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IMPLICATIONS OF POPULATION GROWTH IN AUSTRALIAN CITIES: CASE STUDY – LOGAN, QLD

2013

ABOUT THE AUTHORS

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Case study summary

Logan City Council has the sixth-highest population of any local government area (LGA) in Australia. It is south of Brisbane and shares boundaries with Brisbane City Council, Gold Coast City Council, Ipswich City Council, Redland City Council and the Scenic Rim Regional Council. During boundary adjustments which resulted from the 2008 Queensland local government reforms, Logan City Council more than quadrupled in land area. The Logan LGA features a series of small urban centres, and suburban and rural localities. Several significant rivers run through Logan, and it sits within a regional corridor of significant koala habitat.

Logan City Council currently has 278,050 residents and the population is growing at approximately two per cent a year. Continued growth is forecast, with a population increase of 165,000 expected in the next 20 years (Queensland Treasury, 2011).

The median age of Logan residents is 33, and the region has a larger percentage of its population under 20 than is the case in Greater Brisbane. The predominant form of household in Logan City is 'couples with children' at 36.4%, and the majority of housing in Logan City is 'separate houses' (87.2%). A higher proportion of the Logan population was born overseas than is the case in Greater Brisbane, and in the 2011 Census, 42 countries of birth were recorded within Logan. Of the total population, 14.7 % were born in countries where English is the first language, and 13.9% were born in countries where English is not the first language. Logan receives refugees through the humanitarian migration scheme.

The data analysis conducted for this study suggests several potential impacts associated with population growth. In the environmental domain, data indicates that while average energy and water consumption per household is decreasing, the higher gross energy and water usage indicates population growth is impacting on environmental quality. Other data indicates that population growth has brought with it changes in land use and increased motor vehicle use, both of which have also environmental implications.

Stakeholders interviewed spoke of habitat loss and threats to biodiversity or environmental quality from the land use changes which are projected to accompany growth. This includes impacts on threatened species and catchment water quality, increased pressure on existing urban bushland and potentially the loss of the South East Queensland 'character' which is green and leafy and includes bushland. Population growth is projected to increase waste disposal costs as existing landfill draws to a close and waste needs to be transported further for treatment and disposal. On the other hand, new developments bring opportunities for applying more efficient technologies or trialling new technologies in relation to water and energy.

The social data suggests a community with patches of socioeconomic disadvantage, some housing and mortgage stress, and low levels of university education. The proportion of residents with university qualifications is much lower in Logan than in Brisbane, although Logan has a slightly higher proportion of residents holding certificate or diploma level qualifications. The proportion of Logan residents holding certificate or diploma level qualifications is higher than the proportion holding bachelor's degrees or postgraduate qualifications. The data suggests that Logan is an ethnically diverse and physically healthy community. The percentages of Logan's population who are daily smokers, who are obese, who report their health as poor or who report experiencing psychological distress are lower than the corresponding percentages for Greater Brisbane or for Queensland as a whole.

Logan is more disadvantaged socially than the national average, in 2006, Logan City scored 971 on the ABS Socio-economic Indexes for Areas (SEIFA) index of disadvantage. The aggregated social data at the LGA level is likely to conceal higher concentrations of poor health status and disadvantage in specific areas of Logan. Logan is a highly car dependent area, with a very low level of public transport usage.

Stakeholders interviewed described housing instability and transport as key social issues that impact most on the disadvantaged in the community, and compound their disadvantage by making access to employment more difficult. Looking to the future, many of those interviewed felt concerns about the ability of the Council to provide the infrastructure, especially social infrastructure, needed to support growth in new development areas, and were also concerned about regional state infrastructure such as new roads and privately provided services such as bus services. Health, recreation and community infrastructure were key concerns for development areas, and many of those interviewed expressed the hope that such facilities would accompany early developments to benefit residents living in less connected suburbs.

In economic terms, creating diverse local employment was a key concern of interviewees. Logan is seen to be primarily a city relying on manufacturing, construction and retail business for employment. It was felt that the types of jobs available in the Logan area does not match the diversity of either the existing population, or the projected population, especially as demand for more ‘professional’ or white collar jobs increases. Interviewees reported a historical focus on providing cheap land to businesses which needed large amounts of space, such as transport logistics and manufacturing. This history, interviewees reported, had resulted in a predominance of blue collar jobs and limited local opportunities for professional employment. Instead people needed to travel to Brisbane for many occupational roles that were not available locally.

In terms of Logan central, interviewees expressed a vision for a more diverse, culturally vibrant city with ‘more to do’, and a greater sense of a ‘centre’ or a series of town centres each with its own distinct character, rather than the large undercover shopping centres which act as the current community hubs. It was felt that an increased population would help support these changes.

Glossary

ABS	Australian Bureau of Statistics
BSD	Brisbane Statistical Division
CBD	Central Business District
DEEWR	Department of Education, Employment and Workplace Relations
EPA	Environmental Protection Agency
EPBC Act	Environmental Protection and Biodiversity Conservation Act
GRP	Gross Regional Product
kg	kilogram
km^2	square kilometre
kWh	kilowatt hour
LGA	Local government area
m	metre
NIEIR	National Institute of Economic and Industry Research
OESR	Queensland Office of Economic and Statistical Research
pa	per annum
PDA	Priority Development Areas
PHIDU	Public Health Information Development Unit
PIP	priority infrastructure plan
RDA	Regional Development Australia
SEIFA	Socio-Economic Indexes of Areas
SEQ	South East Queensland
TTMRA	Trans-Tasman Mutual Recognition Arrangement
UDA	Urban Development Areas
ULDA	Urban Land Development Authority (Qld)

Contents

Background and context

Geography and features

Logan City Council is located between 15 and 50 km south of the Brisbane GPO, and has boundaries with Brisbane City Council, Gold Coast City Council, Ipswich City Council, Redland City Council and the Scenic Rim Regional Council. It was created as Logan Shire Council in 1979, and became Logan City in 1981.

Prior to the 2008 boundary changes[1] Logan was a medium-sized (229 km^2) urban council (Logan City Council, 2012h), with a low density suburban form and several scattered small commercial or mixed-use precincts but no main urban centre. During 2008, Logan City Council 'inherited' land from two adjoining shires – Beaudesert and the Gold Coast. This expansion saw Logan City Council gain 728 km^2 in land area, an additional area almost three times the size of its original expanse. This change also brought 103,050 new residents (Logan City Council, 2012h). The current boundaries reflect this 2008 designation which expanded Logan City, making it the sixth-largest council in Australia (Logan City Council, 2009). The new boundaries now encompass 'old' Logan City, suburbs north of the Albert River which were previously part of Gold Coast City, and a large area previously incorporated under the northern part of Beaudesert Shire (Logan City Council, 2012b). The Logan City local government area now covers 957 km^2 (Logan City Council, 2012b).

Logan City has 53 small areas, and the City includes the suburbs and rural localities of: Bahrs Scrub, Bannockburn, Beenleigh, Belivah, Berrinba, Bethania, Boronia Heights, Browns Plains, Buccan, Carbrook, Cedar Creek (part), Cedar Grove, Cedar Vale, Chambers Flat, Cornubia, Crestmead, Daisy Hill, Eagleby, Edens Landing, Forestdale, Greenbank, Heritage Park, Hillcrest, Holmview, Jimboomba, Kagaru (part), Kingston, Logan Central, Logan Reserve, Logan Village, Loganholme, Loganlea, Lyons, Marsden, Meadowbrook, Mount Warren Park, Mundoolun, Munruben, New Beith, North Maclean, Park Ridge, Park Ridge South, Priestdale, Regents Park, Rochedale South, Shailer Park, Slacks Creek, South Maclean, Springwood, Stockleigh, Tamborine (part), Tanah Merah, Underwood, Undullah (part), Veresdale (part), Veresdale Scrub (part), Waterford, Waterford West, Windaroo, Wolffdene, Woodhill, Woodridge and Yarrabilba (Logan City Council, 2012b).

The majority of land is used for residential purposes and agriculture, with rural areas mainly located in the south, west and eastern edges of the City (Logan City Council, 2012b). It features several large rivers and conservation areas, including: Buccan Conservation Park, Carbrook Wetlands Conservation Park, Daisy Hill Conservation Park, Mount Perry Conservation Park, Plunkett Conservation Park, Springwood Conservation Park (Logan City Council, 2012b).

Growth in the 1980s focused on in-fill development within the predominantly urbanised Logan centre. Following the 2008 boundary changes, the then Urban Land Development Authority (ULDA) designated two major areas as Urban Development Areas (UDAs): Yarrabilba and Flagstone. These two areas lie to the south and south-west of the City and are in areas which are currently rural or rural residential (for example Yarrabilba was previously a pine plantation (Urban Land Development Authority, 2010)). Yarrabilba and Greater Flagstone can accommodate 60,000 dwellings and 150,000 people (Urban Land Development Authority, 2011a; 2011b); however the State Government's South-East Queensland Regional Plan 2009–2031 requires Logan City to accommodate a minimum of 40% of the 70,000 new dwellings within its existing urban area, known as infill development (Regional Development Australia, 2012). Growth is forecast for the next 20 years, with another 165,000 residents expected to be in the area in the next 20 years (Queensland Treasury, 2011).

[1] Through the *Local Government (Reform Implementation) Act 2007* (Qld) (Queensland Department of Local Government, nd)

Along with the forecast growth, urban form will likely be changing towards greater density in the urban centres, with some areas such as Loganholme already zoned for medium density (e.g. three storey apartment or commercial buildings) and choices of varied lot sizes in peri urban areas such as the UDA sites (e.g. in Yarrabilba planned lot sizes range from 480m to 680m) (Logan City Council, 2012c).

Major features of the city include: commercial areas in Logan Central, the Hyperdome (Shopping Centre), Logan Hospital, Logan Entertainment Centre, Logan Art Gallery, Kingston Butter Factory Community Arts Centre, Beenleigh Rum Distillery, Greenbank Military Area, Metropolitan South Institute of TAFE (Loganlea and Springwood Campuses), Griffith University (Logan Campus), and the Mount Cotton Driver Training Centre. Logan City transport links include the Pacific Motorway, the Mount Lindsay Highway, and the Beenleigh and Gold Coast rail lines (Logan City Council, 2012b).

Logan City consists of a mix of urban, rural areas and contains natural catchments from three waterways – the Logan River which flows through the middle of the region, the Albert River on the south-east border, and Oxley Creek on the north-west border. These waterways link directly into the Brisbane, Logan and Albert River estuary and flow into southern Moreton Bay (Logan City Council, 2012i). Logan River Catchment, covers an area of 3,067 km^2, and the Albert River is 185km long. It goes through the city centre before emptying into Southern Moreton Bay, forming a border between Gold Cost City Council and Redlands City Council (Logan City Council, 2012i). Oxley Creek originates in Logan City and supports “rural, rural residential, residential, industrial, sand extraction, waste facilities, and special uses such as Archerfield Airport and rail freight terminals” (Logan City Council, 2012i). During the wet season, Oxley Creek is prone to flooding, and this impacts on road and access routes.

Development of the surrounding areas has negatively impacted the Logan waterways, with Council undertaking river and wetland recovery programs to ensure that the recreational, commercial and aesthetic values of the waterways are maintained. The upper catchment has mainly been cleared for agriculture and grazing, the middle areas are used for chicken farms, turf farms and beef cattle, and the lower reaches are predominantly used for residential purposes, as well as sugarcane and prawn farming activities (Logan City Council, 2012b). The catchment contains isolated patches of remnant bushland which are home to a number of endangered, vulnerable and near threatened flora. Parts of the lower catchment are recognised as significant koala habitats (Logan City Council, 2012i). The Brisbane koala bushlands extends into Logan City and Redland Shire and this ‘Koala Coast’ is thought to protect between 3,000 and 5,000 koalas, as well as many other native animals (Brisbane City Council, 2012).

The Albert River originates in the World Heritage Lamington National Park, and for most of its length, sustains rural land uses (Logan City Council, 2012i). The Logan/Albert Catchment has the highest density of aquaculture farms of any catchment in Australia (Logan City Council, 2012i). The Albert River is also used by beef, pork, dairy and cane farms. The ‘scenic rim’ where the Albert catchment begins is considered the second-most biodiverse area in Queensland (Logan City Council, 2012i).

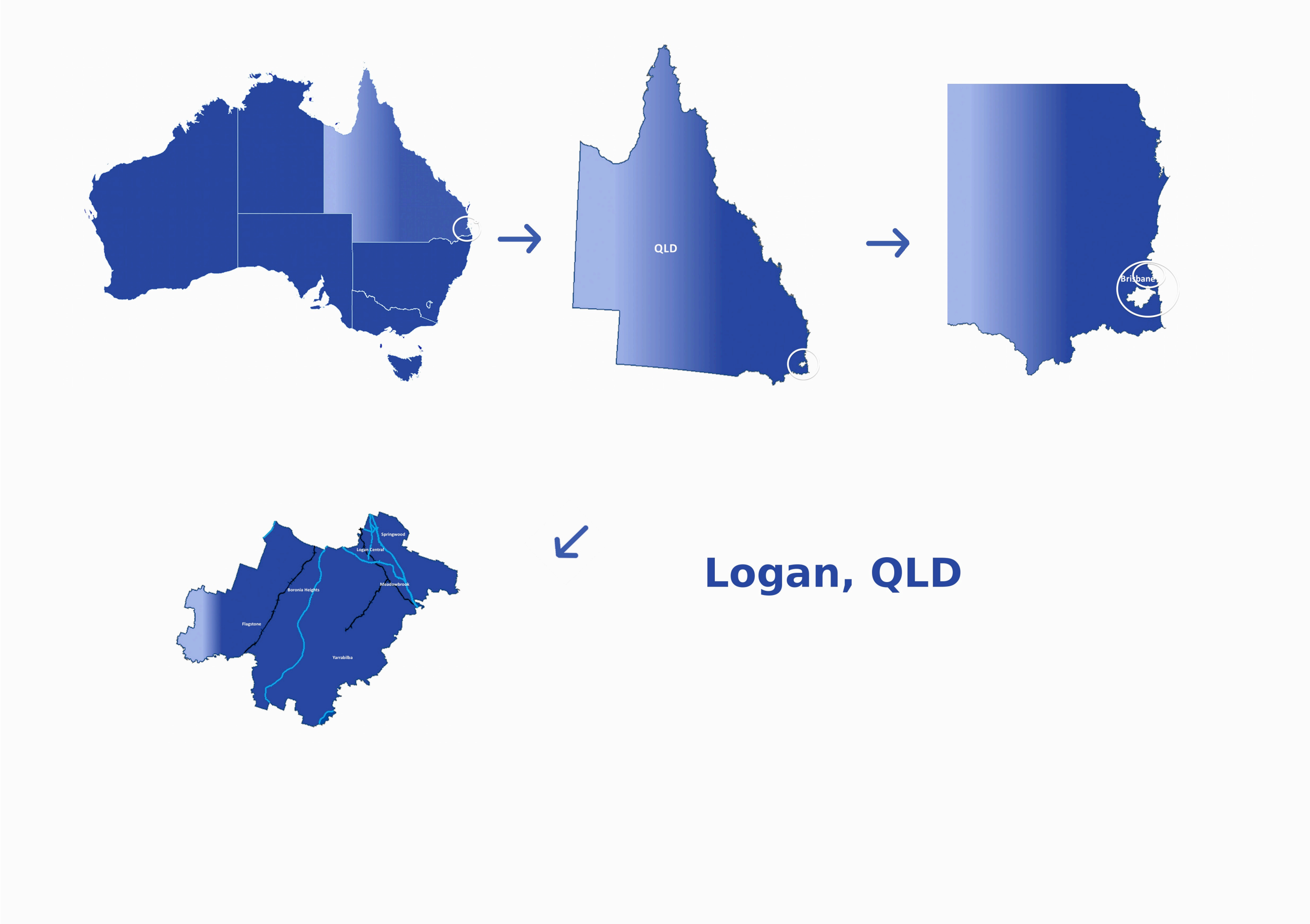


Figure 1: Geographical context map of Logan

Population summary

The estimated population of Logan at 30 June 2011 was 287,517 persons, with 278,061 residents counted in the 2011 Census. This is an increase of 27,065 persons since the 2006 Census, and an overall increase of 46,568 since 2001 (Logan City Council, 2012b). The Logan City population is expected to nearly double in the coming decades (Logan City Council, 2009b) (see Figure 2).

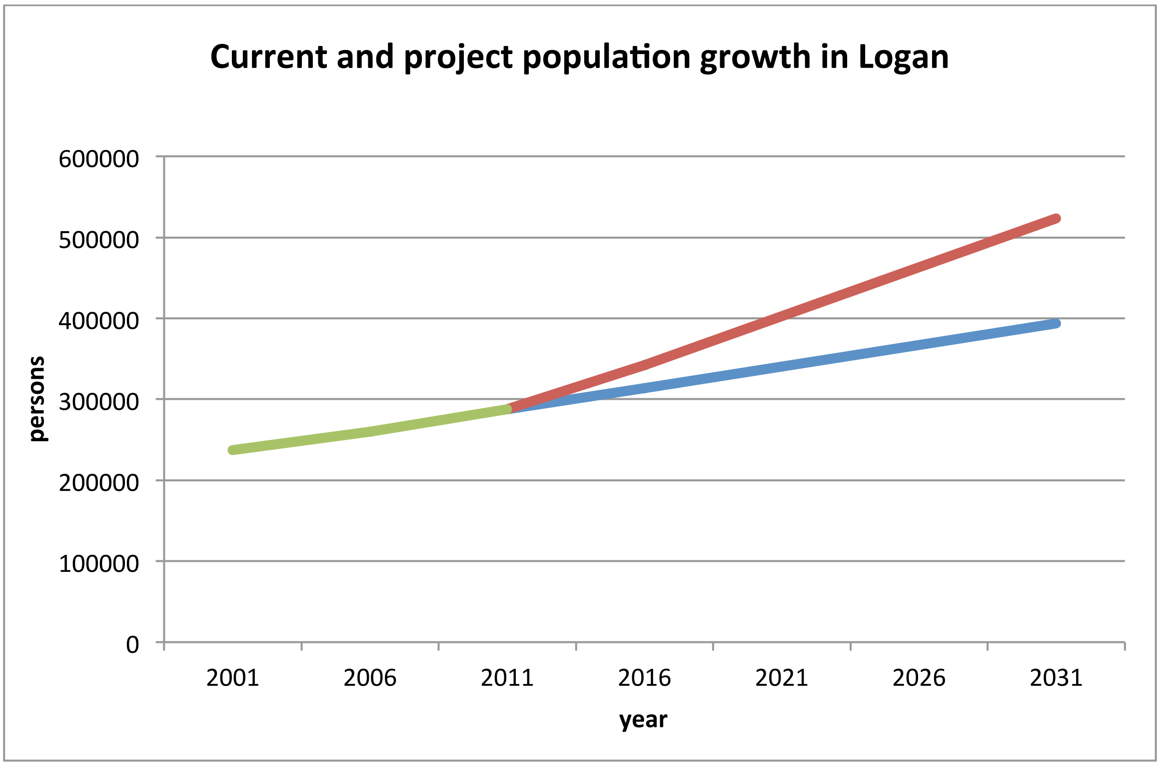


Figure 2: Current and projected population growth in Logan (Source: State of Queensland, 2012; ABS, 2012a) (Note: Population projections are shown in red (high) and blue (low))

Table 1: Context indicator – population (source: ABS, 2012b)

	Logan 2001	Logan 2011	Greater Brisbane 2011	QLD 2011
Population (persons)	237,236	287,517	2,146,577	4,474,098
Rate of growth 2011-2001 pa		1.9%	2.3%	2.1%
Population density (people/km2)	247.6	300.1	135.6	2.6

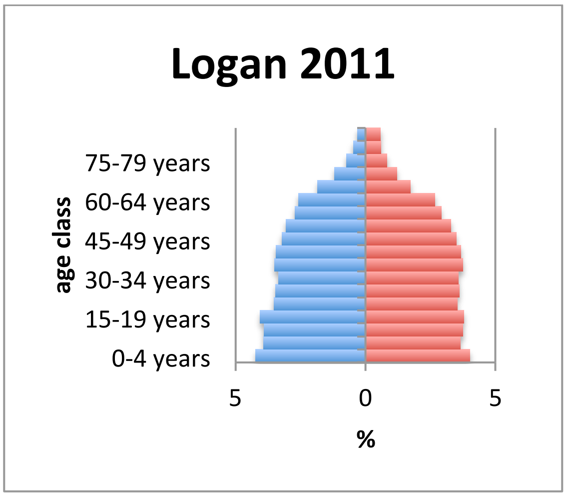
Social characteristics

Age profile

The median age of Logan residents is 33 years, which is lower than the median age of people in Greater Brisbane and Queensland as a whole. The largest population group at 8.2% in 2011 are those aged 0-4 years, followed by 15-19 year olds representing 7.8% of the population. Another 33.6% of the population is above 45 years of age (Logan City Council, 2012b). However, the largest increases in population between 2001 and 2011 occurred in the age groups between 55 to 69. Compared to Greater Brisbane, Logan City has a larger percentage population between the ages of 0-19 years.

The proportion of the population that is female has remained steady since 2001 at 50.4%, roughly mimicking the percentage of females in Brisbane (declining from 50.9% to 50.7% between 2001 and 2011) (Logan City Council, 2012b). The total population has grown an average of 1.9% per year since 2001 (Logan City Council, 2012b).

The predominant form of household in Logan City is 'couples with children' at 36.4%, down from 39.4% in 2001. 'couples without children' are the next-largest group at 24% in 2011 (up from 22% in 2001) and 'lone person' households make up 16.9% of the total population, the same percentage reported in 2001 (Logan City Council, 2012b). The average household size in Logan City is 2.9 people. The number of dwellings reported in the 2011 census was 100,578. Of these, 100,531 are private dwellings and 5.6% of them were unoccupied. The number of private dwellings has increased by 16,811 since 2001. The number of non-private dwellings has increased by 13 since 2001 to a total of 46 (Logan City Council, 2012b). Most housing in Logan City is classified as 'separate houses' (87.2%) with the remainder consisting of medium and high density housing (about 12%) and cars, caravans, houseboats or other (0.6%) (Logan City Council, 2012b).



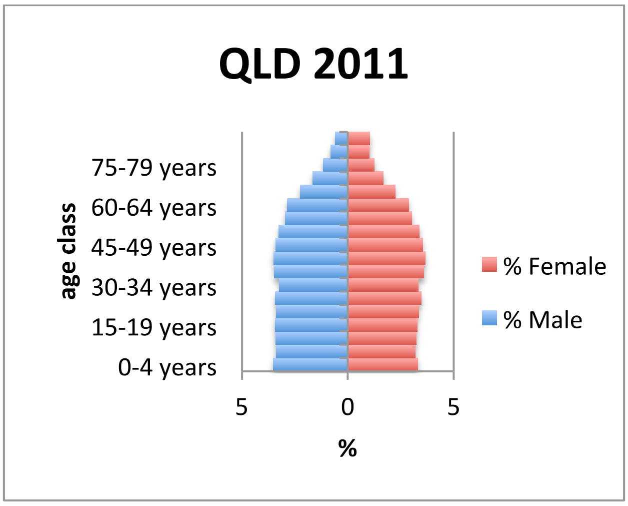


Figure 3: Age profile of Logan and Queensland (2011) (Source: ABS, 2012b)

Population diversity

At the time of the 2011 Census, Logan had 7,771 persons who stated they were of Aboriginal or Torres Strait Islander origin. Indigenous persons made up 2.8% of the total population (up from 2.3% in 2001) in Logan, compared with 3.6% for Queensland as a whole.

At the time of the 2011 Census, Logan had 72,057 persons who stated they were born overseas (26.2% of the total population). This is higher than the proportion of the total Queensland population born overseas (20.5%).

Table 2: Context indicator – population (source: ABS, 2012a)

	Logan 2011	Greater Brisbane 2011	QLD 2011
Indigenous	2.8%	2.0%	3.6%
Born overseas in a predominantly English-speaking country	14.7%	12.1%	11.0%
Born overseas in a non-English speaking country	13.9%	13.0%	9.5%
Total overseas born	26.2%	24.7%	20.5%

In the 2011 Census, 42 countries of birth were recorded within Logan, with 68.2% of the 2011 population born in Australia (down from 71.9% in 2001). Of the total population, 14.7 % were born in a country where English is the main language, and 13.9% in a country where English is not the main language (up from 14.0% and 11.4% respectively on the 2006 figures). The proportion of people in the Logan area who do not speak English well increased by 0.8 per cent in the ten years between 2001 and 2011. From 1 July 2006 to 30 June 2012, 7,766 people moved to Logan. Of these, 2,538 (32.7 per cent) were from the humanitarian migration stream (Logan City Council 2012m).

Table 3: Context indicator - culture and migration (source: ABS, 2007 & 2012b)

	Logan 2001	Logan 2011	Brisbane 2011	QLD 2011
% Born overseas	23.5%	26.2%	24.7%	20.5%
% Do not speak English well	1.4%	2.2%	2.0%	1.4%
Indigenous	2.3%	2.8%	2.0%	3.6%

Between 2001 and 2011, 47.3% of the Loan City population did not move overseas, interstate, or within state. Between 2006 and 2011, 18% out of the 38.9%[2] of Logan's population who reported moving house during this period had moved within Logan, 12% moved to the area from another part of Queensland, 5.1% came to Logan from another country and 0.7% came from an undisclosed place of origin.

Economic characteristics

Of the 64.2% of the Logan population that identified themselves as part of the Labour Force in 2011, 92.8% was employed, up from 90.3% in 2001. A total of 60.6% of employees were employed full time, up from 59.2% in 2001. The top four industry sectors in Logan City are Manufacturing (13.6%), Retail trade (11.5%), construction (11.3%) and Health Care and Social Assistance (10.6%). Primary industry activities (Agriculture, Forestry, Fishing, and Mining) combined account for 1.4% of those employed. The percentage of persons employed in each of these industries bar the latter decreased since 2001. Manufacturing, Agriculture, Forestry and Fishing and the Rental, Hiring and Real Estate Sector reported a real decrease in number of persons employed since 2001(Logan City Council, 2012b).

Particular manufacturing activities in Logan include: metal production, machinery, equipment, and materials for the residential and commercial building industry as well as an emerging food and beverage manufacturing sector (Logan City Council 2012d). The area has three main business parks or industrial land hubs: SouthWest1 Enterprise Hub (in planning stages), Crestmead Industrial Estate (established), Loganlink South (45ha currently for sale) (Logan Office of Economic Development, 2012a).

Looking at employment by occupation rather than industry sector, those employed in Logan are predominantly technicians and trades workers (17%), clerical and administrative workers (16.4%), and labourers (12.7%), followed by machinery operators and drivers (11%), sales workers (9.8%), community and personal service workers (9.4%), managers (9.2%)[3].

[2] Note that the total who moved (38.9%) and who didn't move (47.3%) does not total 100, as an additional 5.6% did not state their movement, and 8.2% were not applicable (ie births between 2011 and 2006 (aged under 5) – 8.2%)

[3] Does not total 100 as 2% of occupations were categorised by ABS as 'inadequately described'

According to 2011 Census travel-to-work surveys, 67% of employed persons drive to work as the personal driver, up from 64.9% in 2001, an increase of almost 20,000. A total of 95,848 people reported travelling to work as the passenger or driver of a private vehicle. Private vehicles included trucks, motorbikes, and cars. Over one-third (36.5%) of households reported owning two motor vehicles, 30.3% one motor vehicle, and 21.1% three or more motor vehicles. Commuters using public transport – train or bus – totalled 7.1%, up from 4.9% in 2001, indicating an increase of 3,994 persons (Logan City Council, 2012a). Compared to Greater Brisbane, Logan City residents drive more, walk less and use less public transport.

In Logan, 31.5% of the working population earn between $200 and $600 per week, 10% earn between $800 and $900, and 12.7% earn between $600 and $799 per week. A total of 2% of the working population earn $2,000 or more per week and 8% earn between $1 and$199 per week. The total percentage of the working population earning under $1000 per week is higher than the figure for Greater Brisbane.

Planning and governance

Influence of the Queensland State Government

The state government is responsible for high-level strategic planning, development and conservation across Queensland, as well as plans with a regional focus. The *Sustainable Planning Act 2009* (Qld) sets out the land use planning laws. Under the *Sustainable Planning Act,* there are four types of state planning instruments that comprise the State Planning Instruments Program including: state planning regulatory provisions (used to regulate development), regional plans (intended to integrate related government policy for each region), state planning policies (to protect interests of the state), and Queensland Planning Provisions (to facilitate consistency in planning schemes across the state).

Following the change of government in 2012 the State Planning Instruments Program is under review and in general, the state government's approach to planning is in a degree of flux.

The new government's vision for the Department of State Development, Infrastructure and Planning is 'to drive the economic development of Queensland'. Further details are set out in the Department's new *Strategic Plan 2012–2016*, which includes key objectives, strategies and indicators. The key objectives for the new department as set out in the Plan are:

1. Champion the interests of business and industry in Queensland.
2. Fast track delivery of major resource and industrial development projects.
3. Diversify and build resilience in regional and state economies.
4. Assist property and construction industries to grow and flourish through streamlined planning processes.
5. Re-empower local governments and their communities to plan for their futures.
6. Improve service delivery.

In 2010, the then government held a growth management summit to explore the challenges and opportunities of population growth across the state (Queensland Government, 2010a). Priorities identified at the summit focused on: protecting green space, inter-urban breaks and agricultural land from development; opening green space for recreation; making homes more sustainable; and enabling more compact or consolidated development (Queensland Government, 2010c). These priorities were to be implemented by the then Department of Infrastructure and Planning. An Urban Land Development Authority (ULDA) was also established in 2010 to fast track development and manage the master planning process in areas identified as suitable for population growth (Queensland Government, 2010b).

The status of these priorities is now not clear. The new Queensland Government has transferred the powers and functions of the ULDA into the new *Economic Development Act 2012* (Qld), which is expected to become law in early 2013 (Urban Land Development Authority, 2012). The new Act allows for the creation of Priority Development Areas (PDAs) – equivalent to current Urban Development Areas (UDAs) – and for the making of provisional land use plans and development schemes for them. Existing UDAs will be transitioned to PDAs (McInness Wilson Lawyers, 2012). Key components of the Act include requiring the state to 'consult with local government and undertake development that is consistent with community expectation', and allowing the formation of Local Representative Committees for PDAs which the new Minister for Economic Development can delegate powers to (Department of State Development, Infrastructure and Planning, 2012b).

According to Regional Development Australia, the other current Queensland Government's ministerial deliverables in relation to growth management, infrastructure and planning are as follows (Regional Development Australia, 2012: 61):

- Revamp the Local Government Act and the City of Brisbane Act to give more power to Queensland local councils
- Ensure local government are centrally involved in planning for regional and state infrastructure including the implementation of a better system of statutory planning that will position Councils as leading contributors to the development of regional plans
- Appoint an industry "Go To" person for the property and construction industry, supported by Growth Management Queensland
- Establish and chair a Cabinet Committee focused on property and construction
- Establish Infrastructure Queensland to advise the State Government on long-term infrastructure planning, prioritisation and ongoing management and maintenance
- Establish Queensland Projects – a standalone unit within Queensland Treasury driving cooperative funding models to maximise private investment in Queensland's infrastructure.

Regional plans

Logan City Council is one of eleven councils currently grouped by the state government in the South East Queensland Regional Plan 2009–2031 (*SEQ-2031*). The purpose of the plan is to 'manage regional growth and change in the most sustainable way to protect and enhance quality of life in the region'. To this end, 'population and housing projects have been extended to 2031 and the implications for accommodating growth in SEQ have been examined' (Queensland Department of Infrastructure and Planning, 2009).

As long-term population forecasts predict Logan's population will double over the next forty years, the SEQ Regional Plan has set targets for Logan City of housing an additional 160,000 people in 70,000 dwellings by 2031, as well as an additional 50,000 jobs (2009). SEQ-2031 requires Logan City to accommodate a minimum of 40% of the new dwellings as infill development within its existing urban area (Queensland Department of Infrastructure and Planning, 2009).

The SEQ Regional Plan shows that Logan has, compared to other local government areas, a large percentage of its existing freehold subdivision land outside the 'Urban Footprint.' In fact, Logan City is estimated to have the second-largest supply of broadacre land in South-East Queensland at 7,146 hectares. However, when matched against future demand, Logan's supply of broadacre land will only last 16 years (Queensland State Government, 2009).

In relation to population growth, the immediate aim of SEQ-2031 is to make plans for the development of identified Regional Development Areas both within and outside the 'Urban Footprint' zone. Identified Region Development Areas for residential and employment purposes within Logan's urban footprint include Park Ridge, Flagstone, and Yarrabilba North. Two other areas in urban Logan were identified as Local Development Areas: Bahrs Scrub for residential development and Greenbank Central for residential and employment development (Queensland Department of Infrastructure and Planning, 2009: 107). Outside the urban footprint, 15 sites were identified for development across the 11 councils, and a third of them were located in Logan (Queensland Department of Infrastructure and Planning, 2009: 109).

The Regional Plan also lays out the following designations (and associated strategies) for Logan:

- principal regional activity centres (Springwood, Beenleigh)
- major regional activity centres (Logan Central, Browns Plains, Logan Hyperdome)
- health, education and training opportunities (Griffith University Campus and Hospital, Meadowbrook)
- employment opportunities (Meadowbrook).

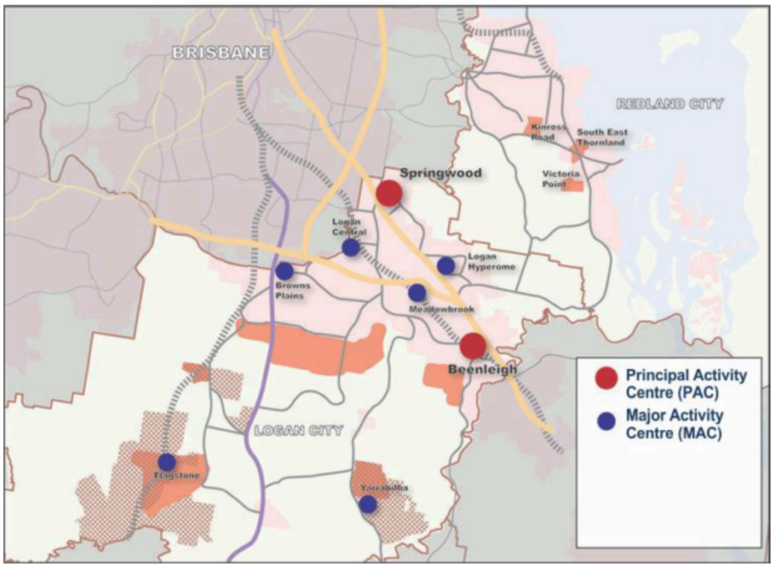


Figure 4: Proposed Activity Centres (Source: Regional Development Australia, 2012)

The seven Logan City urban nodes, as shown in the figure above, cluster along the main Brisbane–Gold Coast transport axis. Logan Central, Meadowbrook and Beenleigh are served by rail. Springwood, Underwood, Loganholme and Beenleigh are located next to the Pacific Motorway. No single centre dominates the others (Regional Development Australia, 2012). The strategic proposal is to anchor the urban pattern of Logan City along the Pacific Motorway at Springwood, in the north-west, and Beenleigh, in the south-east, as shown in the figure above.

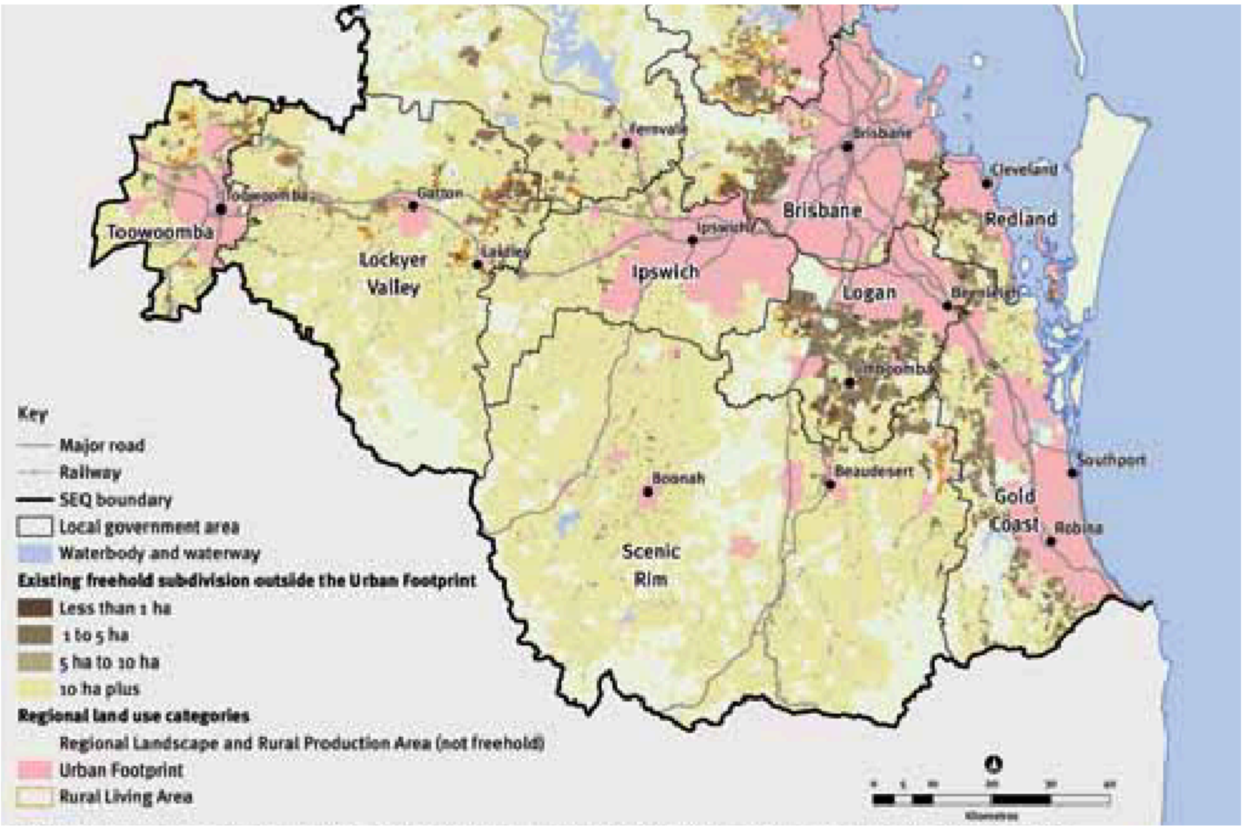


Figure 5: Existing subdivision outside the Urban Footprint (Source: Queensland Department of Infrastructure and Planning, 2009: 61)

Influence of Local Government

The state government changes to local government in Queensland which took effect at the 2008 council elections, brought controversial large-scale, forced amalgamations which reduced the number of local councils from 157 to 73 (Local Government Reform Commission Qld, 2007: 13, cited in Tiley and Dollery, 2010). Logan more than tripled in area and added 78,400 people to its population. This increase in size came about through annexing a large section of the now-dissolved Shire of Beaudesert as well as the Beenleigh–Eagleby suburban area to its southeast, which had been part of the Gold Coast. In its rationale for the changes, the Local Government Reform Commission argued that the additional area brought the South East Queensland urban footprint and future growth areas to 2026 under the one local government, which could plan effectively for the area's future and would face reduced compliance costs for development works. The Local Government Reform Commission stated:

> *An expanded Logan City local government area with the inclusion of Beenleigh/Eagleby, and in particular the major future urban development area of northern Beaudesert Shire, will allow the new council to plan appropriately for the population growth the SEQ Regional Plan forecasts for this area* (Local Government Reform Commission, n.d.).

The areas which were annexed by Logan also included the lower urbanised reaches of the Logan River catchment and the area north of the Albert River which was seen to form a 'logical physical and administrative boundary' between the Logan and Gold Coast local government areas (Local Government Reform Commission, n.d.).

Logan City Council faces major challenges in managing the expected population growth in both existing and new development areas. These expected challenge include:

- changes in household size and composition
- social integration
- provision of affordable housing
- public transport and social infrastructure
- skilling entrants into the labour force
- ensuring adequate employment opportunities (Regional Development Australia, 2012: 39).

Local planning schemes

Councils control and regulate how land is used in their areas. Local government planning schemes outline councils' long-term plans for the future directions of local government areas and are the main instruments against which development applications are considered. Councils' local planning schemes must conform with the *Sustainable Planning Act of 2009* and the Queensland Planning Provisions.[4] Generally, local governments are the authorities responsible for assessing proposals. As of September 2012, Logan City Council has three planning schemes, Beaudesert, Gold Coast and Logan, and is in the process of developing a new integrated planning scheme.[5]

Priority infrastructure plan

In 2012, Logan Council adopted a priority infrastructure plan (PIP) into its planning scheme based on the *Sustainable Planning Act 2009* framework. The PIP 'predicts the infrastructure Logan will need over the next 10 to 15 years to service our growing population and support healthy, well-functioning neighbourhoods' (Logan City Council, 2012f). The purpose of the priority infrastructure plan is to integrate and coordinate land use planning and infrastructure planning, and ensure that trunk infrastructure is planned and provided in an efficient and orderly manner (Logan City Council, 2012i: 14). The priority infrastructure plan provides 'the projections of residential development and non-residential development and the assumptions of demand for each trunk infrastructure network in the planning scheme area which informed the preparation of the priority infrastructure plan' and identifies 'the area that is used or is proposed to be used for urban growth up to the year 2021' (Logan City Council, 2012i: 16). Additionally, the PIP 'establishes an infrastructure planning benchmark that forms part of the assessment criteria for assessable development' (2012).

The projected number of dwellings is 89,630 and the projected population is 214,081, out to 2026 (Logan City Council, 2012i: 27-28). The priority infrastructure plan also includes estimates and desired standards of service for projected employees, non-residential floor space, and networks for road, parks, water supply infrastructure, and stormwater infrastructure.

Infrastructure charging

In 2011, the Queensland State Government introduced an amendment to the 2009 Sustainable Planning Act, the *Sustainable Planning (Housing Affordability and Infrastructure Charges Reform) Amendment 2011.* This amendment set maximum standard infrastructure charges for local governments throughout Queensland. As a result of the amendment, local governments have to adopt an 'Adopted Infrastructure Charges Resolution' to be able to recoup the required cost of infrastructure to service new developments throughout the City, if they also have a Priority Infrastructure Plan (PIP) in place. In 2012, the 'Logan Adopted Infrastructure Charges Resolution (No. 3)' came into effect (Logan City Council, 2012g).

[4] See: http://www.dsdip.qld.gov.au/local-area-planning/local-government-planning-schemes.html
[5] See: http://logan.qld.gov.au/planning-and-building/planning/new-planning-scheme

Local plans – Logan City Council has five local development area plans either in progress or endorsed, one each for Bahrs Scrub, Jimboomba, Logan Village, Loganholme Neighbourhood and Loganlea Neighbourhood. Council's local plans provide guides for the development of local areas within Logan.[6] The plans must be incorporated into the local planning scheme before they can be implemented.

Master plans and structure plans – The Council has developed, or is currently developing, four master plans and one structure plan for Beenleigh, Greater Springwood, Logan Central, Meadowbrook and Park Ridge.[7] The master plans guide a strategic framework for managing future growth over the next 20 years.

Major new cities – The major new cities of Greater Flagstone and Yarrabilba were formally declared Urban Development Areas by the Queensland Government in 2010. The Urban Land Development Authority (ULDA) became the planning authority for Flagstone and Yarrabilba and took over the land use planning role for these areas. The strategic plan developed by Council prior to the ULDA's takeover formed the basis of Council's input into the ULDA's land use planning for Flagstone and Yarrabilba. In 2011, ULDA's Urban Development Area Development Schemes (out to 2051) were approved.

Growth management plan – Logan City Council also developed a growth management plan, *Core Matters* 2008 (GMCM) – *Regional Plan 2031*. The GMCM 'presents Council's initial policy framework to position Logan in managing the challenges of growth in SEQ's South West corridor for both its community and South East Queensland' over the period 2008 to 2026 and 'outlines the overall implementation and sequencing strategy of the key growth areas for Logan' (Logan City Council, 2008).

The GMCM plans for a population of approximately 379,000 to 2026 and overall, aims to ensure that Logan's population growth is 'distributed evenly throughout Logan, to infill and redevelopment, and greenfield sites, all of which are considered key growth areas' (Logan City Council, 2008: 10). The GMCM provides for 53,355 new dwellings in Logan to 2026 and allocates 20,974 dwellings of the total 53,355 dwellings to infill and redevelopment areas which are specific targeted sites and Regional Activity Centres (Logan City Council, 2008). The remaining dwellings will be greenfield developments within the areas defined by the SEQ Regional Plan's Urban Footprint. Logan City has made detailed land provisions for future residential, industrial and commercial expansion (Figure 6).

[6] See: http://logan.qld.gov.au/planning-and-building/planning/local-plans
[7] See: http://logan.qld.gov.au/planning-and-building/planning/structure-plans-and-master-plans

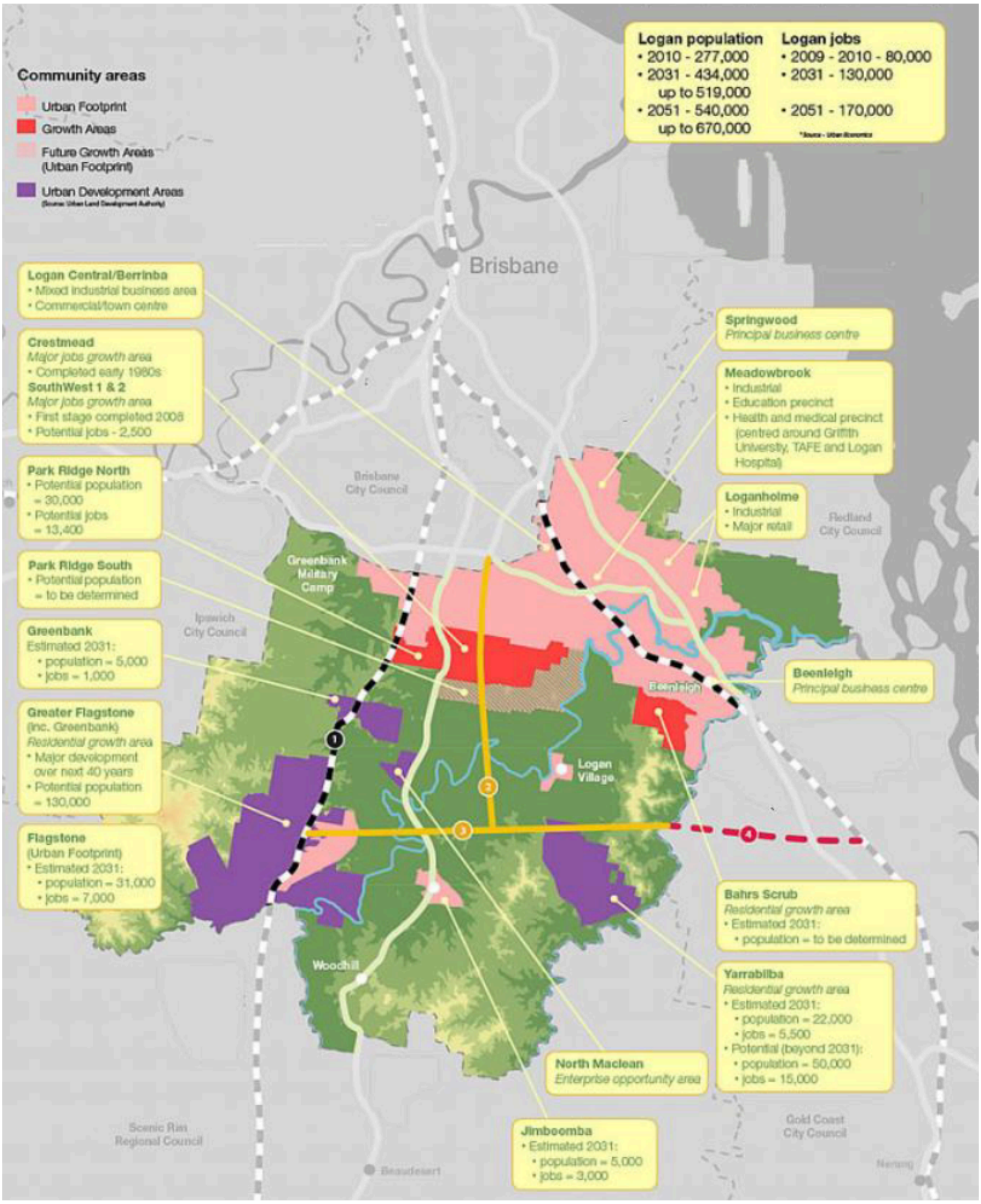


Figure 6: Logan City spatial configuration 2031 (Source: Logan Office of Economic Development in RDA, 2012: 58)

Other relevant institutions

Federal Government regional development initiative

Under the Federal Government's Regional Development Australia (RDA) initiative, a partnership between the three tiers of government, 55 RDA committees across the country have prepared regional plans. The Logan and Redlands Inc. RDA is one of 12 in Queensland (Regional Development Australia, 2012). This RDA region covers the two local government areas of in South East Queensland between the major centres of Brisbane and the Gold Coast.

The Logan and Redlands RDA's *Regional Road Map* (Regional Development Australia, 2012) describes the region, its attributes, industry and employment base and key advantages. It also sets out the economic, transport, growth management, social inclusion and national broadband network vision for the region; articulates the drivers of change, identifies strengths, opportunities and weaknesses; and lists priorities for action. The *Road Map* is reviewed at least annually and was last updated in August 2012.

According to the *Road Map*, this region is home to almost 10% of Queensland's population. In 2011, the population growth in the Logan and Redlands region was 1.5% and represented an 8.1% share of the state's population growth for the previous 12 months (2012: 35). The largest increase in population occurred in Logan City, which accounted for 71% of all growth in the Logan and Redlands region (2012: 35). Logan City is set to grow faster than Redland City, at 2.3% per year compared with Redland City's expected growth of 1.3% (2012: 36). The *Road Map* describes the current status of the region's development as fragmented and describes the strategic challenge (2012: 56):

> *'Logan City lacks an identifiable CBD. Springwood and Capalaba, likewise, are sprawling developments organised around car-based transport, with good access by this mode but little structural capacity for other modes. The strategic challenge is to develop, through urban design initiatives, focuses that are functional for people as well as cars.'*

One goal identified by the *Road Map* is for regional growth to be supported through a pattern of interconnected urban, rural and coastal activity centres that maximise economic, social and environmental outcomes for residents, businesses and visitors. With this end in mind the *Road Map* identifies potential key performance indicators such as:

- population and job growth outcomes meet projected demands in the SEQ Regional Plan;
- the Logan and Redlands region is recognised within South-East Queensland as a desirable place to live, work and visit (2012: 86).

In alignment with the SEQ Regional Plan, priority actions for this RDA in 2012-2013 are to 'partner with stakeholders to facilitate innovative development of the new major urban areas Greater Flagstone and Yarrabilba' (2012: 79).

Future Housing Taskforce

Logan City Council Mayor Pam Parker is part of an industry-led Future Housing Taskforce think tank. The Taskforce 'intends to tackle the challenges of housing affordability faced by millions of Australians struggling to get a foothold in the property market' and is 'is committed to bringing affordability back by working closely with builders, developers and local councils to create a range of homes that are smart, sustainable and affordable' (Future Housing Taskforce, 2012).

Environmental, social and economic indicators

The first component of the case study research involved investigating data relating to the themes and indicators presented in the indicator framework. Results across the three sustainability domains specified in the framework (environmental, social and economic) are discussed here, using the indicators as headings. The availability of data at the local level varies greatly across the indicators, and this report therefore draws on the most appropriate data that could be identified to characterise local activity. Where comparative data (for example at the Queensland level) was available and meaningful, this has been included.

The analysis presented shows that population growth is impacting on all three domains. In the environmental domain, data indicates that while average energy and water consumption per household is decreasing as a whole, the increased gross energy and water usage indicates population growth is impacting on environmental quality. Other data makes it clear that population growth has brought with it changes in land use and increased motor vehicle use, both of which have environmental implications.

The social indicators show that Logan is a relatively disadvantaged area. Educational attainment data is consistent with the relatively disadvantaged nature of the area, with Logan having significantly lower rates of bachelor’s degree or higher qualifications compared to Greater Brisbane and Queensland as a whole. On the other hand, despite expectations that socio-economic status is correlated with health status, many of the health indicators suggest that people in Logan have better health outcomes than those in Brisbane and Queensland as a whole. Unemployment is slightly higher than the state and capital city averages.

Logan has a relatively robust regional economy, and contributes 3.6% of the total Queensland gross state product. Overall household wealth has increased in recent years, although average dwelling prices in different areas show that there is a range of household income and wealth levels within the LGA. Household debt service ratios and the ratio of debt to income have also increased. Data suggests that Logan mortgagees suffer higher rates of mortgage and rental stress than those in Greater Brisbane and Queensland as a whole. Transport data indicates Logan is a highly car dependent area, with a very low level of public transport usage. This high level of dependence on private vehicles probably reflects the relatively poor, or patchy, level of public transport infrastructure in the area (as reported by stakeholders interviewed), and has a number of negative implications for sustainability, as discussed further in this case study. The proportion of residents with broadband Internet connections is slightly lower than in the Greater Brisbane area, but higher than the state average.

Environmental indicators

Climate and atmosphere

The Queensland Environmental Protection Agency (EPA) runs one monitoring station in Springwood, which is located within the Logan LGA. **Error! Not a valid bookmark self-reference.** summarises compliance with monitoring standards and goals for Ambient Air Quality of the air monitoring station.[8] In all years between 2007 and 2011, Logan has not had any days of exceedence for nitrogen dioxide (NO_2) or sulphur dioxide ($S0_2$), and only one day of exceedence for ozone (0_3). However, for PM_{10}[9] and $PM_{2.5}$[10] Logan experienced several days of exceedence during the same period.

Table 4: Natural capital - climate and atmosphere (Source: Queensland EPA, 2008-2012)

	Springwood air monitoring station (days of exceedence)				
	2007	**2008**	**2009**	**2010**	**2011**
NO_2	0	0	0	0	0
0_3	0	0	0	0	1
$S0_2$	0	0	0	0	0
PM_{10}	0	1	10	0	2
$PM_{2.5}$	0	0	3	0	3

Energex reports on total energy consumption for its network in the South East Queensland area. Table 5 indicates that the average annual energy consumption for domestic customers decreased slightly from 2010 to 2011, but was still significantly higher that the South East Queensland average. Interestingly, the average annual energy consumption for business customers in Logan followed an opposite trend and increased from 2010 to 2011, and yet was significantly less that the South East Queensland average. As the calculation is annual consumption per customer, it may be that the businesses within Logan are smaller on average than elsewhere in Queensland, or less energy intense - that is, the types of businesses may be different rather than the businesses being particularly energy efficient for their type of business.

Table 5: Natural capital – climate and atmosphere (source: Energex, 2013)

	2010	**2011**
Domestic - Average Consumption (kWh/customer/year)	Logan – 7,542 SEQ – 6,658	Logan – 7,253 SEQ - 6,513
Business - Average Consumption (kWh/customer/year)	Logan – 75,110 SEQ – 100,136	Logan – 78,069 SEQ – 101,453

[8] The data indicates the number of days in the year, when the AAQ standard for the pollutant was exceeded.
[9] PM_{10} refers to particles with a diameter of less than 10 micrometres (µg).
[10] $PM_{2.5}$ refers to with a diameter of less than 2.5 micrometres (µg).

Ecosystems and biodiversity

Logan is home to at least 56 species of native mammals, 273 species of birds, 58 native reptile species, 27 native frogs and many fish and insect species (Logan City Council, 2012e). Of these animals, there are several significant animal species which are recorded as either *near threatened*, *vulnerable* or *endangered* under Queensland law (*Nature Conservation Act 1992*), and species listed as *vulnerable* or *endangered* under the federal *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act). These two pieces of legislation provide a legal framework to protect and manage flora and fauna of state and national significance. **Error! Not a valid bookmark self-reference.** summarises the number of plants and animals recorded in the Logan area which are listed under the *Nature Conservation Act 1992* (Qld) and the *EPBC Act*.

Table 6: Natural capital – ecosystems and biodiversity (source: Logan City Council, 2012e)

	Flora	Fauna
Number of species recorded as either *near threatened*, *vulnerable* or *endangered* under the *Nature Conservation Act 1992*	21 species	22 species
Number of species recorded as either *vulnerable* or *endangered* under the *Environment Protection and Biodiversity Conservation Act 1999*	10 species	7 species

Water

The Queensland Government's Water Dashboard provides a central source of information about water in Queensland, and Logan City Council falls within the South East Queensland (SEQ) Central region (which includes Brisbane City Council, Ipswich City Council, Lockyer Regional Council, Moreton Bay Regional Council, Somerset Regional Council and Logan City Council). Information provided by the Water Dashboard is snapshot data figures for dam levels, supply projections, consumption, grid supplies and grid transfers. Residential consumption is updated weekly and is reported as litres per person per day. In comparison to the other regions, SEQ Central has the lowest residential consumption of all of the regions in South East Queensland (as of the week ending 21 December 2012) (State of Queensland, 2013). See

Table 7 for further details.

Water consumption data is available at the individual household level due to Queensland legislation requiring water companies to report the following types of data on residential rates notices:

- graphical and numerical information on water consumption for the current period compared to the previous billing period,
- comparisons of average daily water consumption from current billing period to previous year
- the local area residential average for the current period, and
- litres as a unit of measure on a daily comparative basis.[11]

[11] See http://www.derm.qld.gov.au/water/regulation/ratenotice_guidelines.html

Table 7: Natural capital – water (Source: State of Queensland, 2013)

	North	Central	South	Redland	Scenic Rim
Residential consumption (litres/person/day)[12]	226	182	207	222	207

Land

Logan LGA occupies the northern section of the Logan River catchment area and the Southeast Queensland bioregion. However, due to the large size of the bioregion and catchment area and the small area that Logan LGA covers, data regarding the extent of native vegetation and protected areas at the bioregional level is inappropriate. The Department of Environment and Heritage Protection states that within Logan LGA there are 12 protected areas and five nature refuges (DEHP, 2012).

Table 8: Natural capital – land (Source: DEHP, 2012)

	Logan
Number of protected areas	12
Number of nature refuges	5

Waste

Logan Council operates five waste disposal facilities. Since 2007, the amount of household waste per household per week has decreased consistently within Logan. The amount of household recyclables per household per week has fluctuated during this same time, with a slight decrease between the 2007 and 2008 financial years and a significant decrease from the 2010 to the 2011 financial year (Logan City Council, 2012a). Each month Logan residents recycle approximately 329.5 tonnes of material and 2,500 litres of oil (see Table 10 for a further breakdown of material), or approximately 20% of the solid waste they produce (Logan City Council 2012a).

[12] Figure updated weekly.

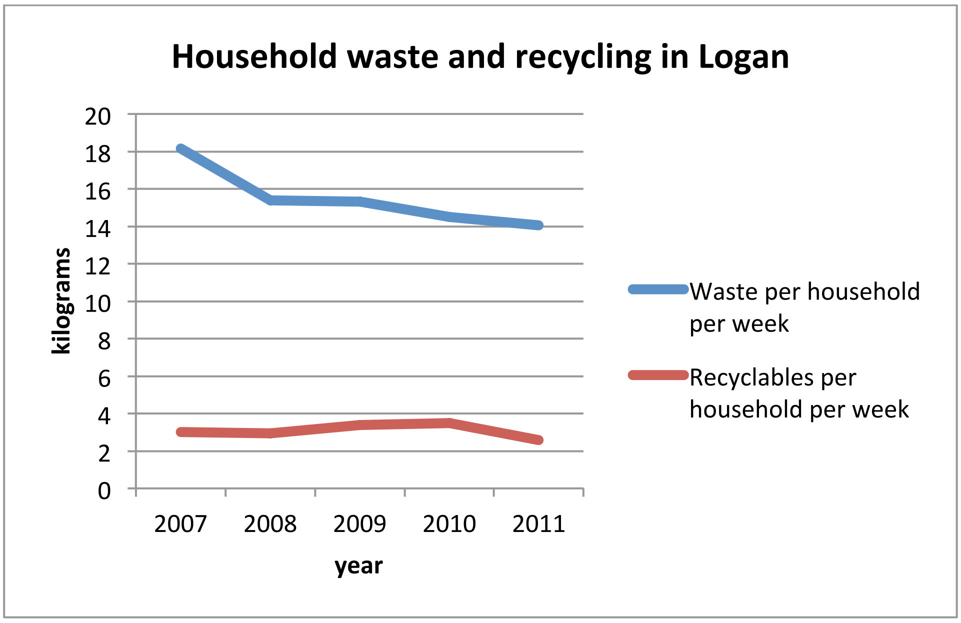


Figure 7: Household waste and recycling in Logan (per household per week) (Source: Logan City Council, 2012a)

Table 9: Natural capital – waste (Source: Logan City Council, 2012a) (Note: For the years prior to 2011/2012, former Logan, Beaudesert and Gold Coast data has been averaged.)

	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012
Waste per household per week (kg)	18.2	15.4	15.3	14.5	14.1
Recyclables per household per week (kg)	3.0	2.9	3.4	3.5	2.6

Table 10: Natural capital – waste (Source: Logan City Council, 2012k) Average Monthly Volume of material recycled

	Logan
Cardboard	25 tonnes
Glass	4.5 tonnes
Metals	200 tonnes
Oils (car and cooking)	2,5000 litres
Materials suitable for sale at the Logan Recycling Market	100 tonnes

Social indicators

Skills and education

There are a number of ways to assess educational attainment in populations. Common measures are the proportion of the adult population that has a bachelor's degree or higher, and the proportion that has a certificate or diploma qualification. On the former measure (adults with a bachelor's degrees or higher) Logan has a significantly lower level of educational attainment than either Greater Brisbane or Queensland. However the data shows that Logan has a slightly higher proportion of adults with certificate and diploma qualifications compared to the capital and state average. These results are shown in Figure 8 and Figure 9.

Logan shows considerable difference to Brisbane in terms of the proportion of residents with bachelor degree or higher qualifications. In the Logan LGA in 2011, 9.5% of residents aged 15 years and older reported having a tertiary qualification at the bachelor degree or postgraduate degree level (this is considerably less than the Greater Brisbane rate of 20.1%). This difference mirrors the disparity evident in the 2001 data, where 5.8% of Logan residents and 13.6% of Brisbane residents had this level of qualification. This gap has in fact widened slightly over the past decade.

The most common type of qualification for the Logan area was certificate or Diploma level, with 28.6% of residents holding this level of qualification in 2011. This statistic much more closely mirrors the situation in both Greater Brisbane and Queensland as a whole, which had 26.1% and 27.4% of the population educated to this level, respectively in 2011.

The proportion of adults with university qualifications in Logan increased by 3.7 percentage points from 5.8% in 2001 to 9.5% in 2011. This is less than the Brisbane and state increases, with university attainment increasing across Greater Brisbane by 6.5 percentage points from 13.6% in 2001 to 20.1% in 2011, and across Queensland from 10.8% in 2001 to 15.9% in 2011. These figures show that the increase in the proportion of the population with university qualifications has been slower in Logan than in Greater Brisbane and Queensland as a whole.

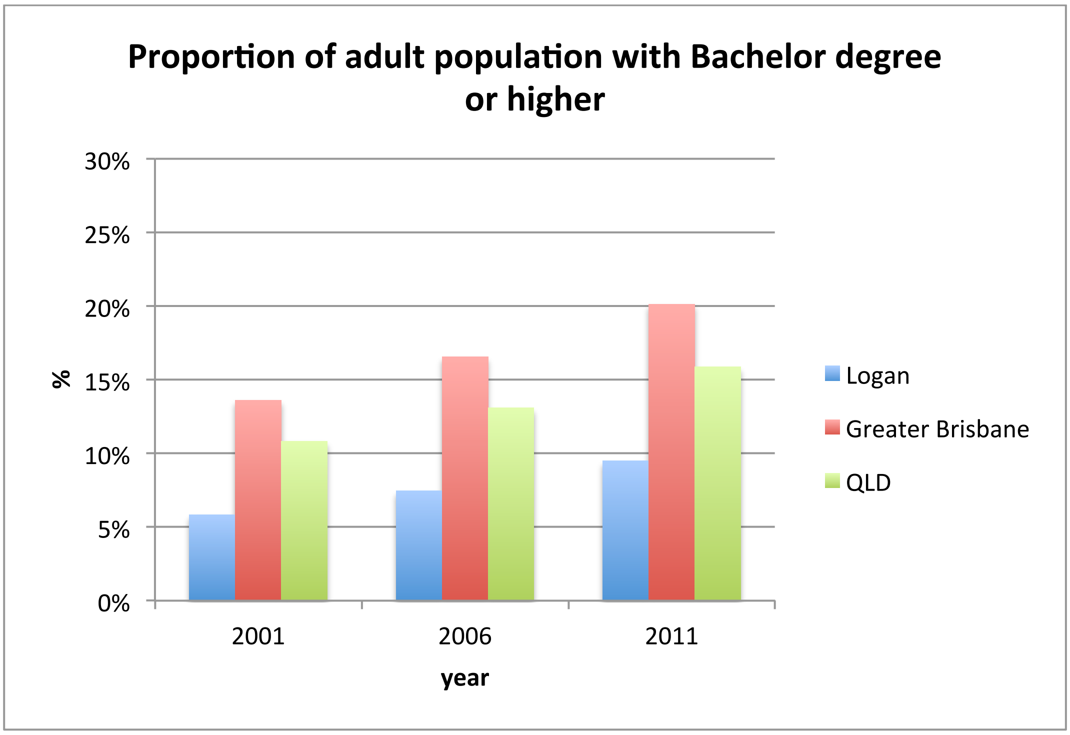


Figure 8: Comparison of adult population with Bachelor degree or higher qualifications (Source: ABS, 2012b)

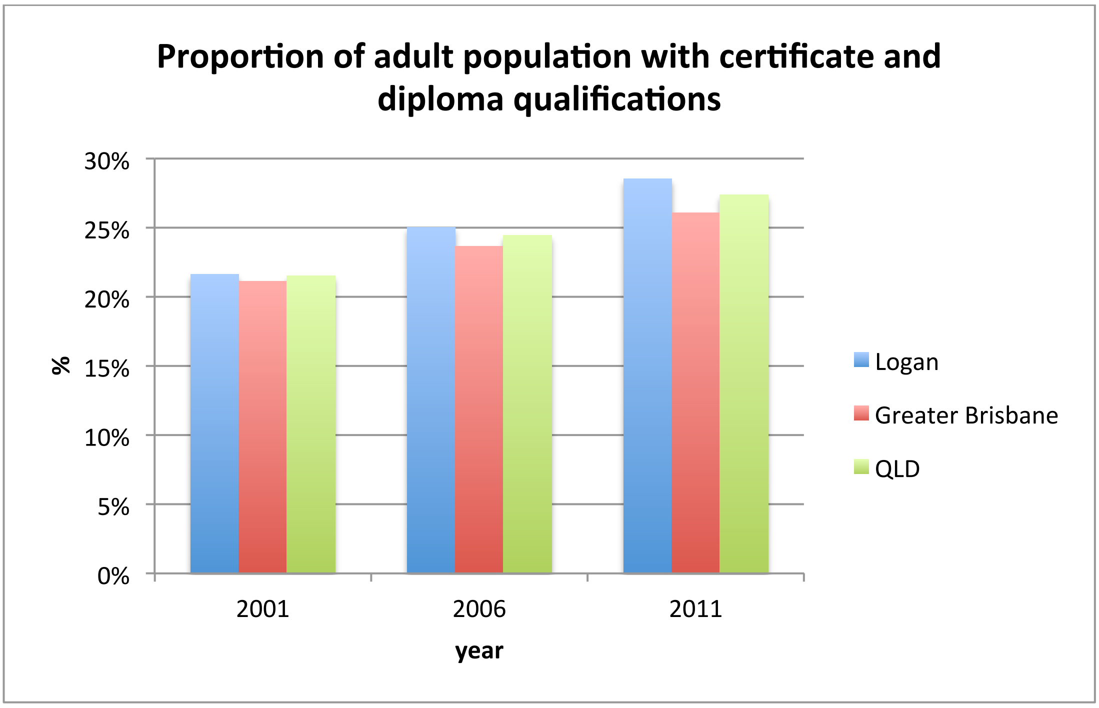


Figure 9: Comparison of adult population with certificate and diploma qualifications (Source: ABS, 2012b)

Health and socio-economic disadvantage

As research on the social determinants of health has shown, health outcomes are closely related to socio-economic status (World Health Organisation, 2012). Using the ABS Socio-economic Indexes for Areas (SEIFA), the Index of Relative Socio-economic Disadvantage (IRSD) scores for Logan show that the area is more disadvantaged than both Greater Brisbane and Queensland as a whole, but does contain some areas of socio-economic advantage. The Logan LGA was ranked in 97 out of 157 LGAs for disadvantage in Queensland in 2006. However, despite the generally disadvantaged nature of the area, SEIFA scores do show that there is variability within the LGA, with a minimum census collection district (CD) score of 675 and a maximum of 1144. See Table 11 for a comparison of Logan SEIFA scores with those of Greater Brisbane and Queensland as a whole.

Table 11: Social and human capital – disadvantage (Source: ABS, 2008)

	Logan	Greater Brisbane	Queensland
SEIFA Index score	971	1022	1000
Minimum score of CDs	675	640	439
Maximum score of CDs	1144	1182	1182
Rank in Queensland	97 (of 157 LGAs)		
Rank in Australia	313 (of 667 LGAs)		

While available data sources report health information at the whole-of-LGA level only, it is likely that the health status of the population in Logan also contains levels of variability similar to those evidenced by the SEIFA scores discussed above. Overall however, the data indicates that Logan residents enjoy better health than the rest of the state or region. Logan has a comparatively low proportion of the population who are daily smokers (12.5% in Logan compared to 15.0% in Greater Brisbane and 16.7% in Queensland as a whole), and a much lower than average percentage of the population rated as experiencing psychological distress[13] or reporting that their health is only 'fair' or 'poor' (see Table 12). The incidence of obesity also appears to be significantly lower in Logan than in Greater Brisbane and Queensland as a whole (see Table 12). However, as noted above, the aggregation of health data to the LGA level is likely to conceal higher concentrations of poor health status in specific areas of Logan.

Table 12: Social and human capital – health (Source: PHIDU, 2010; ABS, 2007 & 2012a)

	Logan 2007	Greater Brisbane 2007	Queensland 2007
Proportion reporting fair to poor health	7.8%	10.7%	12.3%
Proportion of population that are daily smokers	12.5%	15.0%	16.7%
Proportion of population that are overweight or obese	25.7%	34.1%	36.9%
Proportion of population rated as psychological distressed	6.6%	8.6%	9.0%

[13] Percentages are of people experiencing high or very high levels of psychological distress on the Kessler 10 scale.

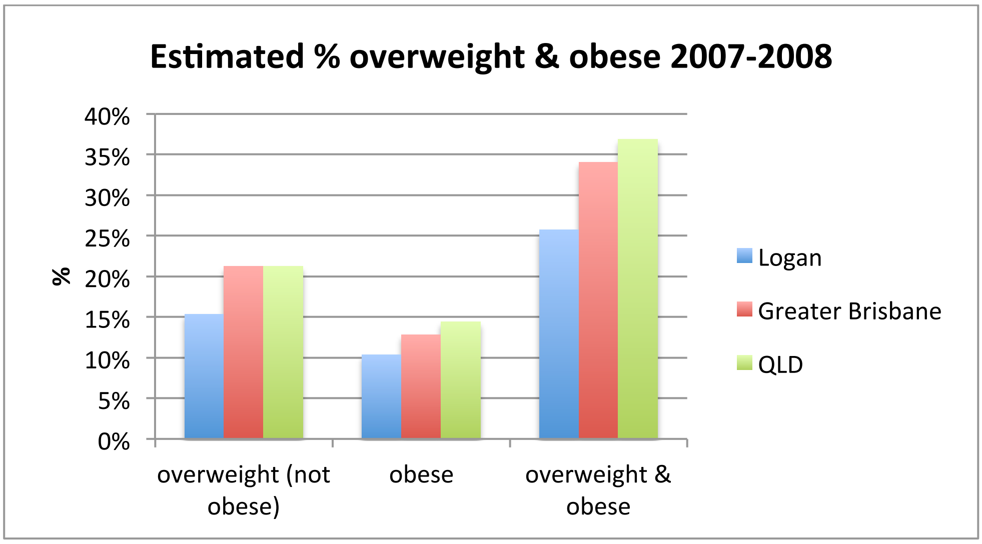


Figure 10: Comparison of estimated % overweight and obese (2007-08) (Source: PHIDU, 2010; ABS, 2009)

Employment and unemployment

As of November 2012, the unemployment rate in Logan was higher than in Greater Brisbane and Queensland as a whole, and the participation rate was lower in Logan than in both Greater Brisbane and Queensland. Table 14 below shows how Logan compares to Queensland and Australia for unemployment and how the Department of Education, Employment and Workplace Relations (DEEWR) SEQ Logan Redland region compares with the neighbouring DEEWR SEQ Gold Coast region for hours worked per week and social security take-up.

Table 13: Social and human capital – employment (Source: DEEWR, 2012; NIEIR, 2012) (* data is from the National Institute of Economic and Industry Research (NIEIR) State of the Regions report for South East Queensland Logan Redland, which includes the major centres of Browns Plains, Beenleigh and Cleveland; ** data is for the South and East BSD (Brisbane Statistical Division) Balance DEEWR Labour Force Region)

	Logan	**Greater Brisbane**	**Queensland**
Unemployment rate**	6.3% (November 2012)	5.8% (November 2012)	6.0% (November 2012)
Participation rate**	66.1% (November 2012)	68.1% (November 2012)	66.6% (November 2012)
	SEQ Logan Redland	**SEQ Gold Coast**	
Hours worked per week*	26.4 hours (2011) +1.5% change from 2007	23.5 hours (2011) -1.7% change from 2007	
Social security take-up*	13.4% (2011) +11.7% change from 2007	12.0% (2011) +21.2% change from 2007	

Security and crime

It is difficult to identify local level data on feelings of safety or security. Crime statistics provide some indication of the security or safety of an area, although it is well-documented that caution should be exercised when interpreting crime statistics, not least because they include only *reported* incidents.

The Queensland Office of Economic and Statistical Research (OESR) previously published annual data on reported violence, property and other offences by LGA, but stopped doing so in 2003.[14] While it is now very dated, the OESR data suggests that between 2000 and 2003, Logan had higher rates of offences against the person and property than the state as a whole. However, between 2000 and 2002, Logan had a lower rate of other offences than Queensland as a whole (see Table 14).

Table 14: Social and human capital – crime and safety (Source: OESR, 2003)

	Logan LGA (number of offences)	Logan LGA rate[15]	Queensland rate
Offences against the person			
2000-01	1,634	925	866
2001-02	1,924	1,147	1,085
2002-03	2,107	1,256	1,110
Offences against property			
2000-01	16,190	9,167	8,626
2001-02	16,243	9,680	8,094
2002-03	18,755	11,177	7,787
Other offences			
2000-01	3,644	2,064	2,981
2001-02	3,424	2,040	2,866
2002-03	5,193	3,904	3,331

Economic indicators

Wealth and housing affordability

Standard of living is usually measured by disposable household income, adjusted for household size and controlling for housing costs. In the period between 2001 and 2007 household disposable income across Australia grew on average by 3.1% a year, accelerated to 6.5% per year during the global financial crisis (2008-2009) and in the years since has dropped back to 1.6% (National Economics, 2012). In the South East Queensland Logan Redland region (which includes the major centres of Browns Plains, Beenleigh and Cleveland) disposable income grew by 16.3% in the period from 2007 to 2012, which equates to an annualised figure of 2.7% (NIEIR, 2012).

Household wealth can be calculated as the value of dwellings owned by residents, plus holdings in financial assets, less the stock of household liabilities (NIEIR, 2012). As Table 15 shows, household wealth in the region has increased over the last decade, with most of the increase attributable to increased property values. Household debt service ratios and the ratio of debt to income have also increased. The average house price in Logan in the 12 months to October 2012 was $340,000 and the average price for a unit was $323,000, although there is variability between suburbs with housing averages of $376,000 in some suburbs (e.g. Springwood) and $213,000–$237,000 in older suburbs (e.g. Woodbridge and Logan Central).

[14] Offences against the person include: homicide, serious assault, other assault, sexual offences, armed robbery, unarmed robbery, extortion, and kidnapping. Property offences include: unlawful entry with intent, arson, other property damage, motor vehicle theft, stealing, fraud, handling stolen goods. Other offences include: drug offences, prostitution offences, liquor (exc. drunkenness), good order offences, stock related offences (OESR, 2003).

[15] Rates expressed per 100,000 persons.

Table 15: Economic capital - wealth and housing affordability (Source: NIEIR, 2012) (Note: *represents growth in chain volume measures using ABS methodology)

	SEQ Logan Redland 2001	SEQ Logan Redland 2011
Wealth per household*	$334,000	$549,000
Household debt service ratio	16%	21%
Household debt to gross income ratio	1.27	1.66
Average dwelling price	$180,400	$370,000
Average dwelling price to household disposable income	2.4	4.0

Mortgage or rental stress is another useful measure of housing affordability. It measures the proportion of low income households (those in the lowest two quintiles of household income[16]) spending 30% or more of their income on housing costs. In Logan, 8.0% of low income mortgaged owner-occupiers and 25.0% of low income private renters can be classified as being in mortgage or rental stress. These rates put Logan above the Greater Brisbane and Queensland levels for mortgage and rental stress.

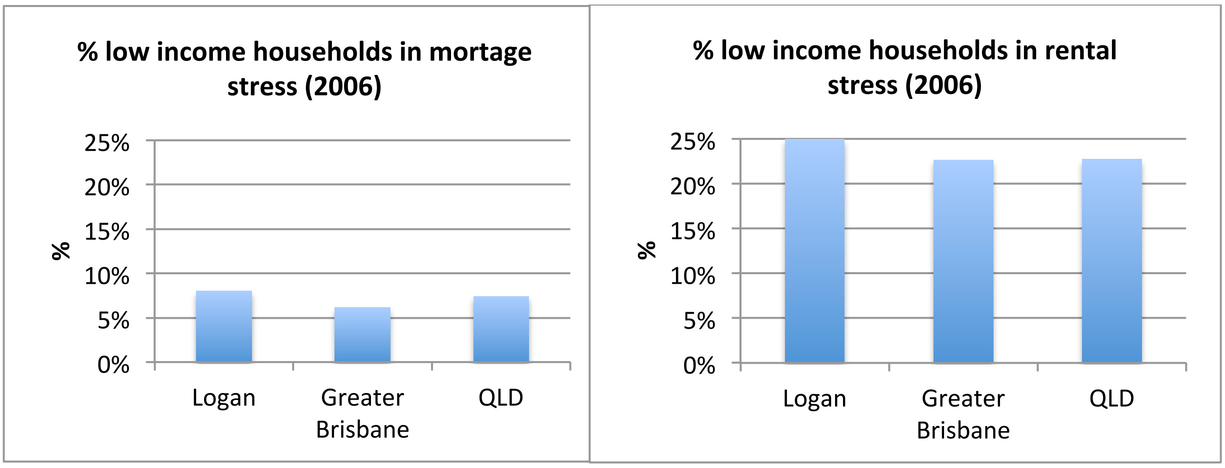


Figure 11: Comparison of % of low income household

Logan has a higher percentage of dwellings rented from the government housing authority than Greater Brisbane or Queensland (5.4 % compared to 3.7% and 3.5% respectively for 2011), although as Table 16 below shows, between 2006 and 2011, the proportion of government rental housing in Logan decreased significantly when compared to Greater Brisbane. For the same period the proportion of government rental housing in Queensland as a whole increased.

[16] Equivalised Disposable Household Income. For more information on Equivalised Disposable Household Income see Explanatory Notes in ABS Household Income and Income Distribution, Australia, 2009-10 (cat. no. 6523.0).

Table 16: Economic capital – housing (Source: PHIDU, 2012; ABS, 2012)

	Logan	Greater Brisbane	Queensland
Dwellings rented from the government housing authority (2011)	5.4%	3.7%	3.5%
Dwellings rented from the government housing authority (% change 2006–11)	-1.6%	+7.5%	+7.5%

Transport and infrastructure

Analysis from 2011 Census data on journey to work patterns shows that Logan residents are more reliant on their car, either as drivers or passengers, than Greater Brisbane and Queensland. Only 7.1% of the population utilised public transport on Census day, 7.1%. This compares to 12.8% of Greater Brisbane residents. Table 17 provides a further comparison of modes of transport between Logan, Greater Brisbane and Queensland as a whole.

Table 17: Economic capital – transport (Source: ABS, 2012)

	Logan	Greater Brisbane	Queensland
Car as driver	66.6%	58.6%	61.2%
Car as passenger	6.4%	5.6%	6.1%
Public transport	7.1%	12.8%	7.6%

Access to broadband Internet connections is a common measure of communications infrastructure. In Australia as a whole, the uptake of broadband services increased rapidly between the 2006 and 2011 census periods. In 2011, 73.7% of Logan residents had access to a broadband Internet connection; this is an increase from 45.4% in 2001. This rate of uptake is similar to that in Queensland as a whole (71.3% in 2011) and slightly behind Greater Brisbane (75.1% in 2011) as shown in Figure 12.

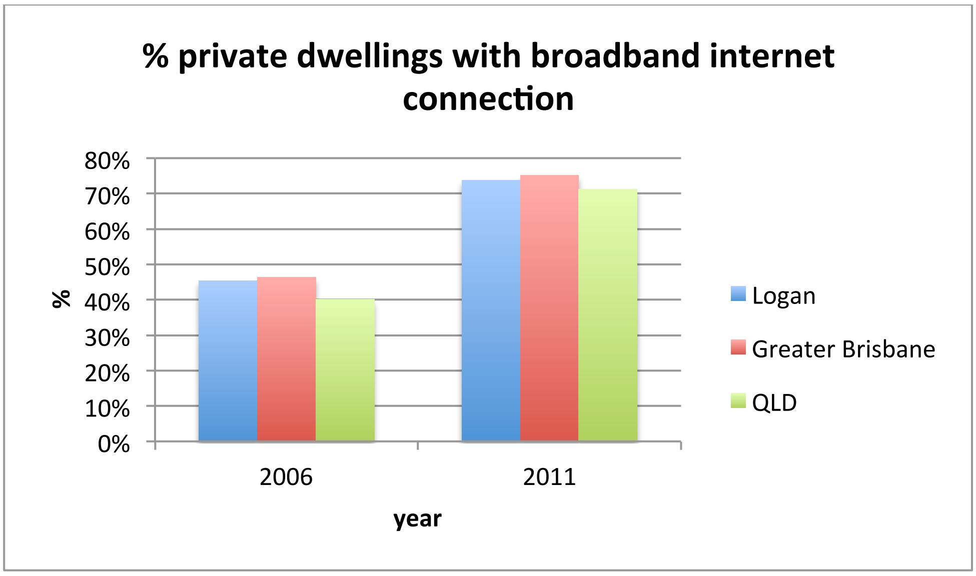


Figure 12: Comparison of broadband Internet connection (2006 & 2011) (Source: ABS, 2007 & 2012a)

Productivity

At the time of the 2011 Census, manufacturing was the largest employer for Logan City LGA residents, with 17,305 persons or 13.6% of the employed labour force. Other industries with relatively large numbers of employed persons included Retail Trade (14,611 persons or 11.5%) and construction (14,377 persons or 11.3%).

The gross regional product of Logan, as at January 2012, was $9.663 billion, which is 3.6% of the total Queensland Gross State Product (Loganbiz, 2012).

Business innovation

Local level business innovation data is virtually non-existent, unless it is collected through small, locally based surveys. Patent counts per population are often used as proxies for innovation, but these are often unsuitable, as patents are only used in certain types of innovation (technology based and radical innovative activity), meaning this measure excludes other more common forms of innovative activity such as service or organisational innovation.

The NIEIR State of the Regions report does calculate patent applications per 100,000 population for the SEQ Logan Redland region. NIEIR calculates 17.78 patent applications per capita 100,000 population (applications between 1994 and 2011). This compares with the Australian average of 21.01.

Stakeholders

Stakeholders were identified from a process of stakeholder mapping. A long list of stakeholders was identified from this process. This list was refined and each of the 18 selected stakeholders was invited to participate in an interview. Stakeholder interviews were conducted from 10–13 December 2012. The list of stakeholders interviewed is shown below.

Table 18: List of stakeholders

Interviewee	Position and Organisation	Role of organisation	Category
Bob Nathan	Transport and Infrastructure Planning Program Leader, Logan City Council	Local Government	Economic
Brett Lee	Waste Administration Program Leader, Waste Services, Logan City Council	Local Government	Environment
Cath Bartolo	CEO, Youth and Family Services (Logan City)	Local NGO	Social
Cheryl Pollitt	Infrastructure Charges Coordinator, Infrastructure Planning and Finance, Logan City Council	Local Government	Economic
David Spolc	Principal Environmental Officer, Logan City Council	Local Government	Environment
Douglas Hunt	Principal Adviser Strategic Economic Development, Governance Department, Redland City Council	Local Government	Economic
Jill Provins	Social Planner, Community Services, Logan City Council	Local Government	Social
Julie Fuersey	Manager/Community Development Officer, Logan East Neighbourhood Centre	Local NGO	Social
Karen Wiik	Manager, Economic Development SEQ South, Department of State Development, Infrastructure and Planning	State Government	Economic
Kirstine Harvie	Executive Director, Housing Programs, Department of Housing and Public Works	State Government	Social
Leanne Lawrie	Social Planner, Community Services, Logan City Council	Local Government	Social
Mariae Cranshaw	Chief Executive Officer, Regional Development Australia, Logan and Redlands	Local RDA	All
Peter Cummins	Economic and Social Development Manager, Communities Development, Lend Lease	Developer	Economic & Social
Peter May	Natural Area Supervisor of Community (Bushcare), Logan City Council	Local Government	Environment
Rosie Barry	Social Planner, Community Services, Logan City Council	Local Government	Social
Sandy Stewart	Water Infrastructure Planning Program Leader, Logan City Council	Local Government	Economic
Sean Cullen	Strategic Land Use Program Leader Logan City Council	Local Government	Planning
Tracey Finlay	Project & Research Officer, Economic Development Unit, Logan City Council	Local Government	Economic

Positive and negative views about population growth

Stakeholder views about the nature of growth in Logan

All interviewees talked about future growth of Logan being rapid and inevitable, and focused primarily on greenfield spaces. Some interviewees suggested that growth in the Logan area was marked in the 1980s, with extensive residential development, however in the 1990s they felt the housing market was affected by the recession in the 90s and development applications slowed. The vast majority of population growth and development will be in the future rather than the present, or near past.

> *'Logan prior to amalgamation was getting on towards being fully developed, but amalgamation brought on these vast open tracts of greenfield.'*
>
> *'Logan is looking at massive growth.'*

A downturn in the housing market over the past several years was seen to have also slowed development.

> *'I remember frantic times of the 80s, and how nice it was when it all sort of stopped in the mid-90s. It will probably will be kicking off big time in 10 years.'*

Changes to the physical form of Logan – decreasing block sizes and the rise of multiunit dwellings - were raised by many as a likely change in the face of population growth: '*The Australian dream of the quarter acre block is well and truly on the wane.'* This was described by stakeholder as being a challenge for residents to adapt to, a challenge for council to provide additional services to make up for things people no longer had on their own blocks, or an opportunity for increased vibrancy and service provision, or all of these things.

Stakeholder positive and negative views about population growth

In Logan, the majority of stakeholders interviewed expressed optimism about the projected population growth and the benefits it might bring the city. Council was described as having a positive attitude toward development, telling people '*we're open for business*.' Others felt that growth itself was neutral and that the impacts could be managed:

> *'It isn't that growth in itself is good or bad, but it's how it's managed and its implications.'*
>
> *'If there is population growth, then we have to find the best possible solution we can.'*

One of the main benefits/opportunities mentioned in interviews was the potential for economic diversity and cultural vibrancy which could arise from growth. Already a culturally diverse area, it was thought that growth would bring new employment opportunities and a diversification of economic activities, as well as consolidated urban centres with leisure and recreation opportunities.

> *'Growth brings economic benefits, diversity, density that allows for interesting urban centres and diverse entertainment. I've lived in other cities where you can walk down the road to a shop or a café – that's what we'd like to have in the future for Logan.'*

> *'The biggest thing I look forward to with growth is the diversity. That will be a wonderful thing for Logan. Having that diversity, is just such a wealth that we can tap into, and draw from, to make our community special.'*

Other opportunities mentioned included the opportunity to try new things in greenfield developments, to capitalise on natural assets/preserve wildlife corridors during development, the possibility of bringing more active volunteers or environmentally aware residents, and the provision of a diversity of housing types – particularly affordable housing (that takes into account factors other than financial housing costs):

> *'We can't just add (number) more people here and keep it the same as it is. We need to change the nature of the urban centres and we need to change densities.'*

At the same time a majority of interviewees raised concerns about timely, well planned and resourced infrastructure provision (especially social infrastructure). A lesser number expressed concern about habitat and conservation impacts, and some raised the '*bigger picture*' question of whether population growth worldwide was actually sustainable, even if local change brought benefits.

> *'The increase in population, particularly big developments in Yarabilba and Flagstone, that's always going to be detrimental to the environment...'*

A key challenge mentioned by interviewees was that market development was out of step with council strategic plans:

> *'There is out of sequence development - growth doesn't happen the way it was planned.'*

This mismatch related both to areas being developed (and desired/planned growth not being able to be achieved) and the implications for the timing of the provision of infrastructure (cost/density, and the need for developers to fit in with council plans). It also related to challenges of negotiating infrastructure provision responsibilities between parties.

> *'When adequate infrastructure isn't provided you can create problems that last for decades.'*

Poor public transport and its connection to social isolation, lack of amenity and lack of social infrastructure was a challenge raised by a majority of interviewees, particularly in relation to young people. Transport connectivity was also raised in relation to the need for commercial diversity and local employment opportunities. Affordable housing and housing instability was cited raised as a key challenge for local people:

> *'There's a lot of mortgage stress, and renters who can't afford a mortgage'.*

Another change associated with growth that stakeholders noted was increasing cultural diversity and humanitarian refugees and migrants. Some specific concerns were associated with population growth from humanitarian refugees and migration – which was seen to potentially compound other issues like socio-economic disadvantage, housing shortages, and poor education.

Challenges of development in specifically rural areas were also raised, including the changing character of the region, threats to the environment, and environmental threats to residents particularly bushfires.

Environmental issues

Biodiversity and habitat conservation

Environmental issues were cited less frequently than social ones as emerging issues related to population growth. However many interviewees mentioned the impact on the environment in a general way:

> *'As more people coming into the area puts pressure on these [environmental] things, like having more cars. Upgrading the freeway is going to encourage more people to use it, and use it more, which will increase our pollution. Don't want to see our natural areas touched (the forests and koala reserve). That's part of what it makes it a liveable city.'*

For those who discussed environmental issues in a more detailed way the issue of habitat and biodiversity loss was a key point. Specifically, there was a sense amongst interviewees that population growth and an increased urban footprint would lead to a decreased amount of bushland, increased habitat fragmentation, and potentially the loss of locally occurring species, including threatened species.

> *'Population growth will impact on wildlife and natural bushland. We're sprawling out and creating fragmented blocks of bushland, which affects wildlife movement. It's a shame when you see areas that are nice that could be saved, that are private and get cleared for development.'*

> *'There are species, like spotted tail tiger quolls listed as vulnerable. Urban sprawl has severely impacted on them, they do need a big area.'*

These impacts were seen as both an environmental issue and a social issue, relating to the character and appeal of the area for residents:

> *'Don't want the urban sprawl, want to keep the pockets of forest, which is the nature of SEQ.'*

Another pressure raised in relation to the large development sites was predation in remnant bushland by cats, especially for the little marsupials that have been identified in initial fauna surveys. Motorcycle access into bushland was another issue raised both for its impacts on habitat, and its social impacts on amenity. This issue was seen to be linked to new dwellings (particularly infill of urban areas):

> *'When they do get developed they bring motorbikes. They rent homes, and parents will get motorbikes for the kids, and they ride them in urban bushland parks and even urban parks.'*

Some of those interviewed felt that biodiversity offset programs could ameliorate these losses, or beyond this changing land use could generate income which could then be invested back into managing council owned natural assets. Various conservation agreements exist for private land within Logan and this was also identified as a way to continue to protect bushland on private land.

> *'There are opportunities through growth and development to better protect the environment. We could utilise development to help fund rehabilitation corridors, have an offset scheme in place, to bring more land under Council ownership.'*

Others expressed concern about the quality of biodiversity being affected by offset schemes and suggested that vegetation of the land offered for offset was often of poor quality and the revegetation planned may take many years to take place:

> *'An offset policy will never produce as a good a result in the short to medium term as what was lost.'*

The idea was also raised that new people arriving may bring more active volunteers for environmental programs or residents with pro environmental attitudes:

> *'It can have negative impact on environment, but population growth also brings in more people who care.'*

The need for a more strategic approach to managing habitat fragmentation and biodiversity preservation was seen as necessary, and a very recently completed national wildlife corridor policy and program policy was mentioned as a useful resource for council. Another interviewee suggested the need for a stronger policy and funding commitment to biodiversity preservation in parallel to development:

> *'There's a range of people, including people who only see the dollar figure, and say we don't care about the future because I'm living now, so it's important that governments have the policies in place to protect the environment. Because once it's gone, it's gone. Extinction is forever and Australia has the highest rate of extinction since European settlement.'*

Resource use – waste, water and energy

Waste and other resources were raised by a few interviewees as something to consider in relation to growth.

One interviewee felt that waste disposal was currently a non-issue for Logan due to very low landfill gate charges (compared for example with New South Wales, which has a levy that has increased considerably over time). As a result, there was little financial incentive to investigate waste disposal options.

> *'We have amongst the highest waste generation rates in Australia, and the worst recyclers, and driven in part by large amount of landfill space, and therefore relatively cheap disposal.'*

In the long term however, interviewees said that landfill space within Logan is forecast to reach the end of its life in the mid-2020's and as a result council will be considering relocating, perhaps to an existing facility in a neighbouring council. This will bring increased waste transport costs (due to longer distances) and will likely result in increased fees to residents. Increased population will accelerate the rate at which landfill fills, and bring closer the date at which this move will need to take place. Additional transfer stations were also identified as necessary infrastructure to cater to projected increased population.

> *'If we move to neighbouring council's landfill site, the average distance is probably going to double for trucks to drive, which is going to cost money.'*

The structural changes to urban centres was raised as an issue for waste disposal, with some concern about the physical form of new infill or higher density developments and the challenges for waste truck access and turning, as well as housing bins and sorting areas for multiunit dwellings.

> *'Higher density living is difficult for waste collectors. Streets are getting narrower, access is getting harder and generous cul-de-sacs are disappearing. With new multi-unit developments, the last thing being considered is waste disposal.'*

Others suggested that population growth and the increased production of built form brought with it opportunities to invest in new types of waste management and resource recovery, including links between energy production and waste. In relation to energy, one interviewee suggested that there are opportunities to explore distributed or renewable energy generation, including new technologies. Another example of an opportunity to reduce resource use in new developments was the installation of LED streetlights. It was suggested that the full range of opportunities are not being realised and that infrastructure is defaulting to more conventional or familiar types of energy generation.

> *'When you're looking at a new city rather than refitting an old system, there's an opportunity to do new things.'*

> *'A lot of the companies don't know much about distributed generation, they only know most of the obvious like solar.'*

In addition, bringing electricity infrastructure to new areas was seen to be another environmental challenge:

> *'There'll be a need to bring in powerlines to get power in, because we don't generate electricity here. Energex wants to bring in powerlines down the Logan River, but these are the areas that you most want to conserve.'*

In relation to water it was suggested that water supply is not a constraint for the area, even in the face of a growing population. New dams are apparently being built beyond Logan, which will service the area and a new treatment plant is planned. Infrastructure is required to bring this potable water to the new development areas, and decisions will need to be made about water treatment technology, placement and timing – these issues are considered in more detail below under 'economic issues'.

> *'There's very little that we can't find an engineering solution to (so long as the funds and resources are available), but the social aspects and the holistic sustainability (of development) are the more challenging aspects.'*

Sewerage provision is another key consideration in terms of water resources, especially for new areas. The environmental impacts of sewage treatment were seen to be mostly related to energy use and also potential pollution of surrounding waterways. One stakeholder with some technical expertise expressed the view that:

> *'Without a doubt there are environmental impacts as a result of sewage treatment. Waste water with high levels of nutrients, salts, etc. - the bulk of the nutrients are stripped out and then put into the Logan River. And this river isn't a high scoring river in terms of healthy water ways. So if we're going to put in another 170,000 people, if that goes into Logan River…'*

However, if water is reused for agriculture or industrial purposes, the impacts on the river may be less, or, interviewees suggested, water may enter the river at a higher quality than it does currently. Interviewees forecast that stormwater pollution in the urban water catchments (i.e. run off from paved areas like roads, as well as nutrients from fertilisers etc.) will end up in the river and become worse as population increases.

Water reuse may be a possibility in the southern areas, interviewees reported, depending on what types of nearby industrial water needs may exist.

> *'If there's a user who wants to irrigate sugar cane using Class C water, and take 50ML a day, then we would be mad to build a Class A treatment facility. But if it doesn't pan out, then we will have to find a way that we can return a large proportion of it to the environment in a way that doesn't damage.'*

> *'Recycled water looks good in the millennium drought, but not when it's raining.'*

The question of decentralised sewage treatment was raised by several interviewees, with different views expressed. One view was that decentralised systems were not as effective or safe as an urban sewage treatment solution (especially septic tanks) and another view was that there were great opportunities in situating dual sewage treatment and energy generation facilities together in new development sites.

Environmental risks for rural development

Rural residential areas were seen to have a greater bushfire risk than elsewhere in the city. Council addresses this through planning development to reduce risk using a GIS bushfire hazard layer (part of a more general GIS disaster hazard layer) when considering approvals for developments. This process *'allows Council to be more responsive to this risk for newer developments*.' However some participants believed that issues still arise where peri-urban development is adjacent to bushfire risk zones, and there were concerns that this risk will be exacerbated by climate change, causing areas to become dryer. In addition, where '*roads aren't up yet*', it was predicted that *'this could increase the risk of people not being able to get out, particularly because development is kind of isolated – blocks here and there isn't the [greatest] access'.*

Interviewees described that Council currently works with Queensland Fire and Rescue to do on ground talks and public speaking about what people need to do to be bushfire prepared, but emphasised that new residents also need to take responsibility for preventing fires and being bushfire prepared. Interviewees suggested that development into rural areas may be placing additional demands on Council to provide education and operational services:

> *'We have the potential to have some serious bush fires, and one of the issues of private development being put onto bushland, we get a lot of requests for firebreaks, and it's something that we have to keep setting up and maintaining.'*

> *'There are still acre blocks, with lots of vegetation – these are the ones that we need to start looking at having better fire management plans in place, prior to people really starting to move there.'*

The peri-urban areas were identified as particularly at risk because they are also isolated from major infrastructure and in some cases have limited access to mobile phone reception. These issues were also raised in relation to flood risk: '*It's very isolated if there's a major flood.'*

Social issues

Transport and public transport

Transport, traffic congestion and lack of public transport were raised as important issues for the area, by most interviewees. They were was raised as both a local and regional issue: local in so much as new development areas need connection by road and by public transport, and regional in that connection by road between regional centres is considered patchy by some as well.

Road congestion was described as a current problem and was projected to continue to be a problem:

> *'Most visible negative [of population growth] is traffic congestion. This is a visible, talked about issue, and it has gotten worse.'*

> *'The new developments are such remote, removed areas, and there's no train lines and only sporadic buses, so everyone has their own cars.'*

One dimension of this issue is the lack of public transport in new development areas. New development areas were seen to be disconnected to heavy rail, or bus services. People described lengthy and circuitous trips to cover comparatively short distances, and the impact this has on the work and other participation opportunities of low income residents.

> *'It's really difficult without a car in Logan.'*

> *'Sometimes it can be a three-legged trip to get any significant distance.'*

> *'If you think about the need to create employment self-sufficiency, then public transport and connectivity becomes really important. '*

While most new development areas had plans for future public transport services, it was commonly reported by interviewees that such services were not to be expected for many years. Effectively services would not be established until population grew sufficiently dense to offer a commercial return on public transport: '*you need the population to make it viable.'*

> *'Public transport is a big one. Translink has got it pretty good in the northern part. But in the southern part, it's probably not cost effective just yet for that infrastructure to be put in.'*

> *'They have trialled additional smaller buses in different areas, but not enough people were using to make them viable.'*

Young people in particular were seen to be impacted by this – people too young to own cars, or people from families without cars or without access to second cars. The lack of local employment or access to train lines to employment in Brisbane was seen to compound these transport issues for young people seeking work. This lack of mobility and access to employment also overlapped with issues of youth services and access to recreation opportunities locally.

> *'Biggest issue with population growth is services and activity for youth, and a lot of this stems around lack of public transport, particularly transport going in ahead of development, because they tend to put it in after.'*

> *'They need to have cars, because there is no employment nearby. And there's nothing for them to do. Lots of hooning...'*

More than one interviewee raised concerns that new public transport was not likely to be supported by the current state government. Council staff expressed an interest in seeing increased public transport but expressed frustration that in fact there is little council can do to encourage the establishment of public transport to new areas.

> *'The future has to be investment in public transport infrastructure, and it's very difficult for local council to do.'*
>
> *'We haven't done as good a job as say Ipswich to get in the face of government to get good transport out to Logan. Ipswich got some highways put in before major residential development.'*

Some interviewees talked about developers putting in private bus links to provide transport into the centres as an effective 'early transport option': '*I think the micro transport option is more effective than trying to get empty buses to come and go during the day.'* However interviewees said that there are '*a few regulation and contractual barriers for them using smaller community options*', and suggested that government should break up the state into delivery areas, and then contract particular organisations to provide bus services to those areas. However if a designated provider did not wish to supply a service, nobody else would be able to either. A private provider could therefore '*have the contract to' but if they did not provide the service this 'locks out other people.'*

Private car travel is expected to increase: '*many communities will find themselves quite remote from employment opportunities, so [they] will need to increase their travel.'* This was expected to impact most severely on those with lower incomes, for example the recent VAMPIRE[17] study was cited, which suggests that where fuel consumption is highest, people have the lowest incomes, or that '*people with the shortest distances to drive, drive the most efficient vehicles, and people with the most to drive actually have worst.'*

Some highlighted the need for additional large inter-city roads for improved regional connection: '*if road sizes aren't kept up, you get monster traffic jams, because people move into the area before its ready.'*

A key road discussed was the Park Ridge Connector – a Department of Transport and Main Roads (TMR) road, which appeared in the South East Queensland Regional Plan and that would provide a connection between the Gateway Motorway out of Brisbane through Park Ridge down to the southern end of Logan. One interviewee suggested that this road proposal has resulted in political debate between state and local government when the new state government '*wanted to back away from it*' because it may be unpopular with some affected residents, and council has had to '*be brave*' and make a public statement about wanting this infrastructure built.

> *'If there is population boom, there would be a need for someone to actually act and get the public transport sorted out, and get these road networks built. If you build it they'll come, but if they come you better build it.'*

[17] VAMPIRE (Vulnerability Assessment for Mortgage, Petroleum and Inflation Risks and Expenses) index identifies the relative degree of socio-economic stress in suburbs in Brisbane, Sydney, Melbourne, Adelaide and Perth and is contained in the Griffith university report 'Unsettling Suburbia: The New Landscape of Oil and Mortgage Vulnerability in Australian Cities' available from their Urban Research Program. For more information see: http://www98.griffith.edu.au/dspace/bitstream/handle/10072/11502/Dodson2006ShockingTheSuburbs_ATRF.pdf;jsessionid=85513CFC09B4500184E7D91C2CB0CABB?sequence=1 and http://www.griffith.edu.au/__data/assets/pdf_file/0003/88851/urp-rp17-dodson-sipe-2008.pdf

Social infrastructure and social isolation in new developments

Most interviewees discussed the importance of infrastructure for new development areas, especially social infrastructure.[18] For example interviewees said that the new Yarabilba development is very large (almost 2,000ha) and will contain not only residential areas but significant mixed industry and business areas, significant educational offerings (with up to 11 schools), multiple neighbourhood and district centres, and a subregional shopping centre. It will take 25 to 30 years to develop. This is expected to offer benefits for the surrounding catchment of existing residents:

> 'O*ne of the benefits for surrounding rural areas will be amenity, whether it's shopping, education, etc.'*

These new areas bring opportunities for new facilities and programs. For example one interviewee described opportunities to encourage local food production and markets in the planning phase of new developments. Interviewees also described how the Yarrabilba development will have an IT masterplan*, 'so from the get go, it will be a fibre-based development',* which provides opportunity.

However in parallel to these opportunities, many interviewees raised concerns about the social impacts a lack of timely infrastructure can pose. In a subsequent section the challenges of financing infrastructure will be discussed.

> *'Town planners would think that these new cities will be little oases of tranquillity, but the services won't be there at the start. There is a period of transition.'*

Interviewees raised concerns about a lack of facilities such as community centres, child minding services and facilities, recreation facilities, and family focused leisure activities occurring in parallel with residents experiencing financial distress and other family distress. This can be compounded by lack of transport options to other areas:

> *'A lot of young families live in those areas like Flagstone, but on the weekend there's nothing for people to do. If someone's out in a one car household, the person left behind can't go out.'*

Another related concern was how to link new development areas to existing ones, to create a cohesive community, and to allow the broader community access to facilities once they are built in new areas:

> *'There are a few gated communities around (i.e. Woodridge, and on top of Springwood homes) and they keep people out. I don't want that segregation happening, and that's what concerns me about some of those areas.'*

Concerns about social services and isolation in greenfield developments were expressed by a wide range of interviewees, including those who do not focus on social service delivery in their roles. Some people raised strong concerns about the development of these areas, suggesting that they could become '*urban ghettos*'.

> *'I consider the Urban Development Areas (UDAs) to be a big scary experiment from a social point of view.'*

> *'And will these development areas that are being proposed, with very, very high density and very small lots - will they turn into ghettos?'*

[18] 'Social infrastructure' is a term that refers to the community facilities, services and networks which help individuals, families, groups and communities meet their social needs, maximise their potential for development and enhance community wellbeing (South East Queensland Regional Plan 2005–2026).

Housing instability and affordability

Interviewees discussed the issue of rental instability, long waitlists for social housing, the increasing focus of social housing on meeting the needs of high-needs individuals (and therefore not being available to cater for many others) and the difficulties faced by some families in accessing private rental accommodation given their poor rental histories.

> *'With population growth and demand, there's a stress on affordable housing.'*

> *'Housing is a huge issue. We have families living in tents – in caravan parks and in people's back yards. There doesn't seem to be any housing for them.'*

> *'Rent is so expensive, and then it's hard to get them … you might have 20 people applying for the same home, and so there's the wait, and tension.'*

High rent prices and limited rental accommodation was suggested to be a problem that may contribute to the issue of overcrowding which is seen in Logan, often involving several families cohabiting in one house. On the other hand cohabiting was also seen to be an expression of cultural norms and preferences that could offer social benefits, whilst at the same time posing safety threats. A high profile house fire in 2011 in which 11 people lost their lives (in the suburb of Kingston within Logan) (Wordsworth, 2011), was mentioned in several interviews as an example of the risks families face as a result of overcrowding.

> *'You can have multiple families living in these houses, because of affordability. And that fire that happened was a house like that.'*

The existing housing stock was described as no longer meeting the diverse needs of the community, especially in low income housing. Both smaller and much larger homes were identified as missing and needed by different types of residents. Interviewees felt that those in sole person households would prefer smaller homes, whilst large families or communities of families who wish to share housing would benefit from much larger homes than say a three-bedroom option.

> *'There's definitely demand for single bedroom houses. As a lot of the stock's quite old; you see one person living in a three-bedroom house. And then you have people who want to live in their own place, but as part of a community.'*

> *'Larger homes are pretty rare also. You can sometimes find private homes that are larger, like five bedrooms, but they're pretty rare.'*

A mix of residential home sizes is being proposed for new developments in Logan's greenfield areas to meet diverse market needs, but there is a recognition that smaller blocks are not always viewed favourably by the community. As one interviewee commented:

> *'Inevitably when lots are smaller and densities higher, people will always say 'oh greedy developers designing slums of tomorrow', but it's about meeting market need – Mum and Dad and 2.7 kids isn't the predominant household anymore.'*

Interviewees described how Logan has large pockets of social housing, and a large social housing waitlist: *'we can't keep up with the demand for social housing.'* The Logan Renewal Plan – a plan to renew Logan's social housing stock and the associated management structures (through state government partnerships with NGOs) – was mentioned as one very recent response which may result in new social housing stock within Logan and may better address the needs of those waiting for social housing in the area, although it was recognised that other forms of support, in addition to affordable housing, would also be needed:

> *'Even the affordable housing on the cards for Logan won't help the people on the social housing waitlist, because they have very complex needs, they need more than a roof over their heads.'*

The shortage of affordable dwellings for private ownership was raised as a concern despite generally low housing prices in the area: '*we need little houses under $300k that people can afford to buy.'* However stigma around the high levels of social housing, welfare dependency or perceived tensions may affect investment in private housing. According to one interviewee '*Logan has stigma of welfare dependency.'*

> *'Getting private investors into Logan is what is needed to get private housing, but there's got to be a market return … Because the stock's not very well priced. And Logan comes with a big stigma, its mostly social housing, it's pretty ugly to look at. So it's difficult to attract private attention.'*

Increased density was seen as an opportunity but was also seen as bringing service provision challenges:

> *'Council is working on a plan to allow more uplift [high density] to create more affordable housing … But it doesn't suit people with complex needs to put stacks of them in a high density area, unless there's concentration of services as well.'*

Addressing varying resident concerns over zoning changes

Population growth in Logan had elicited varied reactions from existing residents, stakeholders reported. Community perceptions of growth were raised as an issue – *'some people don't want change at all',* however not all residents share this view:

> *'There's always going to be strong views by residents … there's going to be the view 'no more population growth' but then there's people who say population growth equals more development equals more jobs.'*

The reactions of existing residents to development was raised in relation to rezoning decisions, and changing densities:

> *'Living in a growth area there are those who resist all change, and those who want to capitalise on the growth financially, and then people who are dissatisfied (i.e. people who haven't been or aren't given an opportunity to capitalise as much as they would like to).'*

In particular, it was suggested that while some community members are particularly averse to increases in density and changes to character, others are interested in the potential economic benefits that such change may bring. Landholders who wish to have their land rezoned can be critical of zoning decisions that impact negatively on their perceived ability to capitalise on their investments. Interviewees reported that some people's land will stay the same, while the land belonging to some will be zoned as high density housing, and that of others will become parks. As a result and there is friction and tension.

> *'This is causing issues – there are always disgruntled residents who feel they have lost out in the zoning process.'*

Making long-term strategic plans for new development areas can result in some land being zoned for roads and public parks. This zoning outcome has resulted in problems for residents and council; on some occasions residents feel their land is blighted and council is then forced into purchasing the land ahead of schedule as part of hardship provisions. Interviewees reported that:

> *'this has created liability to purchase the areas before ready. So council can't do this forward planning for infrastructure anymore.'*

Interviewees noted that people buy into an area with expectations because of council plans, so that's the benchmark they then use to judge future change. Such expectations can sometimes lead to outrage, for example over decisions about where to place the boundary between two differently zoned areas in terms of density.

Cultural diversity and service needs

Logan is described by the stakeholders interviewed as a particularly multicultural area compared to the rest of South East Queensland, and the region has recently experienced an influx of migrants, including refugees.

> *'Logan now receives around a quarter of Queensland's intake of humanitarian refugees and migrants (and this is expected to grow), so multicultural diversity is going to keep growing – and many go on to stay in Logan, rather than regional settlement programs.'*

This diversity was described as a cultural asset, and many relayed with much pride the harmonious way that this diverse community operates. People talked about community spirit in the face of adversity and the rich cultural assets of their community, which they would like to see celebrated, for example, through multicultural food markets.

> '*I think Logan's unique in that respect – we haven't had any race wars, or riots … Hopefully it will stay that way, a harmonious melting pot.'*

Interviewees described how different cultural groups have arrived over time, in part due to the established services, and how service providers need to learn the range of cultural preferences and needs that each new group has so they can adapt their service delivery style or range of services to meet their needs.

> *'We're finding that more people from various backgrounds (particularly humanitarian refugees) are coming into here because of the already established services.'*

This attraction was described in relation to services such as police and libraries, where staff work face-to-face with community members. An example was in library services, where different cultural understandings about child care could at first result in misunderstandings with library staff about what would and wouldn't be provided during workshops for children. Community services described needing to engage a translator for service delivery on the phone or face-to-face. Others wondered whether local cultural facilities were adequate to meet changing needs:

> *'There's a community hub, and art gallery, etc. but perhaps not the right type of things for the new cultural groups.'*

Even though Logan hasn't '*had any race wars or riots*', the arrival of new cultural and linguistic groups occasionally brought conflict or perceived conflict: '*we see a clash of cultures between Islander and*

African communities.' This conflict was described as being highlighted in local media recently and contributing to the stigma associated with the city.

Challenges specific to migrants may relate to employment and housing. One interviewee noted that migrant arrivals are often quite motivated to work but can face difficulties in getting work because of a language barrier.

> *'Even renting is difficult if you don't have a rental history, and coming in from a foreign country you don't have that history.'*

An issue that was raised many times in interviews in relation to cultural diversity and service needs was the impact that the details of the Trans-Tasman Agreement[19] have on New Zealanders coming to Logan. Specifically New Zealanders are able to access some but not all government benefits, and particularly not those associated with education. This lack of access poses challenges for residents in relation to education and employment, and may add to tensions between different cultural and ethnic groups.

> *'We have a lot of Kiwis and South-Sea Islanders in Logan, and they have access to school, but don't have access to HECS (through the Trans-Tasman Agreement), so they can't get into universities, which creates issues in employment for these families.'*

> *'There is some hostility in the community between New Zealand people who can't get support and people who are coming and trying to 'fast-track' their immigration.'*

> *'New Zealanders can't get Fee-Help and HECS-Help, and other benefits … This is causing a problem on the ground, because you're going to have an uneducated sub-class, which is going to have a higher risk.'*

Citizenship application processes and high costs were also seen as causing frustration within New Zealand and Islander communities coming to Logan: '*People go to all this effort and pay this money, and their application gets rejected and they lose it all.'*

Economic issues

Changes to state government funding to the not-for-profit sector

A changing political context at the state government level was raised in relation to changing funding for social service provision in the non-government sector, with many interviewees suggesting services may be 'stretched' as population increases.

> *'Population growth will drain our organisation. Population growth is putting so much pressure on services, and how we'll meet that need at the moment is beyond me, particularly with state government pulling so much funding out of bottom line from January 2013.'*

[19] The Trans-Tasman Mutual Recognition Arrangement (TTMRA) was implemented to 'to promote economic integration and increased trade between participants by reducing regulatory impediments to the movement of goods and people in registered occupations across jurisdictions'. See here for more information: http://www.innovation.gov.au/Industry/TradePolicies/MRA/Documents/TT_MRA_UsersGuide.pdf or here for a discussion of social security entitlements for New Zealanders living in Australia: http://www.nzembassy.com/australia/nzers-overseas/living-in-australia/social-security-entitlements-for-nzers

In the community sector this was discussed in light of the uncertainty that it brings for long-term programming: '*there is a big not-for-profit sector in Logan, which is hurting at the moment, because of the funding cuts by the state government.*'

These funding cuts were also raised in the environmental services sector:

> *'We need to put more money towards having more people employed to work on these issues, and stop having funding cuts, etc.'*
>
> *'I went to a recent environmental conference and found that a lot of state government departments have had their funding cut, and people are losing jobs. Similarly the Wildlife Society has just had longstanding state funding cut.'*

Funding infrastructure for new areas

In the interviews the discussion of two key historical features of Logan was pervasive: the local government boundary changes which took place in 2008[20] and the subsequent designation of large areas for urban development by the state government. These changes have stimulated plans for development in the area, and they have posed some challenges for local councils regarding infrastructure provision. Specifically the investment required in trunk infrastructure (such as roads, sewerage and water) to these areas is now being required earlier than previously planned, and this creates revenue challenges.

> *'Amalgamation etc. has all been political rather than planned. If Canberra is at one end of the planning spectrum, Logan's at the other.'*
>
> *'Things aren't happening as planned in projections. Development applications are coming in way out of sequence, coming in on fringes where it's cheaper, rather than in the centre where it was initially planned. There's unpredictability of population growth. This one-off centre might happen in 10 to 20 years, compared to ones on the train line which might be as much as 50 years away.'*

These new areas of development are where a large proportion of the growth in Logan is forecast to occur. These areas are not currently connected to existing urban trunk infrastructure, or to social infrastructure and neither do they have existing services such as libraries, youth centres, and schools. Funding this infrastructure was raised by a large proportion of interviewees as a key issue of concern. At the same time, in the longer term some thought that '*Council needs growth to increase its rate base to deliver the infrastructure and services needed.*'

> *'Infrastructure charges are a hot topic at the moment. No one [in state or local government] has the money to pay for it, but neither do the residents.'*
>
> *'The traffic generated by the new areas puts pressure on Logan roads, and when these fall outside of priority areas, there is the question of who's going to fund them.'*

Regarding Flagstone and Yarrabilla, interviewees said that the state government, through the Urban Land Development Authority, had '*flicked the switch*' on these developments without regard to the sequencing of developments that the council had planned. This raises challenges for services, and both council and community organisations said there was a lack of clarity around who will fund infrastructure and this was a key and current concern.

[20] See 'background' section of this report for more details

> *'They had been flagged for a long time for growth but now they are being developed and we are still figuring out who pays for infrastructure – a lot of it falls to council.'*

> *'But in new areas, people are buying in, and then complaining that there's nothing there. So a new plan has identified that we need these sorts of things, but it's a matter of finding the funds.'*

> *'State government imposed a regime but didn't back it up with funding. To pay for this infrastructure council needs to raise rates and there is incredible political pressure not to raise rates.'*

Interviewees reported that when developments are approved by state government '*arguments*' about who pays for what are happening after the approval, rather than before. However, it is local government that has an interest in negotiating around infrastructure costs:

> *'ULDA became the approving authority, but Logan City Council is challenging in the courts about who's responsible for the costs. Normally the approving authority (if it was Logan Council) would have a conversation with the developer to settle what needs to be done and who is doing what.'*

In relation to water, for example, reticulation infrastructure (within the bounds of the development) has to be provided by developers, while trunk infrastructure is provided by council and is funded by developer contributions. Interviewees raised concerns about the flow of revenue to cover this investment: *'unfortunately the contributions are quite lumpy, and we have to invest before we get the related contributions.'*

Some interviewees challenged the idea that these new developments were actually affordable housing, when whole of community and whole of lifecycle costs were taken into account:

> *'These two areas [Flagstone and Yarrabilla] have come on line sooner than planned under the banner of affordable housing, that is affordable market housing. But it doesn't take into account the whole-of-life costs – the social costs of not having the infrastructure there or the costs of building the infrastructure.'*

It was stressed that the ongoing staffing, maintenance, and delivery of infrastructure and programs was just as important as building the structures:

> *'One of our concerns is that there needs to be agreement amongst all levels of government about good social infrastructure. And agreement, not just on community centre buildings, but funding for staff/programs.'*

> *'Developers might provide the land, but want us to maintain the facilities, but we don't have funds to maintain.'*

Interviewees also mentioned resident concerns with investment in infrastructure across different parts of the council area. In particular, rural residents felt disgruntled about their perception that the older suburbs are receiving greater investment in infrastructure.

Interviewees said that there is a need to integrate private activities with council-run programs, or to make them sustainable so that the community can take over the long term management of these programs. Some particular cases were cited that raised concerns about how the allocation of these responsibilities is being negotiated:

> *'We have had programming going on while the developer is in situ. And now that they're at a point where they have no more blocks of land to sell, they're pulling the community developer out of there. They offered for Council to take over the role, but Council doesn't have the funds to take it over, so the community is going to lose that. And the community developer person hasn't done anything to make all the activities and programs sustainable so they can be self-run, so they'll just stop.'*

Interviewees described an example where things have worked well. On the Sunshine Coast, the developer had an agreement that 1 to 2% of each block of land was put into community trust, and this funded ongoing activities. However in contrast it was suggested that *'Springfield Lakes [in Ipswich] had a community trust that fell over, so council still needs to be involved.'*

Another positive example that was cited was developers working directly with not-for-profit groups to deliver services:

> *'Developers have talked to a recently formed coalition of community services not for profit organisations in the area because the developer is keen to see community/social services out there … and they've been proactive in inviting NGOs out there.'*

Some interviewees felt that as newer areas featuring smaller block sizes are developed, the community will have increased expectations for council to provide public recreational infrastructure such as parks and swimming pools, which will incur a cost. They also mentioned that developers in UDA sites prefer *'lots of little parks'* and *'they cost a lot more to maintain than one big multi-use park'.* They said that in these sites the developer will plan and install the parks but council will have the responsibility for maintaining them, even if they are smaller than the minimum size of parks in the councils' parks strategy.

> *'People don't use council pools anymore, but with backyards getting smaller, this will shift, as not as many people can have backyard pools, so they'll turn back to council pools. Great socially because it's bringing people together, but also places a lot of pressure on council.'*

Revenue streams for council were raised as a key issue – as they are constrained by the inability to raise rates, and the services will often need to be built before additional properties begin contributing to the rate base.

> *'Most of Logan could not afford increases in rates. But in addition, there's lack of capacity amongst smaller developers to cover infrastructure charges.'*

Developers (particularly commercial operators wishing to expand or change their business) were also seen to be constrained and often unable to make the contributions they are required to contribute to infrastructure provision in the area. Different options were discussed:

> *'Other councils (Gold Coast, Cairns, Townsville) are bringing out 'infrastructure charges holidays'*[21] *to give a leg up to development (usually fixed-term, so that they get the shovel ready for development).'*

However concerns were raised about the flow-on effects of waiving contributions: '*Every time we discount infrastructure charges for developers, we are robbing Peter to pay Paul, so something else is delayed.'*

[21] See for example http://joshdevelop.com.au/council-infrastructure-charges/ and http://www.adcqld.com.au/Media_Gold-Coast-To-Be-Granted-Infrastructure-Charges-Holiday.html for developer comments on this policy direction

While there was a recognition that council may need to explore new revenue streams – *'Councils have to be more innovative and think outside the box, to be able to deliver on infrastructure and services'* – there were also concerns about this.

> *'State government is putting the onus on local government to look at alternative revenue streams, which isn't something that we're really good at, because we're not business people, it's not our core business, but it's going to become quite a focus for council.'*

Facilitating local employment opportunities

The importance of local jobs was discussed at length by many interviewees, in the context of local employment self-containment[22] targets, economic diversification, and development/provision of employment lands. Many thought that growth would bring employment opportunities and that diversity of employment types was critical for future success:

> *'The diversity and critical mass that growth brings with it increases diversity of employment opportunities.'*

> *'For Logan to stand on its own two feet we need to change how it grows – we need economic diversity, not just more of the same.'*

The current situation was described fairly consistently, with the region having a historical focus on providing cheap land to business which needed large areas of land, such as transport logistics and manufacturing. Other key sectors described were construction and its associated supply chains. This history of catering for these industries, interviewees reported, had resulted in a predominance of blue collar jobs and limited local opportunities for professional employment. Instead people had to travel to Brisbane for many roles that were not available locally.

> *'There aren't those big employment hubs in Logan, it's more the blue collar jobs.'*

> *'In the past we attracted business that needed cheap land and wanted to be on the fringe of Brisbane. That has resulted in limited opportunities for professional jobs in the area, and a high proportion of people commuting for white collar roles in Brisbane.'*

Manufacturing was seen to be a sector that is vulnerable to competition from other countries, and that is often faced with reducing the size of its workforce to increase efficiency and therefore competitiveness.

> *'Logan is mainly focused on manufacturing, which is a declining industry sector.'*

> *'Manufacturing is a major sector for Logan (biggest contributor to output, and biggest exporter and importer – because they import parts and then put together as value add). But they're struggling to maintain comparative advantage against manufacturing countries like China and India. Up against major challenges.'*

Growth sectors were described as being the construction industry *'who are dependent on residential development, so they're vulnerable'* and the retail industry, which is quite vulnerable to broader market fluctuations and consumer demand. This view is supported by the 2012 Valuer-General's report which noted that in South East Queensland *'most regional centres are experiencing limited retail or commercial*

[22] Self-containment is defined as the percentage of employed residents who are employed within the boundaries of the Local Government Area

activity due to a lack of consumer confidence, a subdued tourism market and a sluggish housing sector' (Valuer-General 2012).

The challenge for Logan, as outlined by interviewees, is how to diversify employment opportunities:

> *'So the more business we can attract, the more diverse employment we can attract, the more employment lands we can open up close to centres, the more opportunities for residents.'*

> *'Unfortunately it's a bit of chicken and egg. The jobs aren't slated for years, but they're putting in the residential [areas] now, and people are moving in now, but there's no jobs there, and the transport isn't there.'*

Creating a clear vision for the future of Logan was suggested as key, in particular embracing the possibility that the business mix could change:

> *'There's a view, that some people say, 'this is what Logan is, this the type of industry that we have, this is all we'll get there.' But it's kind of a self-fulfilling prophecy.'*

Instead, it was suggested that '*we need to create a point of difference, and attract others here'.* Some interviewees discussed having a strategy in new development areas of trying to attract small, niche commercial businesses, including sole traders and creative enterprises who '*don't need to be located there*' – such as graphic designers. This strategy was seen as an opportunity to diversify employment, and one that is being supported by planning diverse property types within the large greenfield development sites. It was recognised that just attracting very large iconic businesses may not be as successful in the long term as creating a hub of small businesses which also support the establishment of local facilities (such as cafes). Once smaller iconic businesses are in place, it was suggested that the area becomes a more popular location for larger companies. In particular, some interviewees felt that these local facilities are critical to employee satisfaction, and that their employees will otherwise ask '*where do I go for a coffee, and where do my kids go to school, and where can I go for a walk?*' They stressed the importance of building this first before attracting large companies into the area.

Some thought green technology was an opportunity to attract investment, but one that is not currently being fully utilised:

> *'District cooling technologies, for example could be an opportunity to lower operating costs (including energy and waste) for businesses and attract them to the area. Growth centres provide potential to deploy this technology, and then the technology becomes the attractor.'*

Others stressed that supporting existing businesses to expand needed to be an integral part of the strategy, suggesting that while media focus tends to be on new businesses arriving in the area, most of the growth in employment will come from the existing business base.

Interviewees suggested implementing programs that help facilitate pathways from school to employment, increasing retention or introducing school-based vocational training. It seemed clear that disadvantage and low levels of education were key issues related to local employment, but it was not clear from interviews whether this issue is being impacted in any way by population growth in the area, or whether it is a longstanding problem which exists irrespective of rates of growth.

Integrating employment lands into new residential developments was seen as a key strategy:

> *'If we want to sustain ourselves as a city and local government, it can't just be suburbia, it has to have employment opportunities, particularly for our demographics which have high unemployment.'*

Low density and a lack of urban centres was also raised as obstacles which need to be addressed in order to stimulate economic growth, and it was suggested that once the population grows it will become easier to create dynamic retail and cultural hubs that attract people.

> *'Logan doesn't have a centre – it has a network of 14 centres that fulfil different roles – this has been its weakness – though it can be a strength – it needs work in terms of regeneration of the centres themselves to make them vital, attractive welcoming places that you'd want to be in.'*

Challenges and issues of population growth in Logan

The vast majority of population growth and development is expected to occur in the near future in Logan although considerable growth took place in the recent past. A downturn in the housing market over the past several years was seen by interviewees to have slowed development, but a rapid increase in growth is expected in the future.

> *'I remember frantic times of the 80s, and how nice it was when it all sort of stopped in the mid-90s. It will probably will be kicking off big time in 10 years.'*

Changing boundaries of the council area mean that Logan's local government area now contains substantial greenfield developments which will be the focus of future growth:

> *'Logan prior to amalgamation was getting on towards being fully developed, but amalgamation brought on these vast open tracts of greenfield.'*

A key feature of population growth in Logan, as described by interviewees, has been changes to the physical form of Logan – decreasing block sizes and the rise of multiunit dwellings. This was seen by many as an inevitable change in the face of population growth, and some people identified it as a challenge for residents:

> *'The Australian dream of the quarter acre block is well and truly on the wane.'*

Logan is experiencing some key social and environmental changes as a result of an expanded urban footprint and population growth. Many changes are impacting both the social and environmental dimensions of the Logan area. Underpinning these impacts or perceived impacts is a landscape of agencies interacting to make decisions about development, and to prepare for the physical infrastructure and services that an increased population will need. Conversations about infrastructure are taking place, and some decisions about levels of service, timing of infrastructure delivery, and funding sources, are still being made.

Local government expresses some concerns about its ability to fund the infrastructure needed, or to maintain infrastructure that developers may build. Many local government interviewees expressed a lack of certainty and concern about the financial implications to council of supplying a wide range of types of infrastructure, especially for new large scale developments in greenfield areas. Conversations centred on meeting resident expectations, about councils inability to raise rates to meet additional costs, and about the tensions between developer contributions to pay for infrastructure and the barrier that some feel such develop contributions may pose to encouraging expansion of especially existing businesses, and therefore creating local jobs.

Creating local employment was a key concern of interviewees. Logan is seen to be primarily a city relying on manufacturing, construction and retail business for employment, and these industries are vulnerable to competition from other manufacturers (e.g. China), and to global fluctuations in financial markets and consumer demand. It was felt that the range of jobs available in the Logan area does not meet the needs of either the existing population or the projected population, especially as demand for more 'professional' or white collar jobs is expected to increase in Logan.

'Employment self-containment' is a key concept that many stakeholders referred to. The level of employment self-containment is the proportion of the residents of an area who also work in the municipality. There is a target for self-containment set by council. Employment self-containment is seen to be an indication of local economic vitality, and it is also a way to reduce the need for long commutes which impact on the wellbeing of residents. There are concerns about whether local employment generation will match the speed of population growth in the area, and therefore whether growth will impact on employment self-containment.

On the issue of transport the concerns are varied. People spoke of existing traffic jams and congestion on major roads in and out of Brisbane, as well as key pieces of inter-city road infrastructure which have been planned but not yet constructed in the region. Roads into new greenfield development areas are also required, and there are concerns about the potential vulnerability to isolation in the face of fire or flood or congestion resulting from limited roads leading into and out of such developments.

In terms of public transport, interviewees almost universally identified this as a key lack in the area, and raised concerns about the experience that new residents will face as population grows and people begin to live in more outlying areas. People spoke of the isolation of families, young people and stay-at-home parents in particular when public transport is infrequent, circuitous or poorly connected – a situation they see as existing now and which they believe will also exist in new development areas. People spoke of a time lag between the arrival of residents and the provision of public transport services. While recognising that there needs to be a 'critical mass' of residents to make public transport financially viable, they were concerned that in the meantime the social impacts of such a lag are considerable. Interviewees also revealed that developers are subsidising bus services in some new areas until they become commercially viable.

Many interviewees raised concerns about the lack of social infrastructure such as community centres, health services, or recreational facilities in proposed new development areas. This was linked to the concerns described above about funding for infrastructure, but the other aspect of this is the social impacts that residents may face without access to services in the local area. Whether these concerns are well founded or not (e.g. whether planned infrastructure will meet local resident's needs, meet government set service delivery standards, or be delivered in time for the earliest residents to benefit from) is unclear, however it is clear that there are serious concerns within the minds of key stakeholders working in the area.

Social cohesion and harmony in the face of population change was discussed. Logan was described as a highly diverse community in terms of culture, ethnicity and language, and more recently it has become a location for settling humanitarian refugees. Interviewees felt that on the whole there was a supportive and cohesive community but some tensions between different ethnic groups exist, and these tensions were seen to be 'picked up on by the media'. Interviewees felt that and that this media coverage exacerbated the stigma already attached to Logan's low socioeconomic status. People expressed hope that growth in Logan would be characterised by different cultural groups co-existing harmoniously. The Trans-Tasman agreement was seen as being unsupportive of harmonious growth. In particular, interviewees were concerned about provisions within the agreement that limited New Zealanders' access to social welfare or financial support for further education. Interviewees suggested that these provisions resulted in some resentment between New Zealand residents and those of other ethnic backgrounds who had become residents or citizens, or were being supported as refugees.

Environmentally, key concerns raised included impacts on biodiversity and habitat, water quality, energy use and the financial impacts of increased waste generation resulting in the need to find new landfill space.

In relation to biodiversity, the key issue raised was habitat loss as well as habitat fragmentation. As new areas are cleared for development and remaining bushland areas become fragmented due to urban development there was concern that the remaining patches of bushland may be too small to support key species or that the connectivity between spaces would not allow adequate migration of species between locations. Some discussion ensued on the role of offsets and covenants. Mixed feelings were expressed about the overall effectiveness of such measures, or their ability to prevent a net loss of biodiversity. At the same time there was the suggestion that additional residents to the area may result in more volunteers to help care for the bushland that was under management and to contribute to voluntary water monitoring programs.

Water quality was raised as an issue, with the expectation that increased urbanisation would result in additional non-point source (diffuse) stormwater pollution and that this may negatively impact the region's rivers and creeks, including the Logan River. An additional possible source of water pollution mentioned was the effluent discharged to waterways after sewage treatment, from new sewage treatment facilities that will process waste water from new development areas. However it was also suggested that new treatment facilities will have up-to-date technologies and be as cost effective as possible. It was also suggested that depending on the industry needs of the areas surrounding these developments, there may be opportunities for waste water recycling. Should the water be treated at a higher standard to allow industrial use, the direct impacts on local waterways may be less.

In terms of water supply, energy supply and waste services, there were some but not many concerns. It was noted that the overall impact of growth would be increased resource use and the environmental impacts associated with that. In terms of locally felt impacts, interviewees felt on the whole that the water supply would not be a concern, due to large supply side infrastructure being built outside Logan. The main local impacts of energy use may be the installation of network infrastructure, which could take up open space and reduce biodiversity. An additional concern raised was the opportunity cost of installing '*business as usual*' technologies rather than using population growth and new developments in particular as a stimulant to apply new technologies. New technologies could, it was suggested, provide an opportunity for Logan to reduce its environmental footprint (or mitigate the increased footprint that additional population will bring) and at the same time create a '*greentech*' innovation hub and employment opportunities. It was even seen as a potential area of revenue growth for council should it champion or invest in such innovation.

Information gaps and opportunities

Comments about coverage of indicators

Stakeholders reflected that the things they wanted information about were mostly reflected in the proposed indicator set. They were generally happy regarding the usefulness of the indicator framework. Where suggestions were made, they were often about the addition of new measures to the existing framework, which would provide more detail, rather than replacement measures. However, stakeholders did have the following comments regarding various indicators.

Open space and access to services

- More than one interviewee asked about whether gauging access to open space would best be managed by 'amount of space per capita', or 'access to open space'. For example: *'Indicators that will gauge the standard of infrastructure and amenity that people have'; 'Need a little bit more around proximity to services'; 'Like proximity to parks, but also size of parks'; 'Relate to standards that you should be within X distance of local parks, and X of district parks'.*
- In relation to recreation, one interviewee suggested that organised sport (access to/participation in) was a key indicator of community health and participation: '*we'd say this is one of those critical areas, on top of education, etc.'*
- Another interviewee thought access to community infrastructure in general would be a useful indicator: '*access to, services available e.g. sport and recreation facilities*'. This would address the question 'Is the community well serviced by facilities and infrastructure?'. Interviewees mentioned that council has set some desired standards of service (and there are Queensland Government standards[23], adjusted by LGAs).
- Another access-related indicator proposed by stakeholders was about access to conveniences. Proximity to convenience services such as corner stores or local shops was considered as important as access to parks in terms of the 'liveability' of suburbs. Some suggested the 'popsicle test' (a phrase used in the UK) – 'can you walk home from the store before your ice cream melts?' – that is, are you located a few minutes' walk from shops and services.
- Another access-related indicator proposed was 'disability access to public facilities' including how the community is addressing mental health problems and physical disabilities (i.e. car parks and pathways, and housing products with disability access): '*You could measure access in built form, but also support services in the area.'*

Housing

- An additional indicator/measure suggested by stakeholders was the proportion of housing stock which is public housing, as it '*gives an indicator of the issues which are around'.* Housing diversity was suggested as an important measure as well as housing affordability.

[23] Participants referred to Queensland Government minimum standards for open space provision, however our research suggests that standards of service sit with individual councils to determine. See here for more information: http://www.nprsr.qld.gov.au/recreation/pdf/open-space/open-space-planning-principles-implementation-sec419-438.pdf. In addition, Sport and Recreation Queensland (SRQ) has developed guidelines for local governments to assist them in their consideration of sport and recreation in the context of land use planning. These are entitled *Open Space for Sport and Recreation - Planning Principles and Implementation Notes for Local Government* and are available on the SRQ website http://www.srq.qld.gov.au/industry_information/recreation_planning/planning_notes.cfm

Education

- In relation to the measure, 'Ratio of primary school places to population of primary aged children resident in the LGA' an interviewee asked *'why primary not secondary? With changes to school leaving rate, secondary is important. When you look at it from an LGA, secondary is important because of the infrastructure that you need to put in place.'*

Diversity

- One interviewee said more detailed migration figures would be useful for understanding Logan: '*Picking up on regional migration: you need to go down a level. You can get stats from Department of Immigration data gateway lets you search by LGA, it will give you information across the categories of migration (skilled, humanitarian, asylum seeker, etc.). This is particularly important for Logan.'*

Income

- 'Disparity' in household weekly income was seen as very important and there were concerns expressed about data aggregation. For example one interviewee suggested that the ABS SEIFA score for the 'Woodridge' suburb (right in middle Logan's highest concentration of social housing) is third on the list of the 10 most highly disadvantaged suburbs in Queensland, but this may be masked by aggregated data. '*Logan has some real diversity in the suburbs, some very low SES suburbs, and some quite well-to-do suburbs, so if you aggregate it you might lose some the difference.'*

Health

- Health programming – an interviewee suggested reporting on activities, healthy eating programs.
- Liquor and gambling – Logan has one of the highest per person gambling losses in the state, and therefore this was suggested as an important local indicator of social wellbeing.

Biodiversity

- One interviewee suggested that the *EPBC* tends to be broad-based, or high profile/high risk. In contrast, they suggested, the state-based threatened species listing goes into more detail and covers some of the less high profile species: for example, 'Melaleuca irbiana *is a particular species of concern in this area that might not be captured under EPBC Act*.'
- One interviewee suggested a measure regarding the extent and distribution of protected areas of agriculture would be appropriate for areas with large tracts which may be used for greenfield development.

Waste

- One stakeholder suggested that having a measure regarding alternative waste treatments (AWT) would be useful, '*so that it doesn't just look like landfill or recycling'.*

Transport

- In relation to the indicator 'journey to work', one interviewee suggested it would be useful to break down work trips verses other trip types. Another measure suggested was distance to education (an important consideration for people in remoter areas).
- Other suggested transport indicators included: access to public transport or how long key trips take by public transport; comparative measures of weekday transport in public and private vehicles; and *'In addition to indicators about bike paths and car transport – add in rail, and separate federal and local transport – distance to airports, ports, etc.'*

Table 19: Natural Capital - data availability, gaps and alternative measures

Natural Capital				
Theme	**Indicator**	**Measure**	**Data availability at case study level**	**Alternative case study level measure (if applicable)**
Climate and atmosphere	1. Air quality	Number of days in year that key pollutants exceed national air quality standards	Available	Number days of exceedence for nitrogen dioxide (NO_2), ozone (0_3), sulphur dioxide ($S0_2$), PM_{10} and $PM_{2.5}$
	2. GHG emissions	Net greenhouse gas emissions	Not available	No alternative measure available
		Greenhouse gas emissions per capita	Not available	No alternative measure available
	3. Energy usage	Residential and non-residential electricity use	Available	Domestic & Business – Average Annual Consumption (kWh)
Ecosystems and biodiversity	4. Terrestrial ecosystems	Extent of native vegetation	Not available	No alternative measure available
		Extent and distribution of protected areas	Not available	Number of protected areas and nature refuges
	5. Vulnerable and endangered species	Number of endangered species, population and communities listed under the *EPBC Act*	Available	Number of species recorded as either *near threatened*, *vulnerable* or *endangered* under the *Nature Conservation Act 1992*
	6. Reestablishment of local vegetation communities	Number of hectares under restoration by Council and volunteers	Not available	No alternative measure available
Water	7. Water consumption and availability	Water consumption (per capita)	Not available	Residential consumption (litres/person/day)[24]
		Water availability to meet demand	Not available	Dam levels (% full)
Land	8. Ground cover	Ground cover	Not available	No alternative measure available

[24] Figure updated weekly.

Waste	9. Waste disposed to landfill	Waste disposed to landfill	Available	Household waste per household per week
	10. Recycling rates	Proportion of waste generated being recycled	Available	Household recyclables per household per week

Table 20: Social and Human Capital - data availability, gaps and alternative measures

Social and Human Capital				
Theme	**Indicator**	**Measure**	**Data availability at case study level**	**Alternative case study level measure (if applicable)**
Skills and education	11. Educational attainment and qualification	Highest level of educational attainment	Available	n/a
	12. Education services	Ratio of childcare places to population of children aged 0-5 years resident in the LGA	Not available	No alternative measure available
		Ratio of primary school places to population of primary aged children resident in the LGA	Not available	No alternative measure available
Health	13. Self-reported health status	% reporting fair to poor health	Available	n/a
	14. Life expectancy	Life expectancy	Not available	No alternative measure available
	15. Persons who smoke daily	% of adults who are daily smokers	Available	n/a
	16. Obese persons	% of adults that are overweight or obese	Available	n/a
	17. Mental health	Proportions of adults rated as psychologically distress	Available	n/a
	18. Access to open space	Open space per capita	Available	n/a
Institutions and governance	19. Fair and functioning institutions and governance	Levels of trust in key institutions	Not available	No alternative measure available
	20. Community engagement	Proportion of people who volunteer	Available	n/a
Employment	21. Under-employment	Underemployment rate	Not available	Hours worked per week
	22. Unemployment	Unemployment rate	Available	n/a

	23.Local employment	% people working and living in the same LGA	Not available	Participation rate
Security	24.Security	Feelings of safety	Not available	No alternative measure available
		Incidence of personal and household crime	Available	n/a

Table 21: Economic Capital - data availability, gaps and alternative measures

Economic Capital				
Theme	**Indicator**	**Measure**	**Data availability at case study level**	**Alternative case study level measure (if applicable)**
Wealth	25.Household net wealth	Household net worth	Not available	Wealth per household
Housing	26.Housing supply gap	Net dwelling gap	Not available	Average dwelling price
	27.Housing affordability	Low income households in rental stress	Available	n/a
		Low income households in mortgage stress	Available	n/a
Transport and infrastructure	28.Mode of transport to work	Car as driver	Available	n/a
		Car as passenger	Available	n/a
		Public transport	Available	n/a
	29.Transport infrastructure	Kilometres of dedicated cycling paths	Available	n/a
	30.Access to broadband internet	% households with broadband connection	Available	n/a
Income	31.Income disparity	Disparity in disposable household weekly income	Not available	Social security take-up; Household debt service ratio; Household debt to gross
Productivity and	32.Multifactor productivity	Multifactor productivity	Not available	Gross regional product (GRP) per capita
	33.Innovation	Business with innovative activity	Not available	Patent counts per population

Socio-economic status	34. Relative socio-economic disadvantage	ABS Index of Relative Socioeconomic Disadvantage (IRSD) score	Available	n/a

Table 22: Contextual indicators - data availability, gaps and alternative measures

Contextual Indicators				
Theme	**Indicator**	**Measure**	**Data availability at case study level**	**Alternative case study level measure (if applicable)**
Population	35. Population size	Number of persons	Available	n/a
	36. Rate of growth	Annual rate of population growth	Available	n/a
	37. Population density	Number of persons per square kilometre	Available	n/a
	38. Gender and age profile	Gender and age profile	Available	n/a
Land use	39. Land use change	Rates of greenfield development	Not available	No alternative measure available
Cultural diversity	40. Proficiency in spoken English	% do not speak English well or not at all	Available	n/a
	41. Indigenous population	% indigenous	Available	n/a
	42. Country of birth	Country of birth	Available	n/a
Regional migration	43. Net overseas migration	Net overseas migration	Not available	No alternative measure available
	44. Overseas born	% born overseas	Available	n/a
	45. Domestic or internal migration	Net number of regional internal migrants	Available	n/a

Summary of theme and indicator data for Logan

Table 23: Natural capital - data figures

Natural capital						
Theme	**Indicator**	**Measure**	**Data**	**Frequency**	**Spatial resolution**	**Data source**
Climate and atmosphere	1. Air quality	Number days of exceedence for nitrogen dioxide (NO_2), ozone (0_3), sulphur dioxide ($S0_2$), PM_{10} and $PM_{2.5}$	0 days for nitrogen dioxide (NO_2) and sulphur dioxide ($S0_2$) between 2007 and 2011. Exceedences for ozone (0_3), in 2011, PM_{10} in 2008, 2009 and 2011, $PM_{2.5}$ in 2009 and 2011.	Annual (2007-2011)	Springwood station	Queensland EPA
	2. GHG emissions	Net greenhouse gas emissions	Not available	n/a	n/a	n/a
		Greenhouse gas emissions per capita	Not available	n/a	n/a	n/a
	3. Energy usage	Domestic - Average Annual Consumption (kWh)	Logan – 7,253, Decrease SEQ - 6,513, Decrease	Annual (2010-2011)	LGA	Power company (Energex)
		Business – Average Annual Consumption (kWh)	Logan – 78,069, Decrease SEQ – 101,453, Decrease	Annual (2010-2011)	LGA	Power company (Energex)
Ecosystems and biodiversity	4. Terrestrial ecosystems	Extent of native vegetation	Not available	n/a	n/a	n/a
		Number of protected areas and nature refuges	12 protected areas; 5 nature refuges	One off	LGA	DEHP

	5. Vulnerable and endangered species	Number of species recorded as either *vulnerable* or *endangered* under the *EPBC Act 1999*	10 species (flora); 7 species (fauna)	One off	LGA	Local Council
	6.	Number of species recorded as either *near threatened*, *vulnerable* or *endangered* under the *Nature Conservation Act 1992*	21 species (flora); 22 species (fauna)	One off	LGA	Local Council
	7. Reestablishment of local of vegetation communities	Number of hectares under restoration by Council and volunteers	Not available	n/a	n/a	n/a
Water	8. Water consumption	Residential consumption (litres/person/day)	Central - 182 litres/person/day North – 226 litres/person/day South – 207 litres/person/day	Weekly	Water regions	State Government
		Dam levels (% full)	Central – 94.9% North – 77.3% South – 96.2%	Weekly	Water regions	State Government
Land	9. Ground cover	Ground cover	Not available	n/a	n/a	n/a
Waste	10. Waste disposed to landfill	Waste per household per week (kg)	18.2 kg (2007), 14.1 kg (2011), Decrease	Annual (2007-2011)	LGA	Local Council
	11. Recycling rates	Recyclables per household per week (kg)	3.0 kg (2007), 2.6 (2011), Decrease	Annual (2007-2011)	LGA	Local Council

Table 24: Social and human capital - data figures

Social and human capital						
Theme	**Indicator**	**Measure**	**Data**	**Frequency**	**Spatial resolution**	**Data source**
Educational attainment	12. Educational attainment and qualification	% adults with Bachelor degree or higher qualifications	5.8% (2001), 9.5% (2011), Increase	5 years (Census)	LGA	ABS
		% adults with certificate/ diploma qualifications	21.6% (2001), 28.6% (2011), Increase	5 years (Census)	LGA	ABS
	13. Education services	Ratio of childcare places to population of children aged 0-5 years resident in the LGA	Not available	n/a	n/a	n/a
		Ratio of primary school places to population of primary aged children resident in the LGA	Not available	n/a	n/a	n/a
Health	14. Self-reported health status	% reporting fair to poor health	7.8% (2007), QLD 12.3% (2007)	2004 & 2007	LGA	PHIDU, compiled from ABS & NHS data
	15. Life expectancy	Life expectancy	Not available	n/a	n/a	n/a
	16. Persons who smoke daily	% of adults who are daily smokers	12.5% (2007), QLD 16.7% (2007)	2004 & 2007	LGA	PHIDU, compiled from ABS & NHS data
	17. Obese persons	% of adults who are overweight or obese	25.7% (2007), QLD 36.9% (2007)	2004 & 2007	LGA	PHIDU, compiled from ABS & NHS data
	18. Mental health	% of adults rated as psychologically distress	6.6% (2007), QLD 9.0% (2007)	2004 & 2007	LGA	PHIDU, compiled from ABS & NHS data

	19. Access to open space	Open space per capita	Not available	n/a	n/a	n/a
Institutions and governance engagement	20. Fair and functioning institutions and governance	Levels of trust in key institutions	Not available	n/a	n/a	n/a
	21. Community engagement	% of volunteering	13.5% (2006), 14.5% (2011), Increase	5 years (Census)	LGA	ABS
Employment	22. Underemployment rate	Hours worked per week	26.4 hours (2011), +1.5% change from 2007	Annual	NIEIR region	SoR
	23. Unemployment rate	Unemployment rate	7.1% (2011), QLD 6.1%, Aust 5.6% (2011)	5 years (Census)	LGA	ABS
	24. Local employment	Participation rate	66.1% (Nov 2012), Greater Brisbane 68.1% (Nov 2012), QLD 66.6% (Nov 2012)	Monthly	DEEWR labour force region	DEEWR, Labour Force Region
Security	25. Security	Feelings of safety	Not available	n/a	n/a	n/a
		Incidence of reported crime (rate expressed per 100,000 persons)	Offences against the person: 1,256 (2003), QLD 1,110 (2003), Increase Offences against property: 11,177, QLD 7,787 (2003), Increase	Annual (2000-2003)	LGA	OESR

Table 25: Economic capital - data figures

Economic capital						
Theme	**Indicator**	**Measure**	**Data**	**Frequency**	**Spatial resolution**	**Data source**
Wealth	26. Household net wealth	Wealth per household	$334,000 (2001), $549,000 (2011), Increase	Annual	NIEIR region	SoR
Housing	27. Housing supply gap	Average dwelling price	$180,400 (2001), $370,000 (2011), Increase	Annual	NIEIR region	SoR
	28. Housing affordability	Low income households in rental stress	25.0% (2006), QLD 22.7.0% (2006)	5 years (Census)	LGA	PHIDU
		Low income households in mortgage stress	8.0% (2006), QLD 7.4% (2006)	5 years (Census)	LGA	PHIDU
Transport and infrastructure	29. Mode of transport to work	Car as driver	66.6% (2011)	5 years (Census)	LGA	ABS
		Car as passenger	6.4% (2011)	5 years (Census)	LGA	ABS
		Public transport	7.1% (2011))	5 years (Census)	LGA	ABS
	30. Transport infrastructure	Kilometres of dedicated cycling	17 kilometres	One off	LGA	Local Council
	31. Access to broadband internet	% households with broadband	45.4% (2006), 73.7% (2011), Increase	5 years (Census)	LGA	ABS
Income	32. Income disparity	Social security take-up	13.4% (2011), 1.4% points increase from 2007	Annual	NIEIR region	SoR
		Household debt service ratio	16% (2001), 21% (2011), Increase	Annual	NIEIR region	SoR
		Average dwelling price to household disposable income	1.27 (2001), 1.66 (2011), Increase	Annual	NIEIR region	SoR

Productivity and innovation	33. Multifactor productivity	GRP per capita	~$33,608 (2011)[25], national $40,234 (2011$)	Annual	Townsville region	Loganbiz
	34. Innovation	Patent counts per population	17.78 per 100,000 (1994-2011), national average 21.01	Annual	NIEIR region	SoR
Socio-economic status	35. Relative socio-economic disadvantage	ABS IRSD score	Logan 971, Greater Brisbane 1022, QLD 1000	5 years (Census)	LGA	ABS

Table 26: Contextual indicators - data figures

Contextual Indicators						
Theme	**Indicator**	**Measure**	**Data**	**Frequency**	**Spatial resolution**	**Data source**
Population	36. Population size	Number of persons	237,236 (2001), 287,517 (2011), Increase	Annual	LGA	ABS
	37. Rate of growth	Annual rate of population growth	Average 1.9% per annum 2001-2011	Annual	LGA	ABS
	38. Population density	Number of persons per square kilometre	247.6 (2001), 300.1 (2011), Increase	Annual	LGA	ABS
	39. Gender and age profile	Gender and age profile	See Figure 3	5 years	LGA	ABS
Land use	40. Land use change	% infill development	Not available	n/a	n/a	n/a
		% greenfield development	Not available	n/a	n/a	n/a
Cultural diversity	41. Proficiency in spoken English	% do not speak English well or not at all	1.4% (2001), 2.2% (2011), Increase	5 years	LGA	ABS

[25] Calculated by dividing the GRP of Logan, as at January 2012 by June 30 2011 estimated population.

	42. Indigenous population	% indigenous	2.3% (2001), 2.8% (2011), Increase	5 years	LGA	ABS
	43. Country of birth	Country of birth	See Table 27	5 years	LGA	ABS
Regional migration	44. Net overseas migration	Net overseas migration	Not available	n/a	n/a	n/a
	45. Overseas born	% born overseas	23.5% in 2001, 26.2% in 2011	5 years	LGA	ABS
	46. Domestic or internal migration	Net number of regional internal migrants	Data inconclusive[26]	Annual (2006-2010)	SLA	ABS

[26] ABS (cat. no. 3412.0) Migration, Australia, 2010-11 experimental regional internal migration estimates. Data for Logan inconclusive.

References

Australian Bureau of Statistics 2002, 2001 Census of Population and Housing.

Australian Bureau of Statistics 2007, 2006 Census of Population and Housing.

Australian Bureau of Statistics 2008, Census of Population and Housing: Socio-Economic Indexes of Areas (SEIFA), Australia (cat. no. 2033.0.55.001).

Australian Bureau of Statistics 2009, National Health Survey: Summary of Results, 2007-2008 (cat. no. 4364.0).

Australian Bureau of Statistics 2011, Regional Population Growth, Australia (cat. no. 3218.0).

Australian Bureau of Statistics 2012a, 2011 Census of Population and Housing.

Australian Bureau of Statistics 2012b, Time Series Profile, Australia (cat. no. 2003.0).

Brisbane City Council 2012, 'Brisbane Koala Bushlands track map', http://www.brisbane.qld.gov.au/environment-waste/natural-environment/bushland-parklands-wetlands/natural-areas/reserves-wetlands-parklands-and-forests/brisbane-koala-bushlands/brisbane-koala-bushlands-track-map/index.htm, accessed 20 December 2012.

Energex 2013, 'Local Government Area Energy Consumption Reports', http://www.energex.com.au/building-and-maintaining-the-network/understanding-the-electricity-network/about-your-power-supply/lga-energy-consumption, accessed 2 January 2013.

Future Housing Taskforce 2012, http://www.futurehousingtaskforce.com.au/index.php, accessed 22 November 2012.

Local Government Reform Commission, QLD 2007, Report of the Local Government Reform Commission. Brisbane Qld, State of Queensland Local Government Reform Commission.

Local Government Reform Commission n.d http://www.dsdip.qld.gov.au/resources/map/reform/logan-rationale.pdf accessed 19 January 2013.

Loganbiz 2012, Logan City Development Activity, Logan Office of Economic Development, http://www.loganbiz.com.au/uploads/file/LDAR/Logan_Development_Activity_Report_Dec_2011.pdf, accessed 2 January 2013.

Logan City Council 2008, Growth Management – Core Matters (pp. 1–59). Logan City Council.

Logan City Council 2009, Connected Communities Strategy: 2009-2013, http://www.logan.qld.gov.au/__data/assets/pdf_file/0005/62078/connected-communities-strategy-20092013.pdf, accessed 20 December 2012.

Logan City Council 2012a, 2011/2012 Annual Report.

Logan City Council 2012b, Community Profile, http://profile.id.com.au/logan/home, accessed 20 December 2012.

Logan City Council 2012c, Draft Loganholme Neighbourhood Plan Summary Booklet.

Logan City Council 2012d, Economic Development, http://www.logan.qld.gov.au/about-logan/economic-development, accessed 20 December 2012.

Logan City Council 2012e, 'Environment, Water & Waste', http://www.logan.qld.gov.au/environment-water-and-waste, accessed 2 January 2013.

Logan City Council 2012f, 'Infrastructure Planning: Amendment to the Logan Planning Scheme 2006 Priority Infrastructure Plan', http://logan.qld.gov.au/planning-and-building/planning/infrastructure-planning, accessed 2 November 2012.

Logan City Council 2012g, Logan Adopted Infrastructure Charges Resolution (No. 3) 2012.

Logan City Council 2012h, Logan City and Logan City Council statistics and factual information.

Logan City Council 2012i, Logan Citys Waterways, http://www.logan.qld.gov.au/environment-water-and-waste/waterways/logan-citys-waterways, accessed 20 December 2012.

Logan City Council 2012j, Logan Planning Scheme 2006 Amendment Instrument 2010 No. 1.

Logan City Council 2012k, 'Recycling', http://www.logan.qld.gov.au/environment-water-and-waste/waste-and-recycling/recycling#factsheets, accessed 3 January 2013.

Logan City Council 2012l, 'Wildlife in Logan', http://www.logan.qld.gov.au/environment-water-and-waste/wildlife/wildlife-in-logan, accessed 20 December 2012.

Logan City Council 2012m, 'Statistics and Facts', http://www.logan.qld.gov.au/about-logan/living-in-logan/statistics-and-facts, accessed 10 January 2013

Logan Office of Economic Development 2012a, Business Parks and industrial land. Retrieved from http://www.loganbiz.com.au/invest-in-logan/business-parks-industrial-land

McInnesWilson Lawyers 2012, 'New Bill proposes fresh start for State's economic development'.

National Economics (NIEIR) 2012, State of the Regions Report: Canberra.

Public Health Information Development Unit (PHIDU) 2010, A Social Health Atlas of Australia, 2010.

Queensland Department of Environment and Heritage Protection (DEHP) 2012, Wetland*Info*, 'Logan LGA - wetland summary information', http://wetlandinfo.derm.qld.gov.au/wetlands/MappingFandD/WetlandMapsAndData/SummaryInfo/LGA-CCLOGA.jsp, accessed 2 January 2013.

Queensland Department of Infrastructure and Planning 2009a, South East Queensland Regional Plan 2009 – 2031.

Queensland Department of Infrastructure and Planning 2009b, Broadhectare study: South East Queensland

Queensland Department of Local Government n.d., History of reform of local government, http://www.dsdip.qld.gov.au/sustainable-local-government/history-of-the-reform-process-and-commission.html, accessed 20 December 2012.

Queensland Department of State Development Infrastructure and Planning 2012a, Strategic Plan 2012-16.

Queensland Department of State Development Infrastructure and Planning 2012b, Economic Development Queensland Bill, http://www.dsdip.qld.gov.au/development-planning/economic-development-queensland-bill.html, accessed 15 December 2012.

Queensland Government 2010a, Growth management: shaping the future - fact sheet.

Queensland Government 2010b, How planning works in Queensland - fact sheet.

Queensland Government 2010c, Sustainable growth - fact sheet.

Queensland Office of Economic and Statistical Research (OESR) 2012, Queensland Regional Profile: Logan (C) Local Government Area (LGA).

Queensland Treasury 2011, Queensland Government Population Projections to 2031: Local government areas, Office of Economic and Statistical Research.

Regional Development Australia 2012, RDA Logan and Redlands - Regional Roadmap 2012.

SGS Economics and Planning Pty Ltd 2007, National Growth Area Alliance: Research Project – Attachment 3: Social infrastructure issues & city of Whittlesea infrastructure gap analysis, report prepared for City of Whittlesea on behalf of the National Growth Area Alliance.

State of Queensland 2012, Population and Dwelling Profile: Logan City Council. Office of Economic and Statistical Research, Queensland Treasury and Trade.

State of Queensland 2013, Queensland Water Dashboard, http://www.water.qld.gov.au/index.html, accessed 2 January 2013.

Tiley, I. and Dollery, B. 2010, Historical Evolution of Local Government Amalgamation in Queensland, the Northern Territory and Western Australia. *Centre for Local Government, UNE, Working Paper Series*. 02-2010. March 2010.

Urban Land Development Authority 2010, Yarrabilba Urban Development Area Interim Land Use Plan (Vol. 2010).

Urban Land Development Authority 2011a, Greater Flagstone Urban Development Area Development Scheme.

Urban Land Development Authority 2011b, Yarrabilba Urban Development Area Development Scheme.

Urban Land Development Authority 2012, Economic Development Bill, http://www.ulda.qld.gov.au/, accessed 20 December 2012.

Valuer-General 2012, *Valuer-General's Property Market Movement Report—Snapshot of the 2012 valuation*, State Valuation Service, Queensland Department of Environment and Resource Management.p.7. http://www.derm.qld.gov.au/property/valuations/pdf/vgmarketreport.pdf Accessed 15 January 2013

Wordsworth, M. 2011, 'Unimaginable tragedy as Housefire claims 11 lives'. *Australian Broadcasting Authority News* (ABC) Retrieved at http://www.abc.net.au/am/content/2011/s3300541.htm, accessed 18 December 2012

World Health Organisation 2012, Social determinants of health, http://www.who.int/social_determinants/en, accessed 7 September 2012.

Appendix

Table 27: Contextual indicators – country of birth (Source: ABS, 2012b)

Country of birth	2001	2011	Percentage point change 2001-2010
Australia	71.9%	68.3%	-3.5%
Bosnia and Herzegovina	0.2%	0.2%	0.0%
Cambodia	0.2%	0.3%	0.0%
Canada	0.1%	0.1%	0.0%
China (excl. SARs and Taiwan)	0.2%	0.4%	0.2%
Croatia	0.2%	0.2%	0.0%
Egypt	0.1%	0.1%	0.0%
Fiji	0.4%	0.6%	0.2%
Former Yugoslav Republic of Macedonia	0.0%	0.0%	0.0%
Germany	0.6%	0.5%	-0.1%
Greece	0.1%	0.1%	0.0%
Hong Kong (SAR of China)	0.1%	0.1%	0.0%
India	0.2%	0.5%	0.3%
Indonesia	0.1%	0.1%	0.0%
Iraq	0.0%	0.1%	0.0%
Ireland	0.2%	0.2%	0.0%
Italy	0.2%	0.1%	0.0%
Japan	0.1%	0.1%	0.0%
Korea, Republic of (South)	0.1%	0.2%	0.1%
Lebanon	0.1%	0.1%	0.0%
Malaysia	0.1%	0.2%	0.1%
Malta	0.1%	0.1%	0.0%
Netherlands	0.6%	0.4%	-0.2%
New Zealand	6.4%	7.8%	1.5%
Philippines	0.6%	0.8%	0.2%
Poland	0.2%	0.2%	0.0%
Singapore	0.1%	0.1%	0.0%
South Africa	0.5%	0.7%	0.2%
South Eastern Europe	0.4%	0.2%	-0.2%
Sri Lanka	0.1%	0.1%	0.0%
Thailand	0.1%	0.3%	0.2%
Turkey	0.0%	0.0%	0.0%
United Kingdom, Channel Islands and Isle of Man	7.0%	5.4%	-1.6%
United States of America	0.2%	0.2%	0.0%
Vietnam	0.2%	0.3%	0.1%
Born elsewhere	3.8%	5.4%	1.6%
Country of birth not stated	4.6%	5.5%	0.9%