

# Surat Basin population report, 2019

## Introduction

The resource sector in regional Queensland utilises fly-in/fly-out and drive-in/drive-out (FIFO/DIDO) workers as a source of labour supply. These non-resident workers live in regional areas while on-shift. The Australian Bureau of Statistics' (ABS) resident population estimates for these areas do not include non-resident workers.

The non-resident population represents the number of FIFO/DIDO workers who are on-shift in the region at a given point in time. This group includes those employed in construction, production, and maintenance at mining and gas industry operations, renewable energy projects and resource-related infrastructure.

This report provides non-resident population estimates for the Surat Basin during the last week of June 2019. It also includes full-time equivalent (FTE) population estimates, which aggregate the resident and non-resident populations to provide a more complete indicator of demand for certain services.

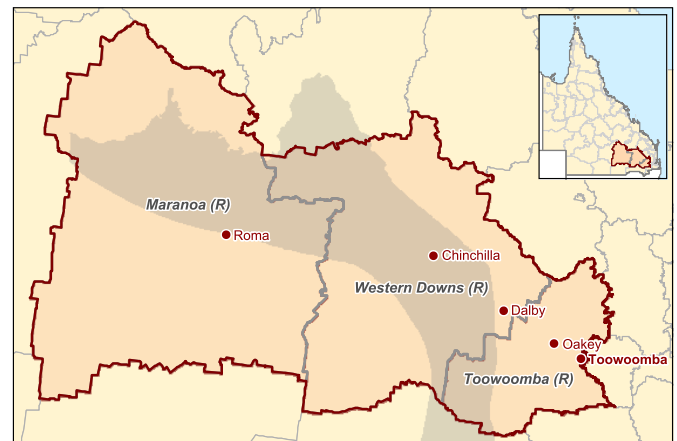
Estimates within this report are primarily derived from the annual Survey of Accommodation Providers conducted by the Queensland Government Statistician's Office (QGSO). The survey includes worker accommodation villages (WAVs), hotels, motels, and caravan parks.

## Key findings

Key findings of this report include:

- The estimated non-resident population of the Surat Basin was 4,040 persons at the end of June 2019, around 415 persons or 11% higher than in June 2018.
  - At the local government area (LGA) level, the largest number of non-resident workers on-shift in the region was counted in Western Downs (R) (2,540 persons or 63%). Around one-third were counted in Maranoa (R) (1,260 persons or 31%), with the remainder in Toowoomba (R) (245 persons or 6%).
  - Of all urban centres and localities (UCLs) in the Surat Basin, Chinchilla had the largest non-resident population (800 persons), followed by Miles (260 persons) and Dalby (185 persons). Altogether, 45% of the region's non-resident population was accommodated in town. The remainder, more than half (55%), stayed in rural areas.
- FIFO/DIDO workers associated with the coal seam gas (CSG) industry account for most of the Surat Basin's non-resident population. Growth in the region's non-resident population in 2018–19 was driven by CSG activity, including construction of additional gas gathering infrastructure, ongoing drilling programs and maintenance activities.
- The Surat Basin's full-time equivalent (FTE) population was estimated at 220,975 persons in June 2019, comprising 216,935 residents and 4,040 non-resident workers on-shift. Non-resident workers on-shift made up slightly less than 2% of the region's FTE population.
- In June 2019, around eight in every ten non-resident workers in the Surat Basin stayed in worker accommodation villages (WAVs) while on-shift (3,210 persons or 79%). The remainder (830 persons or 21%) stayed in other accommodation such as hotels/motels and caravan parks.
- The increase in the Surat Basin's non-resident population in 2018–19 resulted in more workers in both WAVs (up by 270 persons) and other accommodation types (up by 145 persons). Most of this growth was in Western Downs (R).
- Around 38% of hotel/motel rooms in the Surat Basin were vacant and available in June 2019, down from 44% in June 2018.

Figure 1 Surat Basin region



### The Surat Basin – at a glance

The Surat Basin (Figure 1) is a major energy province, based on coal seam gas production, coal mining and electricity generation. The region comprises the local government areas (LGAs) of Maranoa (R), Western Downs (R) and Toowoomba (R).

Population at June 2019:

Non-resident population .....	4,040
Resident population .....	216,935
Full-time equivalent population.....	220,975



### Surat Basin update, 2018–19

In 2018–19, the focus of CSG operations in the Surat Basin (Figure 3 and Table 5) by major gas companies was on unlocking more gas from existing fields to supply domestic and international customers. In addition to ongoing drilling programs, activities centred on increased efficiencies, including enhanced utilisation of existing infrastructure, to facilitate expanded production. During 2018–19:

- **Queensland Curtis LNG (QCLNG)** completed 'Project Ruby' near Chinchilla and commenced 'Project Goog-a-binge', a 250-well development across various locations in Western Downs (R) connecting to existing gas facilities (QGC, 2019; Queensland Government, 2018). Drilling commenced in February 2019, with 34 wells drilled by the end of May 2019. Ongoing operations and maintenance activities also continued across the company's development areas.
- **Gladstone LNG (GLNG)** focussed its drilling activities in the Surat Basin at Roma East, with 222 wells drilled as at June 2019 (Santos, 2019a; Santos, 2019b). Construction on this 480-well development, which also requires new gas gathering infrastructure, will continue until mid-2020 (Santos, 2019c). A program of development and well optimisation projects to support production continued at Fairview, which is predominantly located in northern Maranoa (R). GLNG also progressed drilling at Arcadia Valley, which is in Central Highlands (R) in the Bowen Basin.
- **Australia Pacific LNG (APLNG)** continued drilling and production across its Surat Basin gas fields, with 245 wells drilled and 265 wells commissioned as at June 2019 (Origin Energy, 2019b). Development involved improved infrastructure utilisation to ensure more efficient gas supply, including construction of the 36 km Eurombah Reedy Creek Interconnect (ERIC) pipeline to connect facilities which process gas from APLNG's fields north-east of Roma (APLNG, 2019; Origin Energy, 2019a). Planned maintenance also took place across its upstream gas processing facilities.

Other companies also contributed to CSG activity in the Surat Basin in 2018–19:

- **Senex Energy** began a 110-well integrated drilling campaign across Roma North (in Maranoa (R)) and Project Atlas (near Wandoan in Western Downs (R)) to deliver gas to the domestic market (Senex Energy, 2019a). Drilling started at Roma North in June 2019 (Senex Energy, 2019b).
- **Jemena** was working collaboratively with Senex Energy, with commissioning of the Roma North Processing Facility in progress in June 2019 (Jemena, 2019b). Works were also underway on the Atlas Gas Pipeline Project, which comprises a compressor station and 60 km pipeline connecting Senex Energy's Project Atlas to the Wallumbilla Gas Hub (Jemena, 2019a; Valmec, 2019).
- **Arrow Energy** continued to supply gas to local power stations and other customers from their gas fields at Tipton West, Kogan North, Daandine and Stratheden (Arrow Energy, 2019).
- **Armour Energy** continued to deliver gas to the domestic market through its Kincora Project (Armour Energy, 2019).

Renewable energy projects in the region continued to progress in 2018–19. In Western Downs (R), **Darling Downs Solar Farm** began commercial operation in January 2019 (APA Group, 2019) and **Coopers Gap Wind Farm** began generating electricity in late June 2019, with the first two of 123 turbines feeding energy into the National Electricity Market (AGL, 2019). In Toowoomba (R), construction continued on Stage 2 of Canadian Solar's **Oakey Solar Farm** (DNRME, 2019), while **Yarranlea Solar Farm** was progressing to schedule (Risen Energy, 2019).

Four thermal coal mines in the region continued production during 2018–19: **Cameby Downs**, **Commodore**, and **Kogan Creek** mines in Western Downs (R), and **New Acland** in Toowoomba (R). Other activities, including power station maintenance and civil works, were also underway.

## Non-resident population

The non-resident population of the Surat Basin was estimated at 4,040 persons at the end of June 2019, around 415 persons or 11% higher than in June 2018 (Table 1).

Most of the non-resident workers on-shift in the region were counted in the LGA of Western Downs (R) (2,540 persons or 63%), with around one-third counted in Maranoa (R) (1,260 persons or 31%), and the remainder in Toowoomba (R) (245 persons or 6%).

All three LGAs recorded non-resident population growth in the year to June 2019. Western Downs (R) had the largest increase, growing by 285 persons or 13%, while the non-resident population of Maranoa (R) increased by 90 persons or 8%. Growth in these two LGAs was driven by CSG activity, including construction of additional gas gathering infrastructure, ongoing drilling programs and maintenance activities.

### Non-resident population

The non-resident population is the number of fly-in/fly-out or drive-in/drive-out (FIFO/DIDO) workers who are living in the area of their workplace at a given point in time, but who have their usual place of residence elsewhere.

Due to shift arrangements, not all members of the non-resident workforce are present in the local area at one time. For that reason, the non-resident population refers to the number of non-resident workers on-shift at a given point in time, rather than the total non-resident workforce.



The non-resident population of Toowoomba increased by 40 persons or 20% in 2018–19. Compared with the other two Surat Basin LGAs, the non-resident population of Toowoomba (R) had a smaller proportion of workers directly related to the CSG industry in June 2019, with other workers engaged in activities including power station maintenance and construction of renewable energy projects.

**Table 1 Non-resident population, Surat Basin LGAs, June**

LGA	2018	2019	Change, 2018 to 2019	
	— persons —		persons	%
Maranoa (R)	1,170	1,260	90	8
Toowoomba (R)	205	245	40	20
Western Downs (R)	2,255	2,540	285	13
<b>SURAT BASIN TOTAL</b>	<b>3,625</b>	<b>4,040</b>	<b>415</b>	<b>11</b>

Figures in tables have been rounded to the nearest five; see Notes at end of report for details.

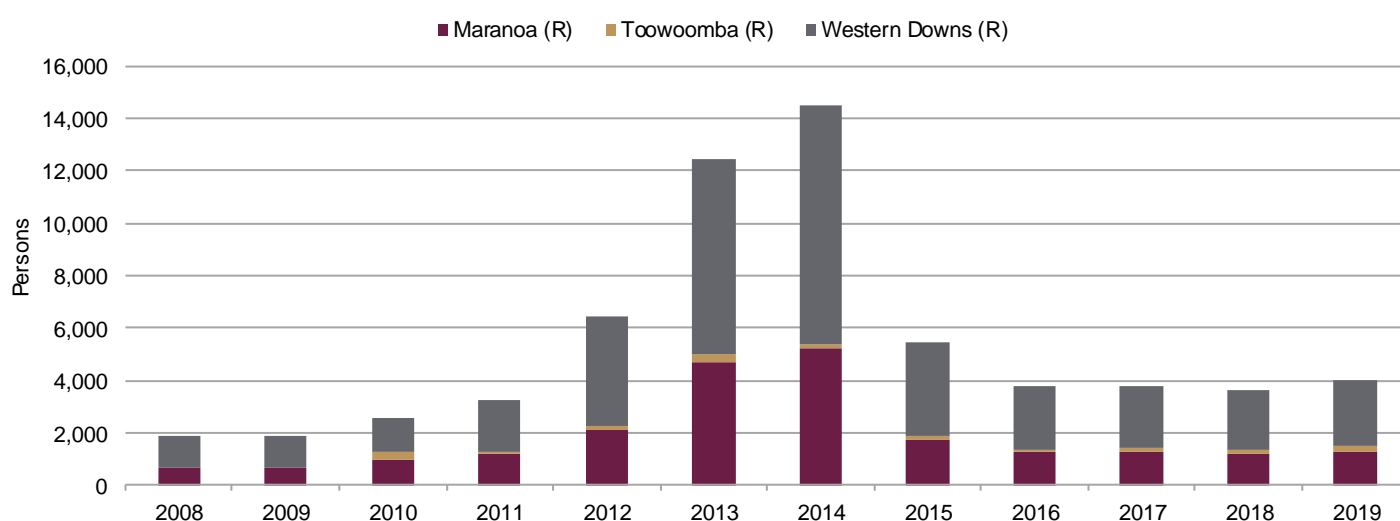
Source: QGSO estimates

As time series data show, the non-resident population of the Surat Basin reached a peak of 14,490 persons in June 2014, due to the presence of large, temporary FIFO/DIDO workforces required for construction of major infrastructure associated with three large CSG projects (Figure 2). Once these construction projects were completed, the number of non-resident workers on-shift declined rapidly with the transition to gas production.

Since June 2016, the region's non-resident population has been relatively stable, consisting primarily of workers associated with ongoing production, maintenance and drilling activities undertaken by the three large CSG projects. With major construction completed, the focus of the industry shifted towards making best use of existing infrastructure to expand gas production for both international and domestic markets. Smaller gas companies have become increasingly active in the region, in response to new opportunities for exploration and development.

During 2018–19, companies continued to focus on ensuring gas supply for domestic and overseas markets. Ongoing production activity has been accompanied by construction of additional infrastructure such as gas compression facilities and ancillary pipelines, which are needed to connect to the existing gas network. Construction of renewable energy projects, power station maintenance and civil works also contributed to activity in the region.

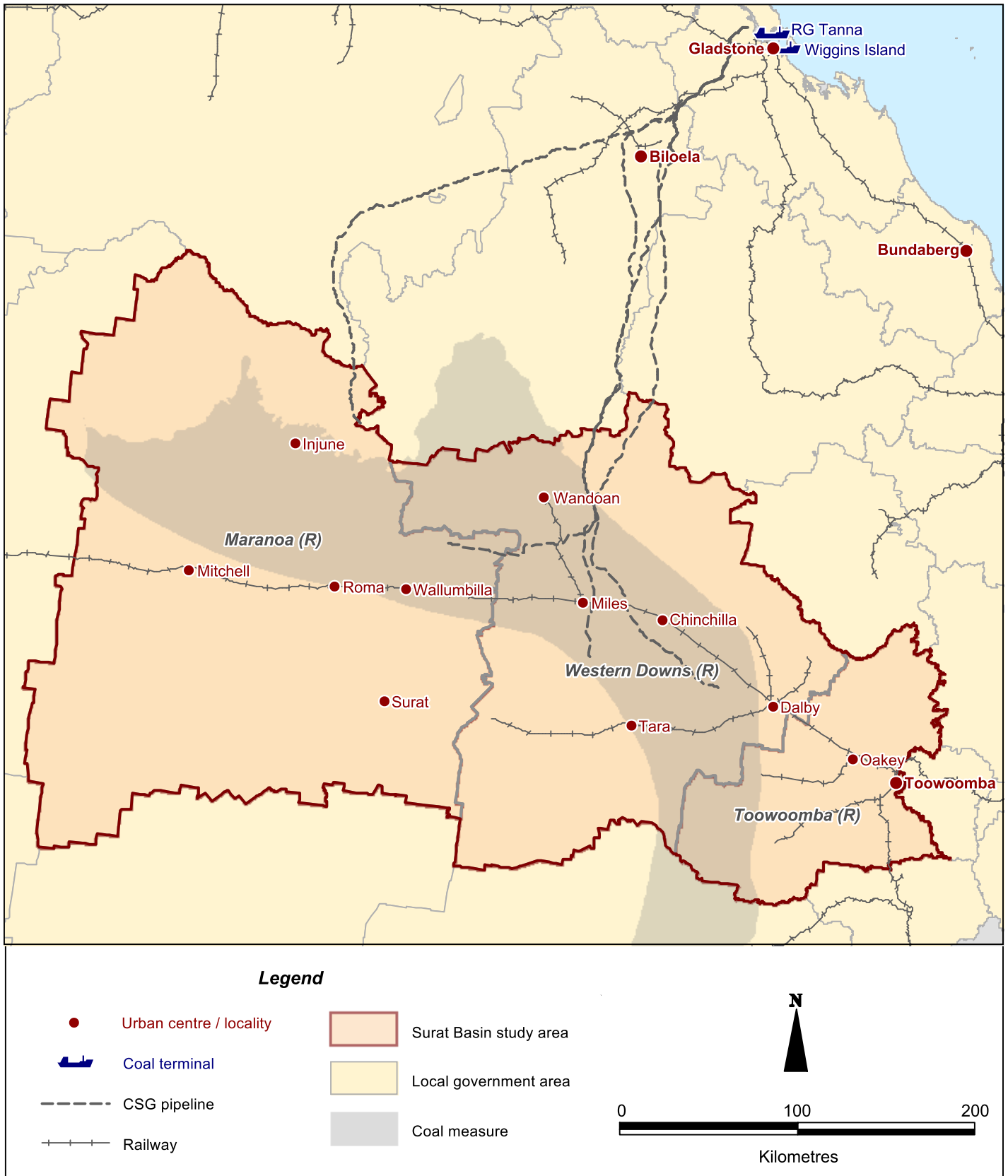
**Figure 2 Non-resident population, Surat Basin LGAs, June**



Note: Estimates for 2008 do not include Toowoomba (R). Data for the Surat Basin were not collected in 2009 and estimates are extrapolated from 2008 data.

Source: QGSO estimates

Figure 3 Surat Basin local government areas and selected urban centres and localities



Source: QGSO

## FTE population estimates

In June 2019, the Surat Basin had an estimated FTE population of 220,975 persons, comprising 216,935 residents and 4,040 non-resident workers on-shift (Table 2). Non-resident workers on-shift made up slightly less than 2% of the region's FTE population.

At the LGA level, Toowoomba (R) had the region's largest FTE population (169,905 persons), with the non-resident component making up less than 1% of the total. Non-resident workers on-shift accounted for 7% of Western Downs (R)'s FTE population of 37,015 persons, and 9% of Maranoa (R)'s FTE population of 14,055 persons.

### Full-time equivalent population

The FTE population measure is the sum of the resident population (people who live in the area permanently) and the non-resident population (i.e. the number of non-resident workers on-shift).

The FTE population measure provides a more complete estimate of total demand for certain services and infrastructure in regions with a high incidence of FIFO/DIDO workers.

**Table 2 FTE population estimates, Surat Basin LGAs and selected UCLs, June 2019**

LGA	Location <sup>(a)</sup>	UCL	Resident population <sup>(b)</sup>	Non-resident population	FTE population
			— persons —		
Maranoa (R)	In town	Injune	335	35	365
		Roma	6,975	95	7,070
		Other towns <sup>(c)</sup>	1,390	25	1,415
	Rural areas		4,095	1,105	5,205
<b>Maranoa (R) total</b>			<b>12,800</b>	<b>1,260</b>	<b>14,055</b>
Toowoomba (R)	In town	Millmerran	1,385	60	1,445
		Toowoomba	105,340	165	105,510
		Other towns <sup>(c)</sup>	39,100	20	39,115
	Rural areas		23,835	0	23,835
<b>Toowoomba (R) total</b>			<b>169,660</b>	<b>245</b>	<b>169,905</b>
Western Downs (R)	In town	Chinchilla	6,235	800	7,035
		Dalby	12,260	185	12,440
		Miles	1,240	260	1,505
		Wandoan	340	160	500
		Other towns <sup>(c)</sup>	2,455	30	2,490
	Rural areas		11,945	1,100	13,045
<b>Western Downs (R) total</b>			<b>34,475</b>	<b>2,540</b>	<b>37,015</b>
<b>SURAT BASIN TOTAL</b>			<b>216,935</b>	<b>4,040</b>	<b>220,975</b>

(a) Refer to Notes at end of report for explanation of 'in town' and 'rural areas'.

(b) QGSO unpublished data.

(c) UCLs with only one accommodation provider or fewer than 20 non-resident workers are aggregated in 'Other towns'.

Figures in tables have been rounded to the nearest five; see Notes at end of report for details.

Source: QGSO estimates

## Non-resident population by location

Several urban centres and localities (UCLs) in the Surat Basin housed non-resident workers on-shift in June 2019 (Table 2). The three UCLs with the largest non-resident populations were in Western Downs (R) – Chinchilla (800 persons), Miles (260 persons) and Dalby (185 persons).

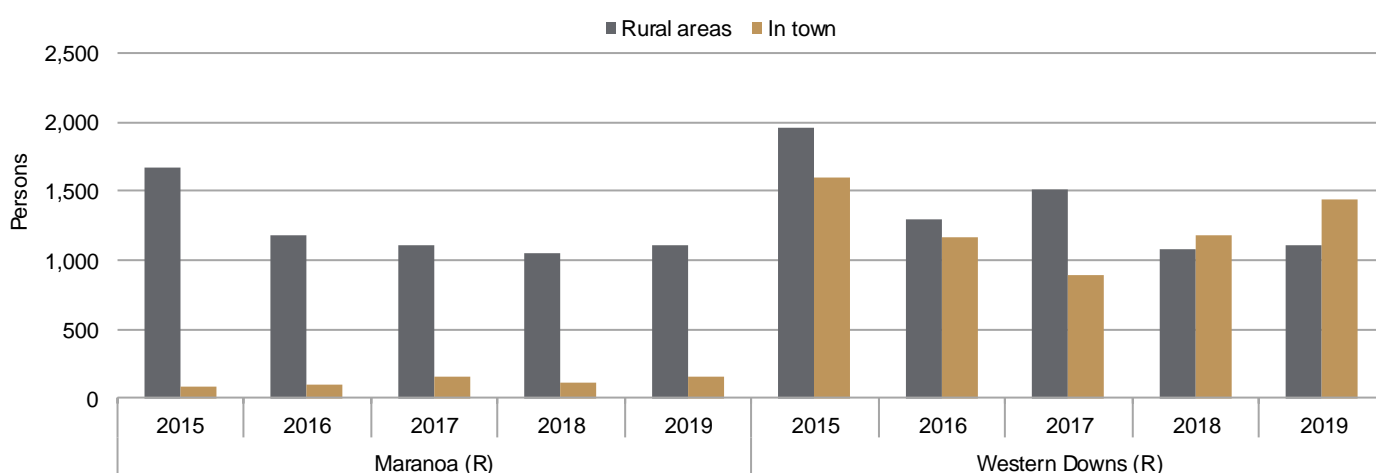
Most non-resident workers on-shift in the Surat Basin in June 2019 were counted in rural areas (2,210 persons or 55%) rather than in town. Almost all the FIFO/DIDO workers in rural areas were engaged in CSG activity and were accommodated in WAVs close to their place of work. In Maranoa (R), there were 1,105 persons (or 88% of the non-resident population) accommodated in rural areas, compared with only 150 persons staying in town. While Western Downs (R) also had a large number of non-resident workers on-shift in rural areas (1,100 persons), the majority of the

non-resident population in June 2019 stayed in town (1,435 persons or 57%). The non-resident population of Toowoomba was counted entirely in town (245 persons).

As the time series in Figure 4 shows, rural areas of Maranoa (R) have historically accounted for the majority of the LGA's non-resident population, due to the remote location of most of the gas industry activity and associated WAVs. Between June 2018 and June 2019, the number of non-resident workers on-shift in Maranoa (R) increased both in town (40 persons) and in rural areas (50 persons).

In Western Downs (R), the proximity of CSG operations and projects to population centres facilitates greater utilisation of in-town accommodation by non-resident workers, with substantial numbers counted in town every year. Over the last two years, the number of non-resident workers staying in town has grown to exceed the number in rural areas. This has been due to several influences, including changes in the geographical location of CSG activity, the emergence of renewable energy projects, and the implementation of policies calling for more non-resident workers to stay in local towns while on-shift. Between June 2018 and June 2019, the number of non-resident workers on-shift grew by 260 persons in town and by 25 persons in rural areas.

**Figure 4 Non-resident population by location<sup>(a)</sup>, Maranoa (R) and Western Downs (R), June**



(a) Refer to Notes at end of report for explanation of 'in town' and 'rural areas'.

Source: QGSO estimates

## Non-resident worker accommodation

In June 2019, around eight in every ten non-resident workers in the Surat Basin stayed in WAVs while on-shift (3,210 persons or 79%). The remainder (830 persons or 21%) stayed in other accommodation such as hotels/motels, caravan parks and rental properties (Table 3).

Non-resident worker accommodation usage across the region in June 2019 reflects the different characteristics of the three LGAs. In Maranoa (R), non-resident workers on-shift in WAVs (1,185 persons) far outnumbered those in other accommodation (75 persons), while the non-resident population of Toowoomba (R) stayed only in other accommodation types (245 persons). In Western Downs (R), while the majority of non-resident workers on-shift was counted in WAVs (2,025 persons), there was also a substantial number in other accommodation (510 persons).

The increase in the Surat Basin's non-resident population in 2018–19 resulted in more workers in both WAVs (up by 270 persons) and other accommodation types (up by 145 persons). Most of this growth was in Western Downs (R), where the number on non-resident workers on-shift in WAVs increased by 185 persons, and those staying in other accommodation types increased by 100 persons.

### Worker accommodation villages (WAVs)

WAVs are commonly used to house unaccompanied non-resident workers. WAVs typically consist of demountable dwellings arranged in a village, with common dining, laundry and recreational facilities.

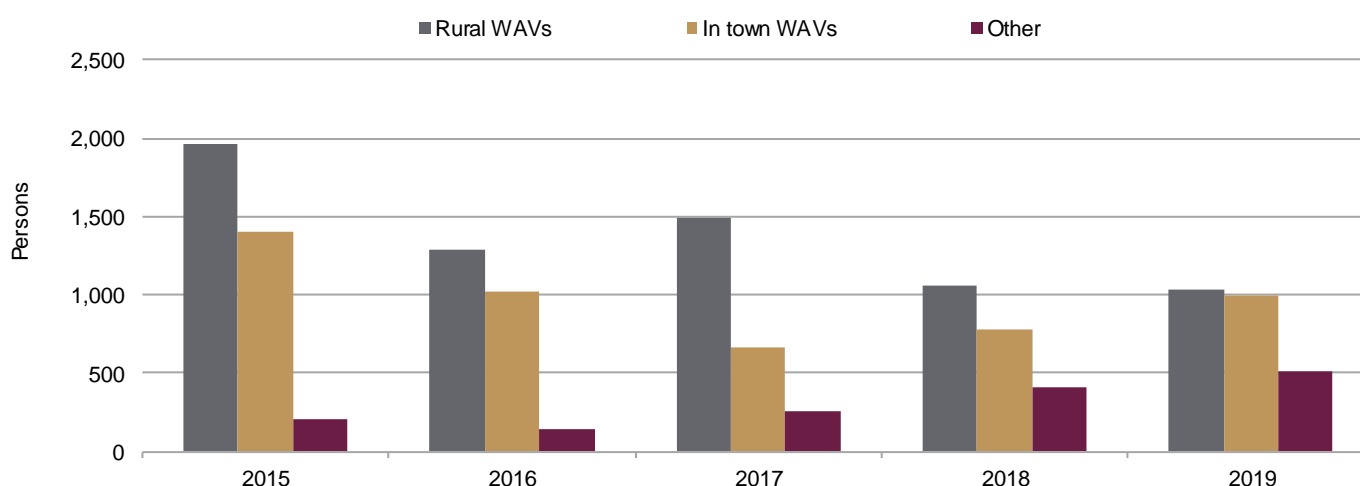
**Table 3 Non-resident population by accommodation type, Surat Basin LGAs, June**

LGA	WAVs	Other <sup>(a)</sup>	Total	WAVs	Other <sup>(a)</sup>	Total
	2019			Change, 2018–19		
— persons —						
Maranoa (R)	1,185	75	1,260	85	5	90
Toowoomba (R)	0	245	245	0	40	40
Western Downs (R)	2,025	510	2,540	185	100	285
<b>SURAT BASIN TOTAL</b>	<b>3,210</b>	<b>830</b>	<b>4,040</b>	<b>270</b>	<b>145</b>	<b>415</b>

(a) 'Other' includes hotels/motels, caravan parks and other accommodation. Refer to Notes at end of report for additional information.

Source: QGSO estimates

In Western Downs (R), WAVs are located in both rural areas and in town, while other accommodation types are predominantly in town. The majority of the non-resident population in June 2019 was split between rural WAVs (1,040 persons) and in town WAVs (990 persons), with the remainder staying in other accommodation (510 persons) (Figure 5). In recent years, accommodation usage in the LGA has changed as the in-town non-resident population has increased. Since June 2017, the number of non-resident workers on-shift counted in rural WAVs has declined while the number of workers staying at in-town WAVs has grown. The non-resident population in other accommodation also increased over this period.

**Figure 5 Non-resident population by accommodation type<sup>(a)</sup> and location<sup>(b)</sup>, Western Downs (R), June**


(a) 'Other' includes hotels/motels, caravan parks and other accommodation. Refer to Notes at end of report for additional information.

(b) Refer to Notes at end of report for explanation of 'in town' and 'rural'.

Source: QGSO estimates

Around 38% of hotel/motel rooms in the Surat Basin were vacant and available in June 2019, down from 44% in June 2018 (Table 4).

In Western Downs (R), demand for hotel/motel accommodation by non-resident workers on-shift contributed to a decline in the proportion of hotel/motel rooms that were vacant and available, from 49% in June 2018 to 35% in June 2019. The proportion of vacant and available hotel/motel rooms in Maranoa (R) also decreased (from 56% in 2018 to 42% in 2019), while the availability in Toowoomba (R) increased (from 36% in 2018 to 39% in 2019).

**Table 4 Vacant and available hotel/motel rooms, Surat Basin LGAs, June**

LGA	Occupied by non-resident workers	Vacant and available <sup>(a)</sup>	Balance <sup>(a)</sup>	Total hotel/motel rooms <sup>(a)</sup>	Vacant and available hotel/motel rooms			
					2019	2017	2018	2019
					— rooms —	— % —		
Maranoa (R)	65	280	325	665	49	56	42	
Toowoomba (R)	145	640	840	1,620	37	36	39	
Western Downs (R)	415	395	315	1,120	63	49	35	
<b>SURAT BASIN TOTAL</b>	<b>620</b>	<b>1,310</b>	<b>1,475</b>	<b>3,405</b>	<b>49</b>	<b>44</b>	<b>38</b>	

(a) Refer to Notes at end of report for explanation of 'vacant and available' and 'balance'.

Source: QGSO estimates

**Table 5 Existing resource operations and projects under construction<sup>(a)</sup>, Surat Basin, June 2019**

Category	Operation / project name	Company name	LGA
CSG	APLNG Drilling and Completions	APLNG <sup>(b)</sup>	Maranoa (R), Western Downs (R)
CSG	APLNG Surat Operations and Gas Gathering	APLNG <sup>(b)</sup>	Maranoa (R), Western Downs (R)
CSG	Arrow Energy Surat Operations	Arrow Energy	Western Downs (R)
CSG	Atlas Gas Pipeline Project	Jemena	Maranoa (R), Western Downs (R)
RI	Braemar 2 Power Station	Arrow Energy	Western Downs (R)
RI	Braemar Power Station	Alinta Energy	Western Downs (R)
RI	Brigalow Solar Farm	Impact Investment Group	Toowoomba (R)
CM	Cameby Downs Mine	Yancoal Australia	Western Downs (R)
CM	Commodore Mine	Millmerran Power Partners	Toowoomba (R)
RI	Condamine Power Station	QGC	Western Downs (R)
RI	Coopers Gap Wind Farm	AGL	Western Downs (R)
RI	Daandine Power Station	Arrow Energy	Western Downs (R)
RI	Darling Downs Power Station	Origin Energy	Western Downs (R)
CSG	Denison South (Yellowbank)	Denison Gas	Maranoa (R)
CSG	GLNG Drilling and Completions	GLNG <sup>(c)</sup>	Maranoa (R), Western Downs (R)
CSG	GLNG Surat Operations and Gas Gathering	GLNG <sup>(c)</sup>	Maranoa (R), Western Downs (R)
CSG	Kincora Project	Armour Energy	Maranoa (R)
CM	Kogan Creek Mine	CS Energy	Western Downs (R)
RI	Kogan Creek Power Station	CS Energy	Western Downs (R)
RI	Millmerran Power Station	InterGen	Toowoomba (R)
CM	New Acland Mine	New Hope Group	Toowoomba (R)
RI	Oakey Power Station	ERM Power	Toowoomba (R)
RI	Oakey Solar Farm	Canadian Solar	Toowoomba (R)
CSG	Project Atlas	Senex Energy	Western Downs (R)
CSG	QCLNG Drilling and Completions	QCLNG <sup>(d)</sup>	Western Downs (R)
CSG	QCLNG Surat Operations and Gas Gathering	QCLNG <sup>(d)</sup>	Western Downs (R)
RI	Roma Power Station	Origin Energy	Maranoa (R)
CSG	Western Surat Gas Project	Senex Energy	Maranoa (R)
RI	Yarranlea Solar Farm	Risen Energy	Toowoomba (R)

CM = coal mine CSG = coal seam gas RI = related infrastructure

(a) Includes coal mining operations, CSG operations, other resource industry-related infrastructure, and projects under construction as at June 2019.

(b) Australia Pacific LNG (APLNG) is a joint venture between Origin Energy, ConocoPhillips and Sinopec.

(c) Santos Gladstone LNG (GLNG) is a joint venture between Santos, PETRONAS, Total and KOGAS.

(d) Queensland Curtis LNG (QCLNG) is a joint venture between QGC, CNOOC and Tokyo Gas.

Source: QGSO 2019





## Notes

(R) – Regional Council UCL – Urban Centre/Locality

Data in this report are derived from surveys conducted by QGSO in 2019 and other sources. The Survey of Accommodation Providers counted non-resident workers staying in worker accommodation villages (WAVs), hotels, motels, caravan parks and other commercial accommodation on a medium to long-term basis during the last week of June 2019. Short-term and overnight visitors are not regarded as non-resident workers. The Resource Employment Survey collected workforce information from all resource companies with existing operations and projects in the Surat Basin as at June 2019.

Non-resident workers are people who fly-in/fly-out or drive-in/drive-out (FIFO/DIDO) to work and live in the area temporarily while rostered on, and who have their usual place of residence elsewhere. This group includes employees, contractors and associated sub-contractors, employed in construction, production, and maintenance at mining and gas industry operations, renewable energy projects and resource related infrastructure. Figures in this report refer to the number of non-resident workers on-shift, or present in the area at a given point in time, and should not be confused with total non-resident workforce numbers.

Non-resident population data presented in this report are a point in time measure, based on the best information available at the time of the surveys. Non-resident worker numbers may vary in response to changing production demands, prevailing weather and industrial disputes. At the time of the 2019 surveys, the number of non-resident workers on-shift in the Surat Basin was unaffected by adverse weather events or widespread industrial action.

Resident population estimates for 2019 are QGSO estimates.

'In town' includes populations counted in defined urban centres and localities (UCLs), as well as non-resident workers housed within 5km of town. 'Rural areas' include populations outside of defined UCLs, including non-resident workers more than 5km from town.

'Other' accommodation includes hotels/motels, caravan parks and other private rental accommodation.

'Vacant and available' refers to hotel/motel rooms that were not occupied by non-resident workers or other guests, and were vacant and available on the night of the survey. 'Balance' includes hotel/motel rooms occupied by short-term visitors, held for non-resident workers under permanent booking arrangements but not actually occupied on the night of the survey, or otherwise unavailable to prospective guests.

Figures in tables have been rounded to the nearest five. As a result of rounding, discrepancies may occur between sums of the component items and totals. Percentages and other calculations are made prior to rounding of figures and discrepancies might therefore exist between these calculations and those that could be derived from the rounded figures.

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