

Research Project:

**Cumulative socioeconomic impacts
of CSG Development in Queensland**

DATA REPORT

**INDICATORS OF CHANGE
IN
ROMA AND DISTRICT COMMUNITY**

Interviews completed in 2015
Statistical data updated in April 2016

VERSION 11 - May 2016

Contact:

**The University of Queensland, Assoc Prof Will Rifkin | Chair in Social Performance
Centre for Social Responsibility in Mining | Centre for Coal Seam Gas**

Sustainable Minerals Institute | The University of Queensland | Brisbane, QLD, 4072 AUSTRALIA

M: +61 (0) 401 701 217 | E: w.rifkin@uq.edu.au

W: www.csrmi.uq.edu.au | www.ccsq.uq.edu.au | www.smi.uq.edu.au

The Roma CSG Development Story

The impact on Roma from coal seam gas development has been characterised here with the help of expert knowledge from members of the Roma community* – Chamber of Commerce, real estate agents, hotels, motels and other local businesses, police, school, employment agencies and local and State government staff. These individuals were presented with statistical data on the following ‘indicators’ of social and economic impact to assess the data’s accuracy from a local point of view and to gather further insight about interconnections between impacts, which form the ‘Roma CSG development story’.

- | | |
|-----------------------------|------------------------------------|
| 1. Population | 5. Housing |
| 2. Unemployment | 6. Top offences recorded by police |
| 3. Income & Business income | 7. Rainfall |
| 4. Business income | 8. Petrol prices |

Those interviewed said Roma was a friendly town with a strong and stable economic base as a rural services centre. Referred to as ‘the gateway to the outback’, Roma is situated at the crossroads of two main transport routes and captures both recreational and commercial traffic heading east-west and north-south. Data shows Roma’s population has been increasing steadily at around 1% growth per annum. From 2012, town population was higher than projected but in 2015 appears to be returning to estimated levels. As the number of non-resident workers (NRWs) dropped in 2015, town population was still increasing. Most NRWs were located in camps out of town. In town, people reported noticing the turnover in population as people came and left, rather than a large net increase. This turnover was in part due to changes in housing costs. Established residents are reported to have sold homes at inflated prices and moved away, sometimes to pick up fly-in/fly-out employment opportunities in the gas industry. Others on lower incomes are said to have moved away as rents increased. People moved into Roma for work, including a proportion of foreign workers sponsored by local employers.

Demand for housing in Roma was heightened by major flood events in 2010, 2011 and 2012. The 2012 record-breaking flood damaged over 400 homes. Around 200 were left uninhabitable. The flood reconstruction period involved numerous road repair and insurance company building contractor crews from out of town and coincided with the peak of the CSG construction period. This created an acute demand for limited housing and accommodation (as well as supplies and services) which pushed prices up.

Foreign workers were brought in to fill labour shortages, mostly in the hospitality and agricultural industries. Local employers said they found it difficult to retain employees. Competition for labour forced the average wage and salary up. Costs of living generally are reported to have increased. It is not clear how much of the additional income was spent locally or not. There was a strong ‘shop local’ campaign coordinated by the Chamber of Commerce to encourage local spending.

Local businesses appear to have benefitted from CSG development. The total business income for the Roma postcode more than tripled from the 2010-11 to the 2012-2013 financial year. The number of businesses filing tax returns in this period also tripled. However, in 2015, some businesses were said to be struggling as the procurement needs for the construction period ended.

Crime rates in Roma are slightly higher than for the whole of Queensland. Good order and drugs offences increased from 2011 to 2014 which caused some local concern, but have since decreased. Strategies put in place by gas companies, local police and businesses to curb bad behaviour were thought to be effective. Traffic offences fluctuated and figures are said to reflect police effort.

This booklet provides detail on the aspects of the ‘Roma story’ based on the range of priority indicators that we tracked. We would like to thank members of the Roma community 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.

* Indicator trend data from public sources and interviews with 10 key stakeholders in each community identified as having specific knowledge - mayors, school principals, real estate agents, police, community group leaders, hotel owners, chamber of commerce leaders and others in prominent roles. Charts of historical trends in indicators were used to prompt an explanation of what they perceived happened - cause and effect - plus concerns, expectations and recommendations.

INTRODUCTION

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. In this document, we present findings on the town of Roma.

Research project aims

- **Find key indicators** – we want to identify ways to calculate and report the impact of multiple CSG projects in terms of a few numbers that are important and credible, e.g., weekly rents.
- **Involve people from the community, government, and industry** – we are asking stakeholders to decide which ‘indicators’ are the most important to monitor. In working with stakeholders, we aim to help develop a shared understanding of social and economic development in the community and create a frame of reference for ongoing, collaborative decision-making in the region.
- **Lessons to help other regions** – we want to develop models and approaches that can be used to measure, track and analyse cumulative impacts in other regions.

The research team

- Assoc. Prof. Will Rifkin, Chair in Social Performance, Centre for Coal Seam Gas (CCSG) and Centre for Social Responsibility in Mining (CSRM).
- Dr Jo-Anne Everingham, Senior Research Scientist, CSRM.
- Dr Katherine Witt, Postdoctoral Research Fellow, CCSG.
- Ms Sherylee Johnson, Research Technician, CCSG.
- Ms Humaira Malik, PhD candidate, Sustainable Minerals Institute.
- Professor David Brereton, Associate Director, Sustainable Minerals Institute.

Funding: The project receives industry funding through the Centre for Coal Seam Gas (CCSG), which is within the University of Queensland’s Sustainable Minerals Institute. CCSG’s industry partners include QGC, Arrow Energy, Santos, and Australia-Pacific LNG. These organisations are providing valuable information on their operations. Researchers are employed by the U of Queensland.

Collaborators: We are getting help from - Queensland government agencies and CSIRO researchers funded by the Gas Industry Social and Environmental Research Alliance (GISERA).

Timeframe: The data collection for the project has been occurring in 2013, 2014, and 2015, with updates planned for 2016 and 2017.

Community participation: In March 2014, a small research team from UQ started to visit communities to introduce the project. We gathered information, mostly from government sources, on impacts that key stakeholders in these communities perceived to be important. We visit each community to discuss that data, to get their insights on what has been occurring.

Reports: Project outcomes, recommendations, and reports have been released periodically 2013-2015, and they will continue to be released in 2016-2018 (*i.e.*, the duration of the project).

Each report contains an updated version of data presented previously. We hope that each page can be read and understood without us being present.

Ethics guidelines we follow: 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, Associate Professor Will Rifkin, Centre for Social Responsibility in Mining, SMI, The University Of Queensland, Brisbane, QLD 4072 , Ph: 0401 701 217, Email: w.rifkin@uq.edu.au, www.csrmi.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.

PRIORITY INDICATORS FOR ROMA AND DISTRICT

DEMOGRAPHICS

1. Population

EMPLOYMENT, BUSINESS & INCOME

2. Unemployment
3. Income & Business Income

HOUSING

4. House prices
5. Weekly rents

WELLBEING

6. Traffic offences
7. Other offences
8. Total offences

EXOGENOUS FACTORS

9. Rainfall
10. Petrol prices

CSG ACTIVITY

Graph/map of CSG development

IMPACTS ON INDIGENOUS MEMBERS OF THE COMMUNITY

Efforts are ongoing to develop key indicators that are agreed as appropriate for measuring impacts on Indigenous residents and businesses. A case study of the Aboriginal employment program of one proponent has been completed by UQ researchers. A UQ specialist has evaluated the Reconciliation Action Plan of a proponent. A UQ team has identified challenges in making and implementing agreements between Aboriginal groups and proponents in the coal seam gas arena (addressing issues like group politics and Native Title claims).

Other Indicators Examined	Indicator-related research being conducted
	<ul style="list-style-type: none"> • Resilience; Community aspirations (CSIRO)
	<ul style="list-style-type: none"> • Public health – PhD study (UQ)
	<ul style="list-style-type: none"> • Demographic & economic trends (CSIRO & UQ)
	<ul style="list-style-type: none"> • Business (women in business) – PhD study (UQ)
	<ul style="list-style-type: none"> • Water Chemistry Atlas (UQ)
	<ul style="list-style-type: none"> • Agriculture & co-existence (UQ & CSIRO)
	<ul style="list-style-type: none"> • Environmental impacts – biodiversity (CSIRO)

The areas for which data in this booklet has been gathered

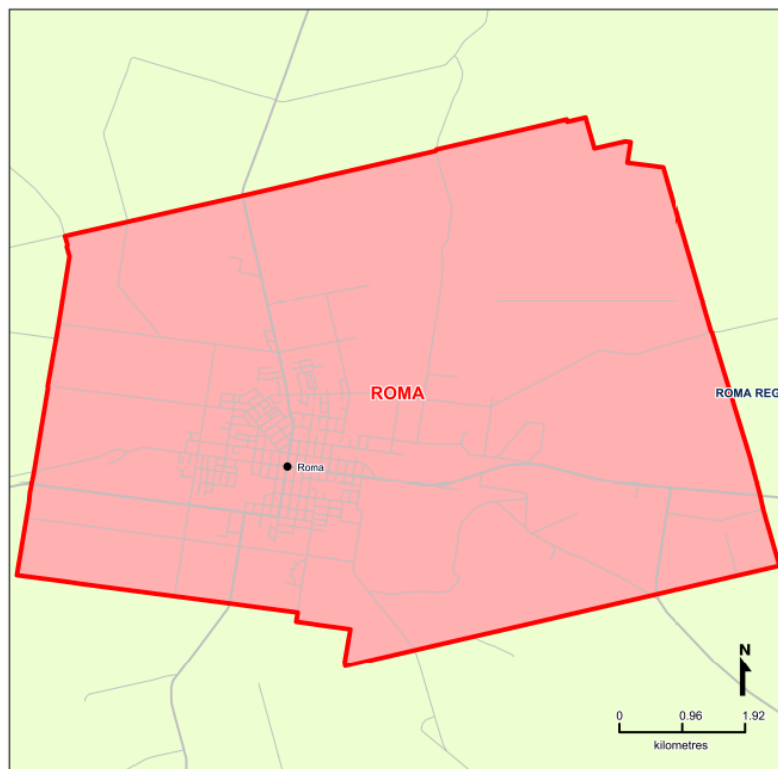
Roma 4455 Postcode Boundary



Source: Australia Post (<http://auspost.com.au/postcode/roma/qld/eef>)

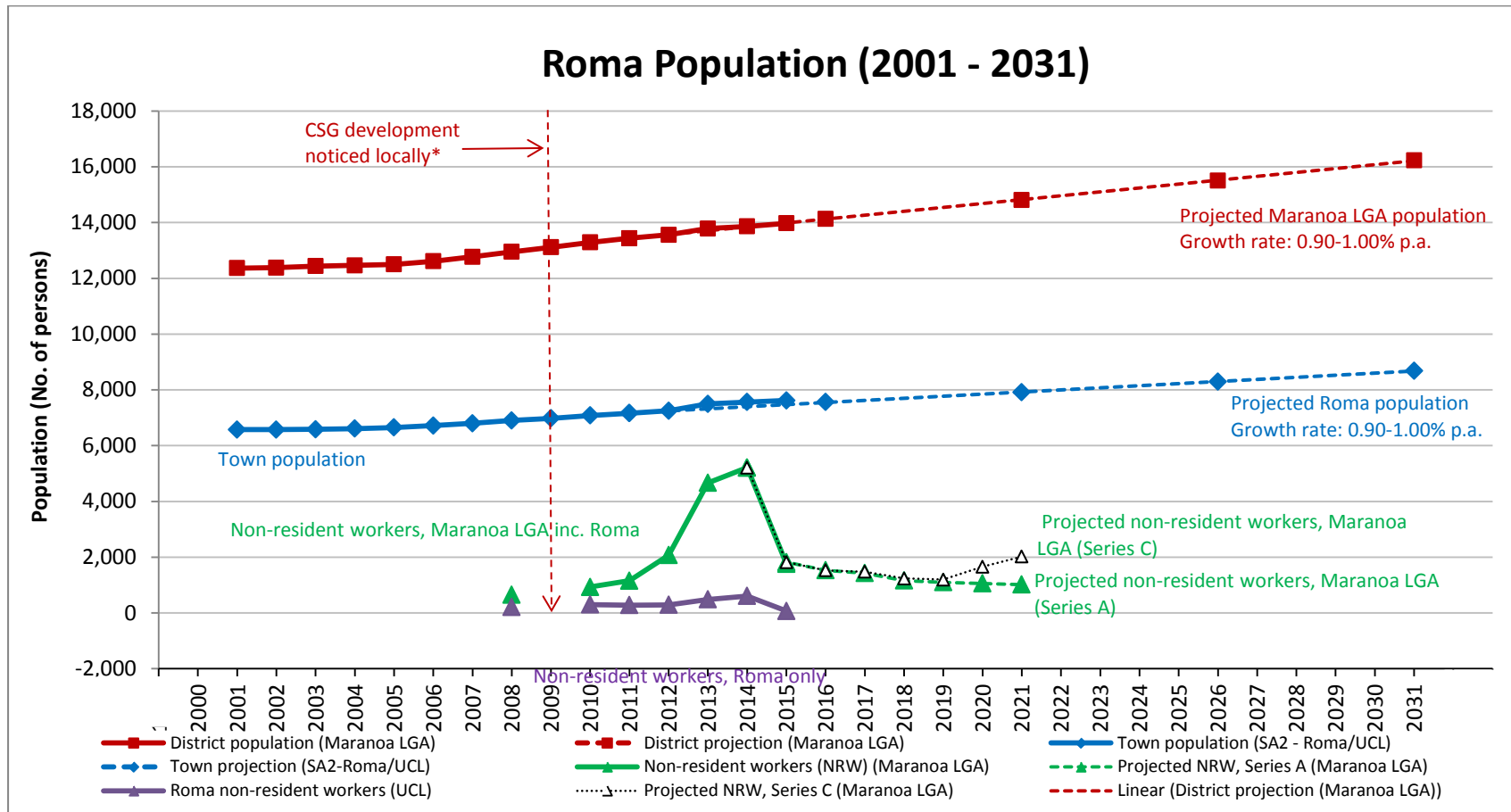
Roma SA2 boundary

Queensland Statistical Areas, Level 2 (SA2), 2011 - Roma (ASGS Code 307011176)



Source: Queensland Government Statistician's

Office <http://www.qgso.qld.gov.au/products/maps/qld-sa2-asgs-2011/qld-sa2-asgs-2011-roma.pdf>



Data sources

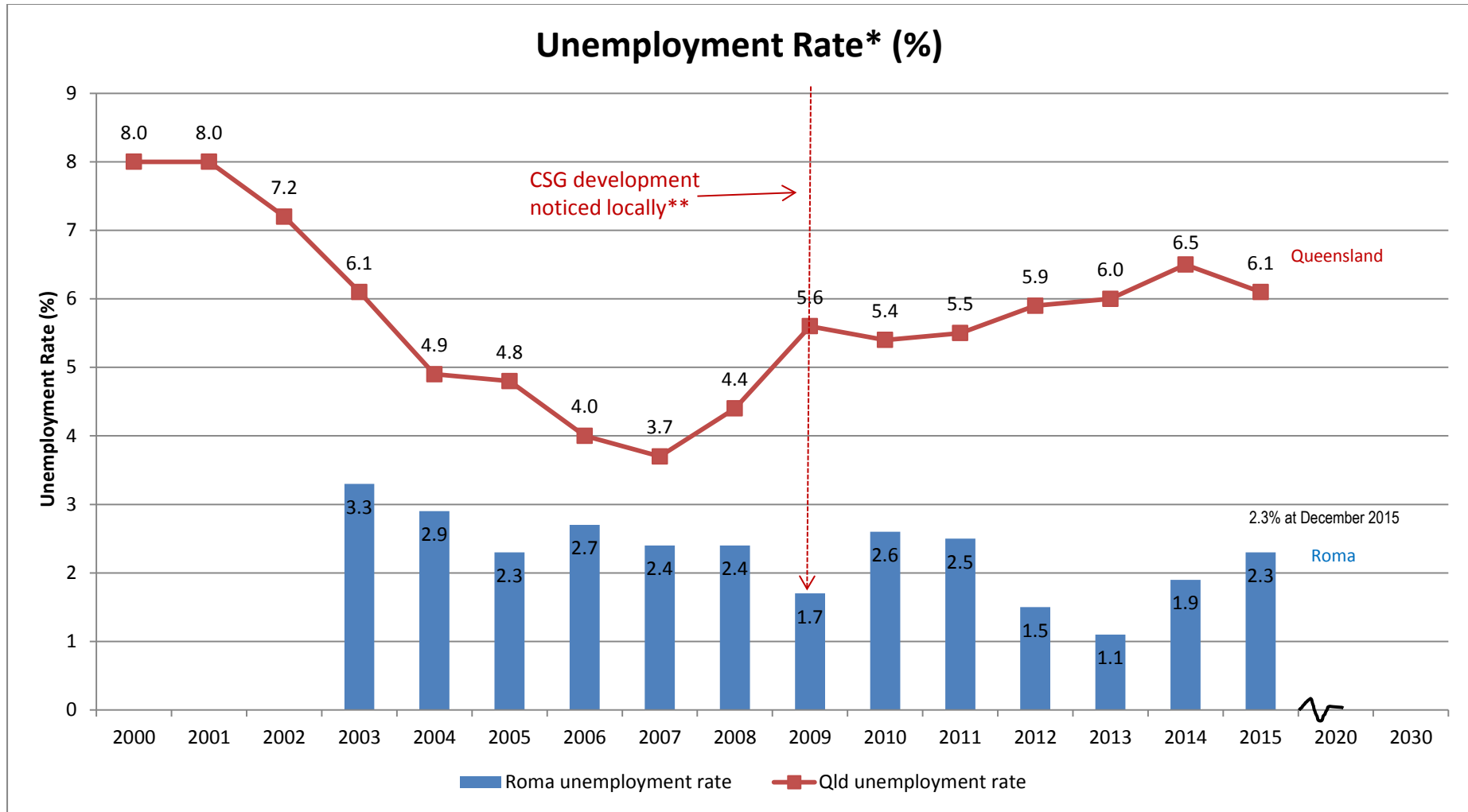
- Historic resident population data: Queensland Government Statistician’s Office (QGSO), www.qgso.qld.gov.au, QRSIS database (based on ABS 3218.0, Regional Population Growth, Australia, 2013-2014)
- LGA resident population projection: Queensland Government Population Projections by LGA, 2013 Edition, <https://data.qld.gov.au/dataset/projected-population-for-queensland>
- Town resident projection: Projected population (medium series) by SA2, <http://www.qgso.qld.gov.au/subjects/demography/population-projections/tables/proj-pop-medium-series-sa2-sa3-sa4-qld/index.php>
- Non-resident workers: QGSO Surat Basin Population Reports (2008, 2010-2014), <http://www.qgso.qld.gov.au/products/reports/surat-basin-pop-report/index.php>
- Non-resident projections: QGSO Surat Basin non-resident population projection, by local government area (LGA), 2015 to 2021, <http://www.qgso.qld.gov.au/subjects/demography/population-projections/tables/surat-basin-non-resident-pop-proj-lga/index.php>

* Natural gas extraction has been in the area for decades- ‘peak’ conditions noticed from 2012.

This information has been compiled for use in consultation with the Roma community

Data & Perceptions about population

- **History and Trend:** Roma has always been a rural service centre with a fairly stable government sector. Over half of the LGA population resides in the town of Roma. Population has been increasing slowly (at around 1% per annum).
- **Change:** In 2013, the resident population of Roma grew 3.4%. In the 5 years from 2008-2013, population grew 8.6%, compared to 3.5% in the 5 years from 2002-2007. Since 2013, population has continued to grow but at less than 1% per year, the lowest growth rates since 2005. The number of non-resident workers staying in town peaked in 2014 at 8% of the town population.
- **Perceived change:** Change described as an “influx”. E.g., “The town was buzzing with people”; “you had to park blocks away from where you wanted to go”. Increased cultural diversity with international workers. It was noted that people also left town.
- **Expectations:** There were more people in Roma than was expected (airport traffic figures appear to confirm this). Locals expect that population will decline.
- **Conclusion:** Roma experienced a short burst of population increase that outpaced housing supply. In-migration was coupled with out-migration. Locals say the town is now very quiet. Some like it that way, others don't.
- **Implications for next project/stage:** Locals want better forecasting and communication of expected numbers of non-resident workers including sub-contractors.
- **Community recommendations:** Need clear rules/guidelines for CSG company engagement with local communities that identify and respect local values.



*The unemployment rate represents the number of persons unemployed as a percentage of the labour force, which includes all those persons over the age of 15 years who are employed plus all those who are unemployed but actively looking for work.

Sources: Queensland Government Statisticians Office, Source: ABS 6202.0 Labour Force, Australia, Jun 2015

DEEWR, Australian Government Department of Education, Employment and Workplace Relations, *Small Area Labour Markets Australia*.

Department of Employment <http://docs.employment.gov.au/node/34691>

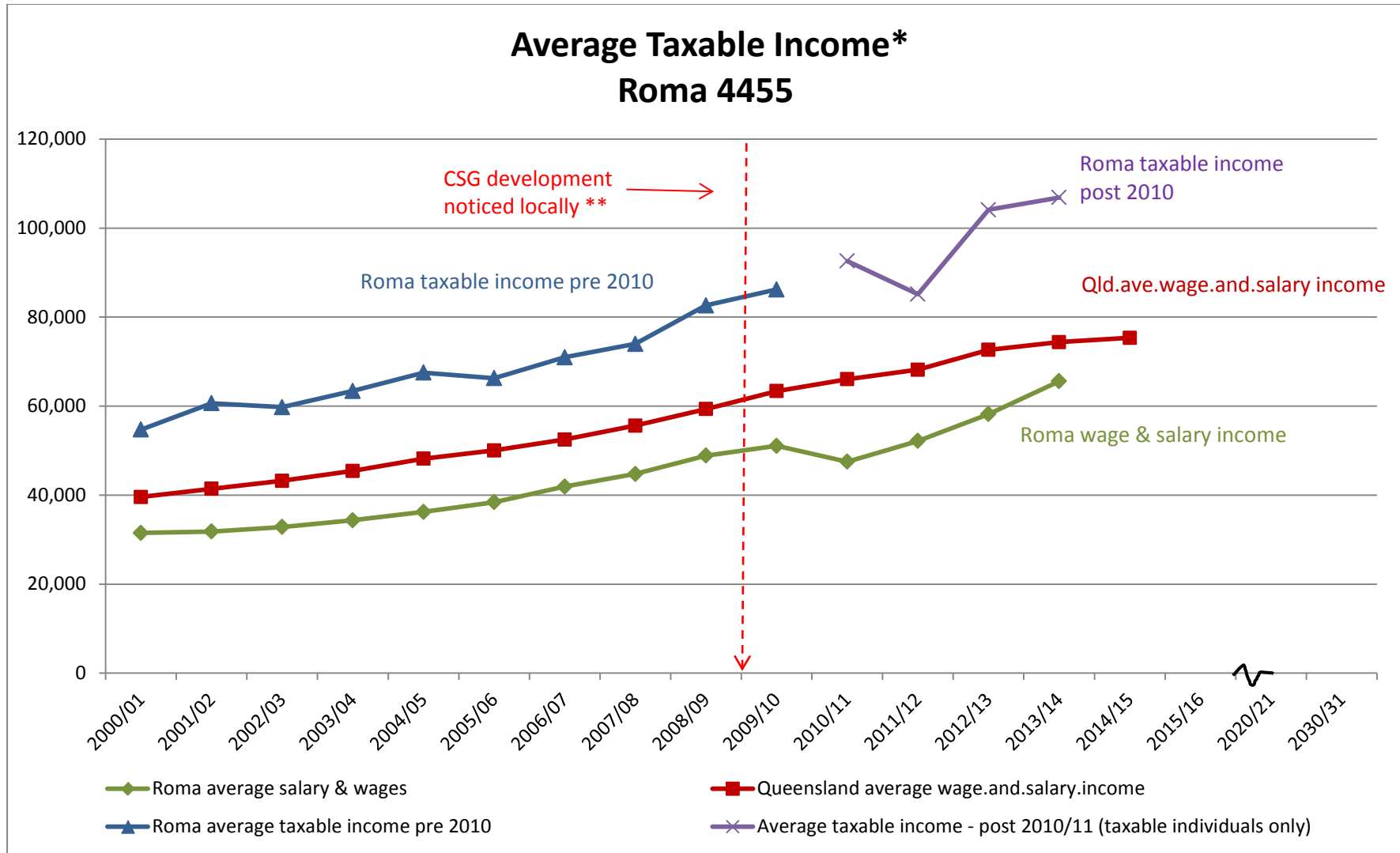
** Natural gas extraction has been in the area for decades - 'peak' conditions noticed from 2012.

This information has been compiled for use in consultation with the Roma community

Data & Perceptions about unemployment

- **History and Trend:** Roma has a low (around 2.5 - 3%) unemployment rate, and the trend does not follow the state-wide trend.
- **Change:** Unemployment was lowest in 2012 and 2013. Since then, it has risen again, although it still remains low. In November 2015, the greater Maranoa-Western Downs region was reported to have the lowest unemployment rates in Queensland (Antrobus 2015).
- **Perceived change:** Very low unemployment made it difficult for local employers to keep staff or recruit new staff. Some local employers sponsored overseas workers or did extra work themselves. Now, job insecurity is concerning people.
- **Expectations:** “Everybody just wanted a job in gas - they just wanted the big dollars”. Those interviewed expect that unemployment will continue to rise as local businesses adapt from the CSG construction phase to the operations phase.
- **Conclusion:** Very low unemployment rates caused increased staffing costs, and/or extra work for local employers. However, extra income in town benefitted local businesses.
- **Implications for next project/stage:** Few unemployed people gained jobs as mostly skilled labour was required. Some unemployed people are said to have moved away as the cost of living rose.
- **Community recommendations:** More, smaller contracts to local people.

Antrobus, B. ‘Maranoa’s unemployment rate is the lowest in Queensland’ <http://www.westernstarnews.com.au/news/maranoa-unemployment-rate-lowest-qld/2854299/>



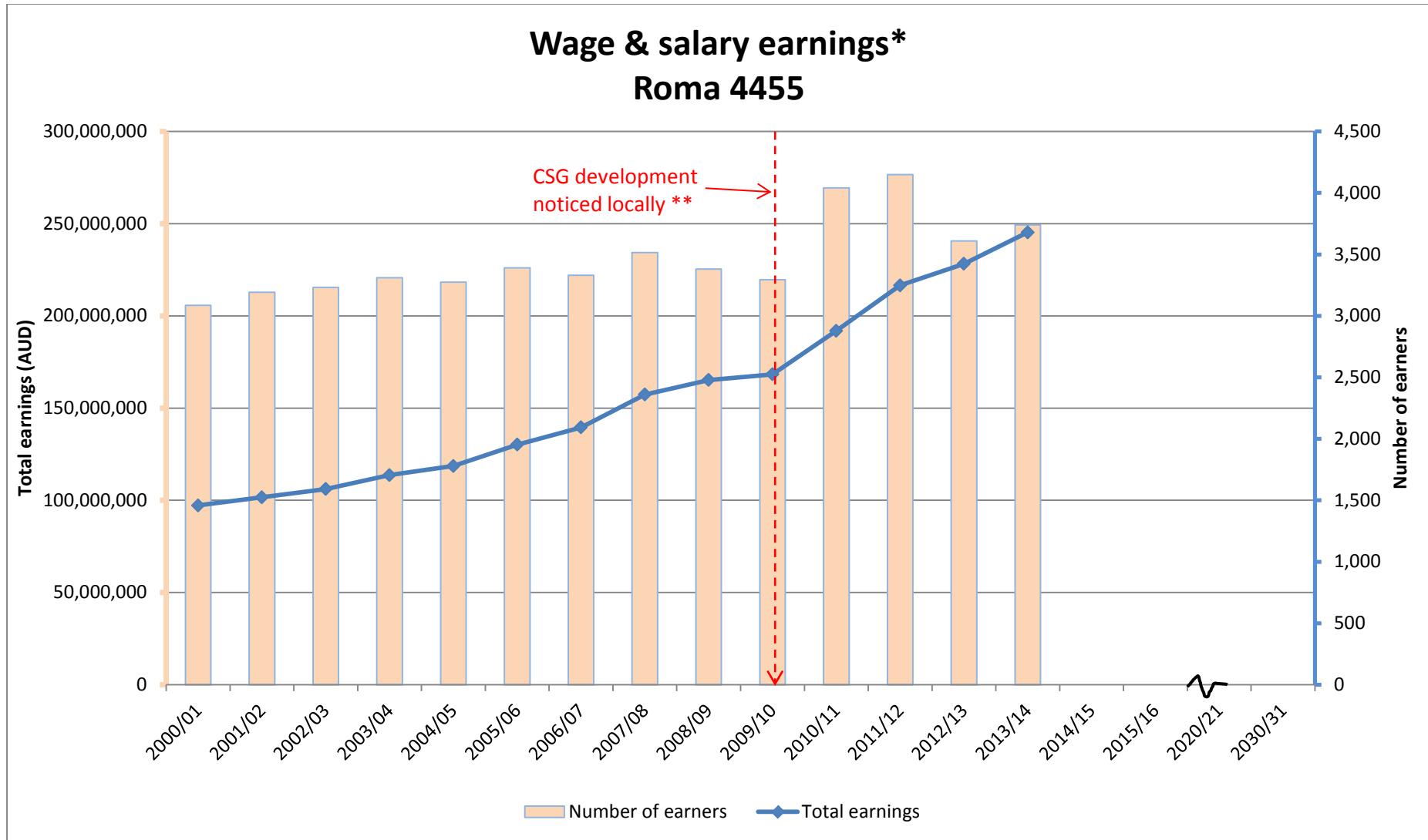
*Original data - No discounting applied

*Average taxable incomes reported by ATO until 2009 excluded losses. Averages from 2010 include all taxable incomes including incomes of 0 and losses.

Sources: Australian Taxation Office, Research and Statistics (<https://www.ato.gov.au/>); income statistics for 2013, 2014, 2015 not yet released by ATO (as at March 2016).

**Natural gas extraction has been in the area for decades - 'peak' conditions noticed from 2012.

This information has been compiled for use in consultation with the Roma community

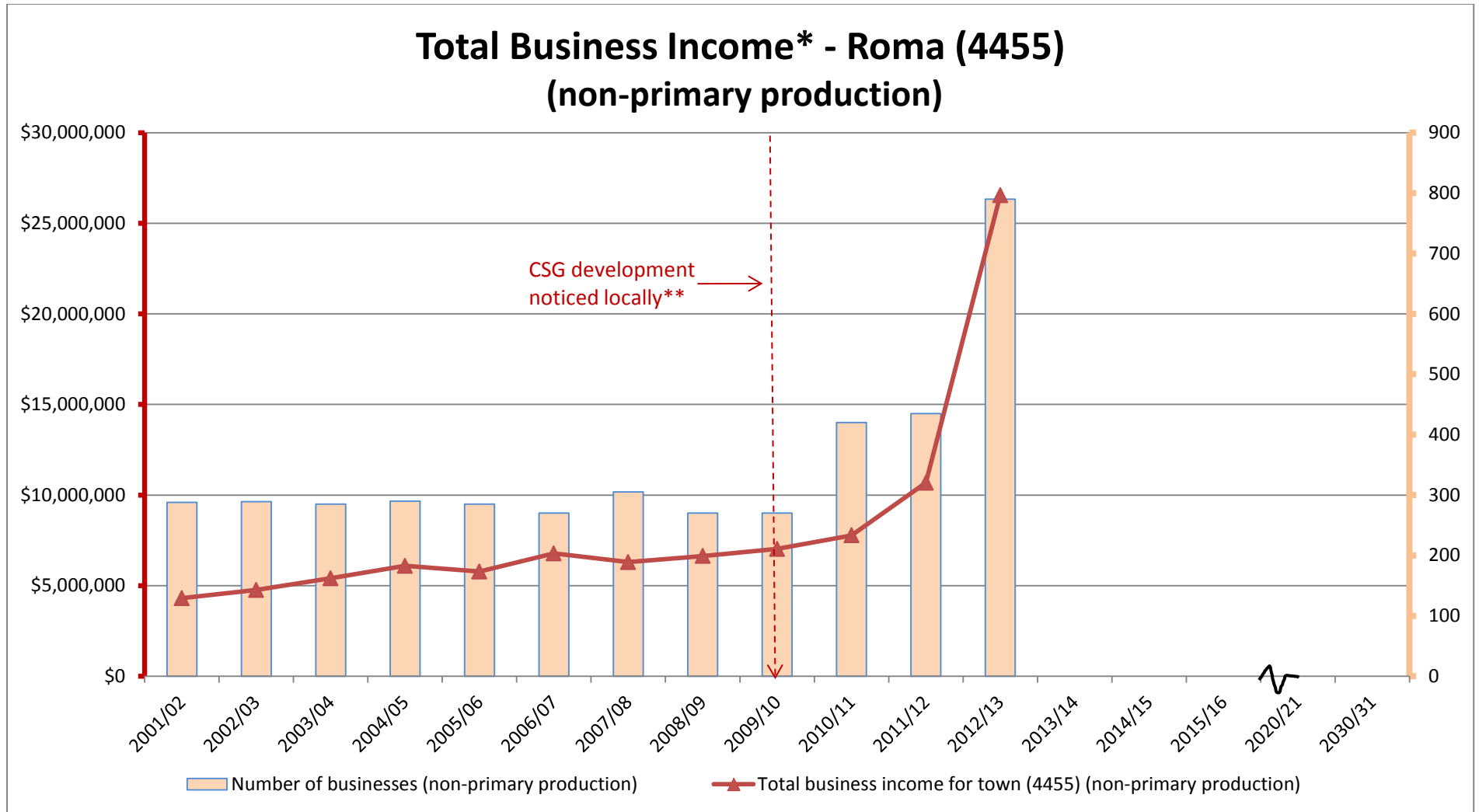


*Original data - No discounting applied

Sources: Australian Taxation Office, Research and Statistics (<https://www.ato.gov.au/>); income statistics for 2014, 2015 not yet released by ATO (as at April 2016).

** Natural gas extraction has been in the area for decades - 'peak' conditions noticed from 2012.

This information has been compiled for use in consultation with the Roma community



*Original data - No discounting applied

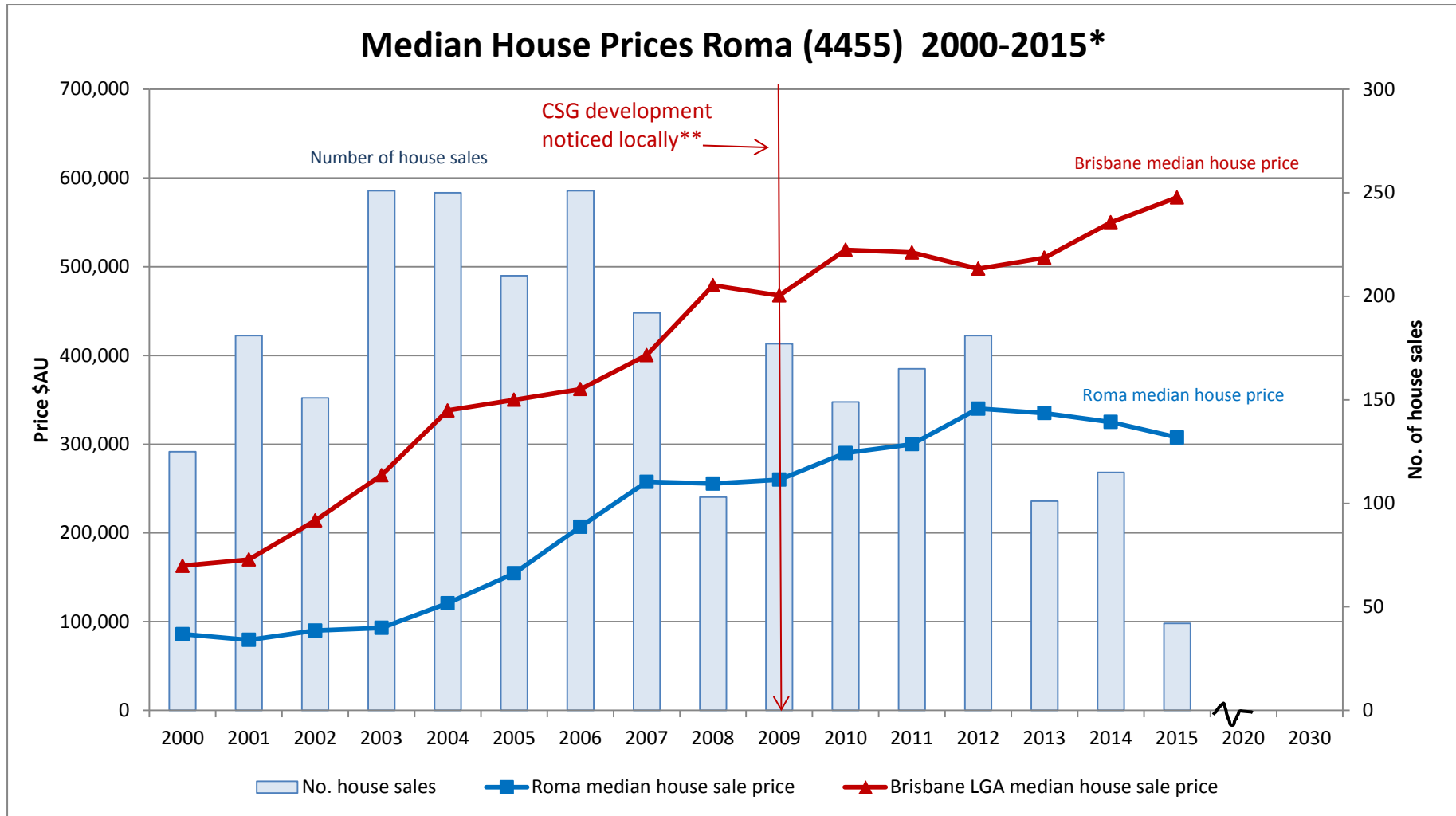
Sources: Australian Taxation Office, Research and Statistics (<https://www.ato.gov.au/>); income statistics for 2013, 2014, 2015 not yet released by ATO (as at March 2016).

** Natural gas extraction has been in the area for decades - 'peak' conditions noticed from 2012.

This information has been compiled for use in consultation with the Roma community

Data & Perceptions about incomes

- **History and Trend:** Roma's average income is consistently below the Queensland average. It has increased in line with the Queensland trend. The combined income of businesses (non-primary production) in the Roma postcode was steady at \$5-7M annually from 2002-2010.
- **Change:** Wage and salary earnings dropped in 2010/11. Since then, they have been increasing. Average taxable personal income declined. Suggests investment in property or other tax deductions. Total business income for the town more than tripled from 2011 to around \$26.5 in the 2012/13 fiscal year.
- **Perceived change:** Local wages increased as employers competed for labour with the resources sector. This trend was noticed, by interviewees, "across the board" from administration and hospitality to trades and professional staff. Increase in "higher end" boutique and homewares stores. Some businesses fared well; others could not compete for labour or market share.
- **Expectations:** Those interviewed expect wages to decrease again. Higher wages are seen as "unsustainable" for employers. Business incomes are also expected to decline. "Higher end boutiques" will struggle as will businesses who "became too dependent" on the resources sector.
- **Conclusion:** Average personal incomes increased but remain below the Queensland average. Total business income increased significantly during the CSG construction phase, but one would expect it to tail off post construction.
- **Implications for next project/stage:** Middle-income earners outside the resource sector were "hit hardest" by rising costs of living associated with CSG development.
- **Community recommendations:** Have more, smaller contracts so that income is distributed among local businesses. Encourage local spending.

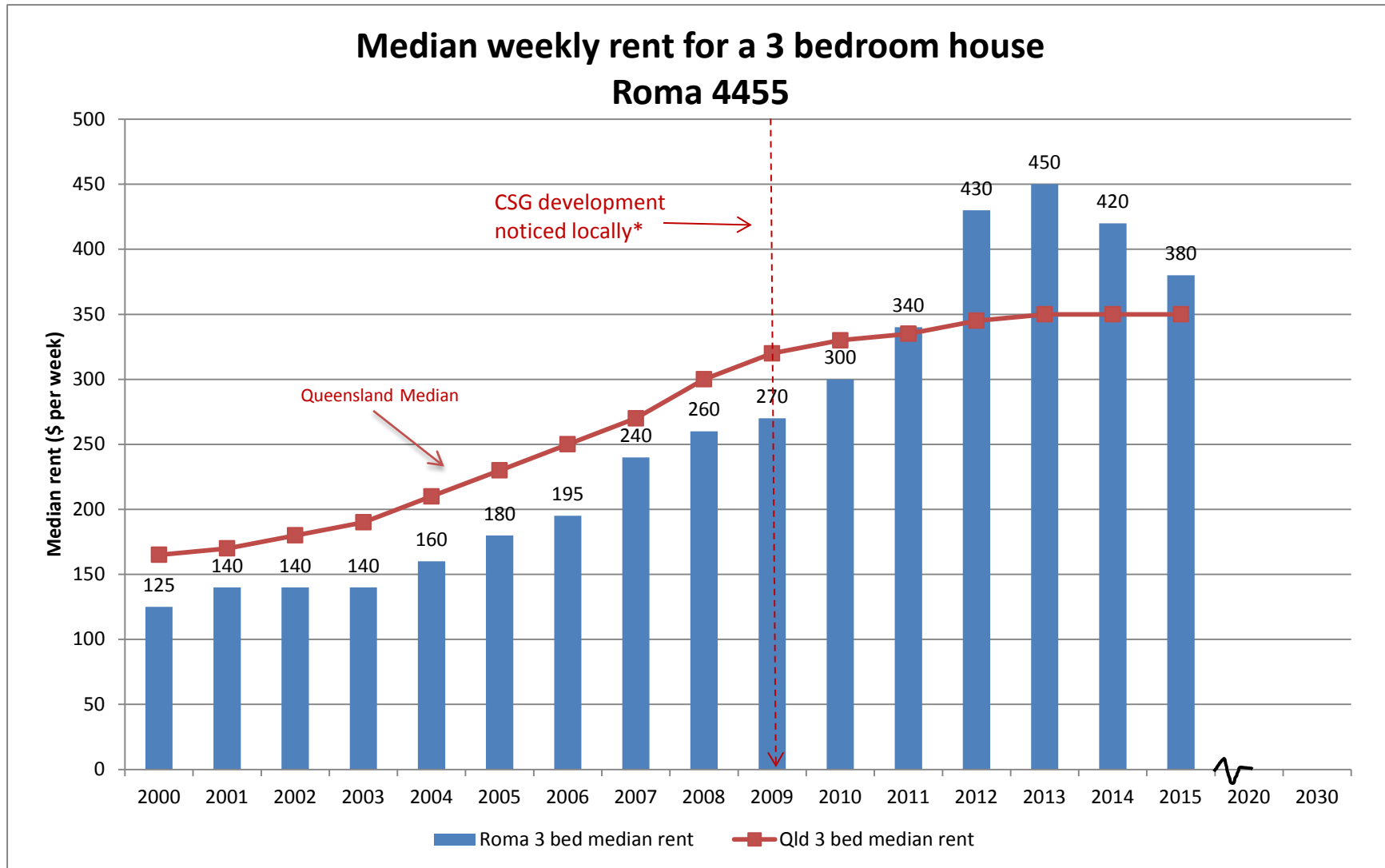


*Measured annually except for 2015, which was measured up to September 2015.

Sources: Price Finder (<http://www.pricefinder.com.au/flyover/?locality=4421&propertyType=House>)

** Natural gas extraction has been in the area for decades - 'peak' conditions noticed from 2012.

This information has been compiled for use in consultation with the Roma Community



Measured in the month of June for each year.

Sources: Queensland Government Statistician's Office 2015

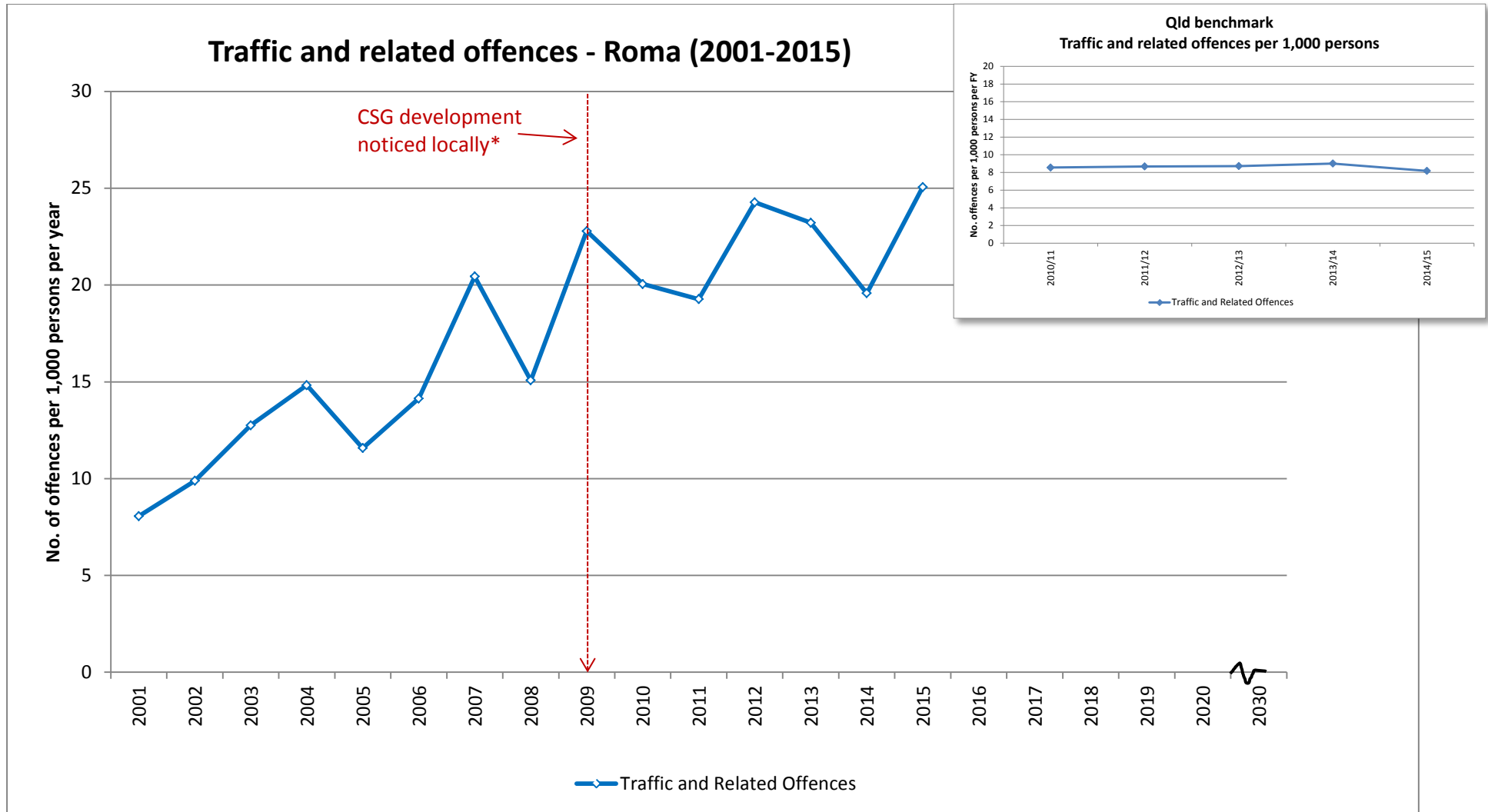
Residential Tenancies Authority, Rental Bonds data (Queensland Government Statistician's Office derived).

* Natural gas extraction has been in the area for decades - 'peak' conditions noticed from 2012.

Data & Perceptions about housing

- **History and Trend:** House prices increased in two ‘bursts’ - from 2003-2007 and from 2009-2012. Rents increased steadily following the Qld trend but remained below the Qld median until 2011.
- **Change:** Roma is reported to have experienced the fastest 5-year growth in median house prices from 2008-2013, when compared to other Qld regions¹. In the same 5-year period, rents almost doubled. Housing was affected by floods in 2010 and 2012. Relocated persons, insurance contractors and road repairers increased demand for housing. Motel accommodation was full with CSG affiliated workers. Rents remain higher than the Qld median.
- **Perceived change:** High demand for limited housing attracted property investors from outside Roma. Rents became unaffordable for some. Employers bought houses for staff accommodation. New housing developments “are not sensitive to the character of the town”. Now, low demand and oversupply are bringing down sale prices, but rents remain high.
- **Expectations:** “There is now an oversupply of housing in Roma”. House prices and rents will go down.
- **Conclusion:** Housing is “the most significant issue and remains an issue”.
- **Implications for next project/stage:** Workers’ camps were built too late. The property market response and private investment was underestimated in housing need forecasts.
- **Community recommendations:** Better monitoring of contract worker numbers; camps built earlier.

¹ Invest Maranoa <http://www.investmaranoa.com.au/index.php/housing>



Data source:

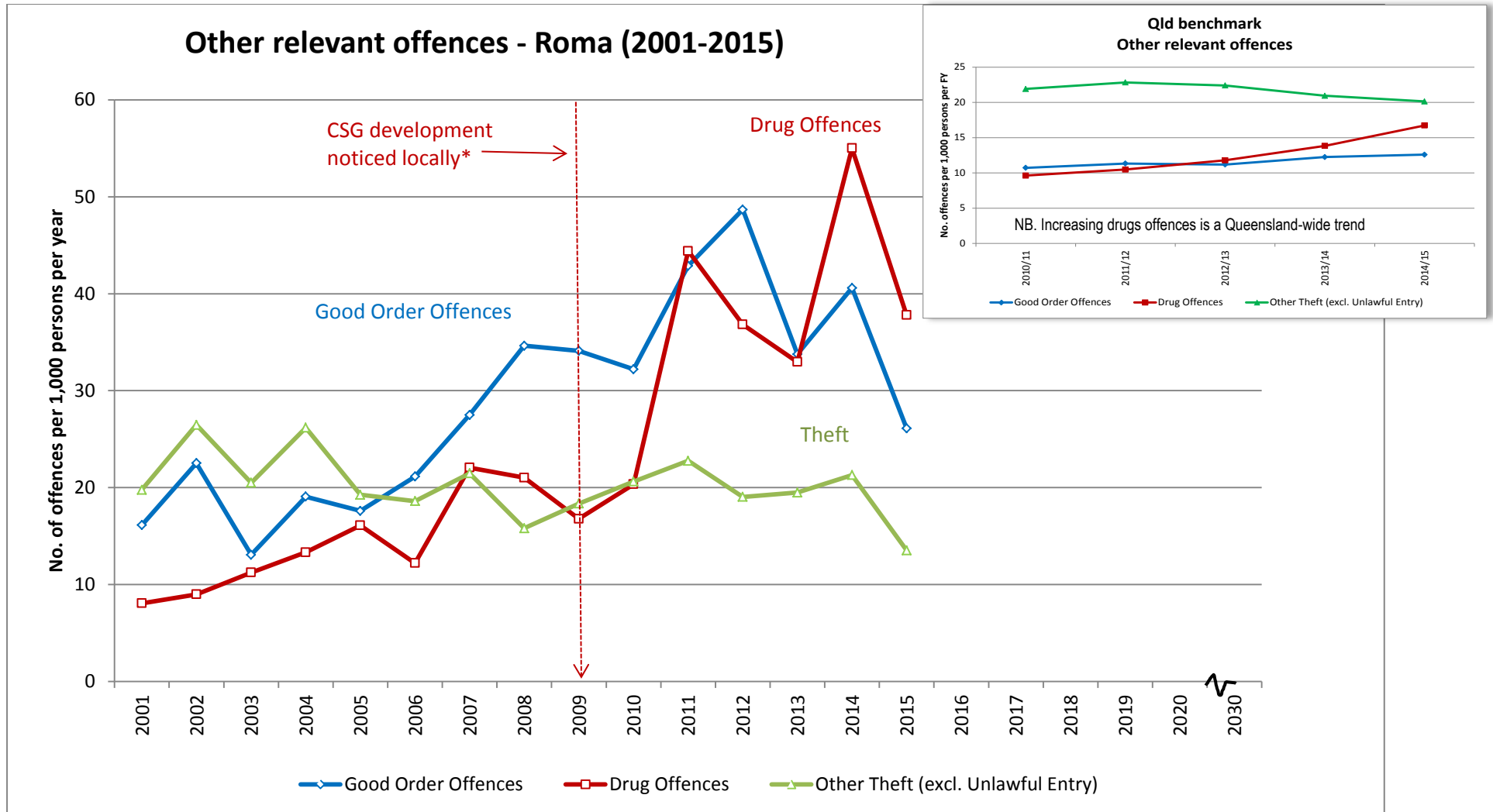
Queensland Police Online Crime Statistics: <https://www.police.qld.gov.au/forms/crimestatsdesktop.asp>

Data retrieved for Roma Queensland Police Service Area, and then filtered to report Roma Suburb only.

Crime rates per 1,000 persons calculated using ABS population estimates for the Roma SA2 (as reported by the Queensland Government Statistician’s Office: www.qgso.qld.gov.au)

Qld Benchmark statistics sourced from <https://www.police.qld.gov.au/rti/published/about/Crime+Statistics.htm>

*Natural gas extraction has been in the area for decades - ‘peak’ conditions noticed from 2012.



Queensland Police Online Crime Statistics: <https://www.police.qld.gov.au/forms/crimestatsdesktop.asp>

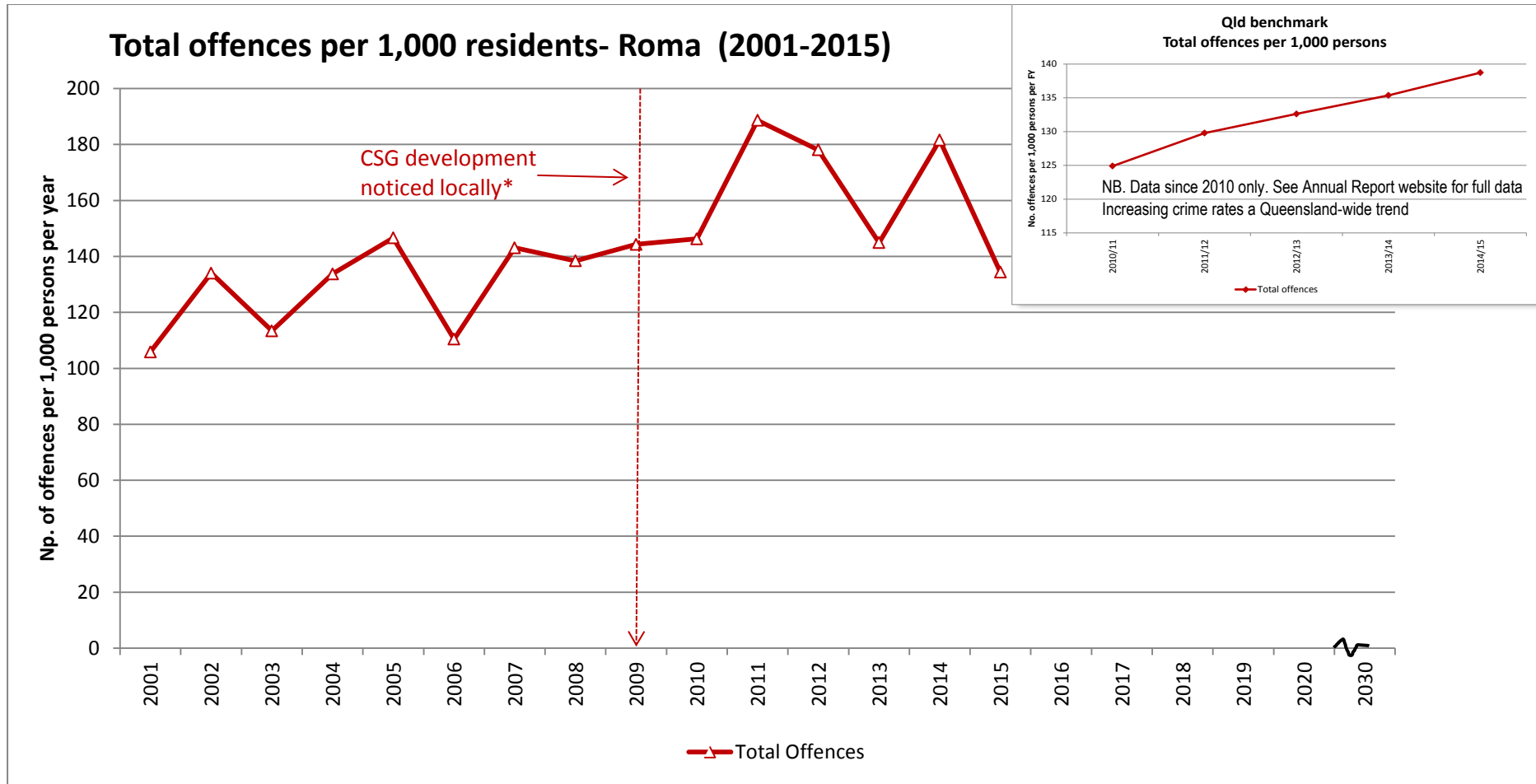
Data retrieved for Roma Queensland Police Service Area, and then filtered to report Roma Suburb only.

Crime rates per 1,000 persons calculated using ABS population estimates for the Roma SA2 (as reported by the Queensland Government Statistician's Office: www.qgso.qld.gov.au)

Qld Benchmark statistics sourced from <https://www.police.qld.gov.au/rti/published/about/Crime+Statistics.htm>

*Natural gas extraction has been in the area for decades - 'peak' conditions noticed from 2012.

UQ Research Project: Cumulative socio-economic impacts of CSG development in Queensland



Queensland Police Online Crime Statistics: <https://www.police.qld.gov.au/forms/crimestatsdesktop.asp>

Data retrieved for Roma Queensland Police Service Area, and then filtered to report Roma Suburb only.

Crime rates per 1,000 persons calculated using ABS population estimates for the Roma SA2 (as reported by the Queensland Government Statistician’s Office: www.qgso.qld.gov.au)

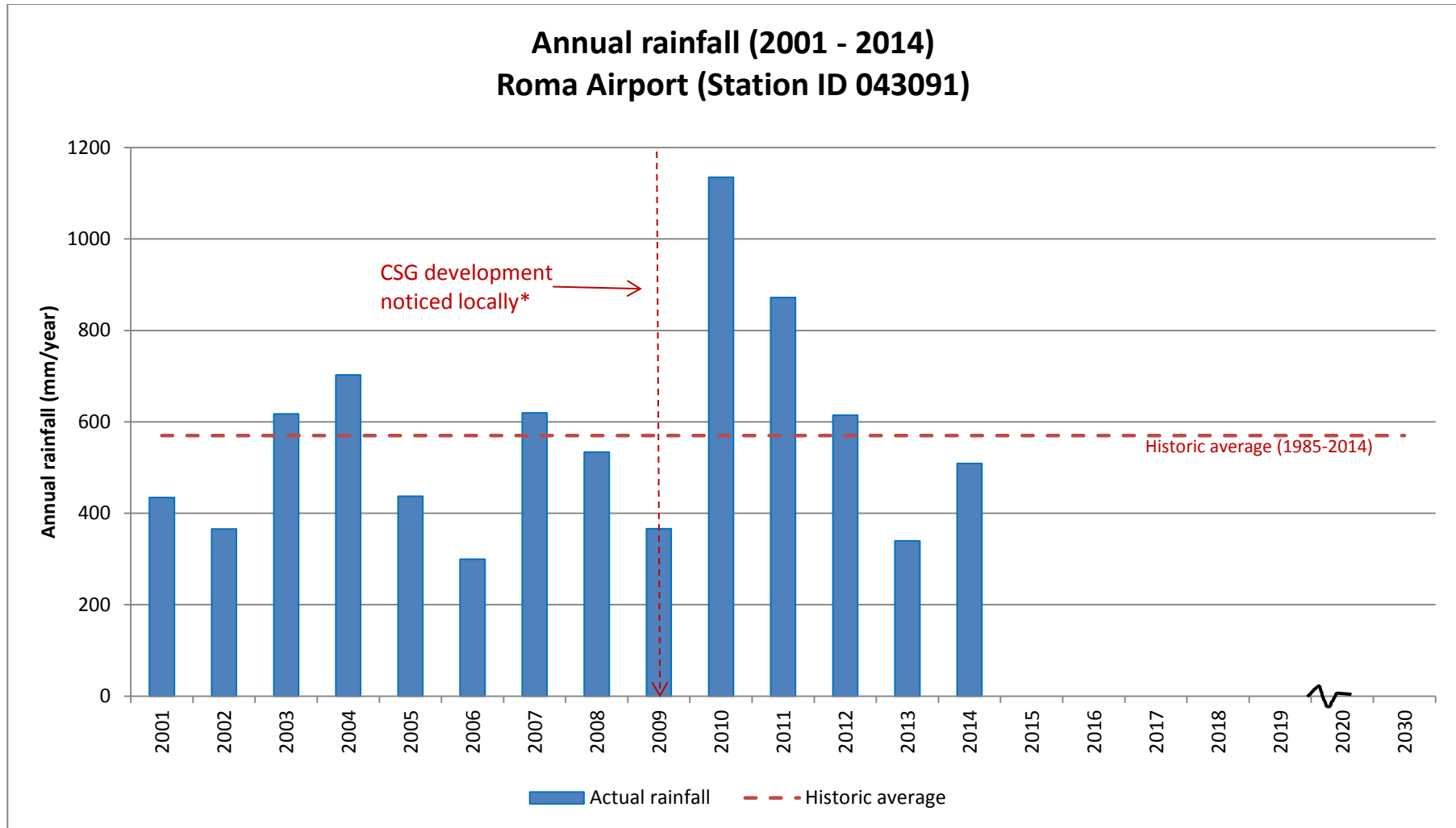
Qld Benchmark statistics sourced from <https://www.police.qld.gov.au/rti/published/about/Crime+Statistics.htm>

*Natural gas extraction has been in the area for decades - ‘peak’ conditions noticed from 2012.

This information has been compiled for use in consultation with the Roma community

Data & Perceptions about safety & wellbeing

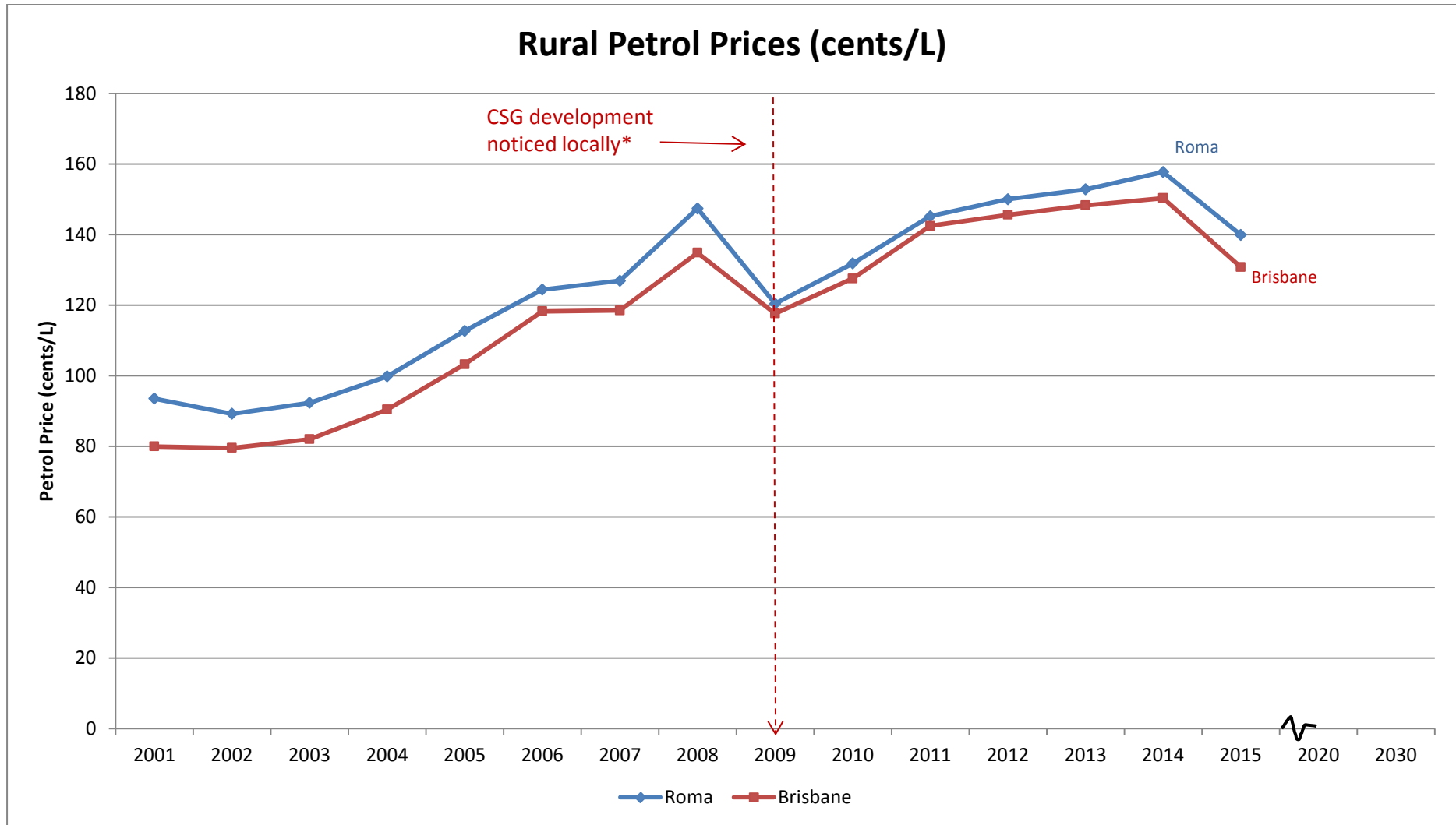
- **History and Trend:** Crime rates in Roma are higher than the Queensland benchmark. At the crossroads of two major transport routes, Roma has a high rate of traffic offences with an upward trend.
- **Change:** Increases in good order offences in 2011, 2012 and 2014. The rate of good order offences dropped in 2015. Drug offences spiked in 2011 and 2014 but dropped in 2015. Traffic offences fluctuate and reflect police activity. Spikes in traffic offences were seen in 2012 and 2015.
- **Perceived change:** There was a spike in assaults in 2012-13 that was of concern. Good order offences were also a concern. Police say it was mainly 'locals' involved, not CSG workers. Local responses included a successful Liquor Accord. "A lot more traffic on the road". "Drugs are too easy to get".
- **Expectations:** Varied. "Overall decreasing trend in crime". "We'll probably see an increase in crime".
- **Adaptations:** Include Liquor Accord, ID scanners in hotel, company in-vehicle monitoring systems, and school education programs.
- **Conclusion:** According to local police, "Good order and traffic are the main impacts of CSG" of interest to them. Traffic offences have been trending upward in Roma since 2001 and this trend continued during the CSG construction phase. No reports of increased fear of crime in the community despite a rise in assaults.
- **Implications for next project/stage:** The vehicle monitoring systems, wet camps (*accommodation for the CSG industry where drinking of alcohol is permitted*) and zero tolerance of good order offences were seen as successful strategies to ensure safety for all.
- **Community recommendations:** Have a Liquor Accord. Establish and maintain good relations with the community.



Data source:

Bureau of Meteorology climate data online service: <http://www.bom.gov.au/climate/data/>
 Data retrieved for Roma Airport, Station ID 043091, located 3.1 km from the Roma township.
 Rainfall station was selected based on the closest active rain station with most reliable historic data.

*Natural gas extraction has been in the area for decades - 'peak' conditions noticed from 2012.



Source: Australian Automobile Association (2015) <http://www.aaa.asn.au/aaa-agenda/affordability/latest-fuel-prices/>

*Natural gas extraction has been in the area for decades - 'peak' conditions noticed from 2012.

This information has been compiled for use in consultation with the Roma community

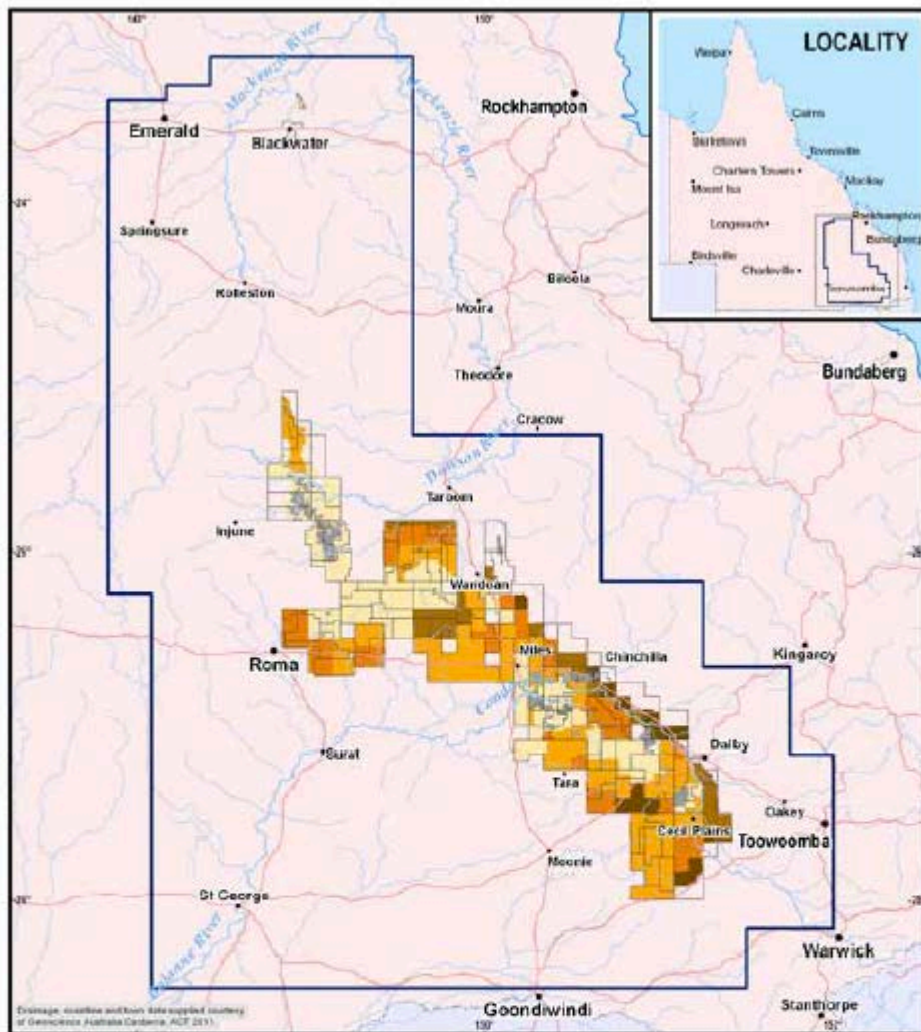
Alignment of Visions - Roma

Indicator topic	Community Visions / plans	Regional Council plans	State government plans <i>Draft Maranoa and Districts Regional Plan Surat basin population projections</i>	Academic studies* (e.g., history of community)	Other sources* (e.g., real estate group's study)
Population	Diverse; attract & retain skilled workers	Average annual growth rate 0.9% to 2036	Sustainable population growth; attract & retain skilled workers	Additional 2,422 residents by 2027	Population growth & cultural diversity
Housing	Affordable & diverse accommodation options for all, especially young people	-	Diverse, available and affordable housing and land	Urban density & need 619 new dwellings by 2027	-
Health and Safety	Safe for all with active lifestyles and access to healthcare, clean water, fresh food, safe transport	-	Safe community and environment; Roma region's primary healthcare provider; safe transport	-	-
Liveability	Progressive, diverse community; families and youth supported; environment & culture protected; sense of belonging; telecoms improved; clean & tidy	Affordable & high quality lifestyle	Regional activity centre with sustainable environment; engaged residents; culture protected; public transport; inclusive and progressive	Infrastructure for industry benefits community	Local governments as lead planners
Income and Equity	All residents valued and respected; high wages	Prosperity and wealth creation through business growth	Long term prosperity	-	-
Employment	Industry needs met by local workers; service agricultural and resource sectors	Job creation & low unemployment	Diverse choices; skilled jobs; locals meet industry needs	-	Promote and expand employment in agriculture
Business	Smart, innovative, sustainable, vibrant, growing economy; local brand & beautification; Roma business facilities improved	Diverse, sustainable, growing economy, in balance with community; regional brand	Balanced, diverse, strong & sustainable economy; industry impacts managed; benefit from resources sector; Roma is primary commercial and economic hub	Balanced industries; growth in service to resources sector	Coexistence of industries, limited regulation on major developments, inter/national market access
Skills and education	Increased education; technology literacy; life-long learning	Improve local skills base	Improve education and skills; life-long learning; training for business needs	-	-
What are the main goals for the town/ region?	To be progressive, diverse, and community-minded, with care for all people	Australia's most successful inland regional economy	Welcoming to all with local identity preserved, strong social and environmental values, and sustainable growth where industry benefits flow to communities	-	-

*References: Wilson, W & Basson, M 2012, 'Housing affordability in Roma: can progress be made within the regulatory and policy framework?', paper presented to Planning Institute of Australia National Congress 2012, 29 Apr - 2 May 2012, Adelaide, Australia, <<http://www.planning.org.au/documents/item/3932>

Manning, I 2013, 'The mineral resource boom and the economy of South West Queensland', *National Economic Review*, vol. 68, pp. 8-22.

Surat Underground Water Impact Report



Disclaimer: It is necessary to take to ensure the accuracy of this product, the Queensland Water Commission makes no representations or warranties of any kind, express or implied about its accuracy, reliability, completeness or suitability for any purpose and disclaims all responsibility (including without limitation, liability in negligence) for any loss or damage (including indirect or consequential loss or damage) which you might incur arising out of or in connection with the use of this product.

	Planned Commencement of CSG Production Surat Underground Water Impact Report		Figure A-1
	0 10 20 30 40 Kilometres <small>Source: Geoscience Data of Australia 1988</small>	Legend Production Commencement Prior 2012 2012 - 2015 2015 - 2020 2020 - 2025 2025 - 2030 2030 - 2035	
<small>QWC-CSGWA01_A 5/07/2012 Original File size: 48 Produced by the Coal Seam Gas Water Unit Queensland Water Commission © The State of Queensland 2012</small>			

Figure A-1 Planned Commencement of CSG Production

Source: State of Queensland (Queensland Water Commission) 2012. *Surat Underground Water Impact Report* (https://www.dnrm.qld.gov.au/data/assets/pdf_file/0016/31327/underground-water-impact-report.pdf)