



South East Queensland Regional Plan 2017 *ShapingSEQ*

Background paper 1: Grow
September 2017



Queensland
Government

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Contents

Introduction	6
Purpose.....	6
Theme defined.....	6
Relationship with other themes	7
Context.....	8
Previous regional policy.....	8
Development of consolidation and expansion areas	10
Urban Footprint.....	12
Rural Living Area	13
Regional Landscape and Rural Production Area.....	13
Integration with local government planning schemes	14
Population and dwelling projections	14
Trends in dwelling and lot types	17
Performance against 2009 dwelling targets	19
Opportunities and challenges.....	23
Reduced pressure on natural resources	23
Reduced cost of living and transportation	24
Efficient provision of infrastructure.....	25
Improved urban amenity and economic prosperity	26
Discretionary rural (family) subdivision	26
Increased fragmentation of rural land.....	29
Increased conflict between rural and urban uses	29
Decreased flexibility of rural land uses	29
Detrimental effects on ecological and scenic values	29
Decreased stability of related long-term rural processing facilities	29
Increased land valuations	30
Increased pressure on rural infrastructure.....	30
Increased service costs for local governments.....	30
Providing other options	31
Policy directions in ShapingSEQ.....	32
Efficient land use.....	32
Measuring land supply: capacity versus realistic take-up	32
Expansion land	32
Existing expansion supply	33
Underutilised Urban Footprint	34
Consolidation supply	35
Growth scenarios.....	35
The 2041 planning horizon.....	35
Alternative growth scenarios and growth allocations	36
Preferred settlement pattern	37
Allocation of consolidation.....	38
Additional expansion areas	39
Housing types.....	40
Land to accommodate employment projections.....	40
Retained expansion capacity	40
SEQ at seven million	41
Focusing density in public transport corridors and around centres.....	42
New communities: compact settlement in expansion development	44

Housing diversity and the ‘missing middle’	45
Growing rural towns and villages	46
Discretionary rural (or family) subdivision.....	47
Available alternative options	47
Accommodating family on-site	47
Rural residential development.....	47
Rural Living Areas	47
Conclusion.....	48
Appendix A: Existing Urban Area (EUA)	49
South East Queensland Regional Plan 2005–2026	49
South East Queensland Regional Plan 2009–2031	49
ShapingSEQ	49
Appendix B: Capacity and expected take-up of greenfield dwellings to 2041	50
Appendix C: Minimum years of supply benchmarks – current practice ...	53
Queensland.....	53
Sydney	53
Melbourne.....	53
Adelaide	54
Perth.....	54
American Planning Association.....	54
United Kingdom	54
Appendix D: Constraints	55
State constraints	55
Local government constraints	56
Appendix E: Urban corridor identification methodology.....	58

List of tables

Table 1: Consolidation and expansion targets in Australian metropolitan regions	12
Table 2: Additions to the Urban Footprint and equivalent changes, 2005 to 2016	13
Table 3: Projected population growth and required dwellings in SEQ 2011–2041 (medium series)	15
Table 4: Total dwelling targets compared to building approvals and actual net dwelling growth to 2016	20
Table 5: Infill dwelling targets compared to building approvals and actual net dwelling growth to 2016	21
Table 6: Greenfield dwelling targets compared to building approvals and actual net dwelling growth to 2016	22
Table 7: Factors affecting take-up rates.....	32
Table 8: Scenarios considered for dwelling supply needs in SEQ	36
Table 9: Dwelling supply benchmarks to 2041	38
Table 10: Expansion capacity in 2011 and expected remaining capacity in 2041.....	41
Table 11: Land and dwellings required at seven million	42
Table 12: Indicative residential densities in and around regional activity centres	44
Table 13: State datasets	55
Table 14: Local datasets.....	56

List of figures

Figure 1: South East Queensland region	6
Figure 2: SEQRP regional land use categories (2009)	9
Figure 3: Existing urban area	11
Figure 4: Population growth and projections in SEQ 2001–2041	15
Figure 5: Capital city gross population density (urban centres and localities, 2015)	18
Figure 6: Total dwelling approvals (2006-2016) vs pro-rata identified SEQRP total dwelling target (2006–2031)	20
Figure 7: Infill dwelling approvals (2006-2016) vs pro-rata SEQRP infill dwelling targets (2009–2031)	21
Figure 8: Subdivision outside the Urban Footprint	28
Figure 9: Major expansion areas in SEQ 2009-2015	34
Figure 10: Expansion dwelling task scenario comparison	37

Introduction

Purpose

The purpose of this paper is to inform, support and provide background material for the policy and implementation provisions of the South East Queensland Regional Plan 2017, called *ShapingSEQ*, in relation to the grow theme. This theme considers the preferred pattern of settlement to best manage projected regional growth in South East Queensland (SEQ).

Another four interrelated background papers have been prepared to support *ShapingSEQ* including those covering the themes of:

- Connect – considering the infrastructure demands and integrating land use and transport planning to improve outcomes in the region.
- Prosper – considering the approach to supporting improved economic and employment outcomes for the region
- Sustain – considering issues for the protection and management of our natural environment and sustainable social outcomes for our communities
- Live – looking at ways to improve the quality of design and amenity in our urban areas.

Combined, the papers provide the foundation upon which *ShapingSEQ* has been prepared.

Theme defined

SEQ is the third most populated metropolitan region in Australia, and is home to over 71 per cent of all Queenslanders, with a population of about 3.5 million in 2016. Recent projections indicate sustained, high levels of population growth over the next 25 years, with the region expected to reach a population of 5.3 million people by 2041.

The way in which we guide the region's pattern of urban development is central to managing this growth in an economically, environmentally and socially sustainable way. Historic patterns of development have left SEQ with some of the lowest densities compared to other major Australian urban areas¹. More recently, regional and local planning policies have focused on achieving more compact settlement patterns. A continued focus on efficient and more sustainable forms of development will help to optimise the benefits of growth while preserving the features communities value.

Compact settlement refers to specific regional planning policy, the broad aim of which is to concentrate new urban growth primarily within the existing urban area.

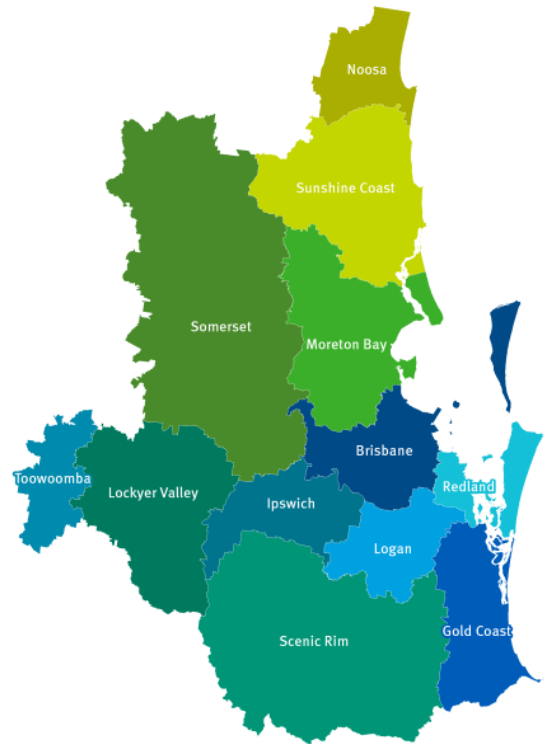


Figure 1: South East Queensland region

¹ State of the Environment 2011 Committee. *Australia state of the environment 2011*. Independent report to the Australian Government Minister for Sustainability, Environment, Water, Population and Communities. DSEWPAC: Canberra, 2011. Page 805.

The Organisation for Economic Cooperation and Development identifies three main characteristics of a compact city²:

1. dense and proximate development patterns
2. urban areas linked by public transport systems
3. accessibility to local services and jobs.³

The central focus of the grow theme is to consider how best to manage SEQ's growth and encourage a compact settlement pattern. The theme deals with:

- the urban form or settlement pattern that will best serve community, economic and environmental needs over the long-term
- the amount, type and location of housing and land to accommodate the projected population to 2041.

Relationship with other themes

The grow theme has strong interrelationships with the other four themes.

1. The connect theme identifies key infrastructure that will be needed to support the region's growth and new growth areas over the next 25 years.
2. Amenity and neighbourhood design, as discussed in the live theme, will become increasingly important as our communities change and grow.
3. Economic growth and global competitiveness, as outlined in the prosper theme, will be vitally important to ensure the ongoing prosperity of SEQ.
4. The region's environmental areas will be preserved through appropriately locating new communities, as outlined in the sustain theme. Additionally, how and where new communities are located will have an impact on social cohesion and the affordability of living in SEQ.

² Compact City is the commonly used term within the planning fraternity. SEQ does not contain a single city and, as such, the term compact settlement is more appropriate.

³ OECD. (2012). *Compact city policies*. OECD: Paris. Pages 27 and 28.

Context

Previous regional policy

Since the 1995 Regional Framework for Growth Management (RFGM), regional planning policy for SEQ has recognised that continuing, outward urban expansion would erode the region's quality of life, vitality and identity. Since 1995, regional planning policy has recognised that a more compact urban form will yield a range of benefits.

The South East Queensland Regional Plan 2009-2031 (SEQRP) continued this policy position in Desired Regional Outcome (DRO) 8: *A compact urban structure of well-planned communities, supported by a network of accessible and convenient centres and transit corridors linking residential areas to employment locations establishes the context for achieving a consolidated urban settlement pattern.*

DRO8 was supported through a range of principles dealing with:

- compact development (8.1)
- containing growth (8.2)
- urban character and design (8.3)
- urban greenspace (8.4)
- housing choice and affordability (8.5)
- activity centres and transit corridors (8.6)
- centres that support business (8.7)
- mixed use activity centres (8.8)
- integrated land use and transport planning (8.9)
- development area delivery (8.10)
- rural residential development (8.11).

These policy directions were implemented through various mechanisms, including the use of three regional land use categories: Urban Footprint, Rural Living Area (RLA) and the Regional Landscape and Rural Production Area (RLRPA) (see Figure 2). These were supported by the South East Queensland Regional Plan 2009–2031 State Planning Regulatory Provisions (SEQSPRP) to create an outward limit to urban development.

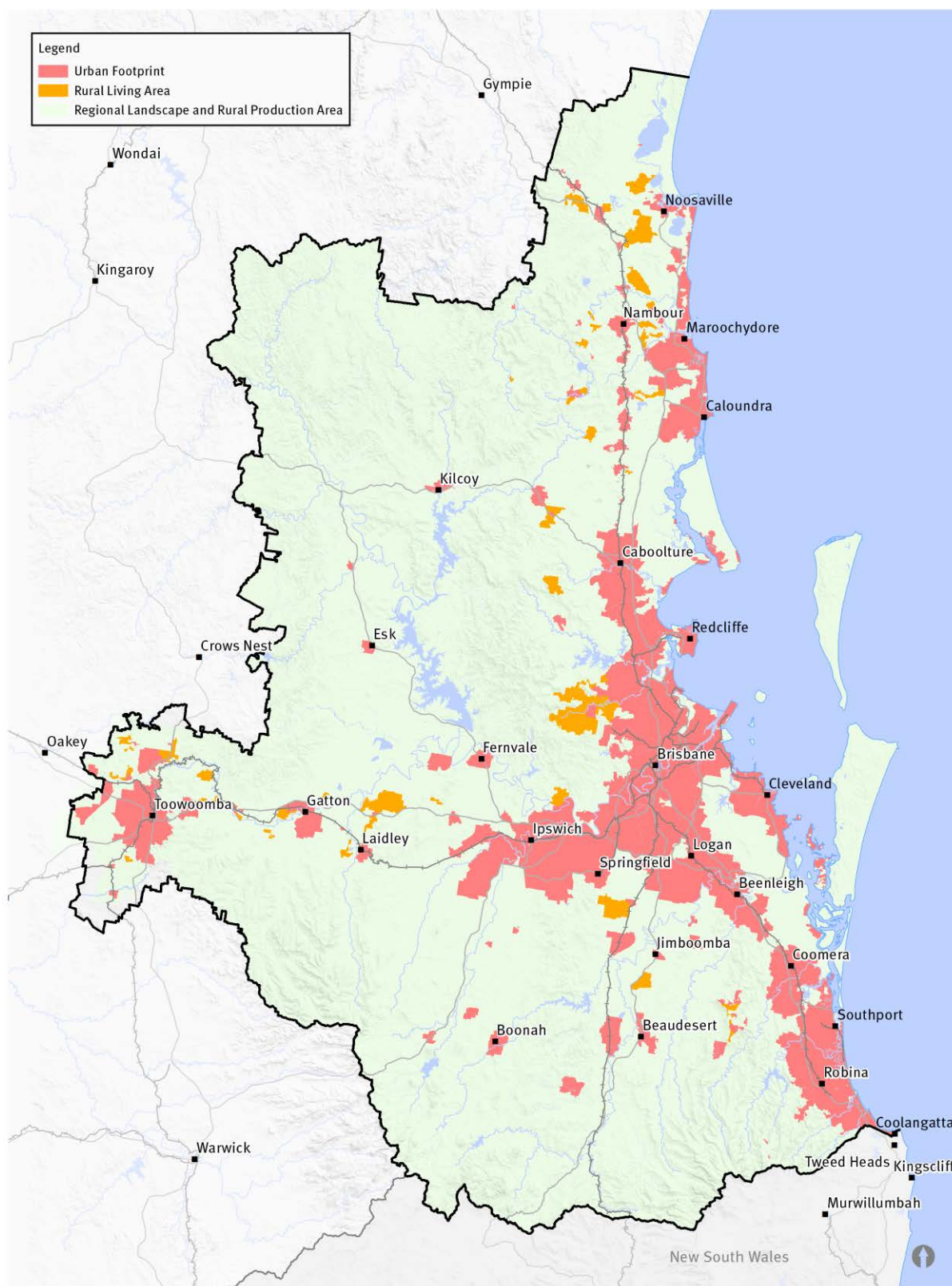


Figure 2: SEQRP regional land use categories (2009)

Development of consolidation and expansion areas

Regional plans have historically assessed and measured development primarily in two ways: infill and greenfield development. *ShapingSEQ* has adopted the terms 'consolidation' and 'expansion' instead of 'infill' and 'greenfield' respectively to reduce any conflict with other meanings for these terms in the planning and development industry⁴. To monitor this, previous regional plans established parameters to distinguish areas that would be regarded as expansion from those that would be regarded as consolidation. By monitoring progress identified these targets, we have been able to identify whether we, as a region, are progressing towards the preferred settlement pattern.

To distinguish consolidation from expansion development, the Existing Urban Area (EUA) boundary was developed and used. *ShapingSEQ* continues the use of the EUA, with any dwelling located within the EUA boundary considered consolidation. To remove any doubt, consolidation can include both detached and attached housing, development on vacant land – both large and small development sites – redevelopment of an existing site to increase density, or change of land use from non-residential to residential.

Development outside the EUA is taken to be expansion development, but again may include both detached and attached housing development.

Appendix A explains the revisions of the EUA boundary, which have occurred to facilitate measurement of consolidation and expansion development over time. The EUA boundary used for the SEQRP, based on now obsolete 2006 Census collection districts, has been approximated for the purpose of *ShapingSEQ* using current Statistical Area Level 2 (SA2) boundaries (see Figure 3⁵).

The EUA is a statistical boundary used for strategic measurement purposes. Whether specific parcels of land are inside or outside the EUA does not affect the current planning intent for those parcels under a relevant planning scheme or regional plan and is not used in development assessment decisions.

⁴ Except where referencing documents that use the terms infill and greenfield, this background paper will use the terms consolidation and expansion.

⁵ Figure 3 reflects 2016 SA2 areas which include some minor boundary changes compared to the 2011 SA2 areas used for the state governments 2015 edition projections. These changes do not have a significant impact on the growth projected or expected for the EUA up to 2041.

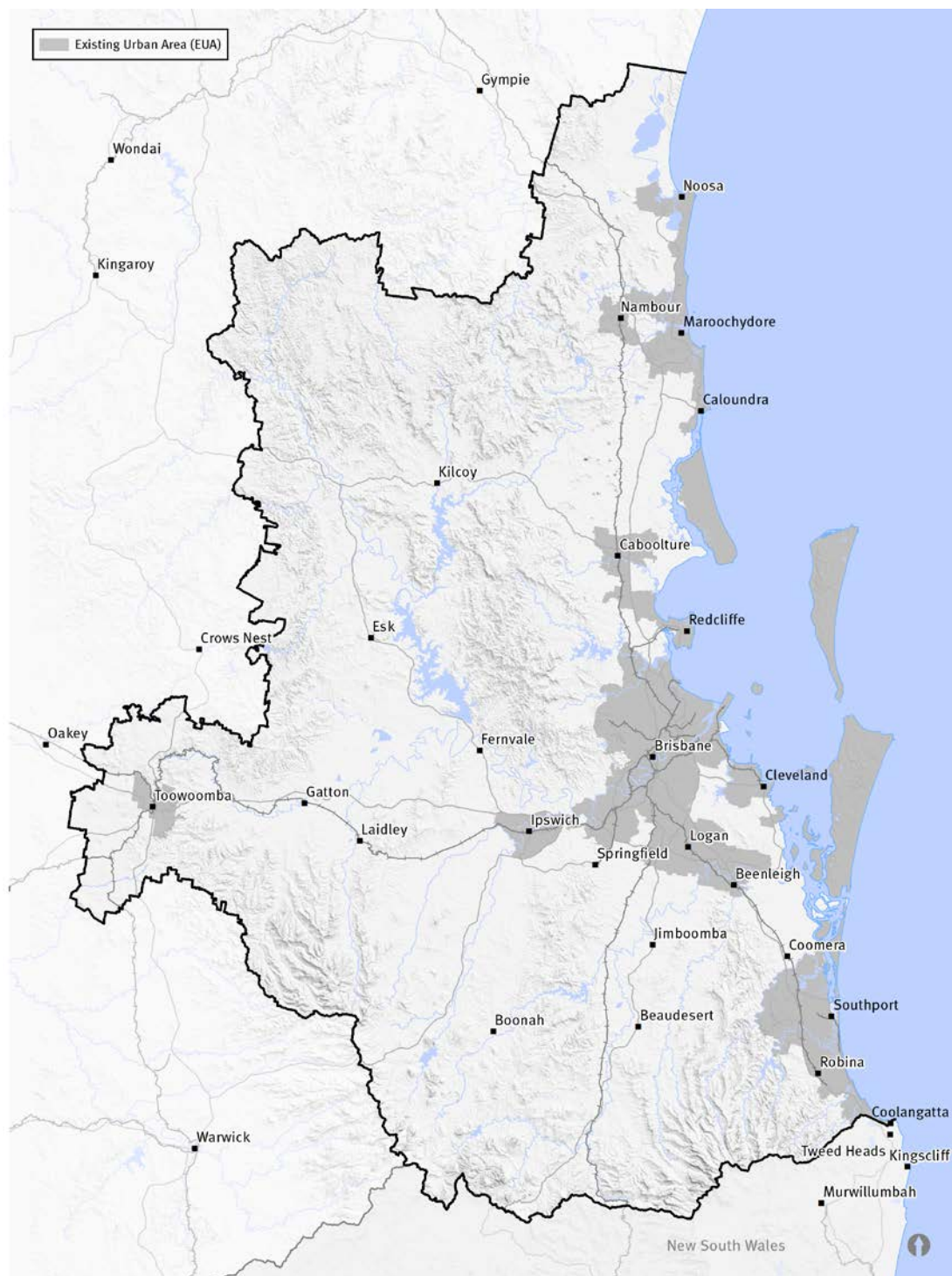


Figure 3: Existing urban area

To inform *ShapingSEQ*, consolidation and expansion targets were looked at from regions across Australia (see Table 1). Most major metropolitan areas in Australia have established regional plans that aim to manage growth in a sustainable and efficient manner and promote a compact settlement pattern. However, given the complexities of regional planning and the diverse existing development patterns and geography, it is difficult to make a meaningful comparison.

Table 1: Consolidation and expansion targets in Australian metropolitan regions

Region/city	Name of plan	Horizon	Dwelling projections	Consolidation	Expansion
South East Queensland	South East Queensland Regional Plan 2009–2031	2031	754,000	Minimum 50%	Maximum 50%
Melbourne ⁶	Plan Melbourne	2050	1.6 million	Minimum 65%	35%
Sydney ⁷	Plan for a Growing Sydney	2031	664,000	Unknown—subregional planning is ongoing with targets pending. Previous regional plan aimed for 70% infill.	
Canberra ⁸	The Canberra Spatial Plan	2032	58,000–90,000	Up to 50% is possible	>50% (assumed)
Perth ⁹	Directions 2031	2031	800,000	47%	53% (assumed)
Adelaide ¹⁰	The 30-year plan for Greater Adelaide	2040	248,000	90% within Outer Greater Adelaide and 85% within metropolitan Adelaide	10% within Outer Greater Adelaide and 15% within metropolitan Adelaide

Urban Footprint

The Urban Footprint identifies the extent of land needed to accommodate the region's urban growth to the projected year. In *ShapingSEQ*, the Urban Footprint identified is the land required to meet the region's urban development needs to 2041. However, not all of the Urban Footprint may be suited for development, with some areas subject to constraints or natural values that require protection or that do not allow development to occur, such as flooding.

Over time, the Urban Footprint has been adjusted to respond to changing conditions and growth pressures. Table 2 sets out changes to the area planned for urban development since 2005 through regional plan reviews and various statutory processes including Priority Development Areas (PDAs), master planned areas and development approvals. These areas have added significant capacity to the Urban Footprint.

⁶http://www.planmelbourne.vic.gov.au/__data/assets/pdf_file/0007/377206/Plan_Melbourne_2017-2050_Strategy_.pdf page 46

⁷ <http://www.planning.nsw.gov.au/~media/Files/DPE/Plans-and-policies/a-plan-for-growing-sydney-2014-12.ashx> page 65

⁸ http://apps.actpla.act.gov.au/spatialplan/4_goals/index.htm

⁹ http://www.planning.wa.gov.au/dop_pub_pdf/pp_part1.pdf page 21

¹⁰ http://livingadelaide.sa.gov.au/__data/assets/pdf_file/0003/319809/The_30-Year_Plan_for_Greater_Adelaide.pdf page 17 and page 140

Table 2: Additions to the Urban Footprint and equivalent changes, 2005 to 2016

2005 to 2006	2006 to 2009	Statutory changes with equivalent effect, post 2009
+7168 ha	+10,989 ha	+12,959 ha
Inclusions: Part of Park Ridge Part of Yarrabilba Part of Flagstone Jimboomba Logan Village Bahrs Scrub Harrisville Peak Crossing Other minor additions	Inclusions: Part of Park Ridge Elimbah industrial Part of Port of Brisbane Buccan part of Fernvale Gatton North Significant additions in Toowoomba due to SEQ boundary change	Inclusions: Part of Yarrabilba PDA Part of Flagstone PDA Caboolture West MPA Southern Redland Bay development approval Other significant urban amendments to council planning schemes (e.g. Flinders and Jimboomba)

Rural Living Area

The Rural Living Area (RLA) identifies key locations in the region for rural residential development. The RLA is an important land use management tool to ensure that land is efficiently utilised, prevents scattered communities and ensures maximisation of existing infrastructure.

The RLA in *ShapingSEQ* includes around 39,600 hectares of land that contains existing rural residential areas or could accommodate future rural residential development.

Regional Landscape and Rural Production Area

The Regional Landscape and Rural Production Area (RLRPA) is where SEQ's important rural areas, natural landscapes and major environmental assets exist. It also includes areas where urban development may not be supported for other reasons, such as the inability to cost-effectively service an area with infrastructure or because of other constraints such as flooding or native vegetation.

There are limitations on the type of development that can occur in this area in order to protect it, however private dwellings and other activity necessary to support rural communities and their economies may be allowed, subject to local government planning schemes and the assessment of development.

Subdivision in this area is also limited to ensure that biodiversity networks, agricultural land and potential future growth opportunities are not broken into small land parcels that might diminish these functions or values.

The types of values and functions in the RLRPA include:

- areas with significant biodiversity
- regional ecosystems that are endangered or of concern
- other areas of environmental significance including native forests, coastal wetlands and formal reserves and national parks
- koala habitat
- good quality agricultural land and other productive rural areas

- cultural and landscape heritage values (traditional and non-indigenous)
- water catchments, water storages and ground water resources
- natural and economic resources, including extractive resources and forestry plantations
- scenic amenity values
- interurban breaks.

To support rural communities and their economies, a range of other activities are also supported. These are subject to local government planning and assessment, and include, agricultural production, access to natural resources, water storage, limited commercial, retail and industrial uses, tourism activities, outdoor recreation, and nature conservation.

Integration with local government planning schemes

Local government planning schemes are primarily responsible for implementing policies of regional plans in SEQ, in particular by determining the pattern of development within each local government area (LGA) and urban land use and housing forms within the Urban Footprint. Planning schemes are required to:

- reflect the Urban Footprint and its associated major development and investigation areas
- aim to achieve a more compact urban form which avoids natural hazards and further fragmentation of natural resources, and facilitate increased housing diversity for their existing and future communities
- support infill growth in strategic locations such as public transport corridors and centres, while protecting particular character areas from significant change
- attempt to achieve improved outcomes in the design of medium and higher density housing, and of the public realm that supports them.

There is some mismatch between the RLA and the extent of existing rural residential land across the region because not all existing or zoned rural residential areas are intended to be consolidated.

Population and dwelling projections

Since 2001, SEQ's population has increased by about 38 per cent, from 2.4 million to about 3.5 million in 2016. The population is expected to reach 5.3 million people by 2041, and require an additional 794,000 dwellings^{11,12}. Figure 4 shows the region's actual and projected growth between 2001 and 2041.

¹¹ 793,700 additional dwellings between 2016 and 2041, based on count of permanent private dwellings at 2016 Census

¹² Medium series projection provided by Queensland Treasury (2015 edition)

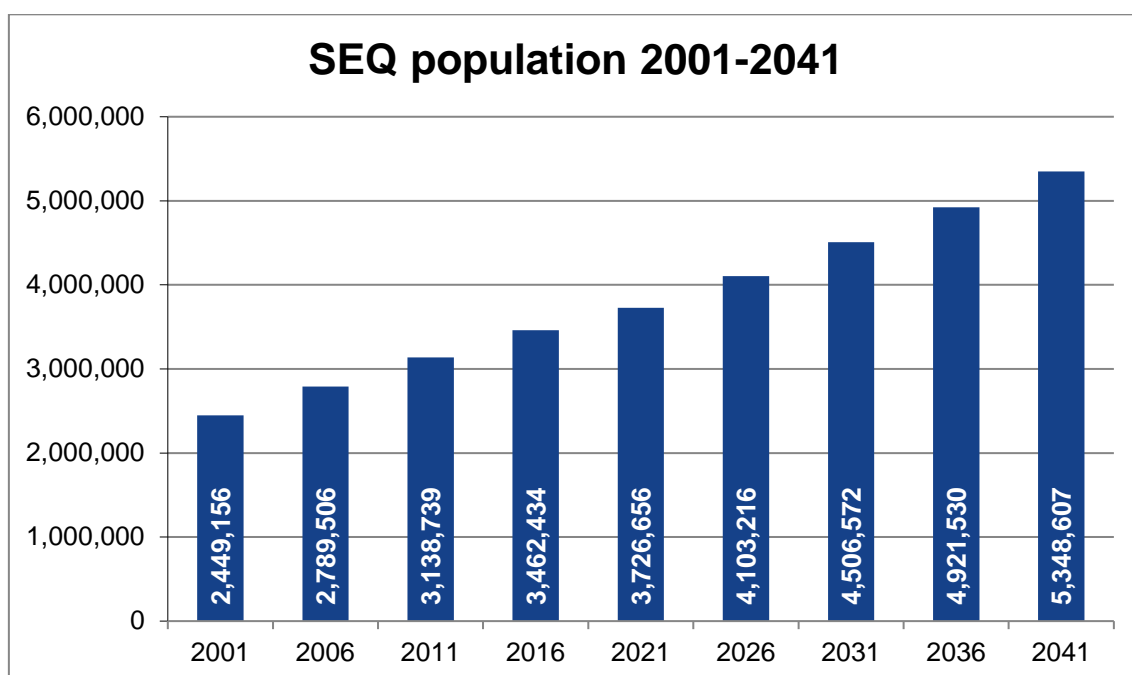


Figure 4: Population growth and projections in SEQ 2001–2041

The state government, through Queensland Treasury, produces and publishes low, medium and high series population projections twice every five years. At the state and regional level the projections are based on assumptions of fertility, mortality, migration (international and interstate) and national, regional and state trends¹³.

These population projections are made available to the public at local government, regional and state levels. For the medium series only, data can be reviewed down to SA2 level within LGAs. The current projections were released by Treasury in 2016 (2015 edition) and provide regional and local projections to 2036. Specifically for *ShapingSEQ*, Treasury extended the local population and dwelling projections to 2041 and provided an overall population figure for SEQ to 2061.

The population and dwelling growth assumptions and the determination of required regional land and dwelling supply for *ShapingSEQ* uses the 2015 edition medium series projections. The medium series is used because it is a more likely outcome for the region's growth, compared to low and high series figures, to inform infrastructure and servicing needs, land supply and economic development. Table 3 details the projected population growth and required dwellings to 2041.

Table 3: Projected population growth and required dwellings in SEQ 2011–2041 (medium series)

Local government	Population		Total dwellings	
	2011	2041	2011	2041
Brisbane City	1,089,879	1,491,487	423,775	599,631
City of Gold Coast	515,202	954,454	217,117	404,889
Ipswich City	172,200	588,577	62,502	224,884
Lockyer Valley Regional	35,880	61,240	13,276	23,834

¹³ The State of Queensland (Queensland Treasury). (2016). *Queensland Government population projections, 2015 edition: methodology and assumptions*. Retrieved from: <http://www.qgso.qld.gov.au/products/reports/qld-govt-pop-proj-reference-info/qld-govt-pop-proj-methodology-assumptions-2015.pdf>

Logan City	287,474	559,000	99,928	187,567
Moreton Bay Regional	390,051	660,323	146,862	255,849
Noosa Shire	51,038	63,421	24,250	32,384
Redland City	143,711	188,104	55,124	76,149
Scenic Rim Regional	37,437	68,919	15,460	29,044
Somerset Regional	22,200	38,350	9,198	16,306
Sunshine Coast Regional	267,241	494,635	113,626	212,935
Toowoomba Regional (urban extent)	126,426	180,096	50,344	74,988
Total	3,138,739	5,348,607	1,231,462	2,138,461
Note: the total dwellings noted for 2041 by LGA reflect projected dwellings/trend and do not take into account the impact of policy decisions made as part of <i>ShapingSEQ</i> .				

The region's population also continues to age and become more culturally diverse. In 2001, 11.9 per cent of the region's population was aged 65 and over and by 2015 this number had increased to 14.1 per cent. Projections indicate that by 2036 people aged over 65 will comprise 19.5 per cent of the population^{14,15}.

During the period 2006 to 2016, residents born overseas increased from 21.1 per cent of the population to 25.2 per cent, of which over half came from non-English speaking backgrounds¹⁶. Over the same 10-year period, lone households increased from 21.0 per cent to 21.2 per cent, couples remained at 25.7 per cent and families with children (with either one or two parents) increased from 40.7 per cent to 41.1 per cent. The ABS predicts that single person households (across Australia) will see the biggest proportional gain of any group over the next 25 years¹⁷. Based on the Queensland Government's medium series projections (2015 edition) SEQ is expected to experience a slight decline from 2.55 people per dwelling to 2.5, from 2011 to 2041.

As our population changes, housing needs will shift¹⁸. The State Planning Policy states that 'a range of housing options provides communities with choice and the ability to adapt as community structures evolve, and family and household types change¹⁹. Accordingly, the region must provide a greater range of housing to ensure adequate choice, lifestyle and tenure options to support the needs and expectations of new residents, our aging population and the emerging millennial generation²⁰.

In the community attitude survey conducted during the preparation of *ShapingSEQ*, young people aged 18–24 years were less likely than the average to agree that there is adequate housing choice (62 per cent), nearby employment options (44 per cent),

¹⁴ ABS Population by Age and Sex, Regions of Australia (August 2016)

¹⁵ Queensland Government population projections, 2015 edition (medium series)

¹⁶ QGSO. (2017). *Queensland Regional Profiles: SEQ*. Created at: <http://statistics.qgso.qld.gov.au/profiles/qrp> on 10 July 2017.

¹⁷ ABS Household and Family Projections, Australia, 2011 to 2036, 19 March 2015

¹⁸ Australian institute of family studies. (2014). *Transcript: Recent and impending demographic change in Australia: Implications for households, family and housing*. Professor Graeme Hugo AO. Retrieved from: <https://aifs.gov.au/events/webinars-seminars/recent-and-impending-demographic-change-australia-implications-households-family-and-housing/transcript-recent-and-impending-demographic-change-australia-implications-households-family-and>

¹⁹ The State of Queensland. (2017). *State Planning Policy*. Retrieved from: <https://dilgpprd.blob.core.windows.net/general/spp-july-2017.pdf>. page 23

²⁰ Johnson, N. (2015), *How millennials will affect the design of our homes, cities, and towns*. . Architecture & Design. Retrieved from: <http://www.architectureanddesign.com.au/news/how-millennials-will-affect-the-design-of-our-homes>

services (66 per cent) and sport and recreation (64 per cent). In comparison, residents aged 65 and above indicated there is a range of housing options (70 per cent) and that everything they need is nearby (78 per cent). Nevertheless, a majority of residents preferred living further from the city in low density housing compared to being close to shops and services in more central locations. However, the survey also showed that an equal proportion of respondents would be happy to relocate from their existing neighbourhood to find more suitable housing.

Trends in dwelling and lot types

Diversity of housing type is changing slowly. In 2006, 74.8 per cent of dwellings in SEQ were detached houses, 9.1 per cent were semi-detached and 14.6 per cent were apartments. In 2016, 72.1 per cent of dwellings were detached houses, 12.3 per cent were semi-detached and 14 per cent were apartments²¹. Looked at another way, as a proportion of total permanent, private dwellings (excluding temporary dwellings like caravans but including unoccupied dwellings) other than houses are now 28 per cent of the regions total dwelling stock²².

Projects such as Fitzgibbon Chase and Northshore Hamilton have provided models for new housing options²³. Apartments and other attached residential products have become increasingly common in the housing market.

More recently across the region, 55 per cent of all additional dwellings built between 2011 and 2016 weren't houses. Buildings taller than three storeys (attached dwellings) accounted for 20 per cent of all additional dwellings over that period, with attached dwellings of one to three storeys comprising 35 per cent of all additional dwellings.

For the 2011-2016 period, within the EUA (considered as consolidation areas in the context of *ShapingSEQ*) buildings over three storeys comprised 31 per cent of all additional dwellings. Attached, low-rise products (three stories and under) comprised 42 per cent and detached dwellings accounted for 27 per cent of all additional dwellings. Brisbane City alone accounted for 69 per cent of all additional dwellings for buildings over three storeys. The inner ring, within five kilometres of the Central Business District (CBD), contained 52 per cent of Brisbane's and 36 per cent of the region's additional dwellings in buildings over three storeys. The mix of dwelling types in the inner ring highlights the intensified development of the area over the last five years. The percentage of detached dwellings and low-rise attached dwellings in the inner ring has reduced from 30 per cent and 34 per cent of the total dwelling mix to 25 per cent and 27 per cent respectively. This reduction was made up for in buildings over 4 storeys, which increased from 36 per cent to 48 per cent.

Greenfield development has also provided a wider variety of housing product over the past five years, with an increase in attached residential products. Nevertheless, separate houses are the dominant dwelling type for greenfield areas, accounting for 78 per cent of all additional dwellings between 2011 and 2016. Attached low-rise dwellings comprised 22 per cent of total greenfield dwelling growth across SEQ.

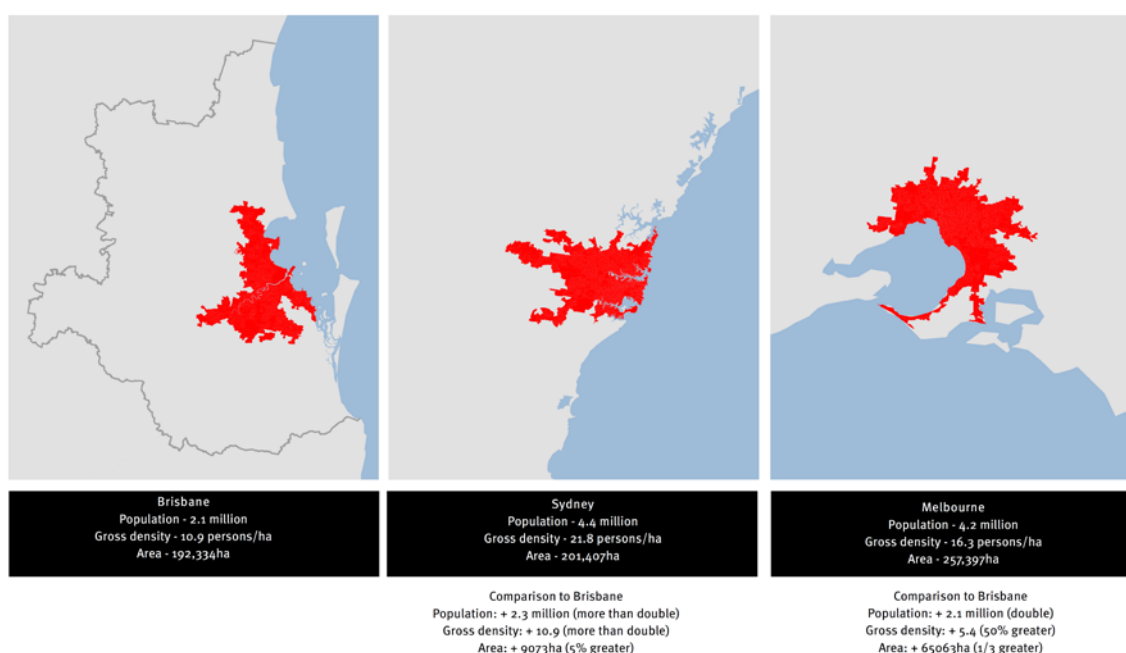
²¹ QGSO. (2016). *Queensland Regional Profiles: SEQ*. Created at: <http://statistics.qgso.qld.gov.au/profiles/qrp> on 10 July 2017.

²² ABS 2016 Census Table Builder, July 2017

²³ Shearer, P. (2012). *House design downsizes to meet property market*. The Courier Mail. Retrieved from: <http://www.couriermail.com.au/lifestyle/house-design-downsizes-to-meet-market/story-e6frequ6-1226321962788>

Australia-wide trends suggest that attached dwellings have primarily been designed for single and couple households. Attached products for groups or families, such as row houses, remain undersupplied²⁴.

Queensland Treasury data shows a decline in the median lot size across the region from 591m² (year to September 2011) to 450m² (year to September 2016)²⁵. This reduction is largely due to the significant decline in lot registrations for traditional lots (600–1000m²) and an increase in smaller lots (350–600m²). While this demonstrates a significant shift, SEQ has a larger median new lot size than Australia's major metropolitan areas, with Adelaide offering the next largest at 413m² and Melbourne offering the smallest at 400m².²⁶ A comparison of the footprints and densities of Sydney, Melbourne and Greater Brisbane is shown in Figure 5.



Source: ABS census 2011 and ABS consultancy, 2015

Figure 5: Capital city gross population density (urban centres and localities, 2015)

Effective urban densities are increasing however. Between 2011 and 2016 the mean population weighted dwelling density of all mesh blocks in SEQ increased from 14.0 to 16.2 dwellings per hectare²⁷.

²⁴ Buxton, M. (2014). *Back to the drawing board for Australian urban planning*. In The Conversation. Retrieved from: <http://theconversation.com/back-to-the-drawing-board-for-australian-urban-planning-22287>

²⁵ By comparison, according to the UDIA's State of the Land Report (2017), the median new lot size in SEQ fell from 623m² in 2010 to 471m² in 2016 (page 19).

²⁶ UDIA. (2017). *UDIA state of the land 2017*.

²⁷ ABS 2011 and 2016 Census mesh block data. Mean population weighted dwelling density equals the sum for all mesh blocks (the dwelling density of each mesh block multiplied by the population count for each mesh block) divided by the total population of all mesh blocks.

Performance against 2009 dwelling targets²⁸

The SEQRP established dwelling targets for a minimum of 50 per cent of new dwellings across the region to be provided within the EUA²⁹ up to 2031 (that is, 50 per cent of new dwellings to be accommodated through infill). These targets were set to achieve a greater proportion of growth through infill than had been projected under trend scenarios, supporting a more compact urban form.

Considered on a pro-rata basis, the regional infill dwelling target has been substantially exceeded, with approximately 68 per cent of SEQ dwelling approvals over the 2006–2016 period being located within the EUA (that is, as consolidation development)³⁰. Table 4 indicates the pro-rata performance of each LGA against a straight line trend of the original dwelling targets. It is important to note that dwelling production will not occur in a linear way as the housing market is subject to fluctuations in economic conditions and shifting land availability over time. Figure 6 illustrates the relationship between cumulative building approvals and the pro-rata total dwellings target for SEQ.

Table 5 and Figure 7 show infill dwelling approvals against pro-rata dwelling targets between 2006 and 2016. Across SEQ as a whole, infill dwelling approvals have been at a higher rate than anticipated by the SEQRP target, but the net dwelling growth between 2011 and 2016 was similar to the annualised target. Brisbane had a significant excess of infill dwelling growth compared to the annualised target while the Gold Coast had a shortfall.

By contrast, a significantly lower proportion of dwellings were supplied in greenfield areas than the annualised targets, except in Moreton Bay and Redland (Table 6). The delayed commencement and take up of some areas, such as Ripley Valley, Yarrabilba, Greater Flagstone and Caloundra South, has constrained expansion dwellings. This trend likely demonstrates the nature of large scale expansion land delivery, and the effects of the global financial crisis since 2009. Faster rates of development are expected into the future. It also, importantly, points towards a long planning, approval and infrastructure delivery phase for large scale expansion development.

The long time frame (average of 10 years) for large scale expansion development areas is unacceptable in terms of the efficient delivery of urban development. This is being actively investigated through the Caboolture West Pilot Project and Strategic Assessment initiatives. Findings from this will be considered and will inform reforms to regional planning and the Queensland planning system.

About 40 per cent of SEQ consolidation dwelling approvals over the 2006–2016 period have been for detached houses. Many of these are likely to be associated with recently subdivided and remnant broad-hectare land parcels. As these parcels are used up, future infill development is expected to increasingly occur in the form of attached housing and apartments on redeveloping urban sites.

Queensland Treasury's projections suggest the recent level of consolidation growth is

²⁸ Note when referring to the 2009 regional plan, references to 'infill' and 'greenfield' have been retained

²⁹ The existing urban area is equivalent to the infill area. It is important to note that infill dwellings refers to dwellings located within the EUA—a boundary based on Statistical Areas—and not particular housing products. Please see Appendix A for more information.

³⁰ ABS building approvals by SA2

unlikely to continue, with projected growth from 2016–2041 being in the order of 53 per cent of additional dwellings achieved as consolidation and 47 per cent as expansion.

Table 4: Total dwelling targets compared to building approvals and actual net dwelling growth to 2016

Local government	SEQRP 2009-2031 total dwelling target	Average annual target	Average annual building approvals 2006-2011	Average annual building approvals 2011-2016	Average annual net dwelling growth 2011-2016
Brisbane	156,000	6,240	6,932	12,726	6,943
Gold Coast	143,000	5,720	4,959	4,623	3,501
Ipswich	118,000	4,720	2,197	1,977	1,910
Lockyer Valley	11,500	460	377	240	202
Logan	70,000	2,800	1,835	1,932	1,775
Moreton Bay	84,000	3,360	4,088	3,555	3,541
Redland	21,000	840	1,013	922	789
Scenic Rim	15,000	600	204	235	170
Somerset	6,500	260	265	171	181
Sunshine Coast (incl.Noosa)	98,000	3,920	3,037	2,843	2,801
Toowoomba (Urban Extent)	31,000	1,240	798	1,045	889
SEQ Total	754,000	30,160	25,719	30,269	22,703

Source: SEQRP 2009-2031; ABS Building approvals; ABS Censuses 2011 and 2016 (total permanent, private dwellings)

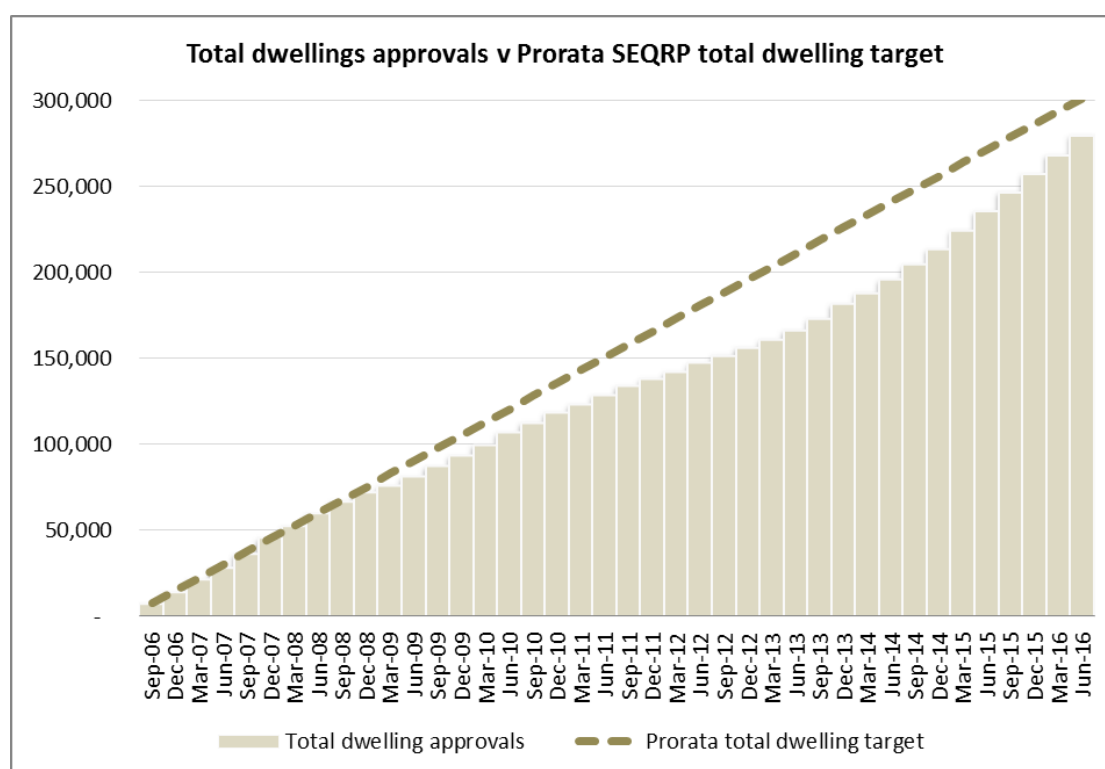


Figure 6: Total dwelling approvals (2006-2016) vs pro-rata identified SEQRP total dwelling target (2006–2031)

Table 5: Infill dwelling targets compared to building approvals and actual net dwelling growth to 2016

Local government	SEQRP 2009-2031 infill dwelling target	Average annual target	Average annual building approvals 2006-2011	Average annual building approvals 2011-2016	Average annual net dwelling growth 2011-2016
Brisbane	138,000	5,520	6,658	12,383	6,776
Gold Coast	97,000	3,880	3,382	2,938	2,209
Ipswich	18,000	720	849	631	728
Lockyer Valley	N/A	N/A	N/A	N/A	N/A
Logan	28,000	1,120	1,462	1,038	1,031
Moreton Bay	35,000	1,400	1,906	1,284	1,354
Redland	15,000	600	605	538	376
Scenic Rim	2,000	80	N/A	N/A	N/A
Somerset	N/A	N/A	N/A	N/A	N/A
Sunshine Coast (incl.Noosa)	37,000	1,480	1,926	1,977	1,794
Toowoomba (Urban Extent)	4,000	160	253	338	247
SEQ Total	374,000	14,960	17,040	21,128	14,789

Source: SEQRP 2009-2031; ABS Building approvals; ABS Censuses 2011 and 2016 (total permanent, private dwellings)

Note: Building approvals and net dwelling growth are calculated using the new EUA boundary. This only approximates that used for setting the infill dwelling target for the SEQRP 2009-2031.

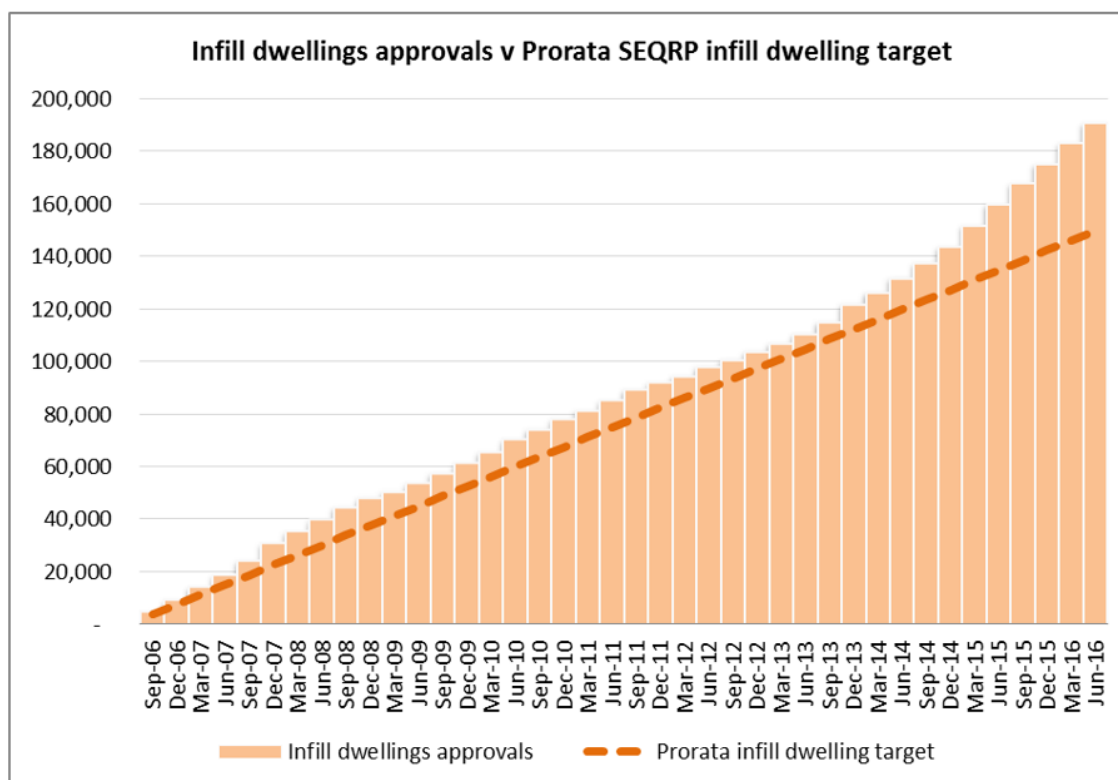


Figure 7: Infill dwelling approvals (2006-2016) vs pro-rata SEQRP infill dwelling targets (2009–2031)

Table 6: Greenfield dwelling targets compared to building approvals and actual net dwelling growth to 2016

Local government	SEQRP 2009-2031 greenfield dwelling target	Average annual target	Average annual building approvals 2006-2011	Average annual building approvals 2011-2016	Average annual net dwelling growth 2011-2016
Brisbane	18,000	720	274	343	208
Gold Coast	46,000	1,840	1,577	1,685	1,293
Ipswich	100,000	4,000	1,348	1,345	1,186
Lockyer Valley	11,500	460	377	240	199
Logan	42,000	1,680	374	893	743
Moreton Bay	49,000	1,960	2,182	2,271	2,189
Redland	6,000	240	409	384	389
Scenic Rim	13,000	520	204	235	170
Somerset	6,500	260	265	171	182
Sunshine Coast (incl.Noosa)	61,000	2,440	1,112	866	743
Toowoomba (Urban Extent)	27,000	1,080	545	708	642
SEQ Total	380,000	15,200	8,679	9,141	7,944
Source: SEQRP 2009-2031; ABS Building approvals; ABS Censuses 2011 and 2016 (total permanent, private dwellings)					
Note: Building approvals and net dwelling growth are calculated using the new EUA boundary. This only approximates that used for setting the dwelling targets for the SEQRP 2009-2031.					

Opportunities and challenges

Regional and local planning policy has long focused on achieving a more compact settlement pattern in which opportunities to accommodate growth in well-serviced locations are maximised. A more compact settlement pattern offers the benefits of supporting:

- reduced pressure on natural resources and lower greenhouse gas emissions³¹
- more diverse housing and affordable transport options
- better accessibility to job and educational opportunities and services³²
- more cost-effective infrastructure, including public transport
- economic competitiveness.

While focusing on a compact urban form has a number of benefits, it is recognised that limited residential development in rural areas can assist with supporting continued agricultural production. This represents a challenge in managing the effects of subdivision in rural areas. These matters are discussed further in the following section of this paper.

Reduced pressure on natural resources

Land is a valuable and finite resource. Within SEQ, there are large areas that contain important environmental, agricultural and scenic values that are physically constrained or are subject to natural hazards like flooding, storm surge and bushfire. Continuing outward expansion of urban development puts pressure on these significant areas, which underpin the region's economic competitiveness, liveability and sustainability.

Urbanisation usually involves the permanent loss of natural habitats and significant changes to the physical environment³³, which places pressure on SEQ's biodiversity and scenic landscapes. Land clearing also contributes significantly to greenhouse gas emissions^{34,35}. The reasonable protection of natural values requires a measured response to urban growth. Focusing growth within the EUA will help reduce the need for the removal of natural habitat on the urban fringe.

Loss of important farming land and peri-urban encroachment because of urban growth are some of the most significant issues facing the rural sector in SEQ^{36, 37}. The inappropriate fragmentation of rural landscapes also impedes the ability of rural

³¹ Glaeser, E. (2011). *The benefits of density*. Retrieved from: <https://lsecities.net/media/objects/articles/the-benefits-of-density/en-gb/>

³² OECD. (2012). *Compact city policies*. OECD: Paris. (Pages 27 & 28)

³³ Lindenmayer, D. & Burgman, M. (2005). *Practical Conservation Biology*. CSIRO Publishing: Canberra. (Page 244)

³⁴ This includes all land clearing, not only that undertaken for the purposes of urban development.

³⁵ WWF. (2008). *Where do Australia's greenhouse gases come from?* Retrieved from: http://www.wwf.org.au/our_work/people_and_the_environment/global_warming_and_climate_change/science/australia_greenhouse_gases/

³⁶ Queensland Farmers' Federation. (2013). *Planning for healthy agriculture: A guide for good practice planning for prosperous agriculture in Queensland*. Retrieved from: <http://www.qff.org.au/wp-content/uploads/2013/02/Planning-for-Healthy-Agriculture-150213.pdf>

³⁷ Bitá, N. (2012). *Paving devours farmland faster than foreign buyers*. In The Australian. Retrieved from: <http://www.theaustralian.com.au/news/nation/paving-devours-farmland-faster-than-foreign-buyers/story-e6frg6nf-1226249813284>

industries to remain profitable into the future³⁸.

The protection of natural resources and easy access to natural areas is recognised by the community as a key attribute to the liveability of SEQ. Concerns about loss of greenspace and negative impacts on the natural environment are some of the perceived negative consequences of population growth³⁹.

Promoting a compact urban form will help to protect and support our important rural and natural landscapes.

Reduced cost of living and transportation

An outwardly expanding, low density urban form continues the region's dependence on private vehicles. Such an urban form would affect productivity⁴⁰ and lifestyles due to congestion and increased travel times. Although homes on the urban fringe can cost less, reduced access to services, poor public transport connections and long commutes for employment often makes the overall cost of living in these areas more expensive⁴¹. This is the concept of affordable living, which is considered further in the sustain background paper.

A dispersed settlement pattern increases reliance on fossil fuels and consequently the region's contributions to greenhouse gas emissions⁴². Transport accounts for nearly 15 per cent of Australia's greenhouse gas emissions and is one of the fastest growing sources. Of that, private vehicles are the largest contributor⁴³.

Compact settlement patterns can reduce the distances that people travel and maximise trips by public transport, walking and cycling⁴⁴. Active transport is cheaper and healthier, encouraging more liveable and affordable communities.

Land and house prices in SEQ have increased significantly over recent years. While house prices are affected by many factors, a limited land supply can contribute to reduced affordability. *ShapingSEQ* tries to address this issue through an approach which seeks to ensure the expansion land supply to 2041 is realistic. This approach is based on the anticipated realistic availability and take-up of land rather than the capacity to supply dwellings. This notion of realistic take-up of land is further described later in this paper.

³⁸ State of Queensland. (2013). *Queensland Agricultural Land Audit 2013*. Retrieved From: https://www.daf.qld.gov.au/__data/assets/pdf_file/0003/77556/QALA-prelims-Ch01-Ch02.pdf

³⁹ 2016 Community Attitudes Survey prepared for the Department of Infrastructure, Local Government and Planning

⁴⁰ SGS Economics and Planning. (ND). *Promoting informed debate around infill housing in Australian cities*. Retrieved from: <http://www.sgsep.com.au/assets/Promoting-infill-housing-background-paper.pdf>

⁴¹ Council of Mayors (SEQ). (2011). *Next generation planning*. COMSEQ: Brisbane. (Page 3)

⁴² WWF. (ND). *Where do Australia's greenhouse gases come from?* Retrieved from: http://www.wwf.org.au/our_work/people_and_the_environment/global_warming_and_climate_change/science/australia_greenhouse_gases/

⁴³ Australian Government (Infrastructure Australia). (2010). *State of Australian Cities*. Retrieved from: https://infrastructure.gov.au/infrastructure/pab/soac/files/MCU_SOAC.pdf (Page 75)

⁴⁴ Buxton, M. (2006). *Urban form and urban efficiency*. Retrieved from: <https://www.environment.gov.au/node/22564>

Efficient provision of infrastructure

The construction of infrastructure has become increasingly expensive^{45, 46}, and governments have a responsibility to ensure infrastructure is used in the most efficient and cost-effective way possible⁴⁷.

Consolidation development is typically found to be less expensive to service than urban expansion⁴⁸. A recent study found the cost of upfront infrastructure provision for infill development was just over one-third the cost of greenfield development. Annual transportation costs were similarly cheaper for infill development by approximately one-half⁴⁹. However, costs for both forms of development can vary considerably depending on existing infrastructure capacity thresholds and terrain⁵⁰.

Transportation and trunk water and sewerage infrastructure represents, by far, the biggest costs to construct and maintain and is least well-served by a dispersed, low density urban form.

A recently completed analysis of potential infill and greenfield costs undertaken by Unitywater identified a number of relevant considerations. A comparison of four potential growth areas – two infill and two greenfield – showed that infill is generally cheaper to service than greenfield, especially for water.

The findings included:

- infill, in general, provides an important opportunity to realise costs savings for infrastructure.
- comparative cost savings in infill locations are not uniform. Costs can be considerable and comparative with greenfield in certain circumstances.
- targeted infill provides the greatest opportunity to realise cost savings.
- cost savings in infill for water, sewerage and transport networks can be realised through:
 - using spare capacity in the existing networks
 - opportunities to augment existing infrastructure rather than having to build new trunk connections
 - minimum residential densities in both greenfield and infill locations to ensure better network efficiencies, reducing the per-unit cost of infrastructure provision.

⁴⁵ Davies, A. (2012) *Why is infrastructure so bloody expensive?* In Crikey. Retrieved from: <https://blogs.crikey.com.au/theurbanist/2012/02/16/why-is-infrastructure-so-bloody-expensive/>

⁴⁶ Bowditch, G. (2013). *Australia's infrastructure cost conundrum*. In The Conversation. Retrieved from: <https://theconversation.com/australias-infrastructure-cost-conundrum-19037>

⁴⁷ Building Queensland. (2016). *Cost benefit analysis guide: supporting business case development*. Retrieved from: <http://buildingqueensland.qld.gov.au/wp-content/uploads/2016/05/45399-Cost-Benefit-Analysis-report-7.pdf>

⁴⁸ Dowling J. & Lucas, C. (2009). *Suburban sprawl costs billions more*. In The Sydney Morning Herald. Retrieved from: <http://www.smh.com.au/national/suburban-sprawl-costs-billions-more-20090716-dmxj.html>

⁴⁹ Trubka, R., Newman, P. and Bilsborough, D. (ND). *Assessing the Costs of Alternative Development Paths in Australian Cities*. Curtin University Sustainability Policy Institute: Fremantle. Retrieved from: http://www.reconnectingamerica.org/assets/Uploads/pb_cusp_urban_v_fringe_research.pdf

⁵⁰ Giannakodakis, G. (2013). *Urban infill vs greenfield development: a review of economic benefits and costs for Adelaide*. InfraPlan: Adelaide. Retrieved from: http://dpti.sa.gov.au/__data/assets/pdf_file/0009/123210/InfraPlan_Report_Infill_versus_Greenfield_Development_Adelaide_-_Final_report.pdf. Page 5

To maximise the efficiency of existing networks, consolidation development should occur where networks contain existing capacity and at densities which maximise capacity.

At the same time expansion development should be of a density that will maximise the efficiencies of new networks. Minimum densities of 15 dwellings per hectare (net residential) should be required for major new consolidation development areas.

Improved urban amenity and economic prosperity

Well designed and delivered developments of higher urban densities create a critical mass of activity that can increase neighbourhood vibrancy and productivity and supports a wider variety of services and economic activity. This issue is considered in more detail in the Live background paper.

As SEQ becomes increasingly engaged in the global economy, its competitiveness will depend on attracting skilled workers and knowledge intensive businesses. Lifestyle and amenity are important attractors for people moving for work opportunities⁵¹ and for new business investment. High levels of urban amenity and an increasingly cosmopolitan lifestyle will support the region's global role.

There is a measurable correlation between compactness, density and productivity or economic output, especially in regions with higher-than-average skill levels⁵². This can be attributed to:

- reduced commuting time, encouraging higher worker productivity and better work-life balance⁵³
- more interactions between people and businesses, which can promote innovation and invention⁵⁴
- concentration of business maximises efficiency for infrastructure, meaning more affordable access to essential services such as high speed internet
- access to a larger and more diverse workforce⁵⁵.

Encouraging increased residential density in key locations across the region will help strengthen SEQ's economy while creating vibrant and interesting urban places for residents and visitors to enjoy.

Discretionary rural (family) subdivision

Discretionary rural (family) subdivision was the creation of new lots to facilitate limited residential development on rural land primarily for family members. Family and related rural subdivision was allowed and widely used in SEQ throughout the 1960-1980's.

⁵¹ O'Farrell, N. (2015). *How to attract people to your city (and it's not just about jobs)*. Retrieved from: <http://economicdevelopment.org/2015/04/how-to-attract-people-to-your-city-and-its-not-just-about-jobs/>

⁵² Florida, R. (2012). *Why denser cities are smarter and more productive*. In CityLab. Retrieved from: <http://www.citylab.com/work/2012/12/why-denser-cities-are-smarter-and-more-productive/4049/>

⁵³ Basu, A. (2005). *Smart growth towards economic performance*. Retrieved from: <http://www.umich.edu/~econdev/smartgrowth/>

⁵⁴ Glaeser, E. (2010). *Why humanity loves, and needs, cities*. In NY Times. Retrieved from: http://economix.blogs.nytimes.com/2010/04/13/why-humanity-loves-and-needs-cities/?_r=0

⁵⁵ SGS Economics. (2012). *Productivity and agglomeration benefits in Australian capital cities*. Retrieved from: <https://www.sgsep.com.au/projects/productivity-and-agglomeration-benefits> (Page 12).

This led to an increasingly fragmented rural landscape, where dwellings in rural areas proliferated on thousands of new lots, many under 10 hectares in size (see Figure 8). While these lots were typically created for some family purpose, they cannot be restricted to that, and are often sold to others not related to the farming use.

In response to the variety of impacts associated with this form of development, the Queensland Government has not supported it since the early 1990s.⁵⁶

This position has been reflected in various state and regional planning instruments and is intended to protect rural areas, which contain important ecological, scenic and agricultural values.

Arguments for family subdivision are based on a need for family and farm management reasons or superannuation purposes, and would not have a significant impact because it was a 'one-off' subdivision. Quite apart from the merits of 'one-off' proposals, the cumulative impact of large numbers of 'one-offs' is significant.

⁵⁶ *Discretionary Rural Subdivision, Policy Position*, Department of Local Government and Planning, August 2002

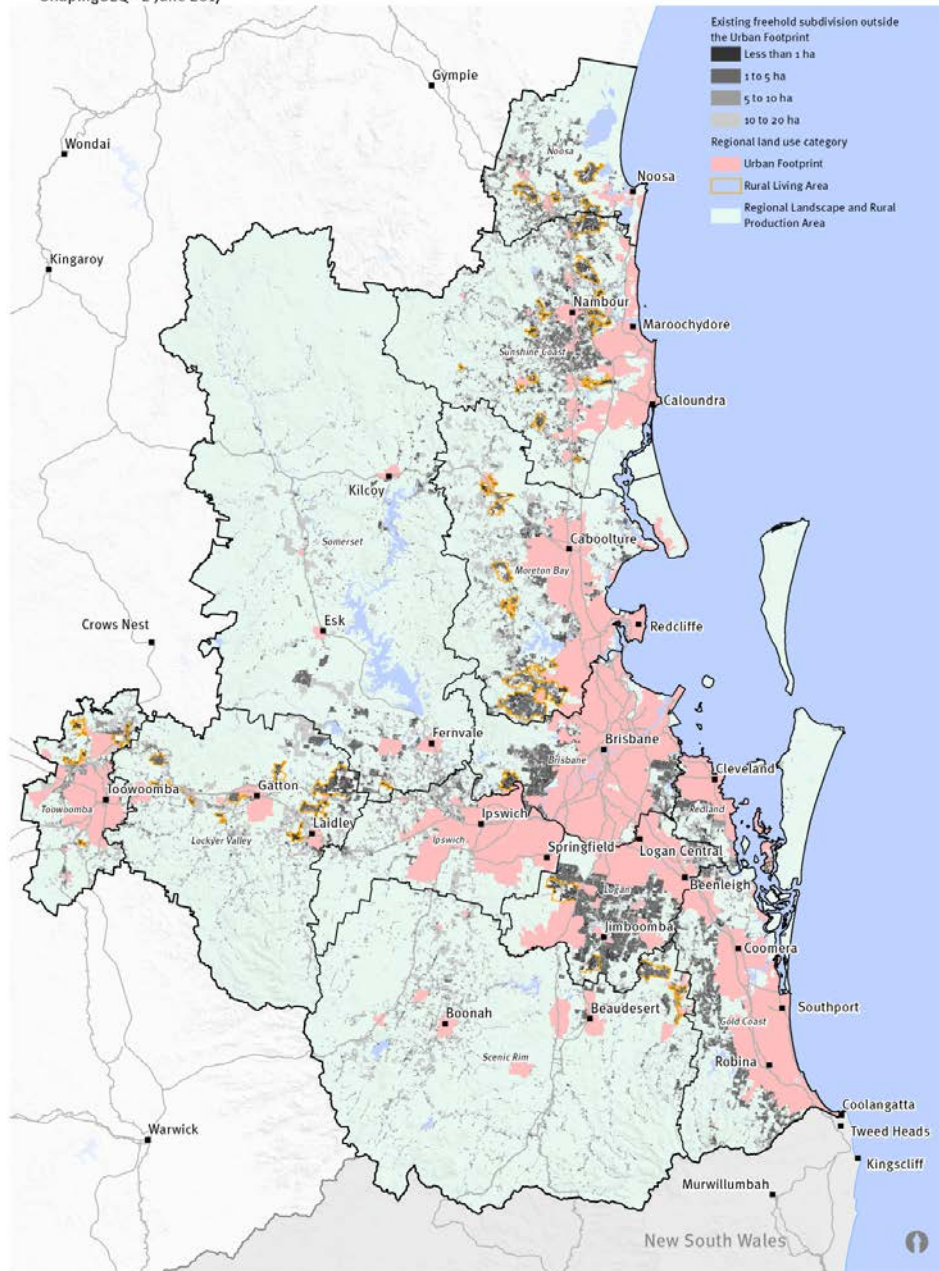


Figure 8: Subdivision outside the Urban Footprint

Both state and local government policy aims to locate people closer to services and employment, reduce private vehicle travel, keep people safe from hazards, and minimise further residential activity in areas where noisy and unpleasant rural industry needs to locate, or where land needs to be protected for conservation purposes.

Problems this form of development caused included:

- increased fragmentation of rural land
- increased conflict between rural and urban uses
- decreased flexibility of rural land uses
- detrimental effects on ecological and scenic values
- decreased stability of related long-term rural processing facilities
- increased land valuations
- increased pressure on rural infrastructure

- increased service costs for local governments.

Increased fragmentation of rural land

The creation of new lots in a rural area by its nature fragments the existing landscape. Many family subdivision lots are much smaller than their parent blocks, often between 0.5-2 hectares and as a result are not viable for rural production. This leads to an irreversible loss of rural production land, with history showing that most family subdivision lots eventually transition into the open market and stop contributing to any rural production being undertaken by the parent lot.

Increased conflict between rural and urban uses

Rural areas, particularly rural production areas, often contain industries that emit noise and odour and particulates that may adversely affect nearby residential uses. Family subdivisions by their nature create unrestricted freehold lots adjacent to rural uses and as a result introduce a conflict that threatens the long-term viability of the nearby rural uses⁵⁷. This issue is exacerbated as more family subdivisions occur in the area and the lots transition to non-family members, until land use conflicts threaten the original rural uses in the area.

Decreased flexibility of rural land uses

The land area available for rural uses is a finite resource. Each family subdivision not only removes some of this land area but also changes the configuration of the lots. Depending on the size and configuration of the resultant lots, subdivisions can limit the ability of rural land to transition from one rural activity to another, particularly in regards to agricultural activities.

Detrimental effects on ecological and scenic values

The rural areas of SEQ include internationally recognised landscapes that are comprised of both ecological and scenic values. Family subdivision results in both primary and secondary impacts to these values. Primary effects include land clearing for the construction of dwellings, outbuildings, roads/driveways and fences, and additional boundary clearing. Secondary effects can include extensive fauna loss due to domestic animals⁵⁸, and an increase in the risk of groundwater contamination from on-site sewerage treatment facilities. These ecological and scenic values are important beyond the biodiversity and aesthetics they provide, they also provide an economic benefit by contributing substantially to tourism activities in rural areas.

Decreased stability of related long-term rural processing facilities

A decrease in the flexibility or production capacity of rural areas as a result of family subdivisions can also result in secondary effects to related processing facilities such as sugar mills, dairy plants and bio-refineries. Once the input to these facilities falls below a certain level they become unviable, which creates downward pressure on prices for producers, a closure of the facility, or in the case of co-op run facilities, that it operates at a loss. When these processing facilities close they have further negative effects on

⁵⁷ Cordell, D., Jacobs, B. and Wynne, L. (2016), In *The Conversation Urban sprawl is threatening Sydney's foodbowl*, retrieved from <http://theconversation.com/urban-sprawl-is-threatening-sydneys-foodbowl-55156>

⁵⁸ Hansen, A., Knight, R., Marzluff, J., Powell, S., Brown, K., Gude, P. and Jones, K. (2005). *Effect of exurban development on biodiversity: Patterns, mechanisms and research needs*. *Ecological Applications* 15:1893-1905 (retrieved from http://www.montana.edu/spowell/documents/pdffiles/pdffiles/hansen_ecological_applications.pdf (page 10))

related rural production in the area, as producers are forced to consider changing what they produce (if possible), or shipping their goods to another processing facility. A lack of long-term stability in future rural production for an area can also dissuade large investments in rural areas to facilitate new related business, including processing facilities.

Increased land valuations

Family subdivision lots, essentially rural residential land, can often be valued higher than their parent rural block. This land valuation can then contribute to higher valuations for the remaining rural block, despite no positive change in that rural block's current or future production capacity⁵⁹. As a result, the owner of the rural block is faced with higher overhead costs, primarily via land tax rates and local government rates.

Increased pressure on rural infrastructure

Rural areas are generally characterised by relatively few dwellings and large land holdings. As a result of this disparate settlement, rural infrastructure is at a different standard than that of more urban areas. This is particularly the case for:

- road infrastructure, which will often lack footpaths, 'kerb and channeling' and associated stormwater infrastructure;
- sewerage infrastructure, which is often not provided by a local government but is dealt with on-site through septic tanks and other on-site sewerage treatment and/or disposal services; and
- water infrastructure, which is often not provided by a local government but is dealt with on-site through dams, rainwater tanks, bores or directly drawing from rivers/creek or other water bodies not privately owned.

As the population of rural areas increases, so does the pressure on both state and local governments to either increase the quality of the existing built infrastructure, or to provide new infrastructure, even if it is at a lower level than for more urban areas⁶⁰. This growth is often in conflict with local and state government strategic settlement patterns and long-term infrastructure plans. This is an important consideration for all levels of government, as this infrastructure requires ongoing maintenance and can be up to three times more expensive than comparable infrastructure for urban development⁶¹.

Increased service costs for local governments

Rural areas generally display low population growth rates outside of existing urban townships. Family subdivisions facilitate an increased population growth rate. As populations increase, so does the need for and quality of services provided by local governments. These services include public transportation, certain health and welfare services, fire and other emergency services, libraries and other community facilities. As a result of the disparate growth created by family subdivisions, these services are far

⁵⁹ Department of Agriculture and Fisheries (2016), *Queensland Agricultural Land Audit*, page 680, retrieved from https://www.daf.qld.gov.au/__data/assets/pdf_file/0011/74000/QALA-Ch13-SEQ.pdf

⁶⁰ Department of Agriculture and Fisheries (2016), *Queensland Agricultural Land Audit*, page 683, retrieved from https://www.daf.qld.gov.au/__data/assets/pdf_file/0011/74000/QALA-Ch13-SEQ.pdf

⁶¹ Rural Councils Victoria (2013), *Financial costs of settlement patterns in rural Victoria*, retrieved from <http://www.ruralcouncilsvictoria.org.au/wp-content/uploads/Financial-costs-of-settlement-patterns-in-rural-Victoria-final-report.pdf>

more expensive than in townships or city areas⁶². Additionally, low growth outside townships means that population increases to adequately offset these high service costs are unlikely to be achieved for many years.

Providing other options

ShapingSEQ and the SEQ regulatory provision under the Planning Regulation 2017 recognise that family may wish to reside on the same property and so provides other avenues for accommodating family onsite, including allowing (subject to local government assessment), secondary dwellings on a lot, or a dual occupancy (ie, second house) on one lot where they are maintained in the same ownership.

⁶² Rural Councils Victoria (2013), *Financial costs of settlement patterns in rural Victoria*, retrieved from <http://www.ruralcouncilsvictoria.org.au/wp-content/uploads/Financial-costs-of-settlement-patterns-in-rural-Victoria-final-report.pdf>
ShapingSEQ background paper 1: grow theme

Policy directions in *ShapingSEQ*

Efficient land use

Measuring land supply: capacity versus realistic take-up

Expansion land

To inform *ShapingSEQ* a significant effort was made to understand the realistic take-up of expansion land across the region. This is different to past regional plans, which have effectively been based on the theoretical capacity of land. This effectively assumes that the total developable land can be developed with dwellings by the planning horizon.

For example, if 1,000 hectares is identified in a regional plan as being developable, with a planning horizon of 2035, then it is assumed that the 1,000 hectares can be fully developed by the year 2035 if required to accommodate the projected growth.

An assessment of realistic take-up accounts for factors that affect the availability and take-up of land for development. These factors are provided in Table 7.

Table 7: Factors affecting take-up rates

Factor	Description
Developer capacity	There are practical constraints to the rate at which dwellings can be developed in any particular location, including the need for approvals and finance, limitations on labour, equipment and materials, as well as local demand over time.
Timing of supporting infrastructure	If trunk infrastructure, which is required to support urban development in an area, is not available, development may be delayed. Conversely, the availability of particular infrastructure (e.g. improved road or public transport access or schools) may increase or bring forward take-up by the market.
Fragmentation	Land, which is planned for future dwelling development, may be in relatively small parcels under separate ownerships. This may constrain opportunities to acquire a feasible development area, particularly given costs for infrastructure required to support the development.
Land use inertia	Related to the issue of fragmentation, existing uses that are inconsistent with the planned future development in an area might be slow to move. The value of the land in its existing use may also reduce overall development feasibility.
Mismatches between supply and demand	<p>A particular area may be planned for dwellings at a higher density than is attractive to the local market within planning time frames.</p> <p>In addition to these factors, target densities are not always achieved, despite a general trend towards reduced lot sizes and increased housing diversity in expansion areas. Market expectations about product types will, to a large extent, drive product delivery.</p> <p>To inform the SEQRP review, Urbis was commissioned in 2015 to review greenfield take-up assumptions. This work was subsequently peer reviewed by SGS Economics and Planning in 2016. The reviews examined expected dwelling</p>

	<p>take-up to 2041 for the new major and potential growth areas as well as the balance of the broadhectare lands identified by Queensland Treasury's 2013 SEQ broadhectare study. The findings of the studies are summarised in appendix B and informed the development of growth scenarios for <i>ShapingSEQ</i> discussed in this section of the paper.</p> <p>This is a significant shift away from the SEQRP and preceding regional plans, which focused on providing the capacity to accommodate the expected dwelling demand for the region, without considering how that capacity might be taken-up over time. Realistic take-up is a more appropriate basis for measuring supply because the projected number of dwellings does need to be provided on the ground by the planning horizon to adequately accommodate the projected population growth. A theoretical capacity to accommodate dwellings means little if it is not feasible.</p>
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Existing expansion supply

A significant proportion of the available expansion land in SEQ is in large master planned communities such as Ripley Valley, Greater Flagstone, Caloundra South, Yarrabilba and Caboolture West. Capacity in these expansion areas vary from about 20,000 to 60,000 dwellings each. Some of these master planned communities are relatively distant from developed centres and as such may take 10 years or more to reach peak rates of take-up. Figure 9 shows the available expansion land within SEQ.

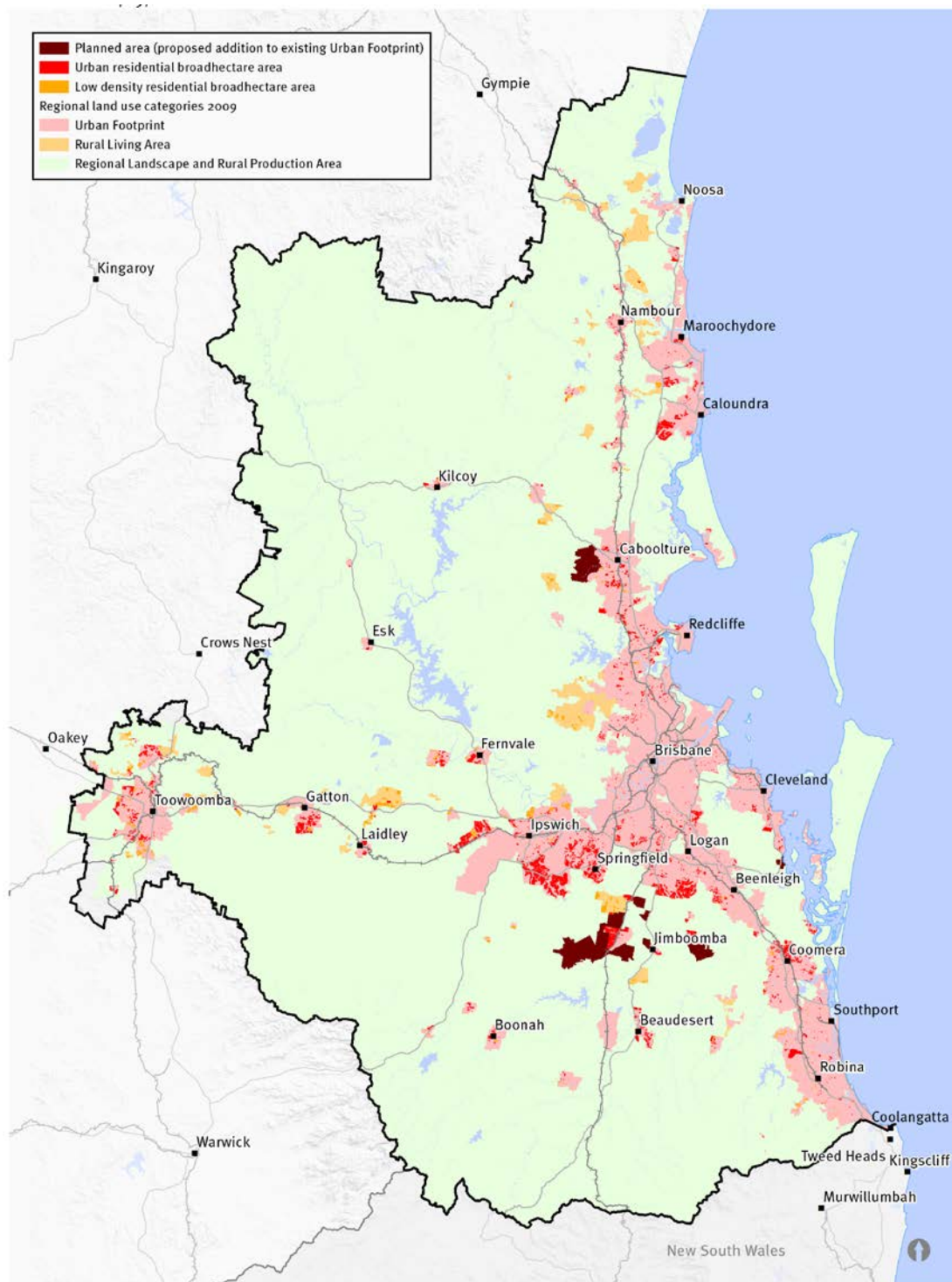


Figure 9: Major expansion areas in SEQ 2009-2015

Underutilised Urban Footprint

In addition to varying take-up rates of major expansion growth areas, some areas that have long been included in the Urban Footprint have proven difficult to develop. These areas have been identified as underutilised Urban Footprint. Examples of these areas include Park Ridge and Bahrs Scrub in Logan, Ellen Grove in Brisbane, Morayfield and Narangba in Moreton Bay, and Drayton in Toowoomba.

Discussions with local governments, infrastructure providers and the development industry indicate the following major barriers to achieving meaningful development of these areas:

- difficult, complicated or expensive infrastructure agreements
- delayed local area or structure planning
- extensive fragmentation
- existing uses inconsistent to urban development (intensive animal farming)
- constraints such as flooding and vegetation.

To inform the sizing of the Urban Footprint, up to about 70 per cent of the dwelling capacity in these areas is assumed to be taken-up by 2041. To achieve this *ShapingSEQ* includes an implementation program to actively investigate and expedite the development of these areas, including by implementing innovative measures to address land fragmentation.

Consolidation supply

Consideration of consolidation dwelling supply has been informed by individual local government modelling or assessment of expected development based on current designations. Key local governments were also consulted about their ability to accommodate consolidation and redevelopment beyond current planning scheme commitments.

Local government models are generally built on assumptions of developability and density for individual parcels. The data provided by local government indicates that the planning schemes and contemplated future changes may provide adequate supply. This supply exists in the following broad categories:

- zoned and serviced land
- land zoned and planned to be serviced within the Priority Infrastructure Areas (PIAs)
- land identified within strategic frameworks, and by other investigations, for future local planning changes.

There is a fundamental need for improved, more consistent supply and take-up information to inform future regional plan reviews. A dedicated commitment to sharing data, modelling and reporting will be critical to inform future regional plans, support infrastructure planning decisions, inform the private sector, and engage with the community as development progresses. A land supply and development monitoring program should be a primary consideration for regional planning in SEQ.

Maximising consolidation growth and accommodating the dwelling supply benchmarks will be achieved through actively facilitating and promoting development in appropriate locations. The state government will work with local governments to ensure that planning schemes consolidation in well-serviced locations. It is explicitly not the intent of *ShapingSEQ* to artificially restrict expansion land supply in order to drive consolidation development. Expansion development will remain an important source of dwellings for the region into the future.

Growth scenarios

The 2041 planning horizon

It is widely accepted in planning practice that regulatory plans should provide for at least 10–15 years supply of land available for development. This represents a balance that:

- allows a range of development options and competition in the market
- avoids pressures on affordability due to an unduly constrained supply

- avoids pressures for extension of infrastructure across more growth fronts than necessary, with the associated costs to infrastructure providers.

Appendix C summarises a review of current practice that supports the need, at any point in time, for 10–15 years supply of zoned and serviceable land.

The 25-year (2041) planning horizon for *ShapingSEQ* accounts for the lead time in reflecting the regional policy in planning schemes and the life of planning schemes before they are significantly amended or reviewed. This means that *ShapingSEQ* may effectively be informing the land supply existing in planning schemes 10 years or more after it goes into effect.⁶³

Alternative growth scenarios and growth allocations

A number of scenarios were considered to inform the choice of the preferred pattern of future growth in *ShapingSEQ*. These scenarios included various consolidation and expansion splits across the region against medium and high series population and dwelling projections.

To consider the potential range of consolidation and expansion dwelling supply needs, scenarios contemplated included the following outlined in Table 8. Due to the timing of the review and available supply and demand information, these scenarios were based on matching supply and demand over the 2011–2041 period.

Table 8: Scenarios considered for dwelling supply needs in SEQ

	Based on medium series projections	Based on high series projections
Projection 54/46 (consolidation/expansion)	P1	P2
Scenario 60/40 (consolidation/expansion)	A1	A2
Scenario 65/35 (consolidation/expansion)	B1	B2

The high series scenarios were considered primarily at the regional level. The medium growth scenarios (60/40, 65/35, and variations of those) considered LGA dwelling demand, supply and allocations in more detail. Except for the current projections scenarios, the scenarios were driven by the intent to achieve a more compact and sustainable urban form. Consequently, progressively higher consolidation growth assumptions are applied.

Figure 10 provides an indication of the expansion dwelling task across each of the scenarios. It shows that the expansion capacity provided for under scenario A1 is greater than the realistic expansion dwelling take-up required under all other scenarios, including the high series growth tasks.

⁶³ The period of 10 years assumes a new or amended planning scheme is adopted five years after the Regional Plan takes effect and is then not subject to significant amendment or review for a further five years, e.g. at the time of the required five-yearly review of its Local Government Infrastructure Plan (LGIP).

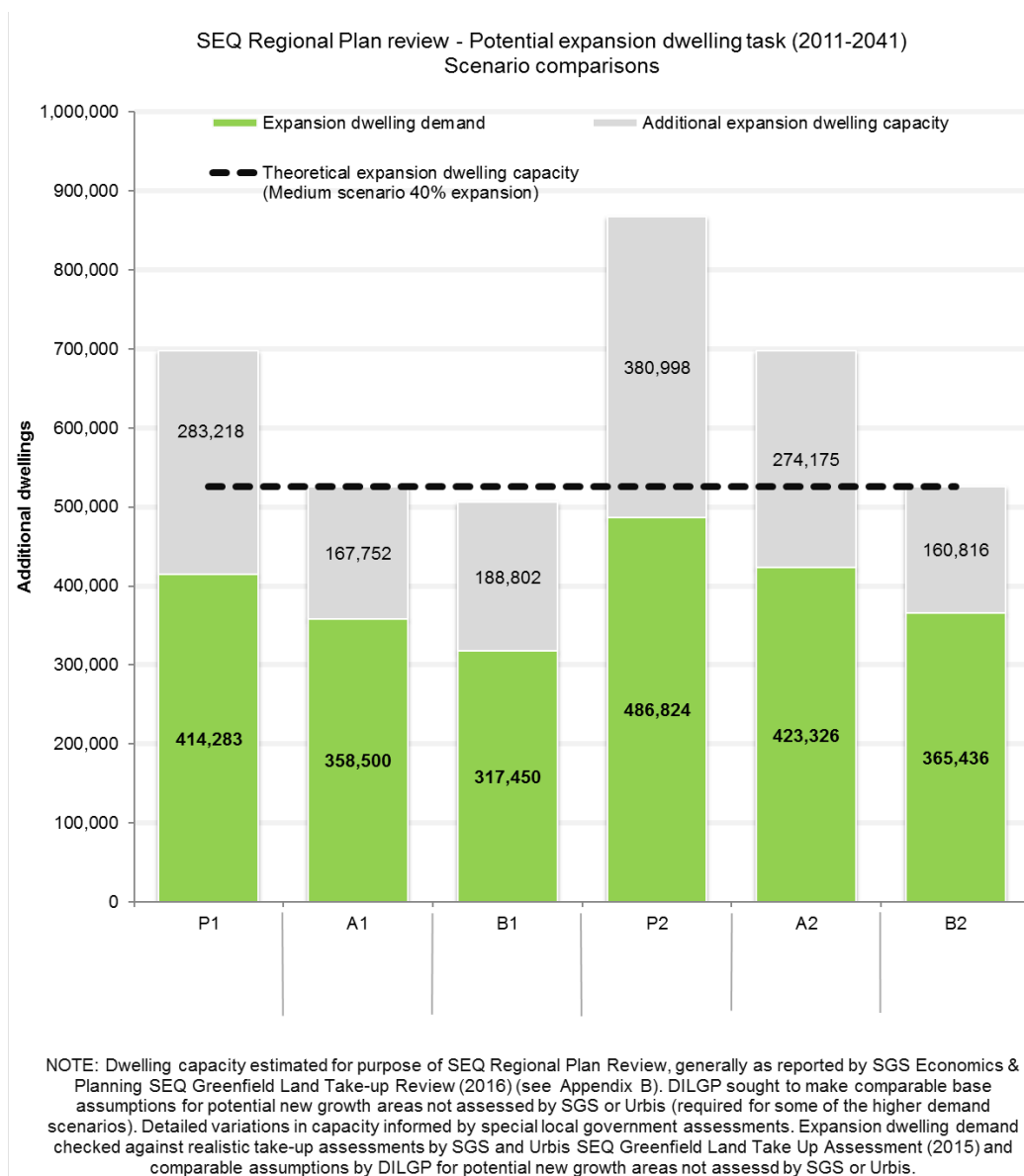


Figure 10: Expansion dwelling task scenario comparison

Urban Footprint areas, dwelling capacities and dwelling supply based on realistic take-up were identified for each of the scenarios. Potential additional Urban Footprint areas were identified through several rounds of consultation with councils, the investigation of existing identified growth areas from the SEQRP, and a regional constraints analysis to identify regionally significant developable areas.

In addition to the areas identified through the regional constraints analysis and local government consultation, a variety of submissions from other parties were considered. These were assessed having regard to the SEQRP's Urban Footprint principles, constraints sieve mapping, the requirements of the preferred growth scenario, local government planning instruments and additional consultation with local governments.

Preferred settlement pattern

The objective of the preferred settlement pattern is for a minimum of 60 per cent of the region's additional dwellings to 2041 to be provided as consolidation development (i.e.

they would be accommodated within the EUA). This benchmark represents an achievable extension of the current trends, which indicate that 53 per cent of additional dwellings in the 2016-2041 period are likely to occur in the EUA.

Growth and consolidation development is not expected to occur evenly across the region. Each local government has different consolidation and expansion tasks based on its particular opportunities and constraints, employment and transport characteristics. Table 9 sets out the dwelling supply benchmarks by local government to 2041. Although originally identified as additional dwellings for the 2011–2041 period, the availability in July 2017 of dwellings counts from the 2016 Census enabled the benchmarks to be rebased to 2041.

Table 9: Dwelling supply benchmarks to 2041

Local government	2011 total existing dwellings	2016 total existing dwellings	2016-2041 consolidation dwellings	2016-2041 expansion dwellings	2016-2041 total additional dwellings
Brisbane	423,776	458,550	176,800	11,400	188,200
Gold Coast	217,117	234,639	127,900	31,000	158,900
Ipswich	62,506	72,092	27,900	83,800	111,700
Lockyer Valley	13,276	14,282	0	9,600	9,600
Logan	99,928	108,770	19,900	70,000	89,900
Moreton Bay	146,862	164,559	48,200	40,100	88,300
Noosa	24,250	26,008	4,800	1,600	6,400
Redland	55,119	58,958	12,500	4,700	17,200
Scenic Rim	15,460	16,305	0	10,000	10,000
Somerset	9,198	10,107	0	6,200	6,200
Sunshine Coast	113,626	125,877	53,700	33,300	87,000
Toowoomba (Urban Extent)	50,344	54,786	3,200	17,100	20,300
SEQ TOTAL	1,231,462	1,344,933	474,900	318,800	793,700
Source: Existing dwellings from ABS Censuses 2011 and 2016 (total, permanent private dwellings)					

Allocation of consolidation

A significant proportion of the supply of consolidation dwellings will fall to Brisbane City. This is consistent with the regional policy of providing more housing with better accessibility to employment. Brisbane has the best public transport connections in the region, nearly half of regional employment, and a wide range of public and private services. Brisbane's existing centres and public transport corridors, with the potential for extension of some priority links such as the south eastern, eastern and northern busways, provides a strong framework for increased consolidation growth.

The additional growth assumed for Brisbane in *ShapingSEQ* was projected by the Queensland Government projections (2015 edition, medium series) to occur in other parts of the broader metropolitan area. The expected realistic take-up of planned expansion land supplies on the fringes, as informed by both Urbis and SGS Economic Planning (see appendix B), are such that alternative sources of supply are needed to accommodate that projected growth. In the context of the overall regional strategy, increased consolidation in Brisbane is the best alternative source of supply together with some increased consolidation in other LGAs.

Major urban and coastal areas are assumed to have somewhat higher consolidation growth than projected to assist with addressing the shortfall in the realistic take-up of planned expansion land.

Gold Coast already has a high proportion of attached dwellings and is the next largest urban environment and employment base after Brisbane. It is transitioning to a predominantly consolidation development context as most of its remaining expansion land supply is taken up by 2041. Significant recent and planned investment in public transport infrastructure, including the Gold Coast light rail, is supporting Gold Coast's transition.

Longer term expansion growth projected for the Gold Coast is expected to be constrained by the available land supply. By contrast, Logan, which has substantial long-term expansion dwelling supplies, is expected to accommodate a larger proportion of dwellings through expansion development.

Sunshine Coast will also be expected to achieve a high rate of consolidation development, supported by significant improvements to local public transport infrastructure and services over time. However, Sunshine Coast is expected to continue to have significant expansion growth up to 2041, primarily in the already planned major growth areas of Caloundra South and Palmview, and the future growth area of Beerwah East.

Additional expansion areas

The 2016 Urban Footprint contains one major new expansion growth area, Beerwah East, in addition to the new Urban Footprint over existing development areas (see Table 2). The new Urban Footprint areas are expected to address an identified undersupply of expansion land in the northern corridor. The identification of this new expansion area resulted from a detailed analysis of hard constraints, subregional market needs, local expansion growth projections, local market expectations, local government planning intents, existing infrastructure, compliance with the Urban Footprint principles and any likely impediments to development, such as fragmentation.

Beerwah East in the Sunshine Coast Council area is well-located next to the existing town of Beerwah, which is served by the north coast rail line. Beerwah East will sit adjacent to the Caloundra South development area, to the immediate west of the Bruce Highway. The Caboolture to Maroochydore Corridor Study (CAMCOS) rail corridor runs through the area, meaning that future public transport can service the development area. Long-term forestry production licenses over the land must be reconciled before the full development potential can be realised.

Alternative growth areas were considered. However, this growth area will provide the best solution in terms of realistic supply to meet the projected expansion dwelling demand in the northern corridor.

Moreton Bay will also accommodate significant expansion development primarily through the new master planned community of Caboolture West. To support its growth, the area will require extension of high-frequency public transport services and east-west road upgrades.

The southern and south-western subregional markets have existing adequate expansion supply to meet demand under the preferred scenario for growth to 2041. Across the region as a whole, Ipswich and Logan will accommodate the largest

proportions of expansion growth. However, the projected growth task for Ipswich has been moderated to account for a realistic take-up of the significant expansion capacity available. Extension of high-capacity, high-frequency public transport services to the major new growth area of Ripley will be a priority in the medium-term in order to encourage take-up of dwellings and delay the need for other expansion growth areas.

The long-term expansion growth potential of Logan is predominantly accounted for by the planned growth areas of Greater Flagstone, Yarrabilba and Park Ridge. Development in these areas will also need to be supported by new high-frequency public transport services over time.

Housing types

The encouragement of consolidation growth instead of expansion does not in itself significantly change the assumed regional dwelling mix in 2041. The increase in consolidation growth is assumed to predominantly capture demand that would have otherwise been for expansion growth attached dwellings, in accordance with the Queensland Treasury Projections.

Land to accommodate employment projections

The Urban Footprint is designed to meet the region's urban development needs to 2041. These needs, in addition to residential uses, include commercial, industrial, business and other related urban land uses and activities (open space and recreation and community facilities).

The determination of the extent of the Urban Footprint has been predominantly focused on accommodating additional residential development to 2041, however there are clearly identified areas in the Urban Footprint for existing and future industrial and/or commercial land uses (e.g. city and town centres and areas such as Ebenezer and Charlton-Wellcamp). Centres provide substantial opportunities for land use intensification over time. The region as a whole has a substantial supply of land identified for future industrial use. Studies based on the previous Industrial Land Monitoring Program (Queensland Treasury) and discussions with local government have assisted to determine the extent of the Urban Footprint and take account of the best possible information available to provide for these uses and their future requirements.

Employment projections are included in *ShapingSEQ* to inform state and local government planning for infrastructure and an adequate land supply. The rationale and use of employment projections is discussed in further detail in the Prosper background paper.

Retained expansion capacity

The preferred settlement pattern and Urban Footprint contain excess dwelling capacity beyond what the A1 scenario requires to meet the projected growth needs to 2041 based on a 60/40 consolidation/expansion split and realistic take-up assumptions. The additional capacity means that the Urban Footprint could theoretically meet the requirements of high series population growth, should it eventuate, or support ongoing development in these areas post-2041. Assuming that growth mirrors the A1 scenario, the Urban Footprint will contain capacity for an additional 167,800 expansion dwellings in 2041. The majority of the retained capacity will be located in Ipswich (44,700 dwellings), Logan (44,000 dwellings), Moreton Bay (26,800 dwellings) and Sunshine Coast (16,700 dwellings).

Brisbane (800 dwellings) and Noosa (100) will have effectively exhausted their expansion capacity by 2041, while Gold Coast (2500 dwellings) will have limited expansion capacity remaining. Redland (2800 dwellings) will also be nearing the end of its expansion supply. Toowoomba (7,500 dwellings), Somerset (1,600 dwellings), Scenic Rim (7700 dwellings) and Lockyer Valley (12,700 dwellings) will have some expansion capacity that is commensurate with their overall growth task. This additional expansion capacity will provide dwelling supply over the long-term and beyond the 2041 horizon of *ShapingSEQ*.

Table 10 identifies the estimated total expansion capacity at 2011, and the expected remaining capacity in 2041. It is important to note that this number does not include consolidation capacity. The actual dwelling growth 2011–2016 forms part of the estimated total expansion capacity in 2011–2041.

Table 10: Expansion capacity in 2011 and expected remaining capacity in 2041

Local government	Estimated total expansion dwelling capacity in 2011	Expansion dwellings growth 2011-2016	Expansion dwelling supply benchmarks 2016-2041	Estimated expansion dwelling capacity remaining in 2041
Brisbane	13,200	1,006	11,400	800
Gold Coast	40,000	6,472	31,000	2,500
Ipswich	134,400	5,930	83,800	44,700
Lockyer Valley	23,300	1,006	9,600	12,700
Logan	117,700	3,706	70,000	44,000
Moreton Bay	77,900	10,959	40,100	26,800
Noosa	2,100	390	1,600	100
Redland	9,400	1,944	4,700	2,800
Scenic Rim	18,500	845	10,000	7,700
Somerset	8,700	909	6,200	1,600
Sunshine Coast	53,300	3,307	33,300	16,700
Toowoomba (Urban Extent)	27,800	3,209	17,100	7,500
SEQ TOTAL	526,300	39,683	318,800	167,800
Source: Existing dwellings from ABS Censuses 2011 and 2016 and land supply analyses for regional plan review, including as reported in Appendix B with necessary adjustments for changes and better information which post-dated the SGS 2016 study.				
Note: Proposed expansion additional dwelling supply benchmarks and remaining expansion capacity are based on assumptions of realistic take-up of expansion capacity to 2041.				

SEQ at seven million

ShapingSEQ is not intended to provide a framework to manage the population growth of the region to seven million, with even the high series projections showing a population below six million at 2041, the planning horizon for *ShapingSEQ*. It is however important to consider the longer-term future land requirements of the region.

SEQ at seven million people will require approximately 2.8 million dwellings, representing approximately 1.6 million additional dwellings from 2011 (assuming an

average occupancy of 2.5 persons per dwelling). Under various alternative scenarios, this demand will require additions to the Urban Footprint, with the existing expansion dwelling capacity constrained at approximately 526,000.

Table 11: Land and dwellings required at seven million

Consolidation/ expansion scenarios beyond <i>ShapingSEQ</i>	Dwellings required from 2011		Additional expansion dwelling capacity required from 2011			Additional gross land required beyond <i>ShapingSEQ</i> ⁶⁴
	Consolidation	Expansion	70% take up of expansion land	75% take up of expansion land	80% take up of expansion land	
Scenario A 60/40	945,480	623,020	890,029	830,693	778,775	51,961
Scenario B 70/30	1,011,610	556,890	795,557	742,520	696,113	38,456
Scenario c 80/20	1,077,740	490,760	701,086	654,347	613,450	24,969

While the region's consolidation/expansion target is the most important factor in determining the extent of additional expansion land required, the take-up of identified expansion land could also shape the future settlement pattern of SEQ. To illustrate this, Table 11 demonstrates that an additional 10 per cent take-up of expansion land reduces the required dwelling capacity more than increasing the consolidation share by 10 per cent (assuming a 70 per cent take-up). It is for this reason that the efficient use of identified expansion land, both in terms of density and take-up, is important in reducing the need for further expansions to the Urban Footprint.

Focusing density in public transport corridors and around centres

Consolidation development can take many forms, ranging from detached houses and duplexes to town houses and high-rise apartments. It is an important part of supplying a broader range of housing to meet changing demographic needs and providing more affordable living options. A mix of housing within neighbourhoods also helps create more inclusive and diverse communities⁶⁵. Higher density residential development can help improve the efficiency of infrastructure networks, revitalise neighbourhoods and maximise the use of land for urban purposes.

Local government planning schemes across the region contain policies to facilitate these outcomes, according to the particular context of their localities—having regard to matters such as the extent of nearby services and employment, access to public transport, local character and the amenity offered by different localities. They have also

⁶⁴ Assuming 70% take-up of expansion land, 30% of which is undevelopable and development of 10 dwellings per hectare (equivalent to a net residential density of 15 dwellings per hectare if one third of the developable area is used for non-residential purposes)

⁶⁵ Select Committee on Housing Affordability in Australia (2008). *A good house is hard to find: housing affordability in Australia*. Retrieved from: http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Former_Committees/hsaf/report/index (Page 97)

consistently aimed to ensure a more compact urban form and to increase housing diversity within each local government area.

It remains important to maximise development opportunities in and around existing centres and high frequency public transport, and assured future high frequency public transport. This development supports the efficiency of the existing public transport network and helps justify investment in future upgrades and expansion of the network because it promotes higher patronage and a greater return on investment. This supports the approach within *ShapingSEQ* and local government planning schemes.

Mixed-use, transit-oriented development in centres and along public transport corridors continues to provide a useful model for how consolidation dwelling supply benchmarks can best be accommodated. The Connect background paper provides further detail regarding the future strategic transport system to 2041.

Higher density residential products and increased consolidation densities appear to have been taken up most significantly in those parts of the region with a well-established urban structure, maturing economies and existing services, or which offer particular lifestyle amenities. In SEQ, this is particularly the case for Brisbane and Gold Coast, which contain a high proportion of attached and higher density dwellings. These two LGAs also have a limited supply of expansion land, so consolidation development can be expected to make up an increasing proportion of new dwellings. In addition, these two areas have the most developed existing and emerging networks of high-frequency public transport, which can support consolidation development.

Despite these successes, experience more broadly in SEQ and elsewhere suggests there can be some significant challenges in delivering successful consolidation housing, including:

- land and ownership fragmentation
- high price of land in inner areas
- construction costs for some forms of development
- uncertainty in the market or by financiers about some forms of housing
- community acceptance
- uneven infrastructure capacity and therefore costs⁶⁶.

These challenges will become increasingly problematic in the region as growth becomes predominantly consolidation. Mechanisms for facilitating growth in these challenged circumstances will need to be investigated.

Promoting mixed density development in appropriate localities across the region will require a greater focus on building design and amenity, to establish a more nuanced and thoughtful response to the surrounding neighbourhood. This issue is considered in more detail in the Live background paper.

A range of densities for regional centres was established in the 2005 regional plan and SEQRP. Table 12 outlines indicative activity centre densities for *ShapingSEQ*.

⁶⁶ Rowley, S. and Phibbs, P. (2012). *Delivering diverse and affordable housing on infill development sites*. AHURI: Melbourne. Retrieved from: https://www.ahuri.edu.au/__data/assets/pdf_file/0014/2066/AHURI_Final_Report_No193_Delivering_diverse_and_affordable_housing_on_infill_development_sites.pdf (Page 4)

Table 12: Indicative residential densities in and around regional activity centres

Centre type	Dwellings per hectare (net residential density)	
	In or within 400 metres of the centre	Within 400–800 metres of the centre
Principal regional activity centre	150–400	100–175 or greater
Major regional activity centre	80–200	40–100
Principal/Major rural activity centre	To be determined by the local government	
Note: Planned density and residential density (dwellings per net developable hectare) from priority infrastructure plans and LGIPs have been utilised to generate Table 12. It should be noted that there is considerable variation in dwelling densities across the region.		

To assist local governments plan effectively for growth in public transport corridors and around centres *ShapingSEQ* identifies at a sub-regional level those areas that contain the necessary values to support high-quality growth, including access to high-frequency public transport. These areas are called urban corridors.

Appendix E summaries the methodology for urban corridors. Of particular note is that urban corridors are not limited to areas within the EUA, and so in most cases while they will support consolidation growth, the nature of development along public transport infrastructure, particularly railway, means that some development will be expansion development. This is considered to be appropriate given the planning horizon of *ShapingSEQ* and increased certainty regarding infrastructure delivery.

The identification of these urban corridors has been made possible by the long-range strategic planning of local governments with respect to future growth areas and public transport and infrastructure. Recent work by the Queensland Government on the State Infrastructure Plan has also supported urban corridor identification.

The identification of these urban corridors is not intended to prevent other urban corridors being identified by local governments. In addition, the future development of all urban corridors will be subject to further detailed planning by local governments.

New communities: compact settlement in expansion development

New communities will continue to be established to meet the region's housing needs. These will predominantly occur in expansion areas⁶⁷. However, expansion development is expected to account for a decreasing proportion of new dwellings into the future.

Supplies of large, unconstrained expansion land in accessible locations are finite in SEQ, and decisions to expand the Urban Footprint increasingly require difficult trade-offs between urban land supply and other values. New expansion development areas

⁶⁷ In *ShapingSEQ* expansion land refers to land that is outside the existing urban area. Some development within the designated existing urban area will, in reality, be new development of currently undeveloped land, i.e. remnant broadhectare land, but will be treated as consolidation for the purposes of the regional plan dwelling benchmarks.

that may be needed to accommodate growth to 2041 have been identified in conjunction with stakeholders through an analysis of constraints, land supply and subregional projections.

To minimise ongoing pressure for outward expansion, we will also need to ensure the efficient use of expansion land. A variety of lot sizes will facilitate a wider variety of housing, including higher density and attached dwellings.

Expansion areas will be developed to include a mix of uses, densities and employment opportunities for future residents. Public transport will be incorporated into new development and existing or future high-frequency public transport should be developed in accordance with transit-oriented development principles.

To ensure new expansion development makes the most efficient use of land, particularly given the outlay of infrastructure costs to service expansion areas, *ShapingSEQ* identifies a minimum net residential density of 15 dwellings per hectare for new communities in SEQ and 30-60 dwellings per hectare where within easy walking distance to an existing or proposed public transport station. These minimum densities do not however apply to the Lockyer Valley, Scenic Rim and Somerset local government areas as primarily rural localities.

Housing diversity and the ‘missing middle’

The region’s housing needs will continue to diversify and change into the future. As the demographics of our population change, and people’s lifestyle expectations shift, a greater array of housing options will be needed to support SEQ’s prosperity.

Due to expectations based on historical development patterns⁶⁸, SEQ has traditionally been reluctant to embrace dwelling forms that are more compact, such as apartments and row houses, when compared to other metropolitan regions in Australia and around the world. Consequently, there has been a strong desire by the market to continue to produce single, detached residential dwellings, which has led to a relatively homogenous level of density, and limited housing choice across the region.

Recent years have seen a significant increase in high-rise housing products, in concentrated areas within the region-mainly inner-Brisbane, the Gold Coast and parts of the Sunshine Coast. However, row houses, town houses, and low-rise apartment buildings offer important housing options for people and being more sympathetic in scale to detached housing are often less intrusive. This ‘missing middle’ must be addressed across all of SEQ to ensure housing diversity and sufficient housing choice into the future, and to facilitate designs in sympathy with nearby detached housing precincts

This is particularly important for the ageing population. New and innovative housing models will be required for the growing population of people aged more than 65. An increasing proportion of older Australians are staying in their homes and aged-care is becoming purely an end-of-life decision. Smaller and more responsive dwellings in established communities will provide important housing options for older residents⁶⁹.

⁶⁸ Skinner, P.R., *When a little is a Lot: an architect’s view*. In Queensland Planner, March, Vol 44 No 1, 2004.

⁶⁹ Australian Government (Productivity Commission). (2015). *Housing decisions of older Australians*. Retrieved from: <http://www.pc.gov.au/research/completed/housing-decisions-older-australians/housing-decisions-older-australians.pdf> (Page 85)

Specialised aged-care and retirement facilities must be well-located, accessible, integrated into the community and affordable⁷⁰. Older people must be supported to 'age in place' and remain engaged in their local community.

At the same time, the younger population, as demonstrated through the recent community attitude survey, are increasingly seeking more flexible and affordable housing in well-located areas in terms of transport, entertainment and services.

Beyond consideration for just younger and older Australians, a diverse range of housing products supports the continued broadening composition of households. By varying housing types in both expansion and consolidation areas, more appropriate housing products are made available to the community.

At the same time, housing diversity and in particular the missing middle will assist with housing affordability by allowing for the more efficient use of land. This is particularly true where the missing middle is not limited to select consolidation areas, which can cause them to be more expensive than comparable surrounding dwellings due to perceived 'exclusivity', but allowed to seamlessly integrate into 'middle ring', suburban and expansion areas⁷¹.

Growing rural towns and villages

Rural towns and villages are an important part of the SEQ settlement pattern and offer a lifestyle choice for many residents that often relies on surrounding scenic and environmental values. The rural towns and rural residential areas located relatively close to the major urban areas experience growth pressures and demographic changes similar to those urban areas. More distant rural towns will grow in accordance with local and subregional needs. Population projections indicate steady and proportionate growth in all the rural local government areas. However, because each rural town and village has a particular character, growth needs to be managed carefully.

Rural residential development is supported in a variety of defined locations throughout the region. Rural residential development provides a lifestyle choice for residents and can also offer opportunities to operate small commercial enterprises. This housing choice is particularly important to rural areas where a rural or semi-rural lifestyle is often a high priority for residents. However, rural residential development is not supported in urban growth corridors due to fragmentation and the consequential constraints created for urban growth and infrastructure provision.

Future housing needs are to be met and opportunities for economic growth and diversification are to be accommodated, but in a way that retains the distinct small town identity. Growth also needs to be accommodated in a way that avoids putting pressure on surrounding natural and agricultural resources and values. This will require the concentration of residential and rural residential development in existing rural towns and villages and identified RLAs.

⁷⁰ Advisory Taskforce on residential transition for Aging Queenslanders. (2016). *Issues Paper*. Retrieved from: <http://cotaql.org.au/wp-content/uploads/2016/07/Advisory-Taskforce-Issues-Paper.pdf>

⁷¹ The Conversation (2016). *Solutions beyond supply to the housing affordability problem*. Retrieved from <http://theconversation.com/solutions-beyond-supply-to-the-housing-affordability-problem-67536>

Discretionary rural (or family) subdivision

Experience has shown that discretionary rural (or family) subdivision results in long-term and often irreversible negative consequences for rural areas, and that any created lots eventually transition into the open market. While it is recognised that limited residential development can assist with supporting valuable rural production, the negative effects of family subdivision far outweigh the positives. As a result, *ShapingSEQ* does not support discretionary family subdivision for land in the regional landscape and rural production regional land use category.

Available alternative options

To support both the continued prosperity of rural areas and protect their important natural values, *ShapingSEQ* allows for the following alternatives to discretionary family subdivision outside the Urban Footprint.

Accommodating family on-site

In alignment with the policies of *ShapingSEQ*, the Planning Regulation 2017 prohibits the majority of residential uses outside the Urban Footprint. The residential uses allowed outside the urban footprint include dual occupancy dwellings and secondary dwellings. These uses allow for the habitation of rural land parcels without requiring families to live in the same dwelling.

Rural residential development

ShapingSEQ continues to recognise rural residential areas, some of which are inside the Urban Footprint, as areas that facilitate housing choice. These areas are characterised by comparatively large lots (between 0.2 and 5 hectares) and single detached dwellings. Where within the Urban Footprint they are considered urban areas and are not regulated by the SEQ regulatory provisions of the Planning Regulation 2017. As a result, the assessment of any subdivision in such an area is largely a matter for local government.

Rural Living Areas

RLA's are intended to support rural residential development in large consolidated areas located close to existing services and with access to employment. Applications for subdivision can be made within these areas without requiring assessment against the SEQ regulatory provisions. SEQ includes over 40 different Rural Living Areas, which in total comprise approximately 38,400ha of land, or 1.7 per cent of the region. RLA's primarily represent areas already designated for future rural residential purposes in planning schemes, and it is not intended for them to be expanded over time.

Conclusion

ShapingSEQ sets out the long-term vision for the sustainable management of growth of the region and will establish a regional and sub-regional framework to achieve this long-term vision. This paper has provided the basis for the development of the grow policy framework of *ShapingSEQ* and demonstrates the importance of efficient land use in catering for the future residential needs of the region and supporting a high quality of life in both urban and rural areas. This theme recognises the value of housing diversity in accommodating future growth and changing housings needs, focusing growth within our existing urban areas in a well-thought out manner and creating high-quality outcomes in new urban areas.

Appendix A: Existing Urban Area (EUA)

The following explains the evolution of the EUA since the first statutory regional plan.

South East Queensland Regional Plan 2005–2026

The EUA was originally identified to support the South East Queensland Regional Plan 2005–2026 (SEQRP 2005) and reflected the existing urbanised areas of the region. It was primarily parcel-based, using the cadastre as at 2005 and the then current local government planning scheme zonings (e.g. residential, industrial, commercial and business zones). Local government officer advice resulted in some generalisations of the boundary to reflect local perspectives on infill.

This boundary was developed to assist in monitoring the infill and redevelopment additional dwelling targets as set in the SEQRP 2005, through the now defunct Urban Development Monitoring Program, which existed between 2006 and 2007. For this monitoring program additional dwelling approvals were sourced through unpublished local government approval databases and Australian Bureau of Statistics (ABS) dwelling unit records.

South East Queensland Regional Plan 2009–2031

As part of the SEQRP review in 2008/09, the EUA was also reviewed. This review analysed the use of the detailed boundary identified for the SEQRP 2005 and formulated a new boundary to:

- reduce the work load of collecting and geocoding council and ABS dwelling approval information
- take advantage of consistent dwelling approval information available from the ABS
- resolve inconsistencies between LGAs in the definition of the EUA.

This new boundary, based on 2006 Census Collection Districts (CCDs), was derived in consultation with the region's local governments and sought to include areas which were predominantly urban as at December 2008. The boundary was used to enable more efficient direct comparisons between infill targets and ABS building approvals data. A range of data sources were used to determine whether a CCD was included within the EUA, based on a consistent set of decision rules applied across the region.

The data inputs included:

- the digital cadastral database
- local government planning schemes
- the draft SEQRP land use category boundaries
- spatial representation of existing sewerage infrastructure
- UBD raster images
- aerial and satellite imagery.

ShapingSEQ

As part of preparing *ShapingSEQ* the EUA has also been reviewed.

Since 2009, the ABS has changed its building approval reporting from CCD level to SA2 level. The review has attempted to match the 2009 CCD-based EUA boundary as closely as practicable with a new SA2-based boundary. However, there are locations where the two are out of alignment, both excluding areas that were in the 2009 boundary and including areas that were not in that boundary. At the overall regional level, the new SA2-based boundary of *ShapingSEQ* is a reasonable approximation of the 2009 CCD-based boundary.

Appendix B: Capacity and expected take-up of greenfield dwellings to 2041

			Urbis 2015		SGS 2016	
LGA	Growth area	Start date	Dwelling capacity	Expected take-up 2011–2041	Dwelling capacity	Expected take-up 2011–2041
Brisbane	Broadhectare balance	2011	13,243	13,229	13,243	12,430
Gold Coast	Broadhectare balance	2011	22,405	21,546	31,673	29,360
	Coomera Town Centre	2011	32,410	12,294	8302	8095
Ipswich	Broadhectare balance	2011	48,168	37,233	70,721	55,737
	Ripley Valley	2014	61,962	25,650	63,634	33,950
	Lanefield Grandchester	2021	56,250	9000	60,459	6120
Lockyer Valley	Broadhectare balance	2011	20,908	20,223	20,908	16,773
	Laidley	na	na	na	2375	1200
Logan	Broadhectare balance	2011	40,436	32,763	39,642	30,369
	Greater Flagstone	2014	49,045	25,650	46,647	27,587
	Yarrabilba	2012	19,612	19,122	18,120	15,700
	South Logan	2021	48,953	9450	45,718	13,500
	Flinders	2031	11,259	3000	13,298	3000
Moreton Bay	Broadhectare balance	2011	17,268	16,018	25,992	21,222
	Caboolture West	2017	26,860	13,200	26,733	17,940
	Elimbah–Beerburum	2021	19,978	12,000	19,195	13,200
	Morayfield South	na	na	na	3000	2100
	North East Business Park	na	na	na	1200	1000
Noosa	Broadhectare balance	2011	923	782	923	811
Redland	Broadhectare balance	2011	3813	3795	5315	5195
	Southern Redland Bay	na	na	na	4045	1490
Scenic Rim	Broadhectare balance	2011	10,876	10,263	10,876	9024
	Beaudesert	na	na	na	3492	1250

	North					
	Beaudesert South	na	na	na	4134	550
Somerset	Broadhectare balance	2011	8633	7795	8633	7564
Sunshine Coast	Broadhectare balance	2011	11,672	11,381	12,654	11,981
	Caloundra South	2016	19,144	18,495	19,097	16,750
	Beerwah East	2021	25,170	10,000	23,863	9500
	Halls Creek	2021	11,843	8000	11,877	8000
	Local Investigation Areas	na	na	na	2322	1837
Toowoomba (SEQ part)	Broadhectare balance	2011	23,070	21,314	23,070	18,256
	Meringandan West–Kleinton	na	na	na	4510	1848
	Westbrook	na	na	na	3415	1200

Source: Urbis (2015), SEQ Greenfield Land Take Up Assessment, prepared for DILGP, September 2015; SGS Economics and Planning (2016), SEQ Greenfield Land Take-Up Review, July 2016

Note:

1. As well as existing planned growth areas, a number of potential future growth areas are identified. These were included for the purpose of the analysis to inform how any dwelling supply shortfalls might be addressed, but most are based on indicative boundaries only. If required, any future investigation looking at similar areas for future growth is likely to consider different boundaries based on more detailed local information.
2. Broadhectare balance areas include estimated dwelling construction July 2011 to September 2013, the as-at-date of the broadhectare study when first published.
3. Six more SA2s were defined as greenfield for the SGS 2016 assessment than for the Urbis 2015 study – three in Ipswich, two in Moreton Bay and one in Redland. This makes the broadhectare balance numbers not comparable for those LGAs.
4. The following were not assessed by either Urbis or SGS and are therefore not included in the table:
 - a. additional land supply identified through consultation with the Moreton Bay Regional Council. Including additional dwelling capacity of 18,100 estimated by the department to yield a take-up of 8,400 dwellings by 2041. Major additional yields primarily reflected recent and proposed planning scheme amendments in areas such as Warner, Kallangur, Narangba and North Lakes-Mango Hill. Areas at Joyner and Morayfield West (Pine Valley) were also added to the Urban Footprint, with a capacity of up to 2,900 dwellings and an assumed yield of about 700 dwellings up to 2041.
 - b. various minor new growth areas across the region.
5. For SGS 2016 the Gold Coast dwelling capacity figures were based on a detailed November 2015 study undertaken for the Council, to reflect more realistic capacity information for Coomera Town Centre.

6. Urbis 2015 only undertook specific take-up assessments for the major greenfield growth LGAs of Ipswich, Logan, Moreton Bay, Sunshine Coast and Gold Coast and the broadhectare balance areas of other LGAs.

Appendix C: Minimum years of supply benchmarks – current practice

Queensland

Previous research:

- Recommendations to the Queensland Government indicated the appropriateness of establishing a minimum land supply benchmark, for example, a minimum of 10 years of developer-ready land supply in key growth areas.⁷²

State Planning Policy:

- No specific supply benchmark – just need to address existing and anticipated demand and cater for the current and projected demographic, economic and social profile.

Local Government Infrastructure Plans

- 10-15 years of growth to be accommodated in the Priority Infrastructure Area (PIA).

Sydney

A Plan for Growing Sydney (released 2014):

- No specific benchmarks other than target for additional 664,000 dwellings by 2031.

Metropolitan Development Program (as at June 2015):

- No specific minimum supply benchmark identified. Previously (2007–08 report) adopted benchmarks of 15 years total released land and eight years of rezoned land.
- Actual measured greenfield supply (using average annual dwelling production 2012–15):
 - released land equals 27 years supply
 - rezoned land equals 23 years supply.
- Total released greenfield supply has increased significantly since 2008 (from about 105,000 to about 167,000 dwellings).

Melbourne

Plan Melbourne (released 2017):

- Plan Melbourne is to 2050 and notes there is at least a 25-year supply of urban zoned land on the fringes of Melbourne, of which 15 years land supply is ‘development ready’ through zoning or approved structure planning

Urban Development Program (as at July 2015):

- No specific minimum supply benchmark. Previously (2007 Report) adopted benchmarks of 15 years supply of total broad-hectare land and 10 years supply of appropriately zoned land.
- Actual measured greenfield supply:
 - total broadhectare land equals 28–29 years supply

⁷² Urbis (2010), Factors Underpinning New Housing Costs and New Housing Availability in Victoria and Queensland, prepared for Queensland Department of Premier and Cabinet, March 2010.

Other related research: Knaap, Gerrit J and Hopkins, Lewis D (2001), The Inventory Approach to Urban Growth Boundaries, APA Journal, Summer 2001, Vol.67, No.3

[ShapingSEQ background paper 1: grow theme](#)

- development ready (zoned or with precinct structure plan) equals 14–15 years supply.
- Total greenfield supply had increased significantly since 2007 (from about 188,000 to about 373,500 lots).

Adelaide

The 30-year Plan for Greater Adelaide – 2017 Update (published 2017):

- Supports achievement of a 25-year rolling supply of land (for residential, commercial and industrial purposes) with a 15-year supply of zoned land at any given time.
- Over 20 years of zoned broadhectare land available in metropolitan fringe and township locations.

Housing and Employment Land Supply Program (as at June 2012):

- Seeks to achieve 30-year Plan benchmarks, with a focus on achieving the zoned land supply benchmark.

Perth

Perth and Peel @ 3.5million (draft released May 2015):

- No specific benchmarks other than to accommodate 800,000 new homes by 2050.
- Encourages shift in demand to infill.

Urban Growth Monitor (as at December 2013, released December 2015):

- No specific benchmarks.
- Actual measured greenfield supply:
 - zoned for urban development (urban and urban deferred) equals at least 30 years supply
 - with shift to infill proposed under Perth and Peel @ 3.5million would potentially increase to 60 years supply.

American Planning Association

Growing Smart Legislative Guidebook (2002 edition):

- Urban growth area sufficient to accommodate 115 to 125 per cent of the growth projected to occur for the next 20 years (125 per cent equals 25 years growth).
- Regular review of urban growth area, at least every five years, to ensure it contains sufficient land for the next 20 years, which implies 25 years supply to start with.

United Kingdom

Local Plan-Making Planning Practice Guidance (as at July 2017):

- No specific benchmark other than to provide sufficient realistically available, suitable and economically viable land to meet identified need for housing as projected for the plan period.

Appendix D: Constraints

The constraints used to inform the potential developable areas are identified in this appendix.

State constraints

The SPP (May 2013) identifies the following as state interests:

- coastal hazards (high/medium storm tide, sea level rise and erosion prone areas)
- Matters of State Environmental Significance (fish habitat areas, marine parks, protected area estates, wetlands, essential habitats, endangered regulated vegetation)
- national and Queensland heritage places
- proposed transport corridors
- key resource areas
- water supply storage areas
- airport public safety.

These and other state data sets that have been used in the analysis are listed Table 13.

Table 13: State datasets

Datasets	Source	Identified growth area use
Coastal		
Coastal hazard – Sea level rise	SPP (May 2013)	Used
Coastal hazard – Erosion prone areas (40m HAT)	SPP (May 2013)	Used
Coastal hazard – High storm tide	SPP (May 2013)	Used
Coastal hazard – Medium storm tide	SPP (May 2013)	Used
MSES – Fish habitat areas	SPP (May 2013)	Used
MSES –Marine parks	SPP (May 2013)	Used
Environment		
MSES – High conservation value wetlands	SPP (May 2013)	Used
MSES – protected area estate	SPP (May 2013)	Used national and conservation parks, forest and resource reserves
MSES – Regulated vegetation (RE)	SPP (May 2013)	Used endangered dominant and subdominant
MSES – Threatened species	SPP (May 2013)	Used essential habitat
Mining		
Mineral development licences	Other	Used granted and applications
Mining claims	Other	Used granted and applications
Mining leases	Other	Used granted and applications
Petroleum pipelines	Other	Used granted and applications (may need buffer)
Physical		
Parcels less than 2500m ²	Other	Used
Pipelines	SPP (May 2013)	Used (may need buffer)
Railway	SPP (May 2013)	Used
State controlled road	SPP (May 2013)	Used

	2013)	
Steep slope	Other	Use >25%
Water casements	Other	Used
Planning/land use		
Declared catchments		
Koala habitat and protection areas (SPRP)		Use priority koala assessable development area (PKADA) and koala assessable development area with high, medium and low value bushland habitat
National heritage places	SPP (May 2013)	Used
Queensland heritage places	SPP (May 2013)	Used
Separation area	SPP (May 2013)	Used
Tenure		
Tenure	Other	Used Reserves, ports and harbours, railway, timber reserves, water reserves, national parks, main roads, industrial estates, forest reserves
Transport/infrastructure		
Airport public safety area	SPP (May 2013)	
CAMCOS Corridor		Used
Easements		Used
Future public transport corridor	SPP (May 2013)	Used
Future railway land	SPP (May 2013)	Used
Future state controlled road (35m)		Used
Public transport corridor	SPP (May 2013)	Used
Resource/processing area	SPP (May 2013)	Used
Strategic ports	SPP (May 2013)	Used
Urban water supply storage	SPP (May 2013)	Used

Local government constraints

Local government derived data sets included the following:

Table 14: Local datasets

Datasets	Identified growth area use
Gold Coast	
Flood affected	Used
Landslide	Used
Slope/instability	Used Moderate to Very High
Ipswich	
Drainage assessment area	Used

Flooding	Used
Haul routes	Used
Known resources	Used
Mining constrained area	Used
Mining disturbance	Used
Mining underground	Used
Public safety areas	Used
Slope greater than 25%	Used
Swanbank power station	Used
Unexploded ordinances	Used
Urban stormwater flow	Used
Lockyer Valley	
Flood hazard – high	Used

medium	
Flood extent	Used
Logan	
Flooding 2012	Used
Koala corridors	Used
Locally endangered remnant vegetation	Used
Locally significant Melaleuca irbyana	Used
Logan Village wastewater treatment plant	Used
Loganholme water pollution control centre	Used
Park Ridge connector	Used
Petroleum pipelines	Used
PMX substations	Used
Power line 100kv easement	Used
PQ interests	Used
PQ substation	Used
Greenbank training	Used
Regional corridors	Used
Slope GT 25	Used
Southern regional water pipeline	Used
Waterway corridors	Used
Wetlands buffers	Used
WWTP buffer	Used
Redland	
Bushland habitat	Used
Flood regulation line	Used
PKADA bushland HV MV	Used
Scenic Rim	
100 year	Used
Cultural heritage	Used
Infrastructure	Used
Land slip and slope	Used
Medium flood hazard	Used
Q100	Used
Somerset	
AES-HES	Used
Brisbane River buffer	Used
Gas pipelines	Used
High voltage powerlines	Used
Kilcoy bypass	Used
Koala habitat	Used
Local heritage	Used
Transport route KRA	Used
Sewerage treatment buffers	Used
Separation areas	Used
Power stations	Used
Waste stations buffer	Used
Waterways	Used
Wetlands buffers	Used
Sunshine Coast	
Flood	Used
Land slip	Used

Slope greater than 25%	Used
Steep slope	Used
Toowoomba	
Extractive resource (+ haulage routes)	Used
Flood (high and medium)	Used
Landslide	Used
Waste facility buffer	Used

Appendix E: Urban corridor identification methodology

Scenario	Considerations for identification as urban corridor	Outcome
1	<ul style="list-style-type: none"> Identified as a Principal Regional Activity Centre; or Identified through Connect mapping as being on high frequency public transport line; and Included as growth area/corridor under the relevant local planning instrument's strategic framework (or similar) growth mapping 	Identified as Urban Corridor
2	<ul style="list-style-type: none"> Identified through Connect mapping as being high frequency public transport line; and Representing a logical extension of existing growth area/corridor under the relevant local planning instrument's strategic framework (or similar) growth mapping 	Identified as Urban Corridor
3	<ul style="list-style-type: none"> Identified through Connect mapping as being on a high frequency public transport line; and The high frequency public transport line is planned and/or funded state infrastructure 	Identified as Urban Corridor
4	<ul style="list-style-type: none"> Not identified on connect map as being on high frequency public transport line, but Included in local planning instrument's strategic framework (or similar) growth mapping; and/or Identified in local planning instrument's strategic framework (or similar) for transport infrastructure but not funded 	Not identified as Urban Corridor

Land was not considered eligible for inclusion as an urban corridor where its identification would be contrary to other considerations *ShapingSEQ*. This includes land located:

- outside the Urban Footprint
- in an identified Inter-urban break
- in a regional biodiversity corridor.

Areas that meet the requirements of scenario 4 are considered candidates for future identification as urban corridors, however, at this time their future growth is best progressed at the local level through local planning instruments.

Department of Infrastructure, Local Government and Planning
1 William Street, Brisbane
tel 13 QGOV (13 74 68)

www.dilgp.qld.gov.au