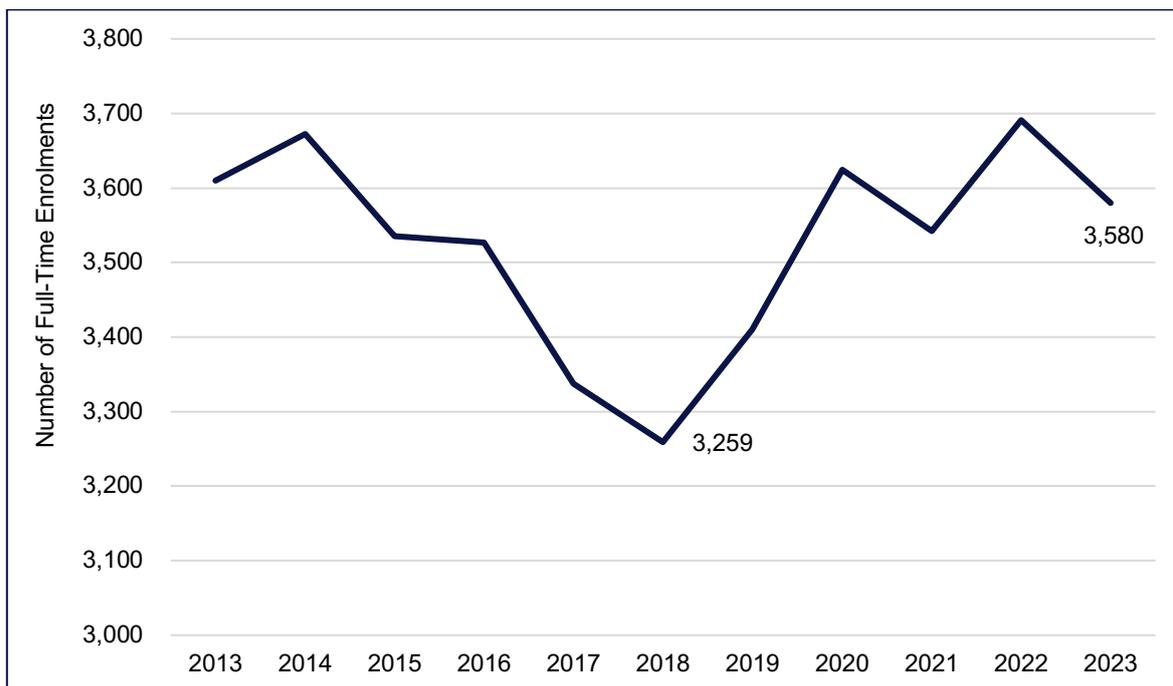
Source: Department of Resources, Office of the Valuer-General, Property Sales, Foresight Partners.

Figure 3.9: Median Weekly Rent, All Dwellings, Isaac LGA, March 2013 to March 2023



Source: RTA, Foresight Partners.

Figure 3.10: Full-Time Public School Enrolments, Isaac LGA, 2013 to 2023



Sources: Department of Education - Corporate Enrolment Collection - 2019 February, myschool.edu.au, schoolsdirectory.eq.edu.au

4. SUB-REGION ANALYSIS

The Isaac LGA has been segmented into eleven sub-regions which constitute separate and distinct communities. These sub-regions are based upon Statistical Area 2 (SA2) and Statistical Area 1 (SA1) Boundaries as defined by the ABS.

The defined sub-regions very closely reflect those utilised in the 2016 Economic and Population Review study with some minor variations due to changes in ABS-defined SA1 boundaries.

The eleven sub-regions are described below and illustrated in Figures 4.1 and 4.2.

1. Moranbah

This area comprises the SA2 of Moranbah, which includes the town and the surrounding rural area.

2. Clermont Town

This area comprises seven SA1s (31201133901, 31201133902, 31201133903, 31201133904, 31201133905, 31201133906, 31201133913) to establish the township of Clermont. A minor change in the 2021 ABS SA1 boundaries resulted in an expansion of this sub-region to include the area around the Council depot and Clermont Showgrounds.

3. Clermont Rural

This area comprises four large rural SA1s (31201133908, 31201133909, 31201133911, 31201133912). The combined sub-regions of Clermont Town & Clermont Rural make up the SA2 of Clermont.

4. Ilbilbie

Ilbilbie comprises a single SA1 (31201133826) which consists of the Ilbilbie township and surrounding rural area.

5. Carmilla

Carmilla comprises a single SA1 (31201133811) which consists of the Carmilla and surrounding rural area.

6. St Lawrence

St Lawrence comprises a single SA1 (31201133821) which consists of the St Lawrence township and surrounding rural area.

7. Nebo

The Nebo township comprises two SA1s (31201133808, 31201133832). A minor change in SA1 boundaries has led to the expansion of this sub-region to include the area around Anne Street.

8. Glenden

The Glenden township comprises three SA1s (31201133805, 31201133806, 31201133835). This sub-region has been slightly reduced (in area) at the eastern periphery which results in the exclusion of only one dwelling.

9. Middlemount

The Middlemount township comprises six SA1s (31201133802, 31201133803, 31201133822, 31201133823, 31201133824, 31201133825).

10. Dysart

The Dysart township comprises twelve SA1s (31201133813, 31201133814, 31201133815, 31201133816, 31201133817, 31201133818, 31201133819, 31201133829, 31201133830, 31201133833, 31201133836, 31201133838). Although SA1 boundaries changes have slightly enlarged this sub-region, the added area is zoned Industry and has no resident population.

11. Nebo Rural

Nebo Rural comprises the remaining five rural SA1s that are located in the SA2 of Broadsound - Nebo (31201133810, 31201133812, 31201133831, 31201133834, 31201133837). Together, the sub-regions of Ilbilbie, Carmilla, St Lawrence, Nebo, Glenden, Middlemount, Dysart and Nebo Rural comprise the SA2 of Broadsound – Nebo.

Figure 4.1: Isaac LGA and Sub-Regions

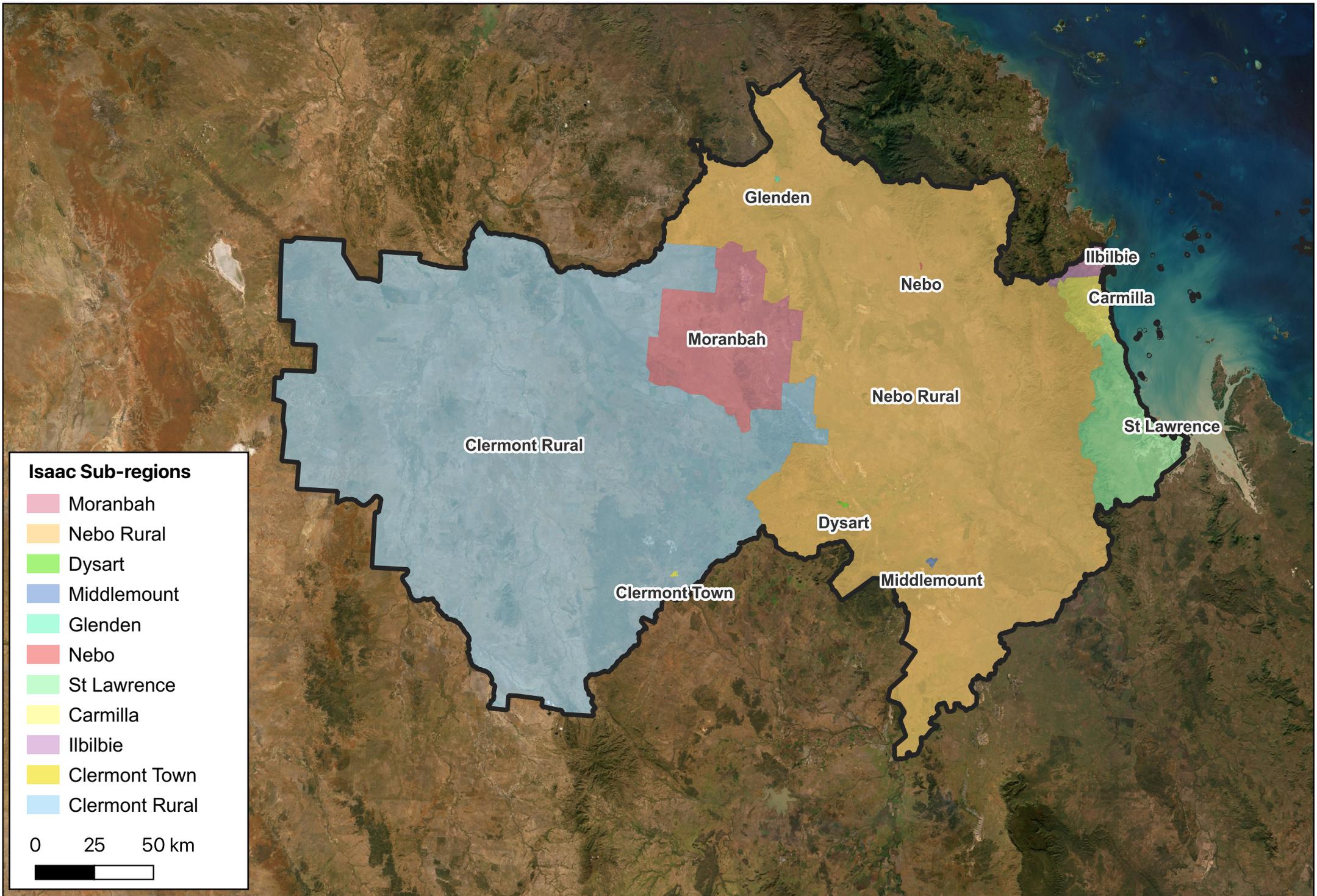
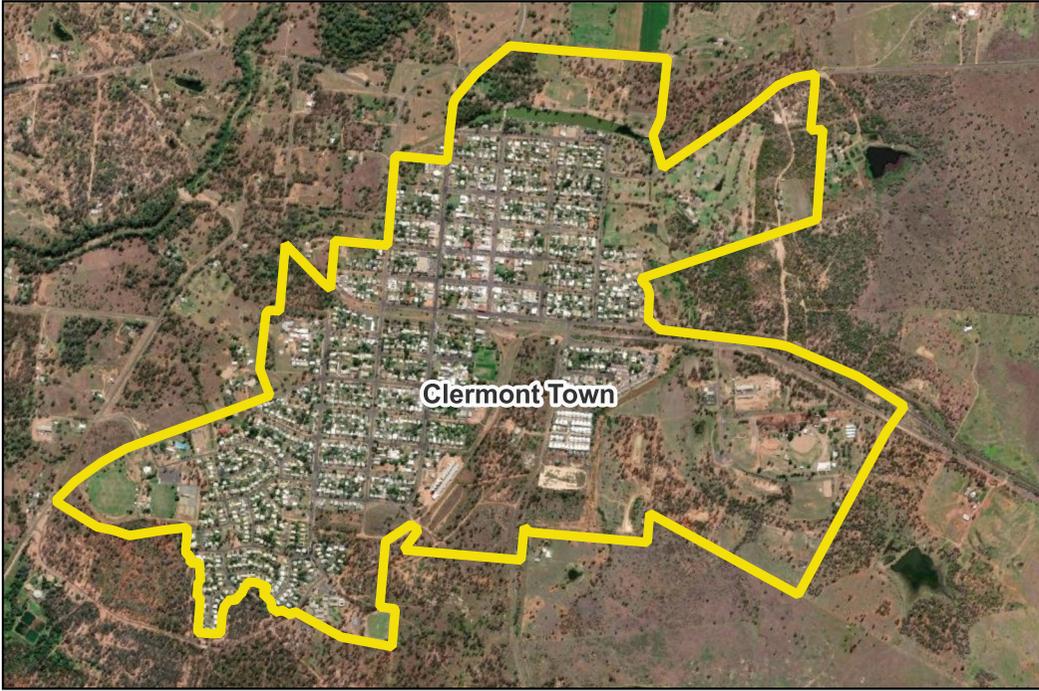


Figure 4.2: Selected Sub-Regions



4.1 Demographic Profile

A summary of selected socio-economic characteristics of residents and households of each sub-region as at the 2021 Census is set out Table 4.1. Data for the Isaac LGA and Queensland are included as benchmarks. Key insights include:

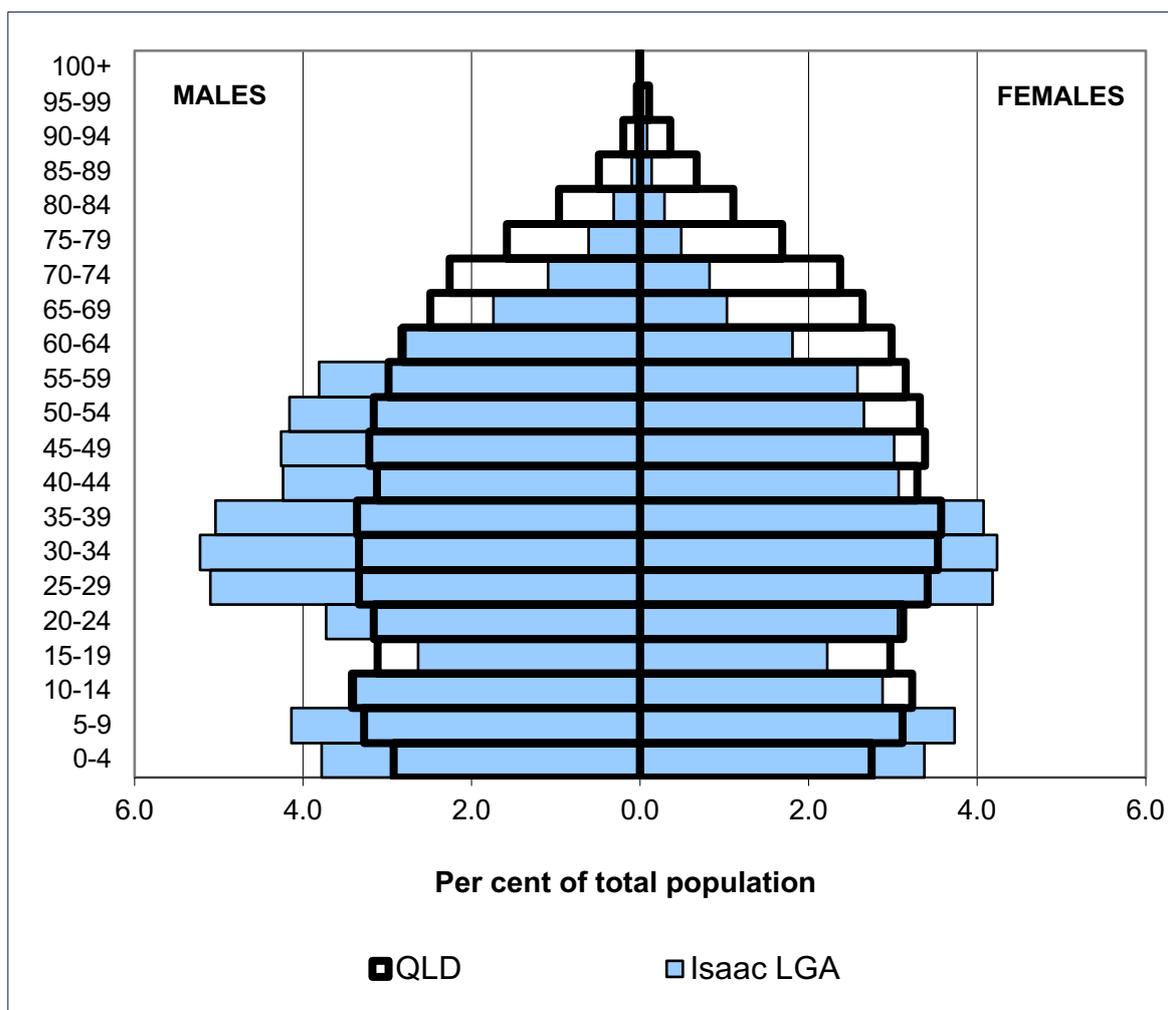
- Coastal sub-regions (Ilbilbie, Carmilla and St Lawrence) had a significantly older resident population than other sub-regions. More than 27% of the population in these areas were aged over 65, whereas only 6.8% of residents of the Isaac LGA were aged 65+.
- Sub-regions dominated by mining such as Moranbah, Glenden, Middlemount and Dysart had a much younger population compared to Isaac LGA and QLD. This is due to the high proportion of working-age residents with children.
- Labour force participation rates were low in coastal areas and far higher in the mining dominated sub-regions.
- The 8 inland sub-regions had an average household income greater than the Queensland average (\$123,035). This is driven by the high salaries in mining positions. Moranbah had the highest average household income of any sub-region (\$207,998).
- Over 90% of households in Glenden and Middlemount were renting, as were over 60% of Moranbah, Dysart, and Nebo households.
- Coastal sub-regions had a high proportion of households that owned their homes outright. For example, in Ilbilbie, 54.1% of households owned their homes outright in 2021. This is explained by the older age profiles of these areas.
- Average annual mortgage costs in the Isaac LGA (\$19,357) were lower than the Queensland level (\$26,760). At the sub-region level, average mortgage costs were highest in Ilbilbie and lowest in Dysart. The data for Ilbilbie should be interpreted with caution given it includes only a small number of households.
- Average annual rent in the LGA was below the Queensland level. Many renting households in the LGA would have subsidised rents which distort these values, particularly in areas with a high proportion of housing owned by mining companies such as Glenden. For context, the median rent across all Isaac LGA properties with a bond held with the RTA (i.e. not owned by mining companies) was \$16,640 per annum in September 2021 compared to \$11,727 as reported in the 2021 Census (which would include subsidised rental properties). While there is no available data surrounding the average rental cost after subsidy, this comparison demonstrates that a notable disparity exists between subsidised and other rental properties.
- Sub-regions including Moranbah (42.2%), Clermont Rural (39.4%), Nebo Rural (38.1%), and Middlemount (38%) had high proportions of households comprising couples with children.
- Sub-regions including Ilbilbie (43.6%), Carmilla (37.4%), and St Lawrence (32.1%) had high proportions of households comprising of couples without children. These proportions are higher than the Queensland level of 28.6%.

- The presence of lone person households was above the state average in most sub-regions (excluding Moranbah, Clermont Rural, and Nebo Rural).
- Figure 4.3 indicates that there was a slightly higher proportion of residents aged 0-9 in the Isaac LGA than Queensland. Moreover, there is a significantly higher proportion of male residents aged 20-59 in the Isaac LGA compared to Queensland due to employment opportunities.

From this analysis, it is evident that the Isaac LGA sub-regions have diverse demographic profiles.

Mining focused sub-regions including Moranbah, Middlemount and Glenden are characterised by high incomes and a high prevalence of working age residents while the coastal sub-regions (Ilbilbie, Carmilla and St Lawrence) accommodate older residents (likely retired) with far lower average incomes.

Figure 4.3: Age-Sex Pyramid, Isaac LGA and Queensland, 2021



Source: ABS Census 2021 via Tablebuilder.

Table 4.1: Selected Socio-Economic Characteristics, Defined Sub-Regions, 2021

	Moranbah	Clermont Town	Clermont Rural	Ilbilbie	Carmilla	St Lawrence	Nebo	Glenden	Middlemount	Dysart	Nebo Rural	Isaac LGA	QLD
Age (% residents)													
0-14	24.7	24.4	18.4	10.9	13.7	10.6	16.8	23.9	20.4	21.7	12.3	21.3	18.7
15-24	12.4	10.6	11.2	7.6	7.4	7.2	9.6	10.8	11.9	12.8	11.7	11.7	12.4
25-44	38.2	29.1	29.6	21.5	16.4	13.4	35.0	39.2	41.7	35.1	37.2	35.2	26.9
45-64	22.3	21.8	28.4	32.4	33.9	41.1	31.8	25.1	24.5	25.4	30.4	25.0	25.0
65+	2.3	14.2	12.4	27.5	28.6	27.7	6.7	1.0	1.4	4.9	8.5	6.8	17.0
Employment (%)													
In labour force	87.5	73.8	83.2	51.6	64.6	54.5	77.7	94.5	86.6	83.1	84.2	82.4	65.8
Unemployed	2.6	1.8	1.3	3.8	1.9	4.8	4.1	1.8	2.6	2.5	0.6	2.4	5.4
White collar occupations	42.8	47.8	54.5	47.4	59.6	52.3	33.3	49.8	41.9	31.4	51.8	44.2	68.8
Employed per household (persons)	1.80	1.32	2.00	0.99	1.18	0.91	1.33	1.81	1.81	1.60	2.29	1.69	1.31
Household Income													
Average (\$2023 values)	\$207,998	\$129,451	\$139,720	\$112,371	\$81,398	\$81,494	\$134,653	\$180,211	\$194,806	\$177,103	\$157,874	\$171,241	\$123,035
Dwelling Structure (% households)													
Detached	82.0	82.5	95.3	92.6	97.1	95.9	85.5	87.4	89.4	92.1	98.2	86.7	75.0
Semi-detached	16.9	14.1	0.0	0.0	0.0	0.0	12.1	12.6	5.4	6.7	0.9	10.6	11.7
Flats/units	1.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	5.2	1.2	0.0	1.6	12.5
Other structure	0.1	1.8	4.7	7.4	2.9	4.1	2.3	0.0	0.0	0.0	0.9	1.1	0.7
Dwelling Tenure (% households)													
Owned	8.2	23.5	39.5	54.1	59.6	57.9	13.7	2.0	0.7	16.1	37.0	18.8	29.5
Purchasing	19.5	21.1	27.6	30.1	12.5	21.6	24.2	0.0	2.4	16.9	20.5	18.4	35.0
Renting	69.0	50.8	13.0	8.2	14.0	15.2	62.1	90.7	90.5	64.4	21.7	56.4	33.6
Average Annual Occupancy Cost - Mortgages	\$20,299	\$19,505	\$22,378	\$29,812	\$21,503	\$13,848	\$18,783	n.a.	n.a.	\$10,992	\$21,728	\$19,357	\$26,760
Average Annual Occupancy Cost - Rentals	\$13,184	\$12,106	\$16,839	n.a.	n.a.	n.a.	\$14,982	\$4,194	\$7,392	\$9,059	\$6,793	\$11,727	\$22,535
Mobility (% households)													
No car	2.6	3.9	0.8	2.0	0.0	0.0	1.9	0.0	2.4	3.4	1.1	2.5	5.8

	Moranbah	Clermont Town	Clermont Rural	Ilbilbie	Carmilla	St Lawrence	Nebo	Glenden	Middlemount	Dysart	Nebo Rural	Isaac LGA	QLD
1 Car	26.2	38.0	18.1	27.9	35.8	43.8	35.7	45.6	39.2	32.5	17.4	29.7	35.8
2 or more cars	71.2	58.1	81.0	70.1	64.2	56.2	62.4	54.4	58.4	64.1	81.5	67.8	58.4
Avg. Vehicles per Household (no.)	2.05	1.80	2.54	2.10	1.89	1.87	1.83	1.79	1.78	1.90	2.61	2.03	1.80
Education (% persons Aged 20+)													
Bachelor's degree	9.4	9.8	6.2	4.2	2.9	3.2	2.8	12.1	7.3	5.4	6.1	7.8	16.2
Grad Dip/Grad Cert	1.2	1.3	0.2	0.0	0.0	1.8	0.8	1.8	1.0	0.4	0.8	1.0	2.4
Postgraduate Degree	2.0	1.3	0.3	0.0	0.0	0.0	0.0	1.5	1.0	0.9	0.6	1.3	5.1
Family Type (% households)													
Couples with Children	42.2	27.8	39.4	23.8	17.2	13.9	20.9	29.6	38.0	31.4	38.1	35.5	29.3
Couples without Children	22.4	25.3	35.7	43.6	37.4	32.1	28.6	23.8	26.0	25.6	28.7	26.2	28.6
Single Parent Household	9.7	9.8	2.9	3.3	8.6	10.3	7.1	9.7	7.2	12.3	5.8	8.8	12.0
Lone Person Household	21.6	33.2	19.3	27.3	36.8	38.6	35.3	34.9	26.8	27.7	22.2	25.7	24.7
Group/Other Household	4.0	3.9	2.7	2.0	0.0	5.1	8.1	2.0	2.1	3.0	5.1	3.8	5.5

Source: ABS Census 2021.

4.2 Population Projections

4.2.1 LGA Level

QGSO Medium Series Population Projections (2023 edition) anticipate the regional population to increase from 22,426 residents in 2021 to 26,208 residents in 2046. This represents an increase of 3,782 residents in the Isaac region between 2021 and 2046.

The Low Series projections predict an increase of 2,414 residents (1,368 persons lower) over this period, with an expected regional population of 24,840 persons by June 2046.

The High Series projections estimate a total population of 27,610 residents, around 1,400 greater than the Medium Series population at 2046.

These projections are used as a basis for sub-region (and township) population projections (Section 4.3.3) after being rebased with the latest small-area ABS Population Estimates (at June 2022).

Table 4.2: QGSO Population Projections, Isaac LGA, 2021 to 2046

	2021	2026	2031	2036	2041	2046	Incr. 2021-2046
Low Series (persons)	22,426	22,986	23,406	23,833	24,317	24,840	2,414
Medium Series (persons)	22,426	23,061	23,727	24,478	25,312	26,208	3,782
High Series (persons)	22,426	23,129	24,042	25,121	26,318	27,610	5,184

Source: QGSO Population Projections by LGA, 2023 edition.

4.2.2 Forecast Population by Age Group

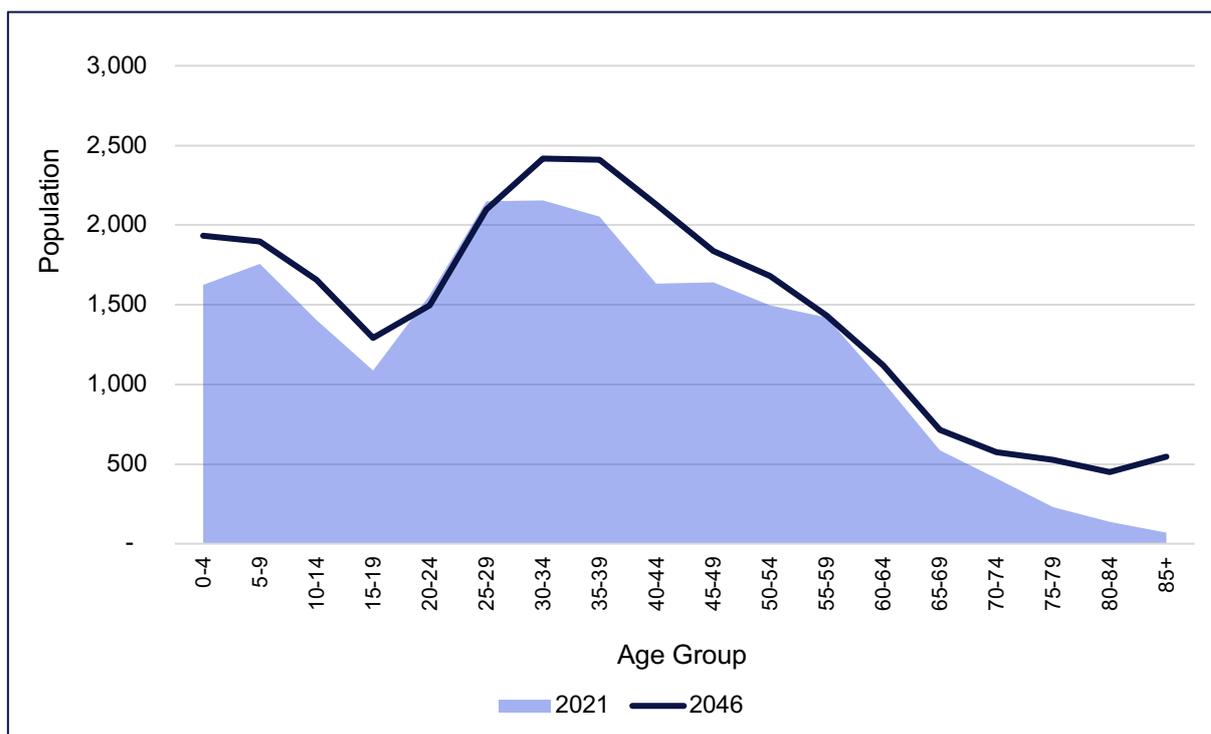
Figure 4.4 illustrates projected population growth between 2021 and 2046 in the Isaac LGA by age group under the QGSO Medium Series Population Projections (without rebasing). The distance between the shaded area (2021) and the line (2046) represents the projected population growth or loss in each age group, as set out in Table 4.3.

Key findings of this analysis include:

- Substantial growth is expected in the age groups of 30-54 years and children aged 0-19 years. This reflects the attraction of new working age residents in the family formation stages (i.e. with children living at home).
- There is a projected decrease in the number of Isaac residents aged 20-29, likely due to the departure of young adults seeking tertiary education and employment opportunities in other regions.

- A notable increase is also anticipated in the 60+ age group (+1,484 residents) with an increase of 479 residents expected in the 85+ age group alone.
- The proportion of Isaac residents aged 60+ is expected to increase from 10.9% of the population in 2021, to 15% of the population in 2046. This will have wide reaching implications for housing and care needs across the region.

Figure 4.4: Forecast Resident Population by Age Group, Isaac LGA, 2021 and 2046



Source: QGSO population projections (2023 edition medium series), by five-year age group and sex, by local government area, 2021 to 2046.

Table 4.3: Forecast Resident Population by Age Group, Isaac LGA, 2021 and 2046

Age Group	2021	2046	Person Change 2021-46
0-4	1,623	1,932	309
5-9	1,757	1,898	141
10-14	1,404	1,656	252
15-19	1,088	1,290	202
20-24	1,559	1,497	-62
25-29	2,148	2,099	-49
30-34	2,155	2,417	262
35-39	2,054	2,408	354
40-44	1,632	2,130	498
45-49	1,641	1,837	196
50-54	1,498	1,681	183
55-59	1,422	1,433	11
60-64	1,014	1,118	104
65-69	587	714	127

Age Group	2021	2046	Person Change 2021-46
70-74	409	575	166
75-79	230	528	298
80-84	136	450	314
85+	69	545	476
Total	22,426	26,208	3,782

Source: QGSO population projections (2023 edition medium series), by five-year age group and sex, by local government area, 2021 to 2046.

4.2.3 Forecast Population by Sub-Region

Scenario 1 – Medium Series

Table 4.4 sets out forecast population by sub-region under Scenario 1. Scenario 1 assumes population growth is generally in line with QGSO Population Projections (2023 edition medium series by SA2) rebased with the latest available ABS population estimates (at June 2022).

Under this scenario, around 3,318 new residents are expected in the Isaac LGA between 2021 and 2041. Around 71% of the net population growth is expected to occur in Moranbah, representing 2,340 additional residents.

Clermont Town and surrounding rural areas are expected to add around a combined 349 residents. Most of the expected growth in Clermont Rural will likely occur at the periphery of the Clermont Town area (refer to Figure 4.2).

Moderate growth is anticipated in Nebo and Dysart which are projected to add 166 and 266 residents respectively between 2021 and 2041. Low growth is expected in the coastal sub-regions of Ilbilbie, Carmilla, and St Lawrence. Glenden is expected to grow marginally. Minor population losses are anticipated in Middlemount (-88 persons 2021-41).

Table 4.4: Forecast Resident Population by Sub-region, Scenario 1 (Medium Series)

Sub-Region	2016	2021	2023	2026	2031	2036	2041	Incr. 2021-41
Moranbah	9,045	9,617	9,908	10,226	10,769	11,349	11,958	2,341
Clermont Town	2,078	2,102	2,123	2,136	2,162	2,192	2,227	125
Clermont Rural	1,675	1,831	1,836	1,860	1,925	1,990	2,055	224
Ilbilbie	359	392	413	422	437	452	467	75
Carmilla	342	346	366	366	371	376	381	35
St Lawrence	394	419	440	448	458	468	478	59
Nebo	532	626	653	677	697	732	792	166
Glenden	599	487	490	490	500	515	550	63
Middlemount	1,874	1,919	1,891	1,876	1,851	1,841	1,831	-88
Dysart	2,514	2,781	2,847	2,877	2,917	2,977	3,047	266
Nebo Rural	2,131	1,906	1,931	1,943	1,948	1,953	1,958	52
Isaac LGA	21,543	22,426	22,898	23,321	24,035	24,845	25,744	3,318

Source: Foresight Partners based on QGSO Population Projections (2023 edition medium series) rebased with ABS ERP at June 2022 by SA1.

Scenario 2 – Low Series

Table 4.5 sets out forecast population growth by sub-region under Scenario 2 which can be considered as a 'low series' of resident population growth in the Isaac LGA.

Scenario 2 is based upon Low Series QGSO Population Projections for the Isaac LGA, but with the following assumptions:

- an increasing proportion of non-resident workers in the mining sector post-2023 implying reduced demand for local labour and therefore reduced attractiveness of the Isaac region for new residents.
- a cycle of increasing productivity for the local mining sector resulting in potential job cuts and/or decreased hours.
- thermal coal production tapers over the long term (noting that this comprises a minority of total coal production in the region).
- metallurgical coal remains the most cost-effective method to produce steel over the medium term to 2041 (rather than alternatives such as hydrogen). As mentioned, the Isaac coal sector is likely to be resilient over the medium term.
- greater uptake in operational automation in the mining sector post-2031 leading to reduced labour requirements.

Under this Scenario, it is estimated that the regional population will experience a net increase of only around 37 residents per annum (on average) between 2021 and 2041. Similar to Scenario 1, most of the population growth is anticipated to occur in Moranbah with some population losses expected in Nebo Rural, Middlemount, and Clermont Town.

Table 4.5: Forecast Resident Population by Sub-region, Scenario 2 (Low Series)

Sub-Region	2016	2021	2023	2026	2031	2036	2041	Incr. 2021-41
Moranbah	9,045	9,617	9,741	9,873	10,084	10,190	10,280	663
Clermont Town	2,078	2,102	2,119	2,125	2,125	2,114	2,083	-19
Clermont Rural	1,675	1,831	1,833	1,840	1,872	1,896	1,899	68
Ilbilbie	359	392	412	420	430	432	433	41
Carmilla	342	346	365	364	365	359	353	7
St Lawrence	394	419	439	446	450	447	443	24
Nebo	532	626	647	666	677	690	714	88
Glenden	599	487	489	488	491	490	490	3
Middlemount	1,874	1,919	1,890	1,870	1,834	1,813	1,807	-112
Dysart	2,514	2,781	2,817	2,837	2,847	2,833	2,813	32
Nebo Rural	2,131	1,906	1,928	1,933	1,915	1,865	1,850	-56
Isaac LGA	21,543	22,426	22,680	22,862	23,090	23,130	23,164	738

Source: Table 4.4 and Foresight Partners estimates.

Scenario 3 – High Series

Table 4.6 sets out forecast population growth by sub-region under Scenario 3 which can be considered as a 'high series' of resident population growth in the Isaac LGA.

These estimates are based upon the QGSO High Series Population Projections (2023 edition) for the Isaac LGA (not available at SA2 level).

Adjustments were made to account for potential resident population growth in Glenden considering the recent decision requiring the Byerwen mine workforce to be accommodated within the township. It is noted that only a portion of the workforce will be permanent residents.

Under the high series, it is estimated that the LGA population will increase by 4,480 residents between 2021 and 2041, representing an average annual increase of around 225 residents per annum.

Under this series, the Glenden population is expected to increase from 487 persons in 2021 to 755 persons by 2041. This is 205 residents greater than 2041 population under the Scenario 1 projections (medium).

Table 4.6: Forecast Resident Population by Sub-region, Scenario 3 (High Series)

Sub-Region	2016	2021	2023	2026	2031	2036	2041	Incr. 2021-41
Moranbah	9,045	9,617	9,903	10,223	10,859	11,567	12,323	2,706
Clermont Town	2,078	2,102	2,122	2,135	2,180	2,234	2,295	193
Clermont Rural	1,675	1,831	1,835	1,859	1,941	2,028	2,118	287
Ilbilbie	359	392	413	422	441	461	481	89
Carmilla	342	346	366	366	374	383	393	47
St Lawrence	394	419	440	448	462	477	493	74
Nebo	532	626	653	677	703	746	816	190
Glenden	599	487	495	575	695	725	755	268
Middlemount	1,874	1,919	1,925	1,930	1,941	1,956	1,967	48
Dysart	2,514	2,781	2,846	2,876	2,941	3,034	3,140	359
Nebo Rural	2,131	1,906	1,940	1,972	2,014	2,071	2,128	222
Isaac LGA	21,543	22,426	22,937	23,485	24,551	25,682	26,907	4,481

Source: Table 4.4 and Foresight Partners estimates.

4.3 Non-Resident Population

The number of non-resident workers in the region will affect demand for infrastructure and other services. It is relevant to note that, within the Isaac LGA, 98% of the non-resident workforce is employed in the coal mining industry⁴⁶.

4.3.1 QGSO Projections

QGSO has derived four projection series to 2026 for non-resident workers (Series A, B, C and D). As the letters increase additional assumptions are added to capture different possibilities. These estimates reflect the number non-resident workers **on-shift** (i.e. present in the region at any one time).

Series A projects that the region's non-resident population will decline to 11,060 persons in 2025 and stagnate due to workforce reductions in operational projects.

Series B projections include Series A plus projected growth arising from projects that have an EIS approved and are awaiting other approvals and/or financial close.

Series C includes the Series B projections plus projected growth arising from projects that have published an EIS but are not yet approved. Series D includes the Series C projections plus projected growth from projects that have yet to publish an EIS, including projects that have lodged an initial advice statement (IAS) as well as projects that have yet to begin the approvals process.

Both Series C and D project an increase in the non-resident workforce to 2026 (up to 13,100 and 13,270 respectively).

Table 4.7: QGSO Non-Resident Population Projections, Isaac LGA, 2021 to 2026

	2021	2022	2023	2024	2025	2026	Change 2021-26
Series A	12,080	11,140	11,510	11,270	11,060	11,060	-1,020
Series B	12,080	11,160	12,140	11,970	11,640	11,980	-100
Series C	12,080	11,160	12,210	12,370	12,710	13,100	1,020
Series D	12,080	11,160	12,210	12,520	13,010	13,270	1,190

Source: QGSO non-resident workforce projections, released June 2022 (latest). Note: Counting non-resident workers on-shift.

4.3.2 Foresight Partners Projections

Since the QGSO non-resident population projections were prepared, more recent data has been released. This data, in the Bowen Basin Population Report 2022, indicates that the non-resident population has increased to 13,405 persons at June 2022, above previous projections of around 11,160 persons.

⁴⁶ QGSO Bowen Basin Resource Industry Workforce Report. 2022.

We have produced long-term forecasts of the non-resident population based on the QGSO Series B (EIS approved projects) with consideration of future changes in the sector post-2026 gleaned from engagement and research. These projections are set out in Table 4.8 and the assumptions are outlined below.

- **Scenario 1 (medium)** – assumes healthy demand for met coal and associated increases in the non-resident workforce. Growth from 2026 is expected to slow due to an increased focus on productivity (cost per tonne) from mining firms.
- **Scenario 2 (high)** – assumes strong demand for met coal and strong growth in the non-resident workforce.
- **Scenario 3 (low)** – assumes low-medium demand for met coal, a strong focus on productivity and increases in the number of resident workers (rather than FIFO/DIDO).

Under these projections, the non-resident population is anticipated to reach some 14,500 to 16,300 persons by 2036. These are considered preliminary projections as they substantially depend on a myriad of factors including global economic conditions, government policy, and private sector decision-making.

With eventual increases in productivity and automation, the non-resident working population is expected to decrease over the long term (approx. post-2036).

Table 4.8: Non-resident Population Projections, Isaac LGA, 2011 to 2036

	2011	2016	2021	2026	2031	2036	Incr. 2021-36
Scenario 1 – medium	13,590	9,445	12,080	14,220	14,800	15,500	3,420
Scenario 2 – high	13,590	9,445	12,080	14,220	15,400	16,300	4,220
Scenario 3 – low	13,590	9,445	12,080	14,220	14,500	14,500	2,420

Source: Foresight Partners estimates. Note: Counting non-resident workers on-shift (i.e. in-region at any one time).

5. 2016 STUDY COMPARISON

This section sets out a comparison with the findings of the 2016 Economic and Population Review study undertaken by Norling Consulting Pty Ltd.

5.1 Demographic Profile Comparison

A comparison of selected socio-economic characteristics of the sub-region's residents and households from the 2016 and 2021 Censuses, as well as those for the Isaac LGA, is set out below. 2021 data is set out in Table 4.1 and 2016 Census data is presented in Appendix 1 and Appendix 2.

It is important to note that apparent dramatic changes were observed at the sub-region level where even small numerical changes can cause significant variations in the relevant percentages (due to the small population in sub-regions such as Glenden).

Key insights include:

- The proportion of Isaac LGA residents aged 65+ has increased from 5.4% in 2016 to 6.8% in 2021. This trend of an ageing population is expected to continue.
- There is also a lower proportion of children in the region with 21.3% of residents aged 0-14 in 2021, down from 25.3% in 2016.
- Notable changes in age profile at the sub-region level include:
 - a decrease in the proportion of residents aged 0-14 in Middlemount from 2016 (27.3%) to 2021 (20.4%); and
 - an increase in the proportion of residents aged 65+ in Carmilla from 2016 (19%) to 2021 (28.6%).
- The Isaac LGA labour force participation rate increased from 79.9% in 2016 to 82.4% in 2021. This reflects the attraction of new working age residents.
- At the sub-region level Glenden experienced a substantial increase in the labour force participation rate from 2016 (88%) to 2021 (94.5%).
- Average household income (in 2023 dollars) of Isaac LGA residents increased by around \$18,000 from 2016 (\$153,208) to 2021 (\$171,241).
- The sub-regions of Carmilla, Nebo, Glenden experienced a decrease in average household income while the remaining sub-regions experienced increases. Moranbah experienced the greatest increase in average household income (\$26,815). While Glenden experienced the greatest decrease (\$12,792).
- The proportion of Isaac LGA households living in semi-detached dwellings increased between 2016 (5.8%) and 2021 (10.6%). This was largely driven by increases in the Clermont Town and Nebo sub-regions.
- The proportion of Glenden households residing in units decreased from 8.5% to 0%, noting that this comprised only 14 households in 2016.

- The proportion of Isaac LGA households that own their home outright remained consistent from 2016 to 2021 (18.2% to 18.8%), while the proportion of households that have a mortgage increased slightly (15.2% to 18.4%). Moreover, the proportion of renting households decreased (65.5% to 56.4%).
- Average mortgage costs at the LGA level decreased (-\$5,820), but average rental costs increased (+\$2,650). This could be explained by the limited availability of rental housing.
- The average annual mortgage cost has decreased in all sub-regions except Ilbilbie where it has increased by \$7,355. The greatest decrease was experienced by Nebo Rural (\$13,060).
- The average annual rental cost (2023 dollars) in the Isaac LGA has increased by \$2,652 from 2016 (\$9,075) to 2021 (\$11,727).
- The proportion of Isaac LGA households comprising couples with children decreasing slightly from 39.6% in 2016 to 35.5% in 2021.
- At the sub-region level, the proportion of households comprising couples with children in Middlemount decreased (from 52% to 38% of households). The proportion of lone person households in Glenden and Middlemount increased.
- Appendix 2 confirms that the strong presence of working-age males in the Isaac LGA has remained consistent between 2016 and 2021.

Based on the above analysis it is concluded that the age profile and family composition/type of Isaac LGA residents has not changed significantly from 2016 to 2021.

Changes to labour force participation, unemployment, and incomes reflect economic conditions of the region (and state), while changes in housing tenure and structure have been influenced by rental housing shortages and private sector decisions.

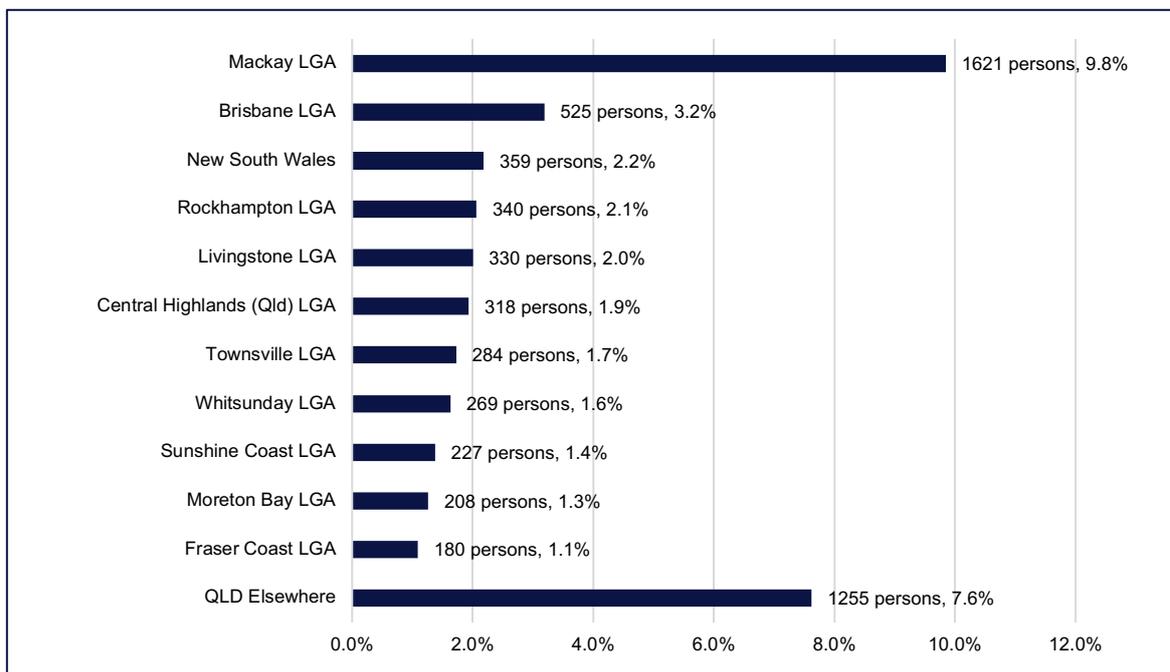
Many sub-regions experienced considerable change across demographic indicators between 2016 and 2021.

5.1.1 Migration

Analysis of 2021 Census data provides information regarding the migration patterns of persons that resided in the Isaac LGA as at the 2016 Census. Key insights from this data include:

- Of the Isaac LGA residents in 2016, around 61.4% also lived in the region in 2021.
- Of the Isaac LGA residents in 2016, around 9.8% (1,621 persons) resided in the Mackay LGA in 2021 (Figure 5.1).
- Other key places of residence of former Isaac LGA residents include Brisbane LGA (3.2%), New South Wales (2.2%), Rockhampton LGA (2.1%) and Livingstone LGA (2%).
- Many Isaac LGA residents in 2016 moved to LGAs elsewhere in Queensland not listed in Figure 5.1 (7.6% or 1,255 persons).

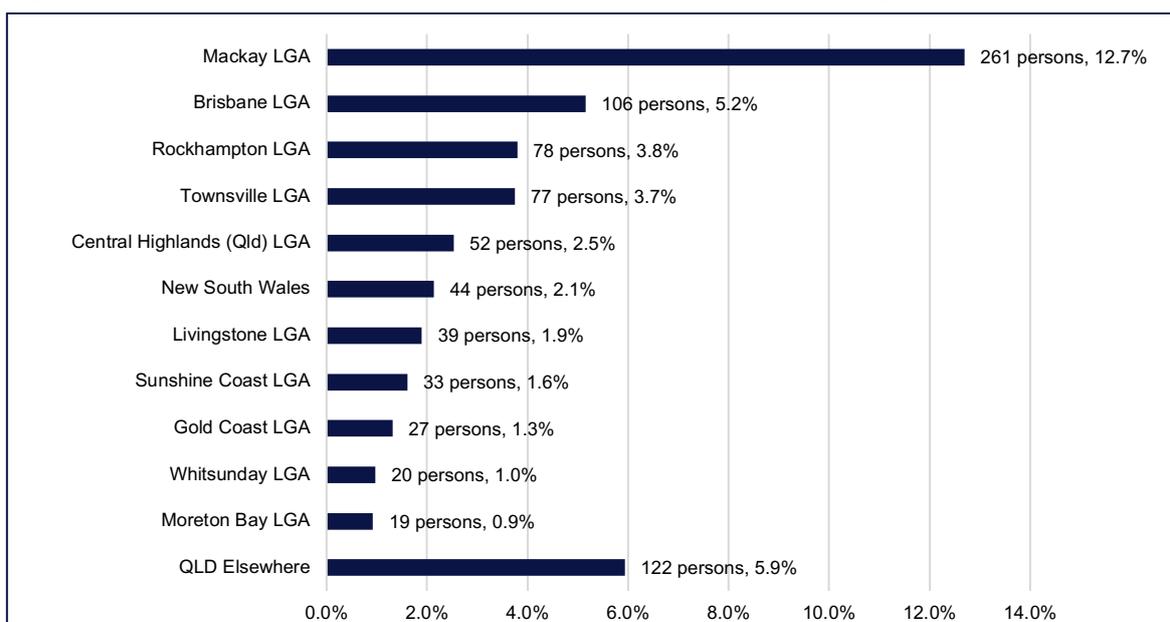
Figure 5.1: Top Places of Residence in 2021 for 2016 Isaac LGA Residents



Source: ABS Census 2021 via Tablebuilder. Note: does not show all places of residence, therefore does not add to 100%.

This analysis was also undertaken for persons aged 15-24 in 2021 (Figure 5.2). It revealed that a higher proportion (12.7%) of young people (aged 15-24) moved from Isaac LGA to Mackay LGA in the 5 years to 2021. The same is true for the Brisbane LGA (5.2%) likely reflecting the pursuit of employment and education opportunities.

Figure 5.2: Top Places of Residence in 2021 for 2016 Isaac LGA Residents Aged 15-24



Source: ABS Census 2021 via Tablebuilder. Note: does not show all places of residence, therefore does not add to 100%.

5.2 Resident Population Projections

Table 5.1 sets out a comparison of population projections from the 2016 and 2023 Economic and Population Review reports.

At the LGA level, the 2023 projections arrive at an estimated 24,845 residents by 2036, around 6,800 lower than the 2016 projections. In Moranbah, this implies 3,280 fewer residents at 2036. Lower population levels are predicted for all other mining townships, whereas small increases are expected for some coastal areas and Nebo.

Scenario 1 in the 2016 Norling report was based on QGSO Population Projections (2015 edition medium series) and the latest ABS population estimates at the time (June 2015). The large difference between the projections in the 2016 and 2023 reports can be explained by the significant variation between the 2015 and 2023 editions of QGSO projections. These are set out in Table 5.2 for context.

At the time the 2015 QGSO projections were prepared, the latest Census data would have been at 2011, during the height of the mining boom. Therefore, QGSO population projections were very optimistic.

Compared to the 2016 study, the current outlook is for far more subdued population growth across the sub-regions.

Table 5.1: Comparison of Population Projections from 2016 and 2023 Reports

Sub-Region	Est. Population at 2036		Difference
	Norling Report (Scenario 1)	Foresight Report (Scenario 1)	
Moranbah	14,630	11,349	-3,281
Clermont Town	2,950	2,192	-758
Clermont Rural	2,011	1,990	-21
Ilbilbie	369	452	83
Carmilla	492	376	-116
St Lawrence	426	468	42
Nebo	677	732	55
Glenden	2,031	515	-1,516
Middlemount	2,104	1,841	-263
Dysart	3,864	2,977	-887
Nebo Rural	2,092	1,953	-139
Isaac LGA	31,646	24,845	-6,801

Source: Table 4.4 and Norling Consulting Population & Economic Review 2016.

Table 5.2: Comparison of QGSO 2015 and 2023 editions, Isaac LGA at 2036

	Isaac LGA Population at 2036
QGSO (2015 edition med series)	31,933
QGSO (2023 edition med series)	24,478
Difference	-7,455

Source: QGSO.

5.3 Non-Resident Population

Table 5.3 sets out a comparison of non-resident population projections from this report and the 2016 Norling report.

The Norling report projected a non-resident population of around 14,500-14,650 persons in 2021, well-above the recorded count of 12,080 persons. It went on to project some 6,500 to 17,400 non-resident workers by 2036 largely dependent on the demand outlook for thermal coal.

Based on our research, diminishing thermal coal demand is expected to have a lesser impact on non-resident population numbers than anticipated by the Norling report. This is largely because most mines in the Isaac region already focus primarily on met coal production.

It is important to recognise that these projections are sensitive to a range of factors and future changes in policy and technology are likely to have unpredictable impacts.

Table 5.3: Comparison of Non-resident Population Projections, Norling and Foresight reports

	2021	2031	2036
Foresight Projections	12,080	14,500 to 15,400	14,500 to 16,300
Norling Projections	14,500 to 14,650	10,500 to 16,100	6,500 to 17,400

Source: Table 4.8 and Norling Consulting Population & Economic Review 2016.

6. CONCLUSION

As stated in the 2016 Economic and Population Review Isaac Region study by Norling Consulting Pty Ltd, the Isaac region is strongly influenced by cycles in the resources sector and its population fluctuates in response to increased or diminished employment opportunities.

Following record-high coal prices, the industry is entering a period of some uncertainty with increased royalties and an effort to improve productivity (cost per tonne) to maintain viable and attractive assets.

Over the short term (5-10 years), moderate growth is anticipated, in both the permanent resident and non-resident populations. The scale and location of this growth will largely depend on employment opportunities, housing availability, and private investment in the resources sector.

Given the region's population and prosperity is sensitive to changes in economic conditions, we consider it prudent to revisit population and non-resident workforce projections as new data becomes available (ideally every 5 years). This will ensure that strategic planning and Council's decision-making is supported by the latest evidence and information regarding emerging trends and growth patterns.

APPENDICES

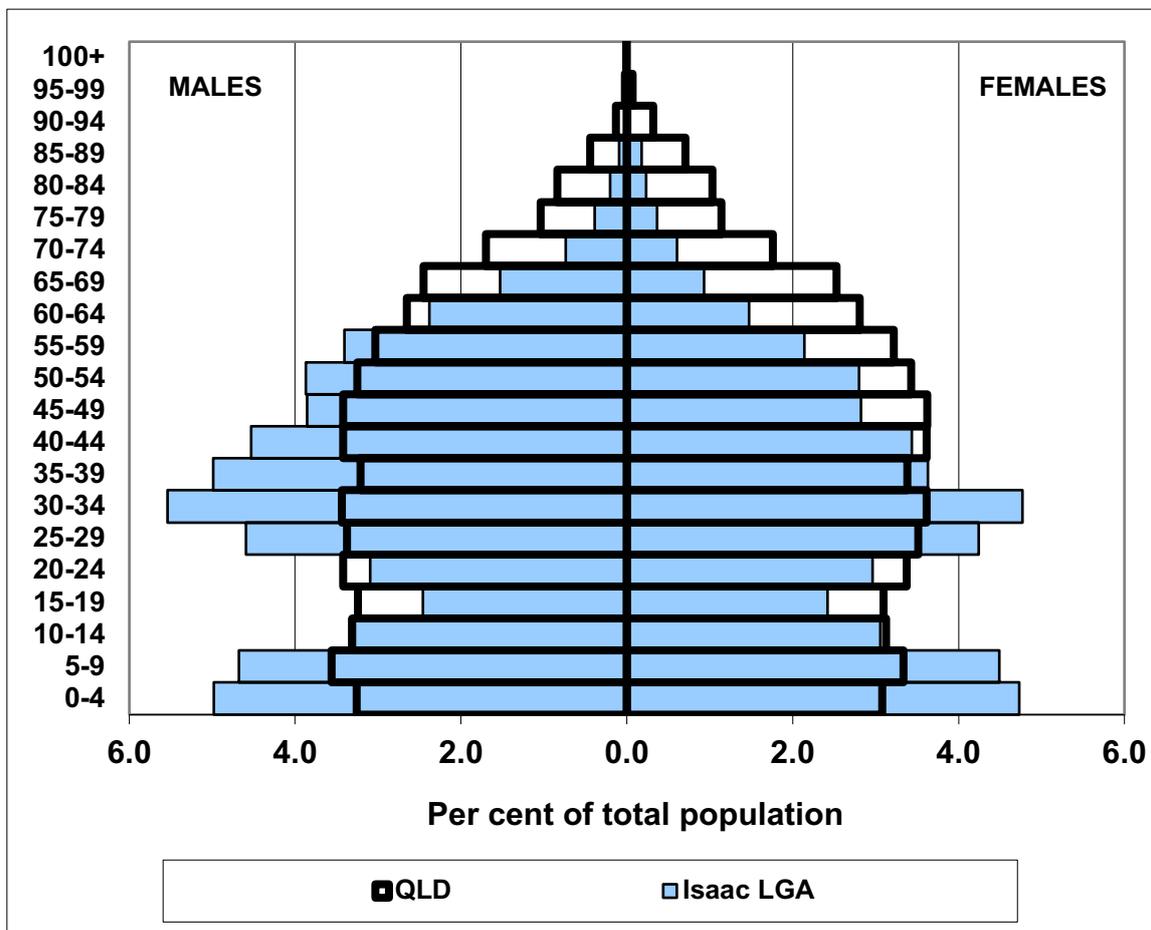
Appendix 1: Selected Socio-Economic Characteristics, Sub-Regions, 2016

	Moran-bah	Clermont Town	Clermont Rural	Ilbilbie	Carmilla	St Lawrence	Nebo	Glenden	Middle-mount	Dysart	Nebo Rural	Isaac LGA	QLD
Age (% residents)													
0-14	28.5	25.0	23.0	14.6	14.2	9.1	22.0	25.2	27.3	26.7	16.8	25.3	19.5
15-24	11.3	10.0	13.1	5.9	6.3	8.6	7.5	12.3	10.0	13.4	9.9	11.0	13.1
25-44	38.7	31.6	27.3	19.4	19.6	14.5	40.4	38.5	42.4	34.8	38.0	35.7	27.1
45-64	19.9	19.3	26.7	37.7	41.0	40.0	25.7	21.8	19.5	22.5	29.5	22.6	25.2
65+	1.7	14.2	10.0	22.3	19.0	27.8	4.4	2.2	0.8	2.7	5.8	5.4	15.1
Employment (%)													
In labour force	84.5	68.9	81.8	51.2	61.0	46.9	78.7	88.0	83.4	78.4	86.0	79.9	65.8
Unemployed	5.6	5.5	3.6	10.0	6.1	9.9	4.7	4.9	2.8	6.0	2.0	4.9	7.6
White collar occupations	43.4	48.1	59.6	49.1	59.5	53.4	27.1	43.2	38.0	33.6	46.0	43.7	67.8
Employed per household (persons)	1.7	1.3	1.7	1.0	1.0	0.8	1.5	1.8	1.8	1.5	2.2	1.6	1.3
Household Income													
Average (\$2023 values)	\$181,183	\$120,132	\$116,740	\$96,781	\$87,725	\$70,029	\$138,860	\$193,003	\$185,372	\$157,020	\$141,436	\$153,208	\$112,754
Dwelling Structure (% households)													
Detached	81.6	90.9	90.8	89.1	95.1	91.3	92.1	89.7	89.7	93.0	95.2	87.1	77.2
Semi-detached	10.8	1.0	0.0	0.0	0.0	0.0	0.0	1.8	8.6	1.3	2.3	5.8	10.6
Flats/units	6.4	5.7	4.5	0.0	0.0	0.0	6.0	8.5	1.0	5.7	0.0	5.1	11.3
Other structure	1.2	2.5	4.7	10.9	4.9	8.7	2.0	0.0	0.6	0.0	2.5	2.1	0.9
Dwelling Tenure (% households)													
Owned	8.2	28.5	38.9	51.6	47.1	53.1	14.8	6.0	1.3	17.6	33.4	18.2	29.3
Purchasing	12.5	26.0	27.0	36.1	23.5	25.0	22.5	0.0	0.6	13.6	10.5	15.2	34.7
Renting	79.2	45.4	29.5	12.3	27.2	21.9	62.7	94.0	97.5	68.8	51.3	65.5	35.2
Average Annual Occupancy Cost - Mortgages	\$29,126	\$22,800	\$26,370	\$22,457	\$26,810	\$21,518	\$19,652	n.a.	n.a.	\$13,353	\$34,788	\$25,176	\$29,247
Average Annual Occupancy Cost - Rentals	\$10,465	\$10,175	n.a.	n.a.	n.a.	n.a.	\$13,180	\$3,613	\$5,669	\$7,735	n.a.	\$9,075	\$21,774
Mobility (% households)													
No car	2.5	4.7	0.0	4.9	6.4	2.5	5.0	0.0	0.6	4.0	2.0	2.7	6.1
1 Car	28.6	34.6	25.1	27.9	29.8	34.8	25.9	32.9	30.2	30.0	22.4	28.7	35.4

	Moran-bah	Clermont Town	Clermont Rural	Ilbilbie	Carmilla	St Lawrence	Nebo	Glenden	Middle-mount	Dysart	Nebo Rural	Isaac LGA	QLD
2 or more cars	69.0	60.7	74.9	67.2	63.8	62.7	69.1	67.1	69.2	66.0	75.6	68.6	58.5
Education (% persons Aged 20+)													
Bachelor's degree	11.1	9.8	6.8	2.8	4.4	1.8	4.4	12.8	9.3	5.6	6.0	8.9	14.1
Grad Dip/Grad Cert	1.0	0.5	0.3	0.0	0.0	0.9	0.0	1.0	1.4	0.5	1.0	1.0	1.9
Postgraduate Degree	1.4	0.9	0.3	0.0	0.0	0.0	1.6	0.8	1.4	0.2	0.7	1.1	3.8
Family Type (% households)													
Couples with Children	43.1	32.6	37.5	19.2	26.3	13.2	24.8	50.5	52.0	36.1	36.6	39.6	30.3
Couples without Children	23.5	27.2	35.2	43.2	30.5	37.3	30.2	23.5	23.2	24.6	31.0	26.0	28.8
Single Parent Household	8.2	6.8	3.8	5.6	4.3	8.4	8.1	0.0	5.4	8.0	3.3	7.8	11.1
Lone Person Household	21.4	30.2	20.1	31.9	39.0	36.3	30.9	23.7	17.5	27.7	26.0	23.2	23.9
Group/Other Household	3.8	3.1	3.4	0.0	0.0	4.8	6.0	2.4	1.9	3.6	3.1	3.3	5.8

Source: ABS Census 2016.

Appendix 2: Age-Sex Pyramid, Isaac LGA & QLD Comparison, 2016



Source: ABS Table builder 2016 Census - Counting Persons, Place of Usual Residence.

Appendix 3: Active Coal Mines, Isaac LGA

No.	Mine Name	Company	Nearest Township
1	Aquila	Anglo American	Middlemount
2	Blair Athol	TerraCom	Clermont
3	Broadlea	Fitzroy Australia Resources	Moranbah
4	Broadmeadow	BMA (BHP)	Moranbah
5	Broadmeadow East	Bowen Coking Coal	Moranbah
6	Byerwen	Qcoal Group	Glenden
7	Lake Lindsay	Anglo American	Middlemount
8	Oak Park	Anglo American	Middlemount
9	Carborough Downs	Fitzroy Australian Resources	Moranbah
10	Carmichael	Bravus Mining and Resources (Adani)	Clermont
11	Caval Ridge	BMA (BHP)	Moranbah
12	Clermont	Glencore Coal	Clermont
13	Coppabella	Peabody Energy	Nebo/ Moranbah
14	Daunia	BMA (BHP)	Middlemount
15	Foxleigh	Middlemount South	Middlemount
16	Goonyella Riverside	BMA (BHP)	Moranbah
17	Grosvenor	Anglo American	Moranbah
18	Hail Creek	Glencore Coal	Glenden
19	Ironbark No.1	Fitzroy Australia Resources	Moranbah
20	Lake Vermont	Jelinbah Group	Dysart
21	Middlemount	Middlemount Coal	Middlemount
22	Millennium	MetRes	Moranbah
23	Moorvale	Peabody Energy	Moranbah
24	Moranbah North	Anglo American	Moranbah
25	North Goonyella	Peabody Energy	Moranbah/ Glenden
26	Olive Downs	Pembroke Resources	Moranbah/ Dysart
27	Peak Downs	BHP	Moranbah
28	Poitrel	Stanmore resources	Moranbah
29	Saraji	BHP	Dysart
30	South Walker Creek	Stanmore Resources	Nebo
31	Vulcan Mine Complex	Vitrinite	Dysart
32	Isaac Downs (in Isaac Plains Complex)	Stanmore Resources	Moranbah

Source: Bowen Basin Resource Industry Workforce 2022 and Foresight Partners based on online sources.