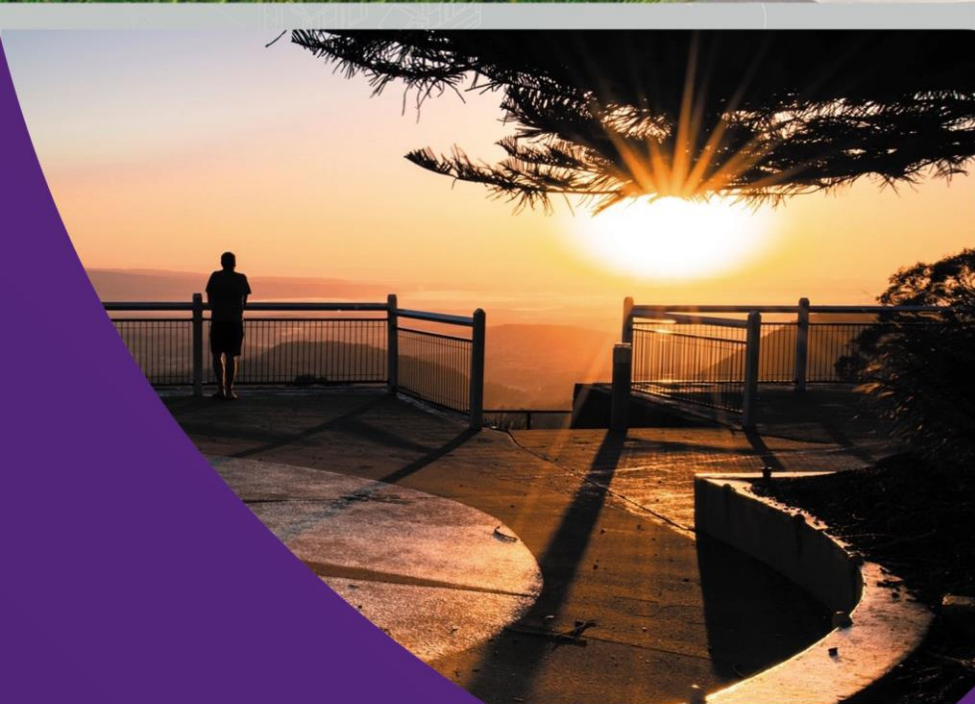


Annual Report: Toowoomba

Social and economic changes in Queensland's gasfield communities in
2018



Research Team

Dr Katherine Witt, Simone Elias and Amy Hodson

Acknowledgements

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Disclosure/Disclaimer

This research was funded by The University of Queensland Centre for Coal Seam Gas including the foundation industry members—Arrow Energy, APLNG, Santos and Shell (QGC). The Centre conducts research across Water, Geoscience, Petroleum Engineering and Social Performance themes. For information about the Centre’s activities and governance, see: <http://www.ccsq.centre.uq.edu.au/>

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The Australian Code for the Responsible Conduct of Research outlines expectations and responsibilities of researchers to further ensure independent and rigorous investigations. This report has not been peer reviewed.

Contact

Dr Katherine Witt
Research Fellow
The University of Queensland Centre for Coal Seam Gas
St Lucia Qld 4072 Australia
E: k.witt@uq.edu.au
W: www.ccsq.uq.edu.au
W: www.boomtown-indicators.org

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The Toowoomba CSG Development Story

Flow on effects related to coal seam gas development in Toowoomba are diffuse and mixed with other key drivers of change. Population seemed to change little, while total business income increased fourfold during the CSG construction period.

Such changes have been characterised here with the help of expert knowledge from members of the Toowoomba community— Chamber of Commerce, real estate agents, managers of hotels, motels and other local businesses, police, managers of employment agencies, and local and State government staff. These individuals were presented with statistical data on the following indicators of social and economic trends to assess the data's accuracy from a local point of view and to enable us to gather further insight about interconnections between observed changes. These data and insights combine to form the 'Toowoomba CSG development story'.

1. Population
2. Unemployment
3. Income
4. Housing
5. Top offences recorded by police

Those interviewed described Toowoomba as a conservative town with a strong and diverse economic base. Founded as an agricultural and government services centre, the town has developed food processing, manufacturing, transport, tourism and technology sectors.

Population in Toowoomba has been increasing slowly, and slow growth is expected to continue. Toowoomba is a popular retirement destination and has an increasing population of the aged. In Toowoomba, the presence of CSG non-resident workers (NRWs) during the CSG construction period was said to be less than interviewees expected. Data shows that most of the NRWs were based out of town. 2015 official predictions showed the number of NRWs for the Toowoomba region remaining stable. In reality, the number of NRWs in town more than halved. In 2017/18 the number of NRWs increased, but was still only 0.1% of the total population.

Unemployment in Toowoomba region has been below the Queensland rate since the commencement of these records (2004), except for 2013. However, unemployment rates have varied markedly between suburbs since 2010. All suburbs recorded increased unemployment in 2017, but only Harlaxton continued that trend in 2018. Skills shortages were experienced in some sectors during the CSG construction period, particularly hospitality and mechanics. Toowoomba now has a well skilled workforce and will be able to capitalise on any opportunities associated with future development projects. Average personal incomes have remained below the Queensland average and showed no significant increase

Housing in Toowoomba is still viewed by those we interviewed as affordable. Median house prices increased by more than \$50,000 in 2014 after a period of relative stability. By 2018 house prices and the number of sales levelled off. Rents for a 3-bedroom home increased steadily until 2016 when there was a slight decrease, followed by a slight increase in 2017 and again in 2018. That possibly reflects steady demand from the government services sector, particularly education and health services. Accommodation providers have largely serviced business travellers and short term stays. There was a shortage of budget accommodation for backpackers and budget travellers during the CSG construction phase. New residential building approvals have significantly increased from 2014 onwards and the Council's Regional Housing Strategy has encouraged new unit developments.

At the commencement of this research interviewees perceived Toowoomba to be a safe place to live. This view was supported by the data, which showed that Toowoomba's overall crime rate was historically close to the Queensland benchmark, although Good Order offences were significantly higher than the Queensland rate. Drug offences are also higher and are increasing rapidly although data shows that increasing drugs offences is a state- wide trend. All categories of offences rose in 2017 and remained there in 2018, there has been a 50% increase since the end of the CSG construction period. The number of offences can reflect police effort, and so recent increases in these offences may be due to concentrated police effort toward these issues. In 2018 the mixed responses from interviewees regarding the crime rates indicated some increase in concern amongst the community, however there was an expectation that rates would lessen in the future.

This booklet provides detail on the aspects of the 'Toowoomba story' based on the range of priority indicators that we tracked. We would like to thank members of the Toowoomba community for their cooperation and the gift of their time. We hope that we have done justice to their contributions to this study.

The UQ 'Cumulative Impacts' Research Team, June 2019.



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Introduction

The University of Queensland commenced research into the social and economic impacts of coal seam gas (CSG) development in 2013. This research focused on the combined impacts of the multiple CSG developments in the Western Downs region of Queensland as an initial case study, and has now expanded to include other local government areas—Maranoa, Toowoomba, and Isaac. The research team uses publicly available statistical information regarding a number of key indicators that were selected in consultation with community members at the commencement of research. These statistics are combined with additional data gained through interviews with key community members, which provide insight into the factors that are influencing changes in the community. This information is gathered each year, and findings are reported for each town, sub-regions and the region as a whole. More information about the methodology is contained in Appendix D to this report. In this document we present the findings on the town of Toowoomba.

The following acronyms are used throughout this report:

| | |
|-----|--------------------------|
| CSG | Coal seam gas |
| LGA | Local Government Area |
| NRW | Non-resident worker |
| SA2 | Statistical Area Level 2 |
| SA3 | Statistical Area Level 3 |
| SLA | Statistical Local Area |
| UCL | Urban Centre & Locality |

General insights

2018 summary

Toowoomba's diversified economy has allowed the town to capitalise on the positives the coal seam gas (CSG) boom brought with it. A recent wave of new industries (e.g. transport and logistics, food manufacturing, data centres) and construction projects (e.g. Second Range Crossing, airport, inland rail, New Hope coal) have been positive for the economy and helped to fill the post-CSG construction gap.

Community spirit:

- Community and business confidence is stable and high.

Changed capability:

- Business capabilities are improved and continue to grow.
- The \$70b¹ invested in CSG projects in Queensland is perceived to have “set the tone” for a new wave of industries in Toowoomba.
- Industry continues to provide funding for local business capacity building programs; for example, an emerging exporters program, funded by QGC, to support agricultural producers to get export ready.

Lessons learned:

- Larger cities are better equipped to absorb the changes that rapid CSG development brings.
- In order to manage community and business expectations, interviewees highlighted the need for clear communication from CSG companies about local procurement policies and procedures, and project timelines.
- Vehicle monitoring systems, wet camps (where alcohol is served), and zero tolerance of good order offences were seen as successful strategies to ensure safety.

¹ <https://www.business.qld.gov.au/industries/invest/mining/resources-potential/petroleum-gas>

1. Population

2018 summary

Toowoomba's resident population continues to slowly increase. Recent growth has been less than 0.5% per annum. The proportion of non-resident workers (NRWs) living in town remains very low. Community insights suggest Toowoomba's population growth is unrelated to coal seam gas (CSG) and that any CSG-related growth has been absorbed into the community with minimal impact.

Context

- Toowoomba is a popular destination for interstate migration due to poor housing affordability elsewhere.
- Toowoomba has been actively promoted in recent years in an attempt to boost population growth.

Trends reflected in the data

Historical trend: Toowoomba historically has a slowly (1 – 1.5% per annum) increasing population. Population growth was strongest (2%) in 2004/05. The greatest increases are in the 65-74 years age bracket (ABS 2013). The majority of this growth has occurred in Toowoomba West, which experienced growth of 50% in the 10 years prior to CSG activity.

During CSG construction period (2011 – 2014): Population in Toowoomba increased by less than 0.5% annually during the CSG construction. NRWs were also lower than surrounding towns. Toowoomba housed between 100 and 400 NRWs, which is less than 1 NRW per 700 residents.

Since CSG construction period (2015 – 2018): Overall population growth in the Toowoomba local government area (LGA) remained relatively steady, but had slightly lower growth of 0.44% in 2017/18. In the last year, population increased by 0.4%. Council is projecting strong growth over the coming decade, with the highest growth in Toowoomba West, which experienced a 3.2% population increase in the last year.

Community insights and perceptions

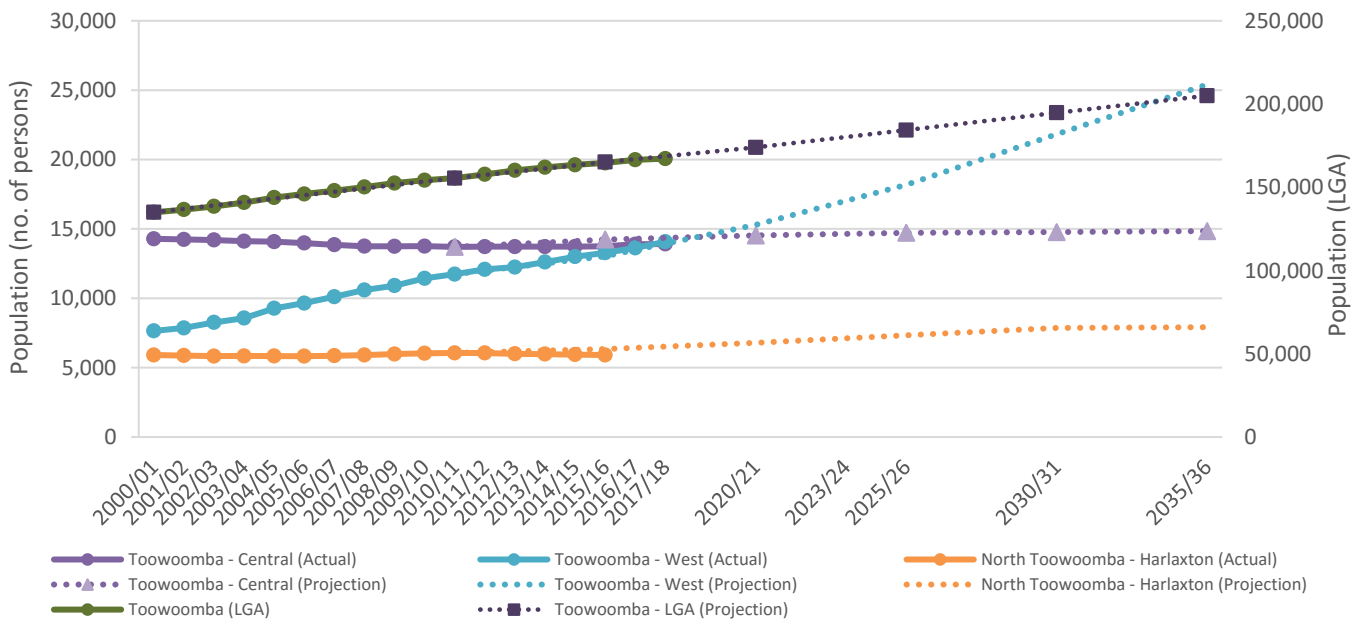
During CSG construction period (2011 – 2014): Most interviewees did not directly attribute population growth in Toowoomba to CSG development. Professional and management staff were often recruited from elsewhere, interviewees reported; mostly, these people moved to Toowoomba with their families, and so do not count as NRWs. NRWs were noticed in town, mainly on shift change-overs, but they were described as “not a big deal”. Increased levels of lower-income tenants were partly attributed to elevated rents in CSG-affected towns to the west.

Since CSG construction period (2015 – now): Some interviewees believe that the reported population growth is understated. In 2016, NRWs were associated with the construction of shopping centres and the Second Range Crossing, rather than CSG. Interviewees expected that the long-term, operational CSG workforce would choose to live in Toowoomba rather than further west.

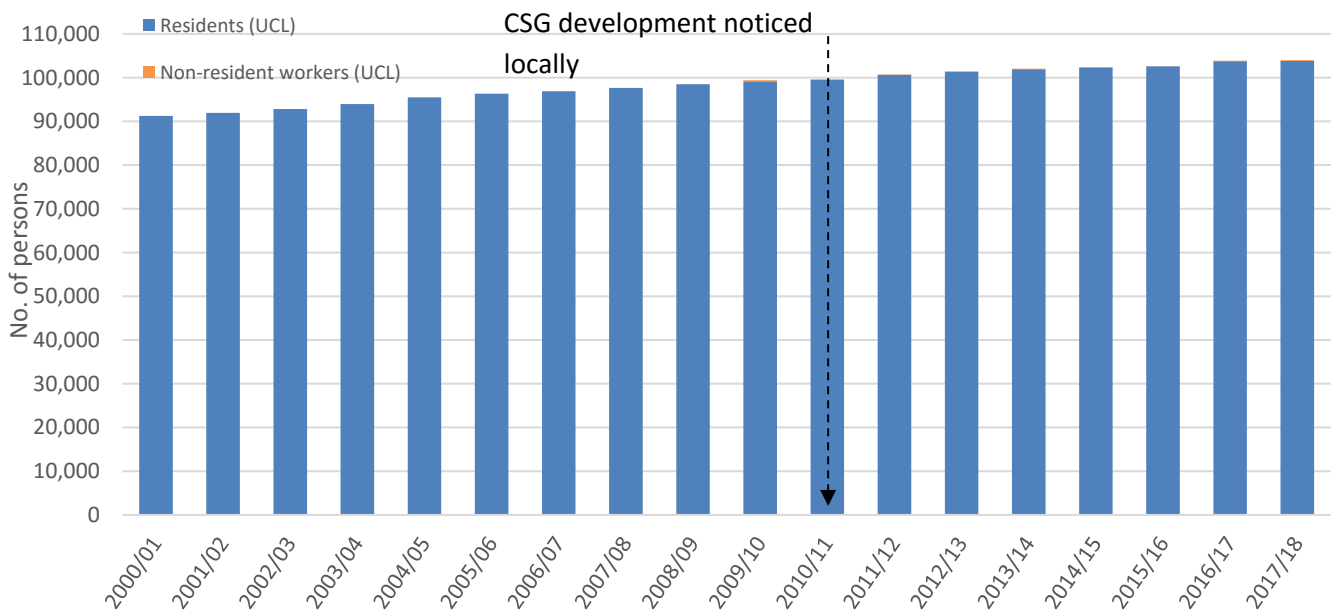
Future expectations: Perception is that Toowoomba will continue to steadily grow. This will be driven by interstate migration (particularly retirees) and upcoming major projects.

1. Population

1a. Toowoomba population and projections



1b. Resident vs. non-resident population



Data notes

- 1a source: SA2 population estimates from the QGSO table 'Estimated resident population by statistical area level 2 (SA2), Queensland, 2006 to 2016pr' (ASGS 2016), <http://www.qgso.qld.gov.au/subjects/demography/population-estimates/tables/erp-sa2-qld/index.php>; population projections (2015 edition) from QGSO table 'Projected population (medium series), by statistical area level 2 (SA2), SA3 and SA4, Queensland, 2011 to 2036' (ASGC 2001), <http://www.qgso.qld.gov.au/subjects/demography/population-projections/tables/proj-pop-medium-series-sa2-sa3-sa4-qld/index.php>
- 1b source: Population and non-resident worker population estimates for Toowoomba UCL from the QGSO 'Surat Basin Population Report' (ASGC 2016); 2018 version available here: <http://www.qgso.qld.gov.au/products/reports/surat-basin-pop-report/surat-basin-pop-report-2018.pdf>
- Data missing for 2008/09 non-resident worker population

2. Employment

2018 summary

Unemployment increased in Toowoomba LGA in 2017 but remains well below the Queensland benchmark. This is a reversal of the decreasing trend observed from 2013 – 2016. Unemployment varies significantly between suburbs; Northern and Central suburbs are the most affected. Depending on approvals for the Acland Mine jobs could go either way.

Trends reflected in the data

Historical trend: Historically, unemployment in Toowoomba LGA has followed and remained slightly below the Queensland rate. The noticeable shift in 2010 from uniform to highly varied trend lines between Toowoomba areas may be attributed to technical changes to ABS statistical boundaries.

During CSG construction period (2011 – 2014): Unemployment peaked in 2013 with Toowoomba LGA unemployment of 5.9% meeting the QLD benchmark. The Toowoomba Central and Harlaxton suburbs were particularly affected with rates approximately double the QLD benchmark. Since this spike, unemployment steadily decreased through the remainder of the construction period.

Since CSG construction period (2015 – 2018): Unemployment decreased in from 2015 to 2016, but has risen since then. The change in unemployment rate between 2017 and 2018 differed between suburbs, with Harlaxton experiencing an increase of 7.8%, while Toowoomba Central and West experienced a decrease in unemployment of 3.6% and 3.7% respectively. The Toowoomba LGA unemployment rate increased by 1.9% to sit at 5.4% in 2018, still below the Queensland benchmark rate of 6.1%.

Community insights and perceptions

During CSG construction period (2011 – 2014):

Despite high unemployment figures, skills shortages were experienced during the construction phase, particularly in hospitality and mechanics. “A fair proportion” of local residents worked as NRWs in the gasfields. Prolonged drought meant low demand for jobs in agriculture, but people could find work in CSG construction. Increased apprenticeships and other opportunities for training were associated with CSG construction and more employment agencies opened. Peaks in unemployment rates in the more affordable suburbs may be related to rising housing costs in the CSG regions.

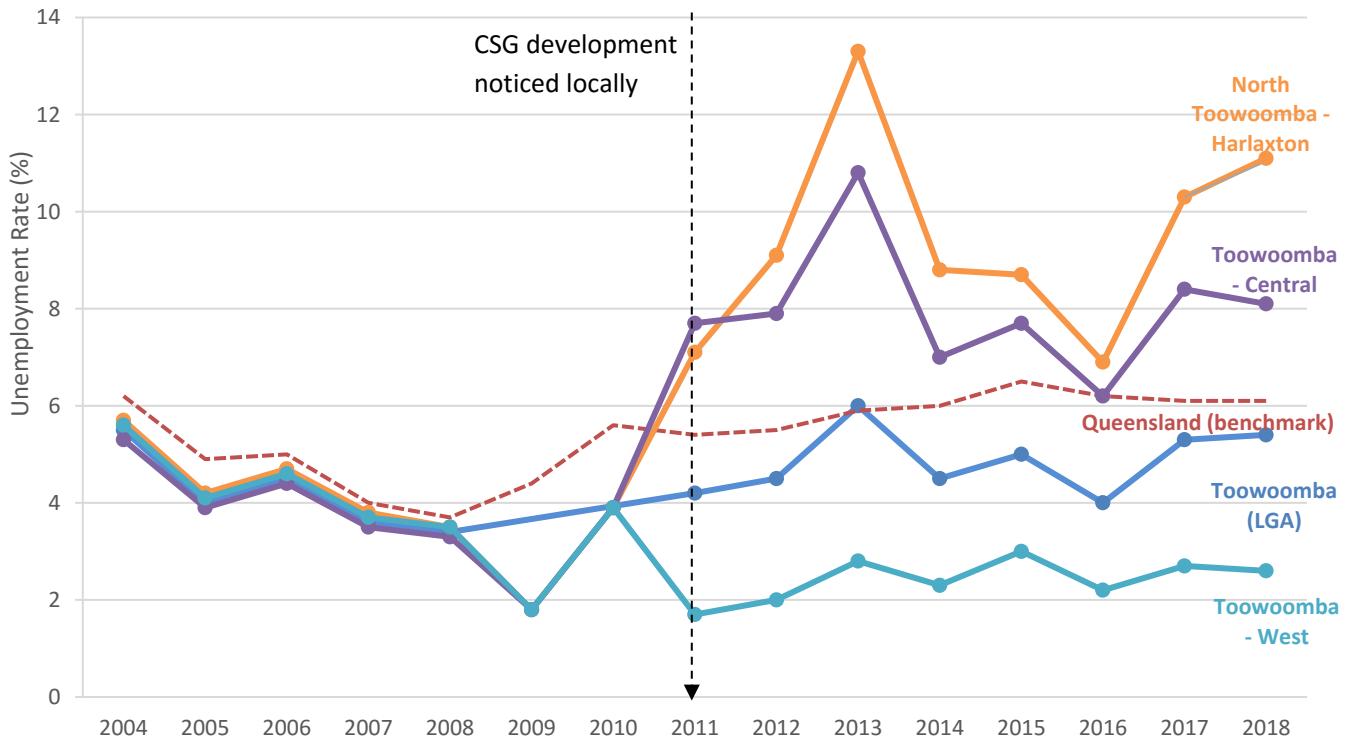
Since CSG construction period (2015 – now):

Recently, some larger companies have closed or moved away following the end of CSG contracts. Less apprenticeships are offered and unemployment mainly affects Toowoomba’s youth and indigenous communities.

Future expectations: Unemployment is expected to rise in some (mostly unskilled) sectors. Skilled workers and people who upskilled during CSG construction have good opportunities with development projects, such as construction of the Second Range Crossing and New Hope coal. CSG professionals are expected to move away; although CSG-related skills can be used to gain employment in local agriculture, the wages are less. With an available skilled workforce, Toowoomba is seen by those interviewed as “well-poised” for the next big project.

2. Employment

2a. Unemployment rate



Data notes

- Unless otherwise indicated, 2004-2008 based on SLA statistical boundaries; Source: QGSO Regional Database Archived dataset 'Labour Force - Small Area (Qtr Ended 31 Dec 2002 to Qtr Ended 31 Dec 2008) [DEEWR, Small Area Labour Markets Australia] (ASGC 2001)', <http://www.qgso.qld.gov.au/products/tables/qld-regional-database/index.php>
- 2009-2010 data from DEEWR file 'Unemployment salm_data_files_2008-2013'
- Unless otherwise indicated, 2010-2017 based on SA2 statistical boundaries; Source: QGSO Regional Database dataset 'Labour Force - Small Area (Qtr Ended 31 Dec 2010 to Qtr Ended 31 Dec 2018) [Department of Jobs and Small Business] (ASGS 2016)', <http://www.qgso.qld.gov.au/products/tables/qld-regional-database/index.php>
- Prior to 2017, unemployment data is reported for financial years; e.g. FY2016 corresponds to July 2015 to June 2016

3. Income

2018 summary

Community perception is a small proportion of businesses were impacted by CSG and Toowoomba has been able to capitalise on emerging industries and projects. Personal incomes have plateaued since 2014 but follow a similar trend to the Queensland benchmark.

Trends reflected in the data

Historical trend: Toowoomba personal incomes historically sit below the Queensland average, but follow the same trend.

During CSG construction period (2011 – 2014):

Average wage and salaries continued steadily increasing, in line with the Queensland trend.

The number of wage earners rose by 25% from 2009/10 to 2011/12, but returned to previous levels in 2012/13.

Since CSG construction period (2015 – 2018):

The number of wage earners and total individual earnings have fluctuated since the CSG construction period, but increased by 2.5% for the number of wage earners and 18.9% for total individual earnings between 2015/16 and 2016/17. Average personal incomes have plateaued since 2014 and is increasing at a lower rate than the Queensland average.

Community insights and perceptions

During CSG construction period (2011 – 2014):

Those interviewed noted that many local businesses were “disappointed with the CSG experience” and “only a very small percent of local businesses benefitted.” Expectations, interviewees noted, were sometimes “unrealistic” and “misinformed”. Contrary to expectations, there was no appreciable increase in local spending.

Since CSG construction period (2015 – now):

Interviewees noted the CSG construction ended abruptly – “with the flick of a switch”. With the opening of new large retailers, small CBD shopfronts have felt the impact and have seen a decline; however, there are council plans in this area.

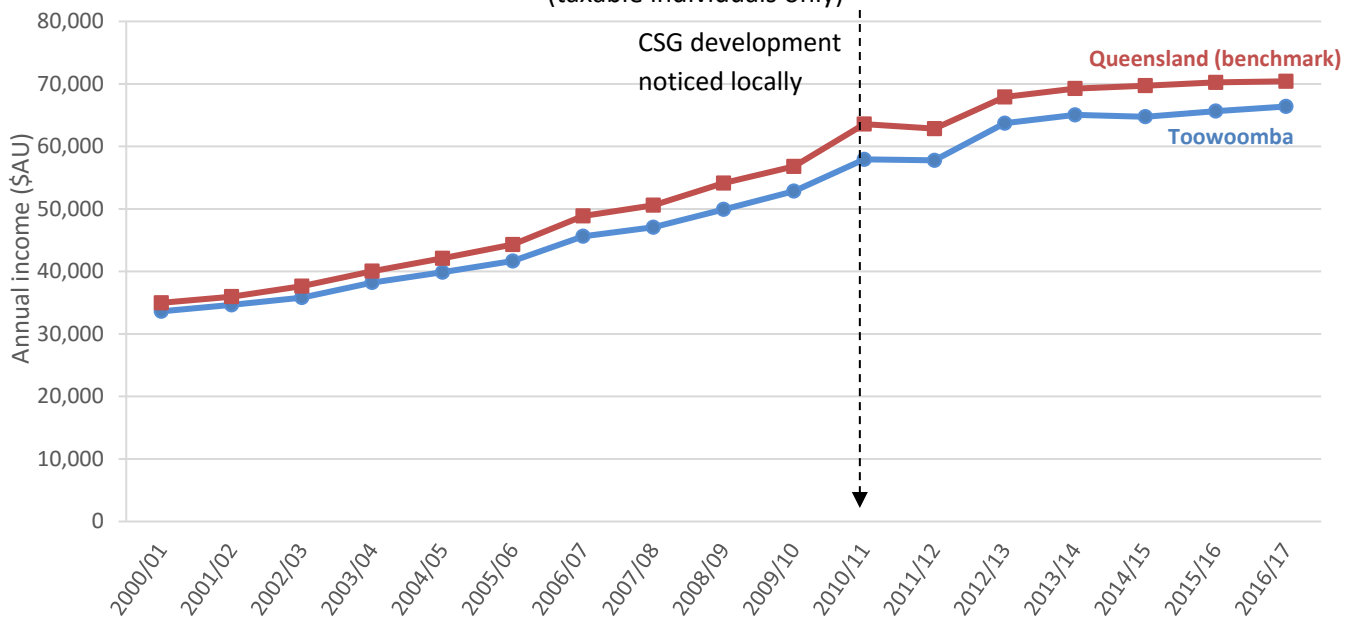
Future expectations:

Interviewees report business confidence is up. Businesses recognise opportunities in emerging industries (logistics, food manufacture, etc) and in major local projects (Second Range Crossing, solar farms and New Hope coal). This is reflected in increased rental of industrial sheds. Others expect more businesses will close, and average income will decrease as CSG employees lose high paying jobs.

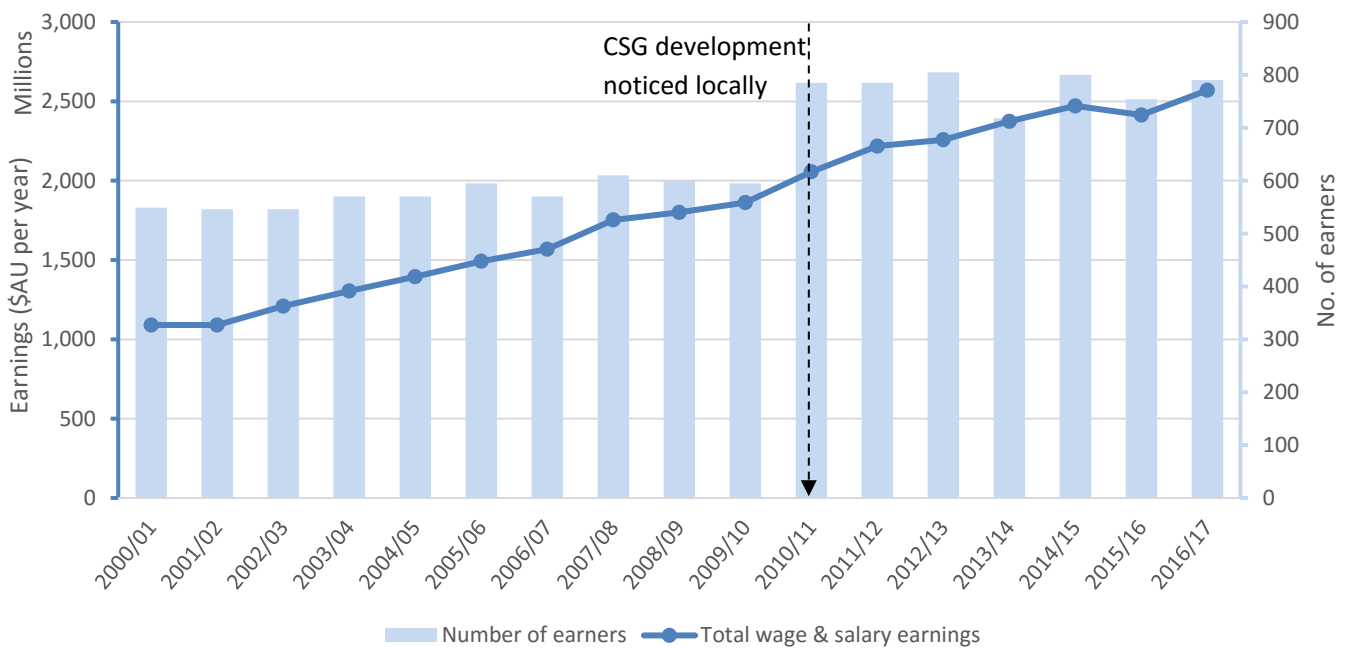
3. Income

3a. Average taxable income

(taxable individuals only)



3b. Total individual earnings



Data notes

- Source: Australian Taxation Office (ATO), Research and Statistics, <https://www.ato.gov.au/>
- Average taxable incomes reported by ATO until 2009 excluded losses. Averages from 2010 include all taxable incomes including incomes of zero and losses.
- Data relates to Toowoomba postcode 4350
- Original data – no discounting applied
- Due to ATO data publishing cycles, 2017/18 data will be included in the 2019 Toowoomba booklet

4. Housing

2018 summary

House prices remained steady through 2018 (compared to 6% in the CSG construction period). Rental prices dipped in 2016 but have reverted near to 2015 rates. Community insights reveal that the indicator selected for Toowoomba (3-bed house) does not reflect the variability across the rental market, due to rental of larger properties and impact of council policies on the quantity of units.

Context

- The Toowoomba Regional Housing Strategy, which aims to increase housing affordability, has promoted developments that increase dwelling density.

Trends reflected in the data

Historical trend: Toowoomba has an historically stable property market. The median sale price increased by just over \$50,000 in the 8 years from 2010 to 2013. The largest growth in house prices occurred between 2003 and 2005 when values increased 60% (the QLD benchmark jumped 30% in the same timeframe). As a service town, there is always been demand for rental accommodation and rents have increased about 6% per annum.

During CSG construction period (2011 – 2014): From 2011 to 2015, median house sale price in the Toowoomba LGA has increased by more than 5% per annum resulting in over \$50,000 increase in the 4 years. Median rents increased slightly less than the rate in the long term trend. The number of houses listed as sold slowly started to increase after 2010, peaking in 2014. Building approvals continued a historical average of 800 approvals per annum.

Since CSG construction period (2015 – 2018): Median house prices for the Toowoomba LGA continued to rise but at a rate of 2% for 2018, while the number of house sales decreased by 2%. Median house sales for Harlaxton and Toowoomba Central decreased by approximately 4% and 3% respectively. Rent prices dropped in 2016, but have risen since and are now at a peak, except for Toowoomba West, where rental prices are down 1.5% in 2018 from the peak in 2015. Building approvals dropped by 26% in 2018.

Community insights and perceptions

During CSG construction period (2011 – 2014):

Interviewees report that Toowoomba was promoted to southern investors as a real estate 'boom' town. These investors were often misled regarding quality and location of properties. The inter-state investment boom commenced well before CSG construction was noticed locally.

Since CSG construction period (2015 – now):

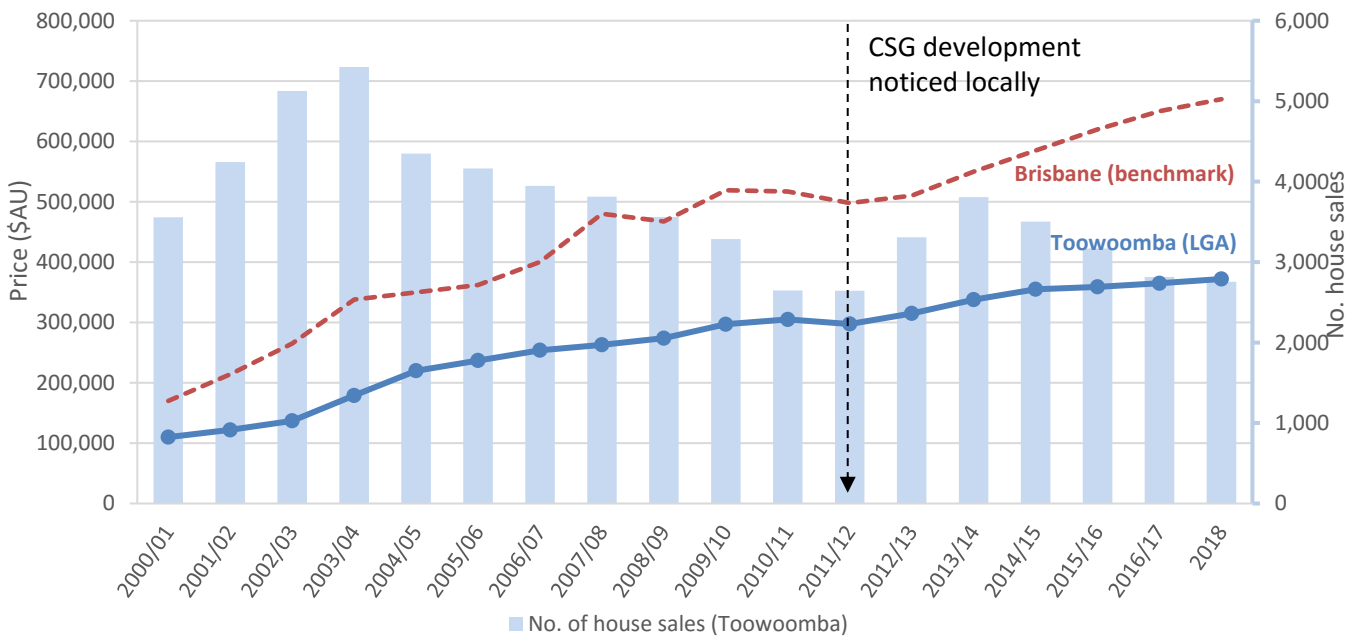
Some areas in Toowoomba are always in demand (e.g. close to schools, hospital), said those interviewed; sales and rents in these areas remain strong. Council incentives to build unit blocks which had created a temporary oversupply of units and this project is lessening. Building approvals are declining due to change in council policy away from increasing urban density dwellings.

Future expectations:

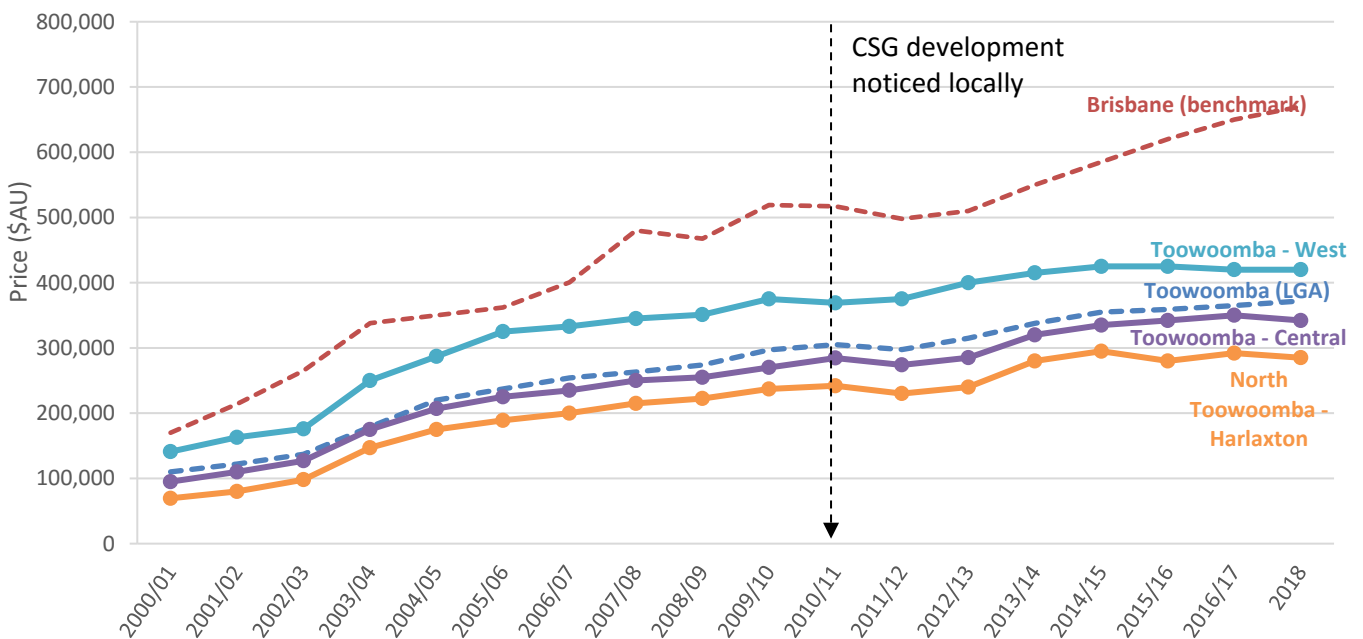
Those interviewed expect that the property market in Toowoomba will remain strong as projects attract people. The current surplus supply of units is closing but investment returns will be low for some. Demand for housing is steady and is showing early signs of undersupply.

4. Housing

4a. Median house sale price



4b. Median house sale price - Toowoomba SA2 comparison

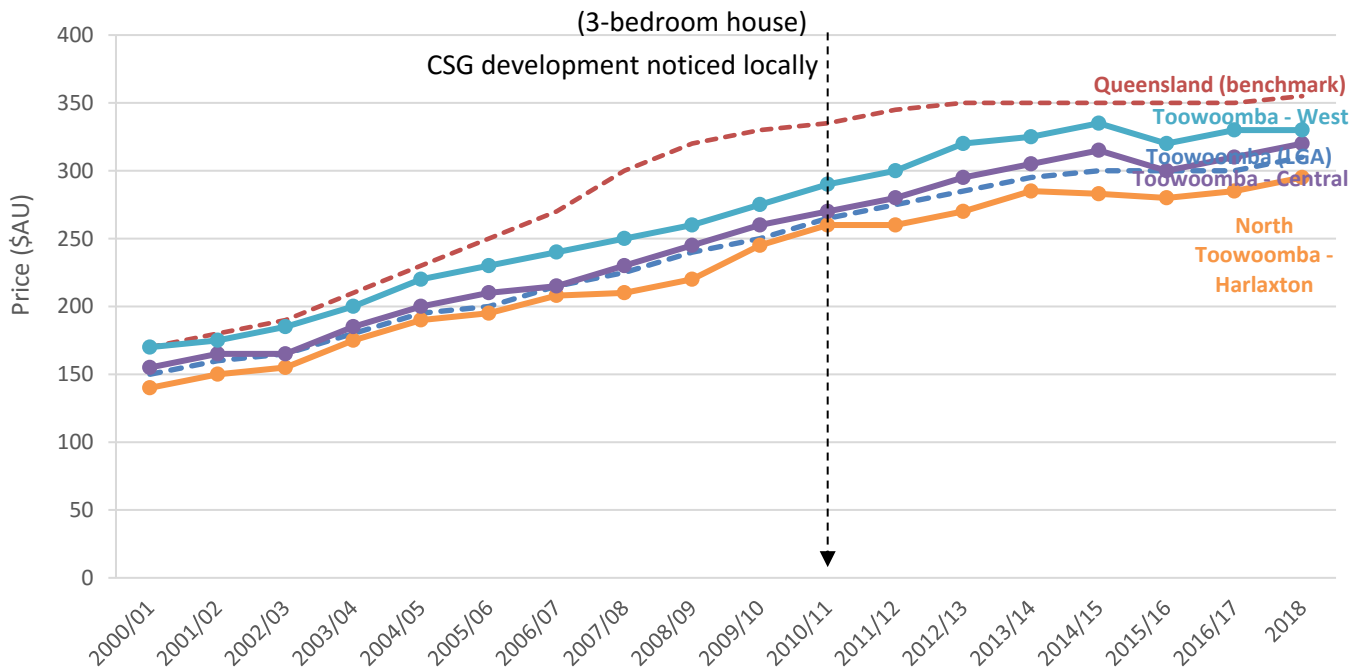


Data notes

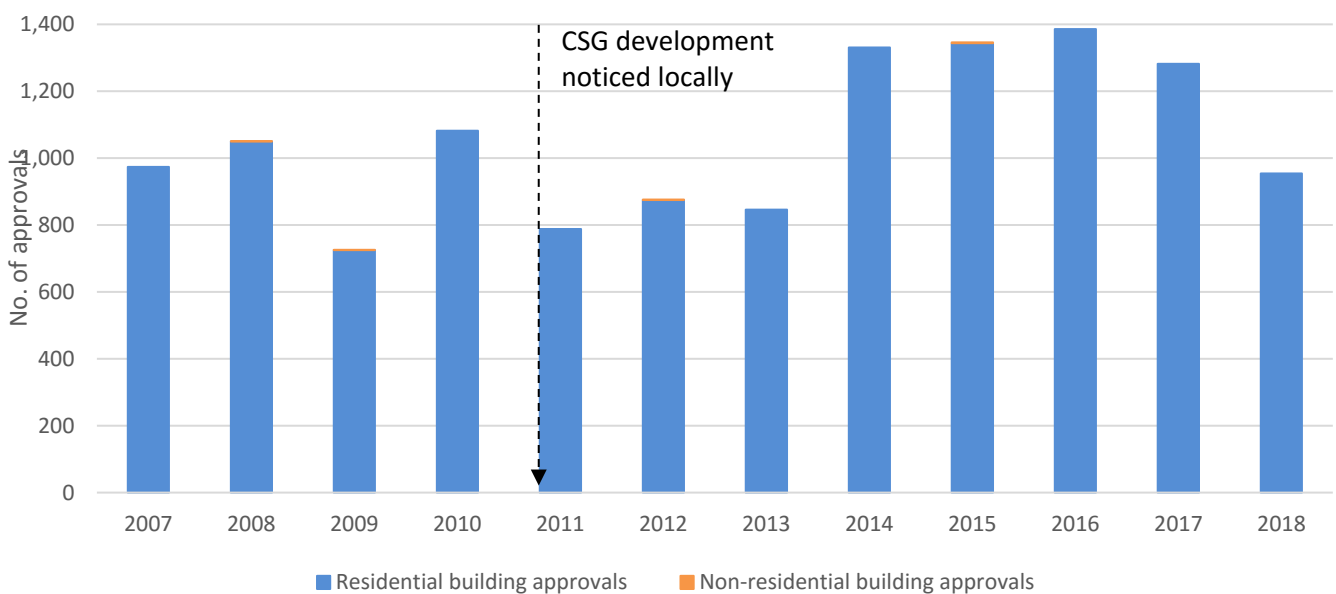
- Source: QGSO Regional Database dataset 'Residential land and dwelling sales (Year Ended 30 Sep 2000 to Year Ended 30 Sept 2017) [DNRM] (ASGS 2016)', <http://www.qgso.qld.gov.au/products/tables/qld-regional-database/index.php>
- 4a data based on Toowoomba LGA statistical boundary
- Prior to 2018, housing data is reported for end of year September; e.g. 2016/17 corresponds to October 2015 to September 2016

4. Housing

4c. Median weekly rent - Toowoomba SA2 comparison



4d. New building approvals



Data notes

- 4c source: QGSO Regional Database dataset 'Median rent (Year Ended 30 Sep 1990 to Year Ended 31 Dec 2018) [RTA] (ASGS 2016)', <http://www.qgso.qld.gov.au/products/tables/qld-regional-database/index.php>
- Prior to 2017, rent data is reported for financial years; e.g. FY2016 corresponds to July 2015 to June 2016
- 4d source: QGSO Regional Database dataset 'Building Approvals (Jul 2001 to Dec 2018) [ABS 8731.0] (ASGS 2016)', <http://www.qgso.qld.gov.au/products/tables/qld-regional-database/index.php>
- 4d data based on Toowoomba LGA statistical boundary
- Approvals shown for private buildings only; public developments are excluded
- Prior to 2017, building approvals are reported for financial years; e.g. FY2016 corresponds to July 2015 to June 2016

5. Safety & Wellbeing

2018 summary

CSG development had minor impacts on crime rates and on perceptions of crime among the stakeholders interviewed. Since the CSG construction ceased, crime rates have increased 50%. Drug and traffic offences are the largest contributors to this increase. Interviewees expressed particular concern for the impact of the drug offences on the community. Rate of drug offences are likely to change as the effects of police Operation Quebec Trawler are felt.

Context

- Toowoomba CBD is a QLD government designated 'safe night precinct', with associated controls in place
- Toowoomba Regional Council is currently seeking to be listed as a 'Certified Safe City'

Trends reflected in the data

Historical trend: Crime rates in Toowoomba are historically similar to, or just below, the Qld benchmark. In 2008, this trend switched to just above the QLD benchmark. This was driven by a jump in drug and good order offences and a decrease in the QLD benchmark crime rates.

During CSG construction period (2011 – 2014): Total offences in Toowoomba were stable during the CSG construction years. This was a balance of an increase in traffic offences and a decrease in Drug and Offences against property. Good order offences were also increasing and were particularly high in 2012.

Since CSG construction period (2015 – 2018): Total offences in Toowoomba have increased by since the end of the CSG construction period and are approximately 50% higher than the Queensland benchmark. This increase is dominated by an increase in traffic offences of 50% since 2014, although there was a slight decrease in 2018 and an increase in drug offences. Drug offences are nearly three times higher than during the CSG construction period and 1.8 times higher than the Queensland benchmark. Good order offences are nearly twice as high as the Queensland benchmark.

Community insights and perceptions

During CSG construction period (2011 – 2014):

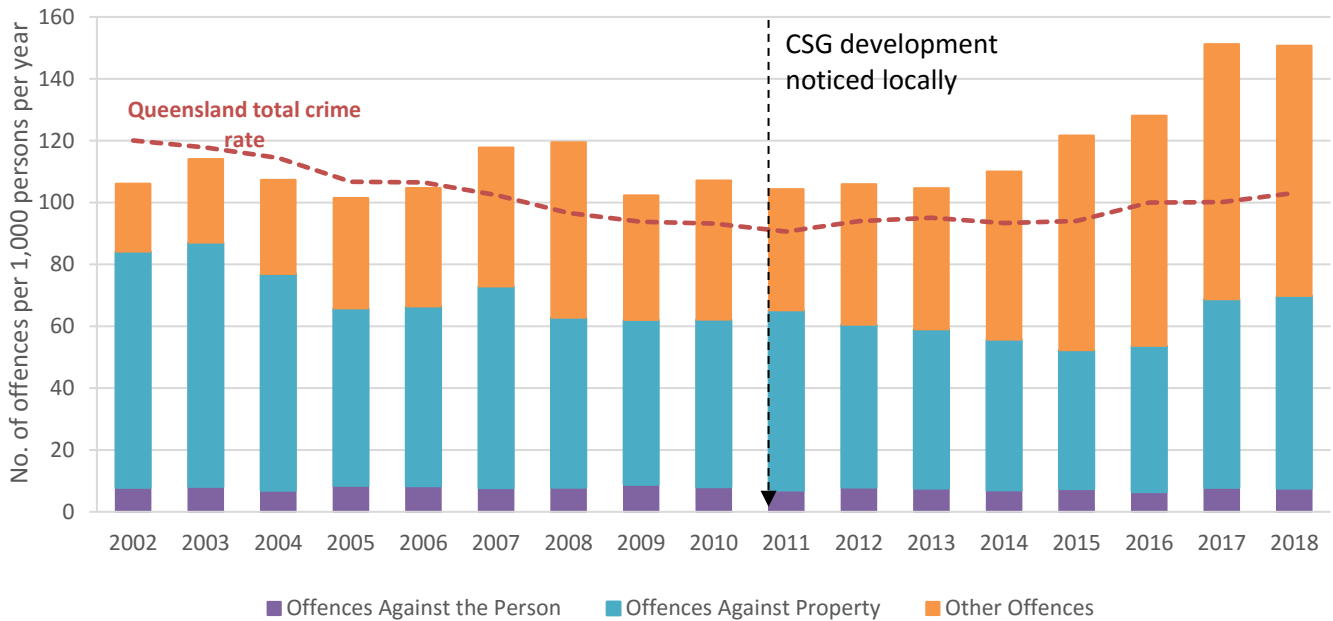
Interviewees noted increased 'crimes against the person' from 2012-2014. The 'safe night precinct' in the CBD, the wet camps (where alcohol is served) and industry employee contracts with zero tolerance of good order offences were seen as successful strategies to reduce these offences and ensure safety. It was also noted that "Toowoomba is not a FIFO location; so we didn't get the major FIFO issues". Interviewees associated the increasing traffic offences with higher traffic volumes. The vehicle monitoring systems and increased police focus kept traffic offences low.

Since CSG construction period (2015 – now): Several interviewees were surprised at overall crime levels in Toowoomba. Their perception is community safety has not significantly changed except for individual events (e.g. a recent murder). For others, the change in drug culture is disturbing. Previously the increase in drug offences in Toowoomba has been described as "no worse than any other place" and "not too visible", however some interviewees now believe that drug offences are higher than data shows. Interviewees felt tight budgets of welfare recipients encourage offences against property.

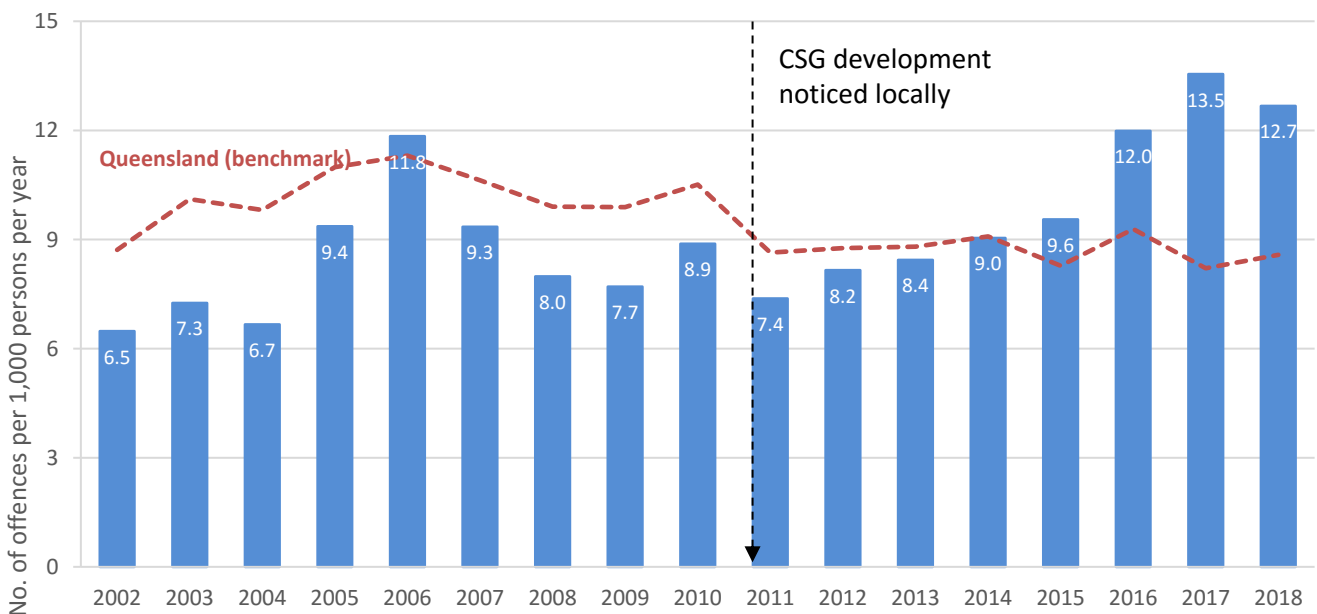
Future expectations: Interviewees believe increased police presence "will make a difference" and traffic offences should decrease again as traffic decreases.

5. Safety & Wellbeing

5a. Total offences



5b. Traffic and related offences

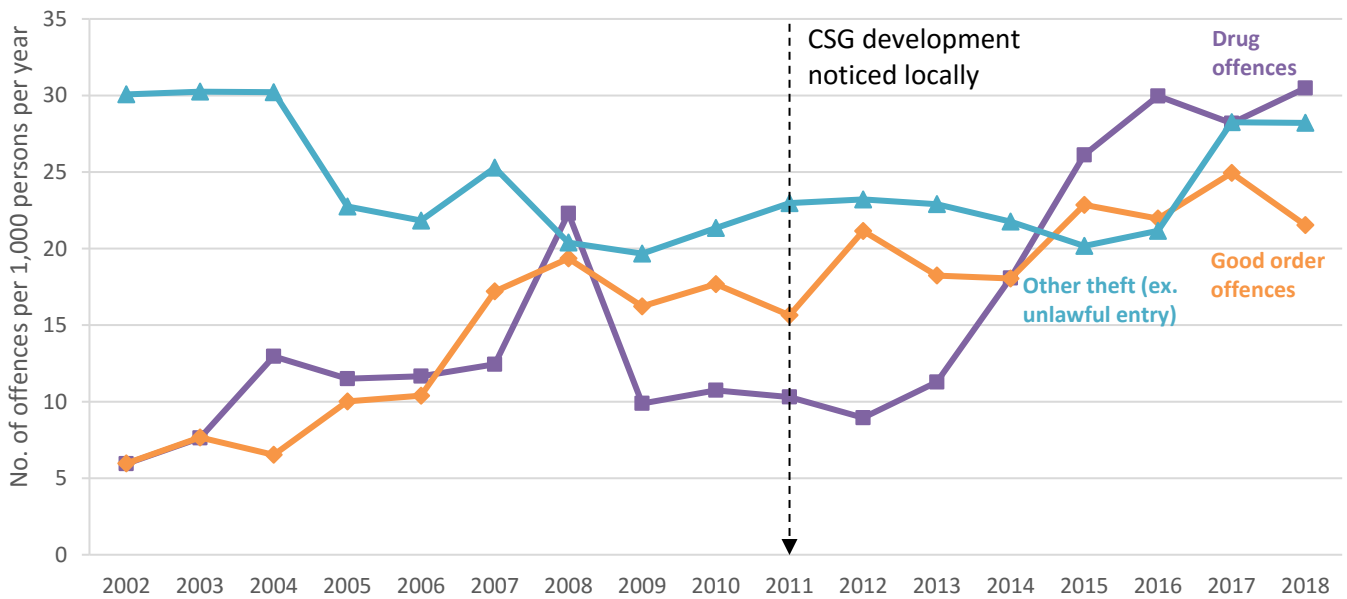


Data notes

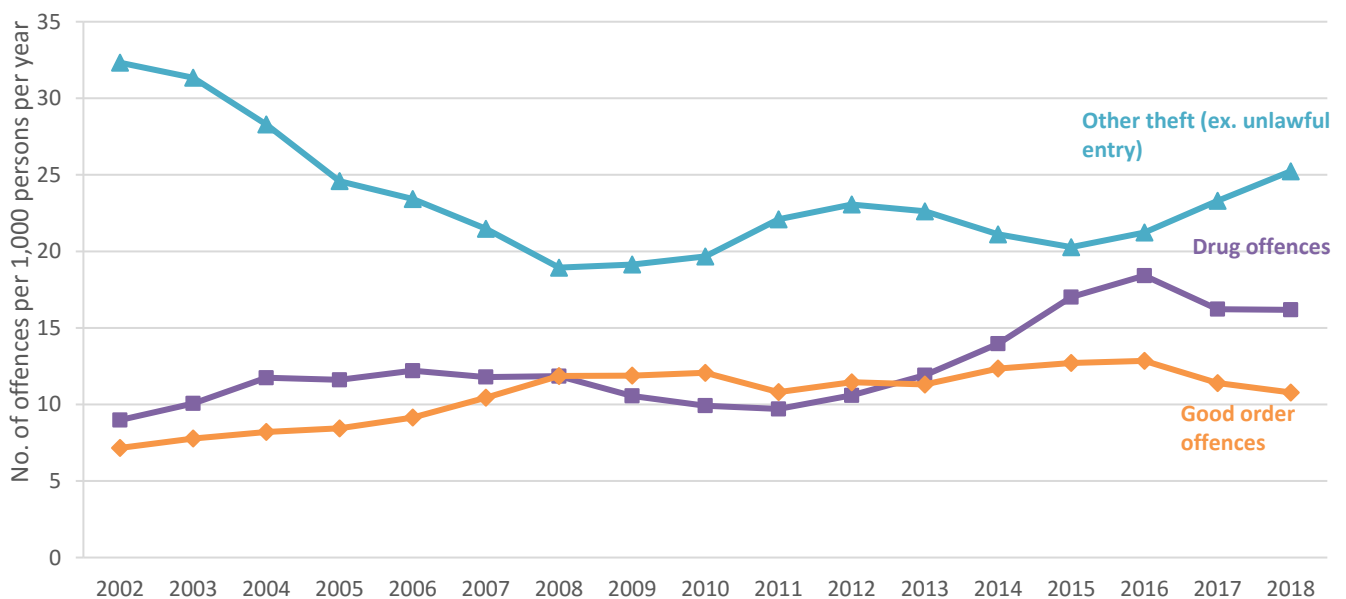
- Source: Queensland Police Service (QPS), <https://www.police.qld.gov.au/online/data/>
- Crime rate data (per 100,000 people) obtained by QPS Division (Toowoomba) and Queensland State; data was adjusted to be presented as number of offences per 1,000 people per year

5. Safety & Wellbeing

5c. Other relevant offences



5d. Other relevant offences - Queensland



Data notes

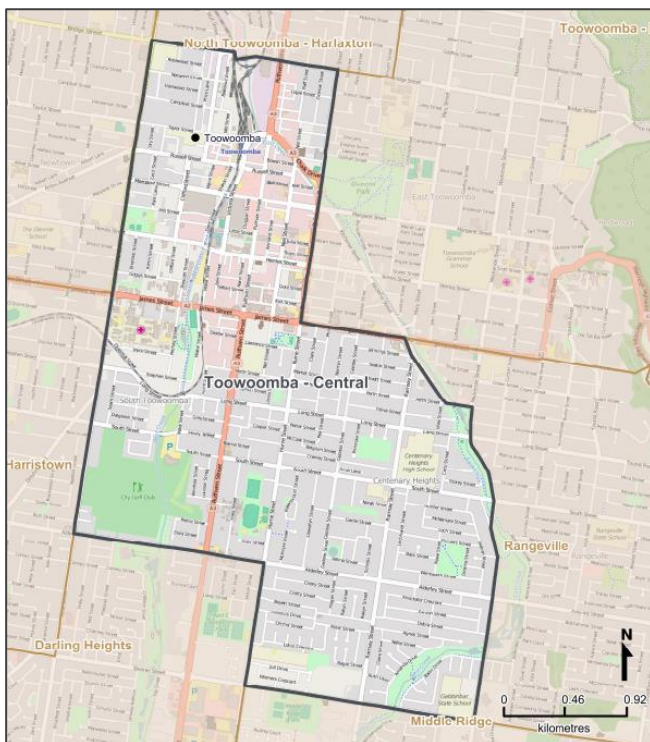
- Source: Queensland Police Service (QPS), <https://www.police.qld.gov.au/online/data/>
- Crime rate data (per 100,000 people) obtained by QPS Division (Toowoomba) and Queensland State; data was adjusted to be presented as number of offences per 1,000 people per year

Appendix A: Spatial boundary maps (LGA, SA2 and postcode)

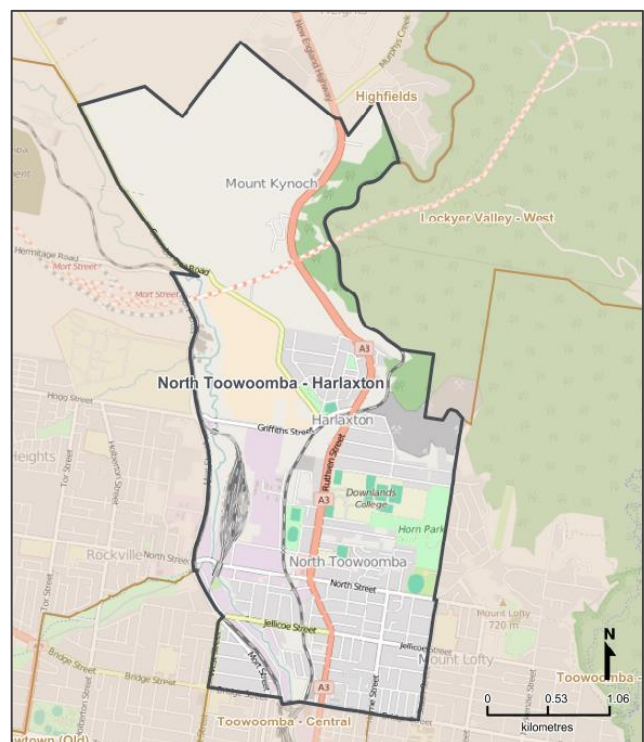


Toowoomba Local Government Area (LGA), 2011

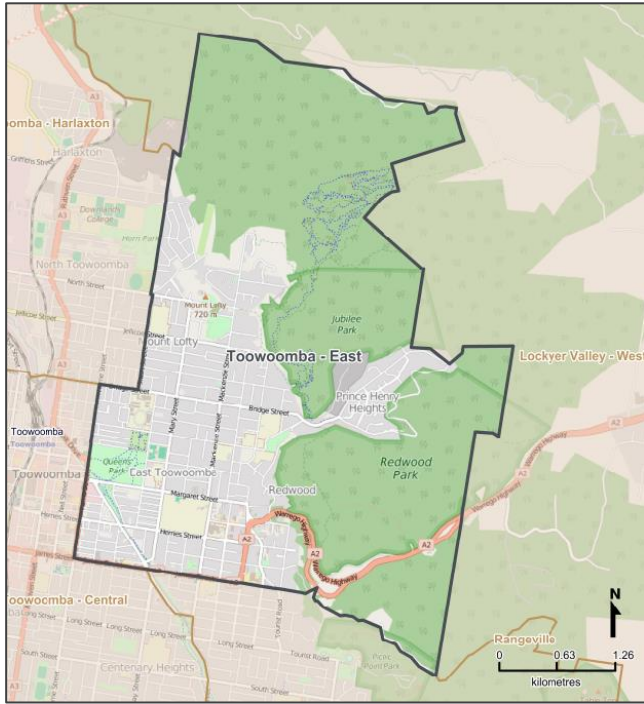
Source: <http://www.qgso.qld.gov.au/products/maps/qld-lga-asgc-2011/qld-lga-asgc-2011-toowoomba.pdf>



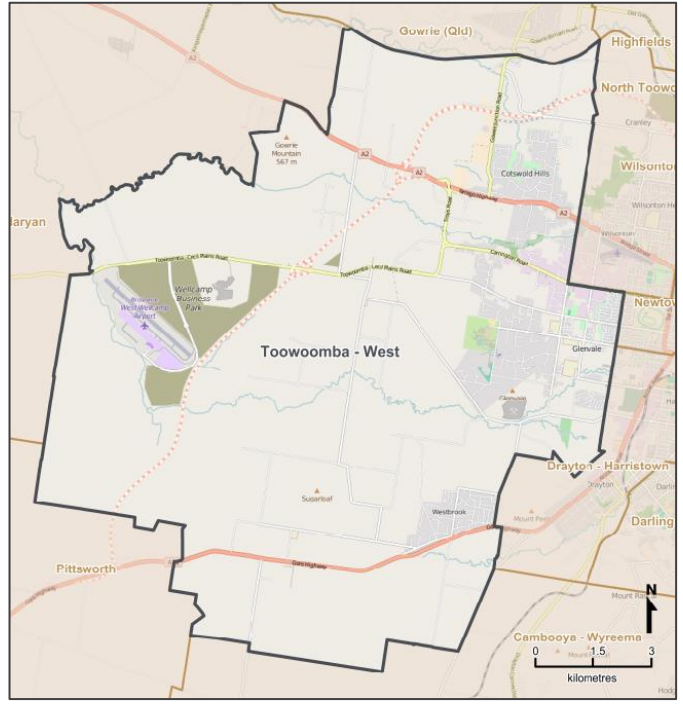
Toowoomba – Central SA2 boundary



North Toowoomba – Harlaxton SA2 boundary



Toowoomba – East SA2 boundary

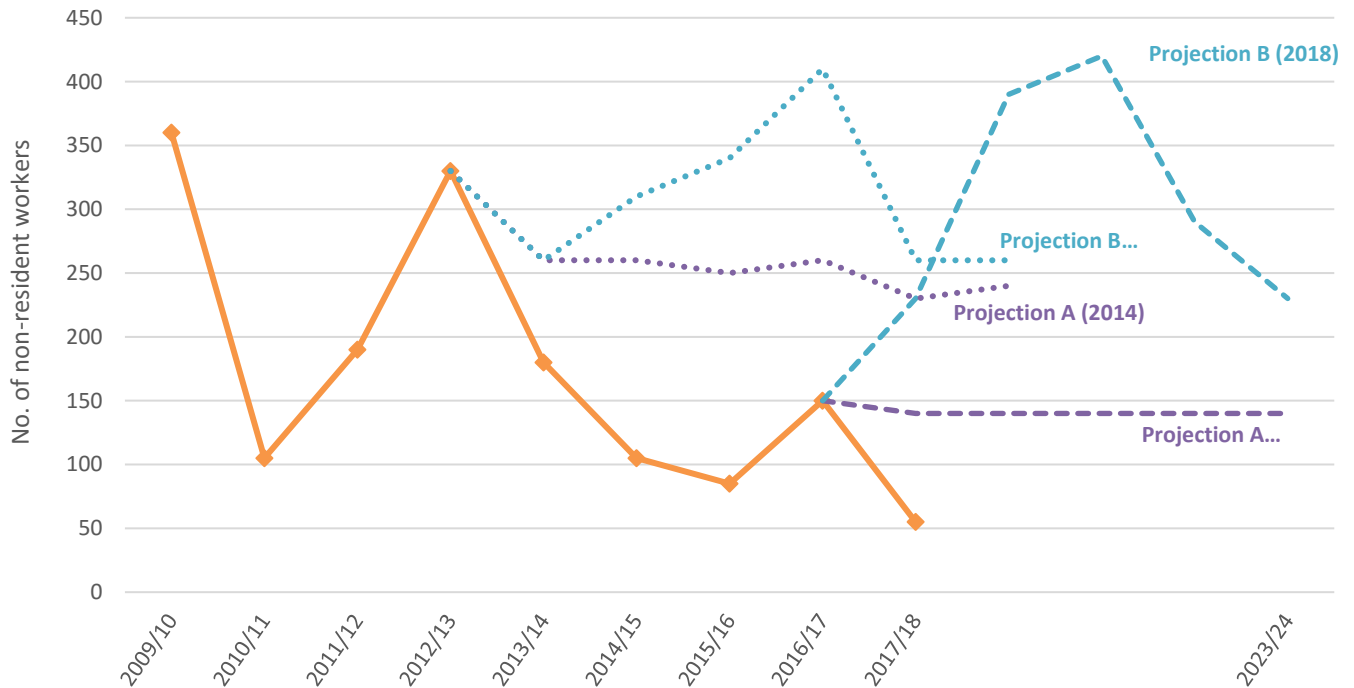


Toowoomba – West SA2 boundary



Toowoomba postcode boundary 4350

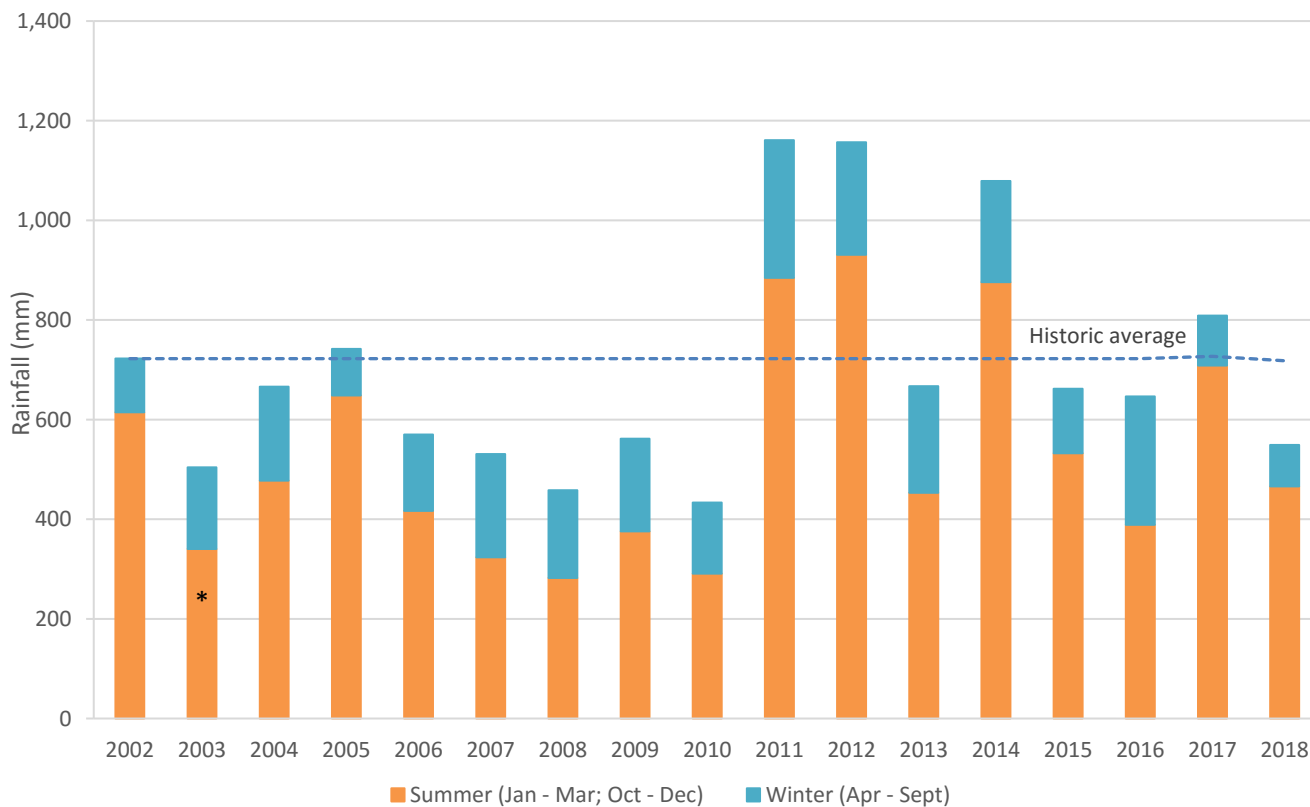
Appendix B: Non-resident population projections



Data notes

- Non-resident worker estimates by LGA from the QGSO 'Surat Basin Population Report' (ASGC 2016); 2018 version available here: <http://www.qgso.qld.gov.au/products/reports/surat-basin-pop-report/surat-basin-pop-report-2018.pdf>
- Non-resident worker projections (2018) by LGA from QGSO table 'Surat Basin: Non-resident population projections, by local government area (LGA), 2018 to 2024' (ASGS 2016), <http://www.qgso.qld.gov.au/subjects/demography/population-projections/tables/surat-basin-non-resident-pop-proj-lga/index.php>
- Non-resident workers projections (2014) by LGA from QGSO report 'Surat Basin non-resident population projections: 2014 to 2020', <http://www.qgso.qld.gov.au/products/reports/surat-basin-non-resident-pop-proj/surat-basin-non-resident-pop-proj-2014-2020.pdf>
- Series A projection is based on the number of non-resident workers on-shift who were engaged in existing resource operations and associated infrastructure activities in the area at June 2014. The projection takes into account future changes to those operational workforces as advised by resource company sources, as well as the estimated construction and operational workforces of Category A projects (i.e. those that are approved and have reached a financial close).
- Series B projection includes the Series A projection plus projected growth in the non-resident population arising from Category B projects (those that are approved but have yet to reach a financial close).

Appendix C: Toowoomba rainfall (2002 – 2018)



Data notes

- Source: Bureau of Meteorology Climate Data online, <http://www.bom.gov.au/climate/data/>
- Rainfall observations reported for Toowoomba Airport Rainfall Station
- Where missing data is indicated (*), gaps exist in daily rainfall observations

Appendix D: Project Information

The University of Queensland is conducting research into the social and economic impacts of coal seam gas (CSG) development. The project has focused on the combined impacts of the multiple CSG developments in the Western Downs region of Queensland as an initial case study. That focus has now expanded to include other local government areas – Maranoa, Toowoomba, and Isaac.

Research project history

- **Engagement:** People from the community, government and industry worked with researchers to identify the most important ‘indicators’ to monitor. This consultation process helped to develop a shared understanding of social and economic development in the community and created a framework for reporting and discussion.
- **Indicator monitoring:** The team identified ways to calculate and report the impact of multiple CSG projects against the agreed set of indicators.

The research team

Dr Kathy Witt, Centre for Coal Seam Gas, The University of Queensland has led this research since May 2017 and joined the original project team in 2015.

A large team of researchers has contributed to this project since 2013, including:

- Assoc. Prof. Will Rifkin, University of Newcastle (previously led this project while working at The University of Queensland from April 2012 – April 2017)
- Dr Jo-Anne Everingham, Senior Research Scientist, Centre for Social Responsibility in Mining, The University of Queensland (CSRM).
- Ms Sarah Choudhury, Research Assistant, CSRM (2017) and Bec Colvin, (2016).
- Ms Sherylllee Johnson, Research Technician, CCSG (2013-2016).
- Professor David Brereton, Associate Director, Sustainable Minerals Institute (2012-2016).
- Dr Vikki Uhlmann, Research Manager, CSRM (2013 -2014).
- Ms Kylie May, Research Analyst, CSRM (2013 – 2014).

Reporting timeframes: The data collection for the project has been occurring annually since 2013. Project outcomes, recommendations, and reports have been released periodically. The timeframe for some datasets, such as those from the Australian Taxation Office, lags behind the main data used in this report—this is due to unique data collection and reporting requirements of this agency.

Ethics approvals: This study has been cleared by the human research ethics committee of The University of Queensland in accordance with the National Health and Medical Research Council's guidelines (Research Ethics clearance approval no. 2013000587).

Questions: Contact the lead researcher, Dr Katherine Witt
Centre for Coal Seam Gas, Faculty of Engineering, Information Technology and Architecture,
The University Of Queensland, Brisbane, QLD, 4072
M: 0418 619 341 | E: k.witt@uq.edu.au | W: www.ccsq.uq.edu.au

If you would like to speak to an officer of the University not involved in the study, you may contact the Ethics Officer on 07 3365 3924.