Description: Brisbane City Council logo

Brisbane City Plan 2014

Local Government Infrastructure Plan

Extrinsic Material

Planning Assumptions

**DRAFT PUBLIC CONSULTATION – August 2023**

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# Glossary of Terms

|  |  |
| --- | --- |
| Term | Description |
| ABS | Australian Bureau of Statistics |
| ANZSIC | Australian and New Zealand Standard Industrial Classification |
| ASGS | Australian Statistical Geographical Standard |
| BSTM\_MM | Brisbane Strategic Transport Model (Multi Modal) |
| GFA | Gross Floor Area |
| GIS | A geographical information system (GIS) used to capture and analyse geographical data |
| LGA | Local government area |
| LGIP | Local government infrastructure plan |
| MGR | Minister’s Guidelines and Rules |
| NIEIR | National Institute of Economic and Industry Research |
| PDA | Priority Development Area |
| PIA | Priority Infrastructure Area |
| QGSO | Queensland Government Statisticians Office |
| SA2 | ABS Statistical Area Level 2 |
| SEQ | South East Queensland |

# Addendum

The Planning Assumptions Extrinsic Material document was adopted in June 2018. Brisbane City Council completed its 5-year review of the Local government infrastructure plan (LGIP), in November 2021, as required under the *Planning Act 2016*. Following this, Council has undertaken to make an amendment to the LGIP (LGIP Amendment 1B) to ensure that it continues to be accurate, relevant and current, and reflects Council’s trunk infrastructure priorities. As a part of LGIP Amendment 1B, a complete review of this document has been conducted and, where required, relevant sections have been amended.

# Introduction

## Background

Brisbane City Council (Council) has maintained *Brisbane City Plan 2014* (the planning scheme) in accordance with the *Planning Act 2016* (PA). The planning scheme sets a framework for managing development in Brisbane over a 15-year horizon. In accordance with legislation Council is required to prepare a LGIP to guide the planning of trunk infrastructure.

For a LGIP, Council is required to demonstrate that it can fund the trunk infrastructure identified in its LGIP from infrastructure charges revenue and other revenue sources. Accordingly, the planning horizon for this major amendment to LGIP is 15 years, until 2036.Council has prepared LGIP Amendment 1B by undertaking a review of, and updating, the following key components to ensure accuracy, currency and relevancy:

1. Updating the LGIP base date to 30 June 2021 and extending the priority infrastructure area planning horizon to 15 years (being 2036);
2. Updating the planning assumptions to reflect updated land use planning to 2041;
3. Updating the desired standards of service (DSS) where required to respond to changing trends; and
4. Updating the plans for trunk infrastructure (PFTI), schedules of work (SOW) and models to reflect network priorities required to support development at the DSS.

To manage and plan future infrastructure to support Brisbane’s growth over the next 15 years, Council has assembled several growth related residential and non-residential databases in order to understand the extent, location, and sequencing of future growth.

Planning assumptions form the basis for the LGIP and have been prepared in accordance with the Minister’s Guidelines and Rules (MGR) that outlines the process for the preparation, review, and implementation of the LGIP. Planning assumptions must be prepared from a relevant base date for a projection period (i.e. modelling term) of at least 15 years, up to 30 years. For the purposes of LGIP Amendment 1B, planning assumptions have been prepared for a period of 20 years until 2041.

Underpinning the residential databases is an extensive series of assumptions related to planning policies. The future supply of private residential dwellings has been projected and is based on the 2018 edition of population growth projections from the Queensland Government Statistician Office (QGSO), other appropriate sources such as growth policy in *South East Queensland Regional Plan 2017* (ShapingSEQ)*,* and reflectsland use policy in planning scheme (Version 20.00, effective 3 September 2021) and the yield assumptions for the development schemes of the Priority Development Areas (PDAs) supplied by State Government in March 2020.

The non-residential databases are also based on an initial series of economic related assumptions, further adjusted by the State Government to reflect the intent of relevant planning policies and other local conditions. These databases form the basis of the planning assumptions for the LGIP, to predict Brisbane’s future scale of development and future infrastructure demand.

The extrinsic material includes amendments relating to the Bridgman Downs, Eight Mile Plains Gateway, and Sandgate District Neighbourhood Plans. These neighbourhood plans are yet to be included in the planning scheme as they are the subject of a separate planning scheme amendment process. The information has been included in anticipation of a neighbourhood plan for the area progressing.

## Purpose

The purpose of this report is to provide an overview of the methodologies and assumptions used in the preparation of Council’s planning assumptions (existing and future population, existing and future residential dwellings, existing and future employees, and the existing and future non-residential floor space).

As this data forms the basis for determining infrastructure demand, the report also provides an overview of the methods undertaken to calculate the planned density and the existing and projected demand for each of Council infrastructure networks.

The document also provides information to support the Priority Infrastructure Area (PIA) used to prepare a LGIP.

# Legislative requirements

Under the PA, a local government that wishes to levy infrastructure charges or impose conditions about trunk infrastructure is required to prepare a LGIP. The LGIP was updated in December 2021 in accordance with the MGR.

The MGR states an LGIP must comprise the following sections:

1. assumptions about growth, type, scale, location and timing of development;
2. PIA;
3. DSS;
4. PFTI supported by SoW; and
5. extrinsic material.

The PA stipulates that a local government must keep available for inspection and purchase, all supporting material used to draft the LGIP. This supporting material forms part of the extrinsic material within the LGIP.

# Planning assumptions overview

## Introduction

MGRrequires that a local government’s LGIP state the assumptions about population and employment growth and the type, location, scale and timing of development within a local government area. The planning assumptions in LGIP therefore state the following:

1. the existing and future population and residential dwelling supply in the local government area;
2. the existing and future employees and non-residential floor space in the local government area;
3. the assumptions about the type, location, scale and timing of residential and non-residential development that are used to derive the demand for a trunk infrastructure network giving a consistent basis for the planning of the trunk infrastructure network and the determination of the PIA.

Planning assumptions are reported in Projection Areas (refer section 3.7 below) and include development projections and infrastructure demand projections.

## Development projections

The development projections were prepared using a top-down, bottom-up approach. Development projections are provided for the following categories:

1. population;
2. employment;
3. residential dwellings; and
4. non-residential floor space.

The development projections have been prepared:

1. to form a relevant base date of 2021 for a period of 20 years to 2041 and ultimate (i.e. modelling term);
2. to not exceed the capacity for the projection area, i.e. to be consistent with the definition for ultimate development;
3. with the ability to be aggregated and reported in the LGIP at a ABS Statistical Area Level 2 (SA2); and
4. to be stated for the LGIP development types (refer sections 4.3.1 for residential development types and section 5.2.2 for non-residential development types, as well as inside and outside PIA).

The detailed outputs of this analysis are summarised and provided as tables in Schedule 3 of the planning scheme.

Development projections are consistent with Council’s Asset Management Plan (AMP) and Long Term Financial Forecasts (LTFF). Urban Utilities were consulted on the development projections to inform their Netserv Plan.

## Infrastructure demand projections

Infrastructure demand projections were prepared and are based on development projections. The following process was applied:

1. convert population and employment related projections at each projection year into relevant demand for each network using stated demand generation units; and
2. when compared to relevant measures of existing infrastructure network capacity, use this information to identify construction dates for new infrastructure necessary to service development by service catchment.

## Base date

For the purposes of the LGIP, a relevant ‘base date’ is required to plan for a projection period of at least 15, and up to 30 years. The base date is the year from which all projections and calculations are undertaken. The base date for LGIP Amendment 1B is 2021 and draws on Council's Land Use Activity Dataset (LUAD). The LUAD represents a census of current land use activity at a point in time (i.e., dwellings and floor area count at June 2018). The 2021 base date is simulated from a model base year at June 2018 (LUAD, 2018).

The planning assumptions have been prepared for the base date and for each future ABS census date for a period of 20 years and to ultimate (see figure below). This process enables the comparison of the LGIP planning assumptions to the most recent available top-down projections from the QGSO and to any dwelling supply benchmarks contained in ShapingSEQ.

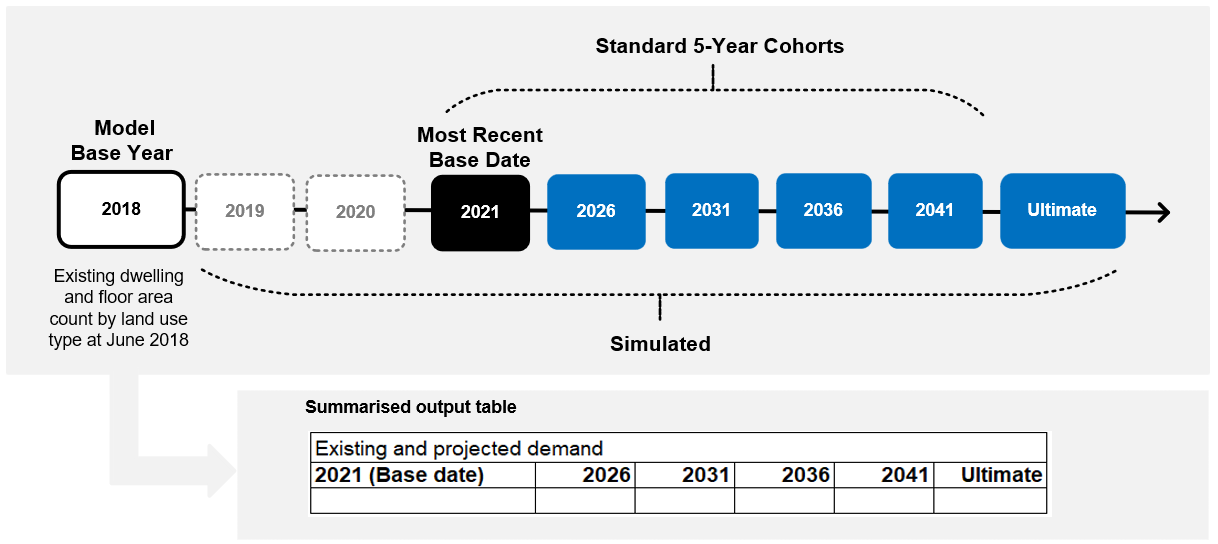


Figure 3.4.1 – Base date

## Time periods

The existing and future resident population, residential dwelling supply, employees and non-residential floor space figures in the Brisbane local government area (LGA) have been prepared for the following projection years to accord with future ABS census years:

1. 2021 (mid 2021, base date);
2. 2021-2026 (mid 2026);
3. 2026-2031 (mid 2031);
4. 2031-2036 (mid 2036);
5. 2036-2041 (mid 2041).

An ultimate development figure has also been provided for both residential and non-residential figures.

## Ultimate development

Ultimate development means the likely extent of development that is anticipated in the area, or on the premises, if the area or premises are fully developed in accordance with the adopted land use and policy allowances in planning scheme at a point in time.

This takes into consideration the development potential of all zones and neighbourhood plan precincts by applying planned densities for various land uses to the developable area of land. Ultimate development provides the population and employment capacity for land at various localities across the city.

The projected population, dwellings, employment, and non-residential floor space at ultimate development has been calculated for each property by applying a planned density for that property to its net developable area. The calculation of ultimate development by Council has also considered other factors that would affect probability and feasibility of properties developing or redeveloping to help define ultimate development that are more realistic and achievable.

## Projection area

The existing and future resident population, residential dwelling supply, employee and non-residential floor space are represented by projection areas in the LGA.

For the purposes of the LGIP, the projection areas are identified according to the Australian Bureau of Statistics (ABS), Australian Standard Geographical Classification (ASGC) at SA2.

The ASGS is a common framework of statistical geography that was introduced in 2011 to produce statistics to ensure comparability and spatial integration. The 2011 statistical geographies were updated for Census 2016. For the purposes of preparing planning assumptions, the 2016 SA2 geographical boundaries were used. Within Brisbane, there are 135 SA2s that represent a scale similar to suburbs and aim to represent a community that interacts together both socially and economically. Figure 3.7.1 presents the spatial extent of the 135 SA2s in relation to the Priority Infrastructure Area (PIA).

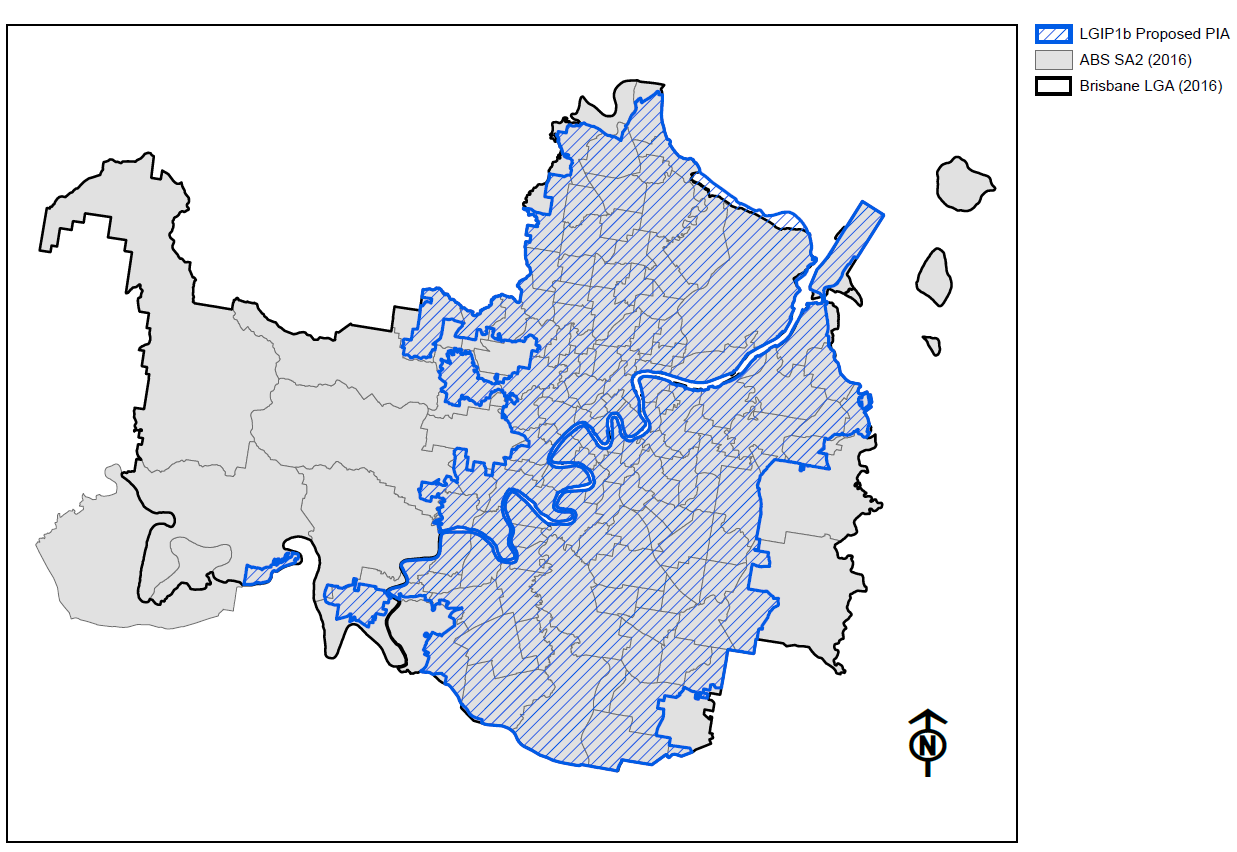


Figure 3.7.1 – Projection area comprising of 135 ABS SA2

## LGIP development types

For the purposes of reporting the existing and future resident population, residential dwelling supply, employees and non-residential floor space, development types prescribed by the Queensland Government have been used[[1]](#footnote-2). These development types reflect an aggregation of specific types of residential dwelling or industry sector of employment. Both the specific types and the development categories have also been cross-referenced to the planning scheme uses.

Further information relating to the development types is set out in section 4.3.1 (Residential development types and planning scheme uses) and section 5.2.2 (Non-residential development types and planning scheme uses) of this document.

## Use of a combined approach to produce planning assumptions

### Top-down approach

Available ‘top down’ population and dwelling projections from the QGSO were used as top-down control totals in developing population and dwelling growth assumptions for the LGA at a site level.

At the time of developing the planning assumptions, Australia was in the middle of the Covid-19 pandemic, with international migration virtually coming to a halt and population growth in Queensland mostly driven by births and inter-state migration. In the absence of more concrete evidence, the release of a 2021 edition of population and dwelling projections by QGSO was postponed until 2023 to rely upon the 2021 census data.

Projected population (2018 edition, medium series) by SA2, 2016 to 2041 and dwelling projections (2018 edition) by Statistical Area Level 4 (SA4), 2016 to 2041 was available from the QGSO and used as top-down control totals in Council’s model.

The release of these growth projections at a SA2 and SA4 level per 5-year cohort by the QGSO helps Council to model the type, location, scale, and timing of residential development and associated anticipated infrastructure demand.

The QGSO population projections at SA2 level have been developed using a multi–regional cohort component model. The cohort-component model ages population cohorts over time to the next age group, accounting for births, deaths, and inwards and outward migration. QGSOs dwelling projections at a SA4 level have been developed using two different approaches based on urban and non-urban categories. SA2s have been classified as ‘urban’ where land supply availability and constraints are expected to impact on future population change and where these data are available. Dwelling projections for these at a SA4 level have been developed using a housing-unit model. This model uses land supply capacities to allocate detached and attached dwellings to population based on:

1. vacant lots
2. assumptions about the likely location and timing of infill
3. recent land subdivision and dwelling construction activity
4. areas of greenfield land and their expected dwelling density and development timing

QGSO population and dwelling projections are updated every three years. Council’s population and dwelling projections closely align with QGSO’s 2018 medium series, which is demand-driven, and provides for a more dynamic and realistic view of the possible future size and distribution of Brisbane’s population and dwelling growth.

Available ‘top down’ employment projections from the National Institute of Economic and Industry Research (NIEIR) were used as top-down control totals in developing employment and floor area growth assumptions for the LGA at a site level.

Employment projections align with the projected population growth and reflect Brisbane’s existing employment base, economic context, and development opportunities. Council engaged independent specialist consultancy the NIEIR in 2019 to undertake this component of work. The employment projections were developed from a State model of the Queensland economy, with State employment and industry projections disaggregated to SEQ and to LGAs. Brisbane’s projections were disaggregated by NIEIR to small areas (ABS SA1 and SA2 geographies).

The ShapingSEQ has policy which influences the expected scale and distribution of growth across Brisbane and has been considered in relation to developing the planning assumptions. The projected dwelling growth of ShapingSEQ differs to that projected for LGA by QGSO (2018 edition – medium series) and Council’s planning assumptions. Figures 3.9.1 and 3.9.2 provide a visual representation of these differences.

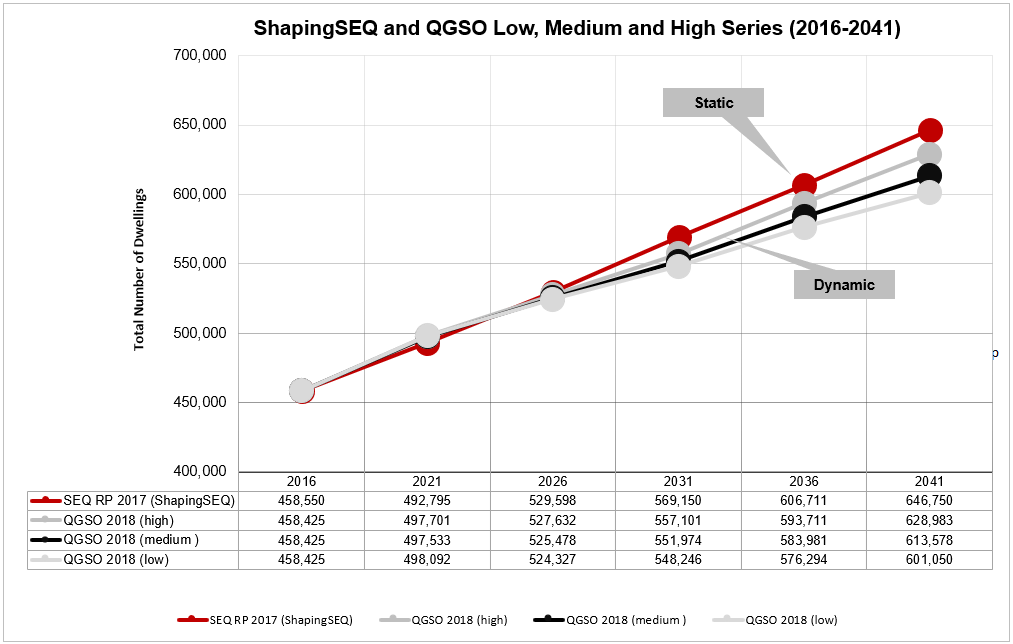


Figure 3.9.1 – QGSO projections in relation to ShapingSEQ dwelling benchmarks

QGSO low (498,092), medium (497,533) and high (497,701) dwelling projection series are projected to be all higher than ShapingSEQ (492,795) at 2021, but then progressively falls below the ShapingSEQ benchmark over time. Council’s planning assumptions closely align with the medium population and dwelling projection series of QGSO 2018 with small difference of less than 1%.

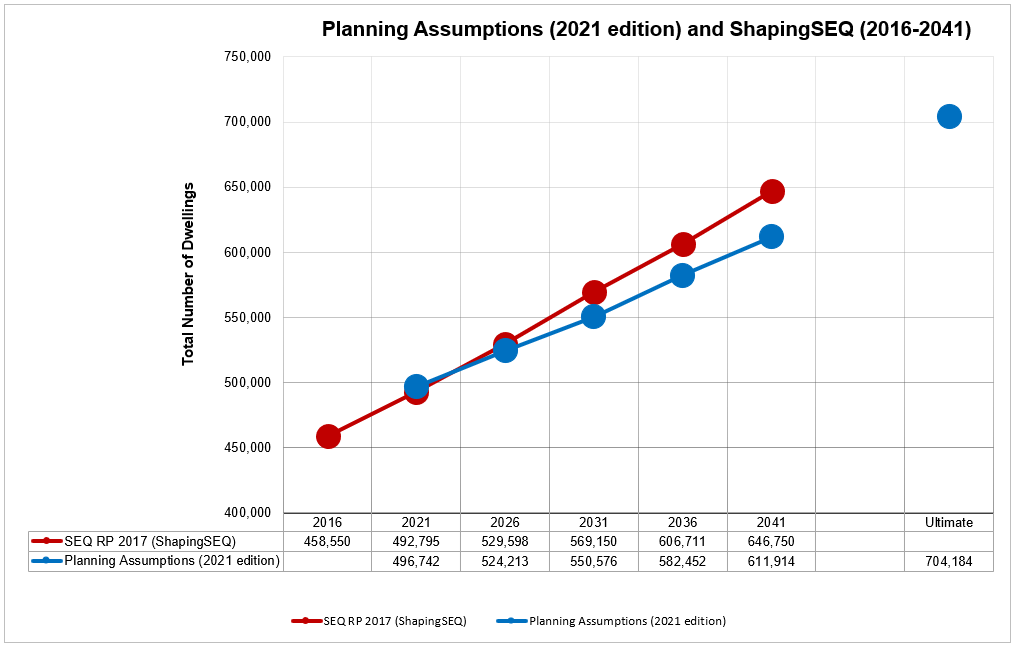


Figure 3.9.2 – Planning Assumptions (2021 edition) in relation to ShapingSEQ

Council’s planning assumptions (2021 edition) forecasts 35,000 dwellings less than that of ShapingSEQ at 2041. The dwelling benchmarks of ShapingSEQ is an important policy objective and remains static over the regional plan term, whereas those of QGSO are data-driven, dynamic and updated regularly as new data becomes available.

Council’s planning assumptions reflects the land use policy in planning scheme (Version 20.0) and that of the development schemes of PDAs at a point in time. The planning scheme is amended on a regular basis to reflect changes in land use planning, leading to a corresponding change and amendment of Council’s planning assumptions. Council will continue to manage dwelling projections expecting to align closer to the 2041 ShapingSEQ benchmark over time.

Figure 3.9.3 displays the actual historical growth in private dwellings in Brisbane LGA in the period leading up to 2021, with actual dwelling supply in 2020 higher than projected by Council’s planning assumptions and ShapingSEQ in 2021.

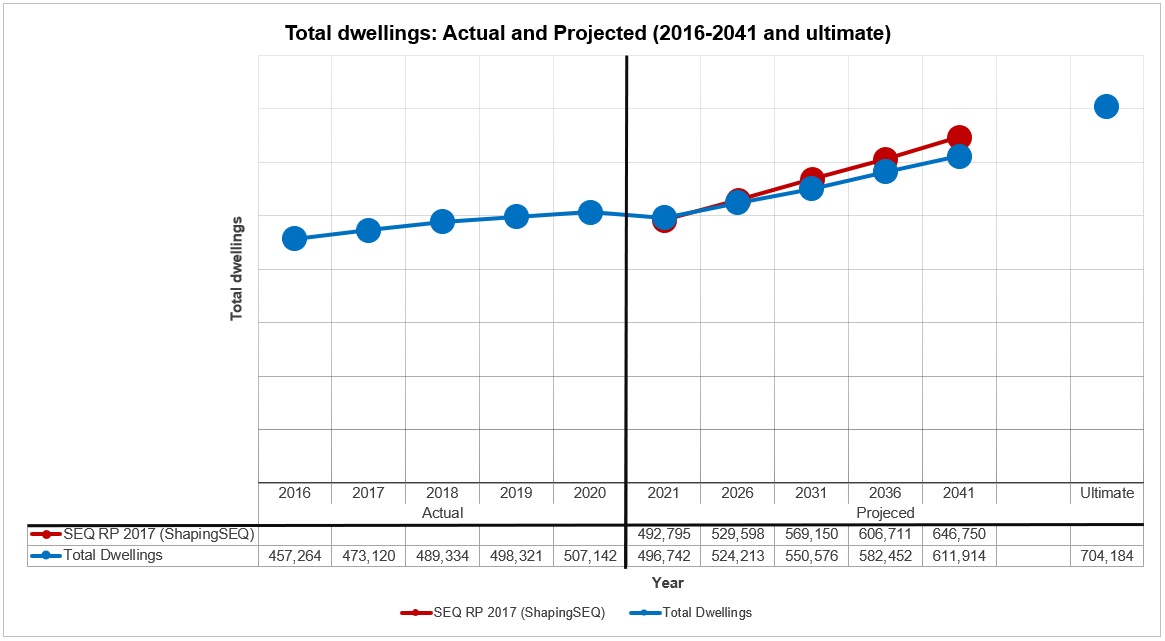


Figure 3.9.3 – Actual and projected dwellings in relation to ShapingSEQ

### The bottom-up approach

The bottom-up distribution of the top-down growth has involved the analysis of the capacity for development (ultimate development) at the property level and its likelihood of development. Growth projections are ultimately limited by the physical capacity available to accommodate growth in the locality or premises.

Steps undertaken by Council for the bottom-up distribution of growth include:

1. understanding development trends and existing use and density within the LGA;
2. application of development constraints to calculate developable area;
3. application of land use and planned density assumptions to calculate expected development yield;
4. analysis of property attributes to calculate the propensity for development; and
5. allocation of a development timeframe.

Further, non-residential planning assumptions are driven by employment projections generated by NIEIR and the Land Use Activity Dataset (LUAD). Non-residential floor space was calculated by converting employment projections using the rate of growth in employment to existing floor space (GFA) of the LUAD.

## Developable area

Developable area means the area of the premises that can be developed and is not subject to a development constraint. The development constraints used to determine developable area are listed in section 6.3.6.

## Planned density

The planned density for the purposes of the LGIP has been determined to reflect the realistic level (scale and intensity) of development. It is calculated with reference to the land use, policy and yield provisions of the planning scheme, site constraints, development trends and the scale and land use mix of existing development.

The planned densities were originally developed for the commencement of planning scheme in 2014. The planned densities are periodically reviewed against several indicators to confirm they remain current.

Land use and yield provisions of the planning scheme set out the intent for the future scale, type and location of development. These provisions were drawn from:

1. the planning scheme (as of 30 June 2014) zone and precinct codes; development codes; and the level of assessment tables (for permissible uses);
2. neighbourhood plans adopted as of 30 October 2020 and incorporated into the planning scheme; and
3. specific neighbourhood plans in draft status as of March 2021.

The land use and yield information derived from these sources were compiled, analysed, and tested to provide the set of assumptions that formed the basis for the planned density assumptions (where relevant).

The specific process for this involves obtaining specified building metrics, densities and land use mix from the planning scheme and neighbourhood plans. Where specific information is not stated, Council officers make estimates having regard to the intent of the provisions in context of other information sources related to development density and land use mix as set out below. For land in the emerging community zone, the planned density and subsequent modelling has considered the provision of land for roads, parks and other infrastructure.

## Development trends and existing land use activity and density

### Recent development trends

Analysis of development trends was carried out to inform the planned density assumptions derived from the planning scheme. Development trends provide an indication of the scale, type and location of developments being achieved on the ground and were used to test whether the assumptions derived from the planning scheme are realistic.

Information sources that were used to develop a profile of development trends include:

1. development approvals (MCU and RoL) (January 2010 to June 2020);
2. residential development approvals (MCU and RoL) for Economic Development Queensland’s (EDQ) priority development areas (PDAs) (January 2010 to June 2020);
3. Virtual Brisbane 3D modelling of development approvals to calculate and inform non-GFA methodology;
4. knowledge and experience of planning professionals particularly in understanding development trends across the city.

These information sources are also periodically reviewed, in line with relevant amendments.

### Scale and land use mix of existing development

An analysis of the scale and land use mix of existing development was also used to inform the planned density assumptions.

This analysis was originally carried out using Brisbane City Council’s Land Use Activity Dataset (LUAD) as at June 2011 which contains gross floor area by land use type and can be further analysed by zone. This analysis has since been refined in subsequent reviews of the Land Use Activity Dataset (LUAD), now using LUAD at June 2018.

This information was used to examine the scale and type of development for various land use types and activities within each zone. For each zone where LUAD could be used with confidence, histograms and averages were developed to analyse the range and scale of development, which in turn was used to further inform and calibrate the planned density assumptions.

### External expert consultant advice

In late 2012, an external consultant was commissioned to provide a set of density and land use mix assumptions for the planned density calculations. This advice was retained in the development of the planning assumptions.

### Assumed scale of development assumptions

The current assumed scale of development assumptions from the planning scheme were used as part of developing the assumptions for the planned density table.

### The information sources

The following table indicates how each of the above information sources was considered in developing assumptions for the various types of development specified below.

Table 3.12.5.1—Key information sources by type of development to derive the assumed scale of development table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Information Source | Type of development | | | |
| **Residential** | **Centres and mixed use** | **Non-Residential** | **Other** |
| Land use and yield provisions of the planning scheme (including neighbourhood plans) | Yes | Yes | In part | In part |
| Priority Development Areas[[2]](#footnote-3) | Yes | Yes | Yes | Yes |
| Recent development trends including periodic reviews | Yes | Yes | Yes | Yes |
| Scale and land use mix of existing development | Yes | Yes | Yes | In part |
| External expert consultant advice | Yes | Yes | Yes | Yes |
| Assumed scale of development assumptions | Yes | Yes | Yes | Yes |

# Planned demand

## Demand units

The demand units align with those identified in the MGR, and are the following:

1. Demand for the parks and land for community facilities network is population based
2. Demand for the water supply and sewerage networks is generated by both residential and non- residential development and is expressed as equivalent person (EP)
3. Demand for the stormwater network is generated by the creation of impervious area for residential and non-residential development and is expressed as impervious hectare (imp ha).
4. Demand for the transport network is generated by both residential and non-residential development. and expressed in terms of vehicles per day or vehicle trip ends per day (vpd).

## Planned infrastructure demand rate

The calculation of planned demand per net developable hectare for a zone, precinct or other specific planning area (i.e. neighbourhood plan area) is based on three key inputs. The inputs are as follows:

1. density, expressed as attached or detached dwellings per net developable hectare for residential development and plot ratios (GFA divided by net developable area) for non-residential development;
2. land use mix within a zone, precinct or other specific planning area;
3. demand conversion rates to allow the conversion of the number of assumed dwellings, GFA or employees (by LGIP development type) into an amount of demand per hectare.

It is important that these inputs result in a planned demand that is aligned with the likely demand achieved by development in a zone or precinct. The alignment of planned demand (and therefore infrastructure provision) with the achieved demand is a key goal of infrastructure planning.

Demand conversion rates are calculated having regard to their desired standards of service. This is described in the relevant Extrinsic Material for each network. The demand conversion rates including ETs and desired rate of provision per unit of demand are listed in Appendix F.

For the stormwater network, a similar approach was used but the measure of demand is expressed as impervious fraction.

## Service catchments and planned demand

### Service catchment boundaries

In determining appropriate service catchments for infrastructure networks a number of factors were considered including:

1. trunk infrastructure items operating as a system to service both citywide and local catchments, such as:
   1. metropolitan parks performing unique functions to service the city;
   2. principal community facilities servicing local catchments;
   3. district access roads and suburban routes servicing local trips;
2. reasonable apportionment of establishment costs of trunk infrastructure;
3. clarity of boundary definitions for both open and closed networks;
4. administration of a financial system supporting the LGIP;
5. Council’s desired standards of service, land acquisition, capital works and expenditure program.

The methodology for determining the service catchments for each network is outlined below.

Service catchments for the road network are defined areas based on amalgamated traffic modelling zones, which originate from the Brisbane Strategic Transport Model (Multimodal) (BSTM\_MM). The pathway network and ferry terminals network have a single service catchment which covers the extent of the LGA (mainland only).

Service catchments for stormwater are primarily based on Brisbane’s major catchments and sub-catchments as well as Local Stormwater Management Plans which provide greater detail in relation to catchments. The service catchments for stormwater reflect the natural catchment boundaries and desired standards of service for stormwater infrastructure.

Service catchments for parks use geographical landmarks (Brisbane River) and major infrastructure (Gympie Road/Bowen Bridge Road/Pacific Motorway) to define the four catchments. Refer to section 4.4.1 of the Parks and Land for Community Facilities Extrinsic Material for further detail.

Service catchments for land for community facilities are defined to reflect the areas serviced by infrastructure items. Land for community facilities service catchments reflect the local ‘draw’ of each identified infrastructure item. Furthermore, the service catchments have common boundaries with the desired standards of service categories on which the infrastructure planning is also based. Refer to section 4.4.2 of the Parks and Land for Community Facilities Extrinsic Material for further detail.

### Planned demand for service catchments

Underpinning the planned demand figures are the private residential dwelling supply and the future non-residential floor space for each five-year timeframe from 2021 to 2041 and beyond 2041 (ultimate development). Residential and non-residential development types were reported by service catchment in a matrix of cumulative attached dwellings, detached dwellings, retail, commercial, industrial, community purposes and other development types by five-year timeframes from 2021 to 2041 (as well as ultimate).

The planned demand for the parks, land for community facilities, transport (ferry terminals) and transport (pathway) networks are calculated by multiplying the residential and non-residential growth data by the demand conversion rates.

The planned demand for the Transport network (roads) has been calculated using the BSTM\_MM for years 2021 to 2036; for beyond 2036 and ultimate the BSTM\_MM data has been projected using the rate of growth obtained from the combined residential and non-residential growth outputs (utilising equivalent tenements).

The planned demand for the Stormwater network has been calculated using hydrologic methods which are appropriate to the type of catchment in accordance with the Queensland Urban Drainage Manual (QUDM). The existing demand for stormwater infrastructure is determined using impervious imagery, and future stormwater demand is calculated using assumptions from the residential and non-residential growth data. The detailed method is in the Stormwater network extrinsic material.

Tables for planned demand have also been expressed as equivalent tenements (ETs) for the transport, parks and land for community facilities networks and are located in Appendix G.

# Priority infrastructure area

The PIA identifies the area that Council intends to prioritise for the provision of all trunk infrastructure networks to service urban growth for 15 years.

The LGIP PIA includes urban zoned land under the planning scheme. The PA provides requirements and guidance for the determination of the PIA when drafting an LGIP. The definition under the PA provides additional guidance than under its legislative predecessor the *Sustainable Planning Act 2009* (SPA 2009)*.* An extract of the PIA definition under each piece of legislation is provided below:

|  |  |
| --- | --- |
| SPA 2009 | PA 2016 |
| **PIA** (an acronym for priority infrastructure area) means an area—   1. used, or approved for use, for non-rural purposes; and 2. serviced, or intended to be serviced, with development infrastructure networks; and 3. that will accommodate at least 10 (but no more than 15) years of growth for non-rural purposes. | **PIA** (priority infrastructure area) means an area—   1. serviced, or intended to be serviced, with development infrastructure networks; and 2. used, or approved for use, for— 3. residential purposes, other than rural residential purposes; or 4. industrial, retail or commercial purposes; or 5. community or government purposes related to a purpose stated in subparagraph (i) or (ii); and 6. that will accommodate at least 10, but no more than 15, years of growth for any of those purposes. |

The guiding principles for where to make updates to the PIA for the LGIP Amendment 1B aimed to add areas of zoning that have changed significantly to capture any land use that have occurred since the adoption of the PIA. The amended PIA has generally aligned with the PIA definition under the PA to extend the PIA to include any areas used or approved for Residential, Commercial, and Industrial. This amendment also involved minor changes to align with administrative boundaries. In accordance with the PA and MGR, the PIA amendment generally excludes land that is not zoned residential, commercial, or industrial with the exception of rural land that has been repurposed for urban uses under an adopted neighbourhood plan. The changes do not reduce the area within the existing PIA and generally follows the Urban Footprint of ShapingSEQ.

Significant urban development is planned to occur in Priority Development Areas (PDAs), which are outside Brisbane’s PIA. Development in PDAs are guided by their individual development schemes. The projected growth and urban development expected to occur in PDAs have been considered by Council when preparing the planning assumptions for the LGIP.

The PIA also includes the following PDAs within the LGA:

1. Albert Street
2. Boggo Road
3. Bowen Hills
4. Fitzgibbon
5. Herston Quarter
6. Northshore Hamilton
7. Oxley
8. Queen's Wharf
9. Roma Street
10. Woolloongabba, and
11. Yeronga.

# Methodology for the existing and future population and residential dwelling supply

## Introduction

A requirement of the LGIP is the provision of existing and future residential dwelling supply and the resident population resulting from the residential dwelling supply.

Council is using an urban land use supply model, known as the ‘*Brisbane Urban Growth (BUG) -Residential*’ Model, for the purpose of understanding future residential dwelling supply by location and timeframe. This model is used for several planning purposes throughout the organisation. The BUG Residential model was reviewed and recalibrated in 2021. Several improvements were added to improve model performance.

Section 6.2 provides a general overview of the Council’s known as BUG Residential Model. Sections 6.3 outlines the key data inputs and assumptions that have been used in the model to create the residential component of the planning assumptions for the LGIP.

## Overview of the Brisbane Urban Growth (BUG) - Residential model

BUG Residential is the Council’s residential dwelling supply model with population demand set by QGSO 2018 (medium series). The primary purpose of the model is to determine at a site level, what, when and where future residential dwelling supply could be in five-year intervals from 2021 to 2041. To achieve the QGSO’s dwelling demand, the model assesses the development potential of all sites within the LGA based on various principles and planning policy inputs and assumptions. The QGSO 2018 (medium series) states that the additional dwelling demand by 2041 for the LGA would be 155, 153 dwellings (2016 to 2041).

As the BUG Residential model allocates potential dwelling supply from 2018, the overall additional dwelling demand to be achieved in the LGA by 2041 is 136,535 private residential dwellings. Of note, for the purposes of the LGIP, the QGSO dwelling projections are used to set the demand for infrastructure planning purposes, instead of the ShapingSEQ dwelling supply benchmarks for Brisbane of 188,200 additional dwellings from 2016 to 2041. The reason for this is discussed in section 3.9.1 (Top-down approach) and that infrastructure planning should be based on the actual known demand of dwellings that will be required to meet the State Government’s population projections.

Predicted resident population estimates are then calculated, outside of the model environment, based on specific detached and attached dwelling occupancy rates (See Appendix C).

Figure 6.2.1 provides an overview of the five major components of the model that combine to determine potential dwelling supply by location and timeframes.

**5. ALLOCATION OF SUPPLY**

* Model allocates development timeframe (2021, 2026, 2031, 2036, 2041) based on set parameters and targets
  + Option generation process is undertaken by taking into consideration all factors above in order to allocate the type of residential dwelling supply and the estimated timeframe

**4. PROPENSITY MODEL**

* Runs through a propensity model to calculate the likelihood of a site developing
  + Includes land area, number of dwellings, accessibility to use

**3. PLANNING ASSUMPTIONS**

* Applies land use and yield assumptions to calculate potential development yield
  + For example, adopted neighbourhood plans, priority development areas and other statutory planning assumptions
  + Policy constraints e.g., caravan parks, residential welfare, heritage sites, community education, community health

**1. BASE DATA LAYER**

* Identifies existing land use/activity and number of dwellings for each site within LGA
  + Land use and number of dwellings as of June 2018

**2. DATA AND CONSTRAINTS LAYERS**

* Applies constraints to each site to calculate developable area
  + Development area constraints e.g., waterways, wetlands, koala habitat areas, park lands, etc
  + Development and building approvals
  + Allocated developments

Figure 6.2.1—Key components of Brisbane’s urban dwelling supply model

First the model needs to understand the existing land use activity on all sites in the LGA. The model assigns different growth parameters depending on the existing land use (e.g., detached residential dwelling, vacant land etc.). Once the existing land use activity for each site is determined, the model calculates the developable area by excluding constrained land. The model identifies if the site is fully or partially constrained and calculates what is left for potential development. A constraint can be physical, such as waterways and/or slopes, and/or can be related to specific planning scheme zones that do not allow for any form of intensive residential or non-residential development, such as environmental protection areas.

Once developable area has been determined the model calculates the potential development yield for each site. The potential development yield is sourced from both existing statutory planning policy and other planning constraints (known as policy constraints for example, parameters for development on a heritage listed site). The model collates the appropriate land use and yield assumptions for each individual site in Brisbane. The primary land use (extent of residential development) and yield assumptions (allowable densities), were sourced from the following:

1. the planning scheme zone codes and development codes;
2. neighbourhood plans adopted as at 30 October 2020 that are incorporated in the planning scheme;
3. select neighbourhood plans in draft status as at March 2021; and
4. development schemes for priority development areas.

Once the potential yield is identified, BUG Residential evaluates all potential residential land uses using its feasibility model to calculate the likelihood of a site developing. The feasibility model uses information such as the existing land use activity occurring on a site and the number of existing residential dwellings on a site. Two major inputs into the feasibility model are how well a site is accessible to consumers (accessibility index) and where it is located on the propensity curve.

After the model completes the steps above it allocates the likelihood of development occurring in five-year time periods.

## Factors determining future residential development for LGIP

The future residential dwelling supply to accommodate the QGSO’s projected resident population has been determined by considering the following factors:

1. QGSO dwelling projections (demand);
2. Land use planning provisions (land use and yield assumptions) of:
   1. the planning scheme;
   2. other relevant planning provisions;
   3. land use planning provisions (land use and yield assumptions) of other statutory instruments, including development schemes for priority development areas;
3. Development potential of land (developable area and constraints);
4. Brisbane City Council policy constraints (overlays);
5. Existing level of development as at 30 June 2018;
6. Development and building approvals (January 2010 – June 2020);
7. Allocation of predicted future private residential dwelling supply; and
8. Residential occupancy rates.

The following sections describe these factors in detail, including the data sources and assumptions for each.

### Residential development types and planning scheme uses

The residential development types in the LGIP are identified as either a private residential dwelling or a non-private residential dwelling.

A private residential dwelling is defined as a detached dwelling (dwelling house) or an attached dwelling (multiple dwelling), which is intended to be occupied by residents on a permanent basis.

Those dwellings categorised in the non-private residential dwelling development type typically represent communal dwellings. For the purposes of the LGIP, non-private residential (other) dwellings are stated in the existing and projected residential dwellings and existing and projected population tables in schedule 3 of planning scheme.

Table 6.3.1.1—Residential development types and planning scheme uses

|  |  |
| --- | --- |
| Residential development type | Planning scheme uses |
| **Private residential development** | |
| Detached dwelling | Dwelling house |
| Attached dwelling | Dual occupancy, Dwelling unit, Multiple dwelling, Retirement facility |
| **Non-private residential development** | |
| Other dwelling | Caretaker's accommodation, Non-resident workforce accommodation, Relocatable home park, Residential care facility, Rural workers’ accommodation |

### Localities and the PIA for existing and future resident population

A requirement of the LGIP is to provide the existing and future resident population and residential dwelling supply for each projection area (defined as a SA2), as well as total growth figures for within the PIA and separate total growth figures for outside the PIA. It should be noted that there are several SA2s in Brisbane that are partially located both inside and outside of the PIA.

As the BUG Residential model produces results at a site level, the residential data for both dwellings and population were able to be aggregated into their corresponding SA2s.

### Brisbane’s dwelling demand and ultimate development

The BUG Residential dwelling target to 2041 (control total) and mini targets (at each five-year cohort from 2021) are listed in Table 6.3.3.1. The ‘target’ and ‘period targets’ act as growth caps and restrict the model from over allocating growth in each of the five-year intervals.

The dwelling target and period targets (i.e. 2021, 2026, 2031, 2036, 2041) are based on the 2018 Edition QGSO dwelling projections (medium series).

In order to ascertain dwelling growth already achieved, given that the dwelling projections calculate growth from 2016, Council undertook an analysis of the number of actual private residential dwellings as at June 2018. This figure was recorded as 489,334 private residential dwellings. The growth for 2018 to 2041 is 122,580 private residential dwellings. For the purposes of reporting in the LGIP only those figures from 2018 through to 2041 were reported.

Table 6.3.3.1—Dwelling targets to 2041 and mini targets

|  |  |  |
| --- | --- | --- |
| Year | Dwellings (private) period targets | Dwelling growth required at each five-year interval |
| 2018 | 489,334 (existing) |  |
| 2021 | 496,742 | 7,408 |
| 2026 | 524,213 | 27,471 |
| 2031 | 550,576 | 26,363 |
| 2036 | 582,452 | 31,876 |
| 2041 | 611,914 | 29,462 |
|  | **Total:** | **122,580** |

Although the BUG Residential model projects potential residential dwelling supply to 2041 to reflect the QGSO dwelling projections (medium series), the model also identifies sites that have potential residential development opportunities beyond 2041, which is defined as the these are included within ultimate development. This is calculated as part of the same model run.

### Land use and yield assumptions

For the purposes of the BUG Residential model, land use and yield assumptions are sourced from planning instruments, primarily from the planning scheme including all neighbourhood plans incorporated in the planning scheme and select neighbourhood plans that are anticipated to be gazetted at the time of the LGIP’s gazettal. Other statutory planning instruments and their provisions, such as development schemes for priority development areas, also provide the future intent of an area including the intended uses and the allowable densities.

A land use assumption means the proportion and type of uses that can occur in a zone, precinct or other specific planning area. For example, information is collated on the percentage and type of residential uses that can occur and taking into consideration the proportions of non-residential uses where relevant.

A yield assumption refers to the density of residential development that can occur. In the first instance, building metrics such as the type of building (i.e. duplex, townhouse, apartment), site cover, storeys, car parking configuration and site size is calculated for each allowable dwelling type and building configuration on specified site sizes to determine a range of plot ratios for each zone, precinct or other specific planning area. The plot ratio information is then converted into dwellings per hectare. Dwellings per hectare, or residential density, is the measurement of how many dwellings have the potential to be built over one hectare of unconstrained land.

A zone, precinct or specific planning area can have an assumption for an attached dwelling, detached dwelling or both an attached and detached dwelling. For example, a Low-medium density residential zone – 2 storey mix precinct (with a site area of 600m2) can have a density of 20 dwellings per hectare for detached dwellings and 44 for attached dwellings. When a precinct has both attached and detached assumptions, a probability (percentage) of how much of that zone will be detached is determined to avoid too much growth of one dwelling type. For example, a Low-medium density residential zone – 2 storey precinct for all site sizes is expected to develop as a mix of 40% detached dwellings and 60% attached dwellings. By using this example, the model will therefore apply 8 dwellings per hectare for detached and 26.4 dwellings per hectare for attached to all applicable sites in this zone and precinct.

### Planning Scheme planning provisions

The BUG Residential model requires all sites located in Brisbane to be allocated a zone and where applicable a precinct. Where a site has been identified as being in a residential zone or a zone that allows for a mix of residential and non-residential development, a density assumption for attached dwellings and/or detached dwellings is applied.

Appendix A is a summary table for each relevant zone and precinct that identifies the density assumptions used in the BUG Residential model for both attached and detached dwellings. This table provides information such as minimum lot sizes for attached and detached dwellings, the plot ratio for each site size for attached dwellings, attached dwellings per hectare and detached dwellings per hectare, the probability of detached and the probability of attached to non-residential uses.

The method undertaken to derive these assumptions are summarised below:

1. Extensive review of the zone and precinct codes and applicable development codes in order to understand the density parameters such as site cover, storeys, car parking configurations, non-GFA and GFA of buildings that could occur in the zone and precinct in order to ascertain ranges of plot ratios that could occur in specific precincts and on-site sizes.
2. Extensive review of the zone and precinct codes to understand the range and type of dwellings that could occur in the zone and precinct, particularly in the 2 and 3 storey precincts.
3. Building design advice from expert urban planners and architects.
4. Analysis of residential development approvals over a two-year period and modelling in Council’s Virtual Brisbane Model to ascertain non-GFA proportions to GFA, dwelling sizes, number of dwellings and all other site details related to individual development approvals.
5. Extensive review of the existing dwelling stock in Brisbane to ascertain existing plot ratios, and development trends related to building types including number of dwellings, size of developments etc.

Although all sites in Brisbane are allocated to a zone and where applicable a precinct, for those sites located in a neighbourhood plan area, the specific provisions of the neighbourhood plan, particularly in relation to land use and yield assumptions, will in most cases override the zone assumptions. Appendix B provides a list of all neighbourhood plans reflected in the land use and yield assumptions.

The same rule applies to all sites located in a priority development area. Although these sites are also allocated a zone and precinct, the land use and yield assumptions outlined in the relevant planning instrument will over-ride the planning scheme assumptions if provisions are provided.

### Developable area

The developable area represents the net developable area of the property that can be developed and is not subject to a development constraint, when the area of specific City Plan 2014 overlay and overlay sub-categories and specific City Plan 2014 zones and precincts have been subtracted from the total land area. Net developable area is calculated for both residential and non-residential land with some variations considering differing needs.

Overlay constraints typically comprise those constraints where most of the development would be deemed as inappropriate and therefore would not be approved (Table 6.3.6.1). The overlays that were not used in the calculation of net developable area are shown in Table 6.3.6.2.

The specific City Plan 2014 zones and precincts used in the net developable area calculation primarily relate to environmental zones and precincts (Table 6.3.6.3).

Table 6.3.6.1—Policy constraints included in determining net developable area calculation for residential development

|  |  |
| --- | --- |
| Constraints | Sub-category |
| Biodiversity Areas | High ecological significance |
| High ecological significance strategic |
| General ecological significance |
| General ecological significance strategic |
| Extractive resources | KRA resource/processing area |
| KRA separation area |
| KRA transport route separation area |
| KRA transport route |
| Flood | Brisbane River flood planning area 1 |
| Creek/waterway flood planning area 1 |
| Industrial amenity | Industrial hazard investigation area |
| Industrial amenity investigation area (in part) |
| Regional infrastructure corridors and substations | Gas pipeline 20m |
| Oil pipeline 15m |
| Major electricity infrastructure high voltage powerline easement |
| Road hierarchy | Future arterial road (20m buffer) |
| Waterway corridors | Brisbane River corridor |
| Citywide waterway corridor |
| Wetlands | Wetland |
| Slope (City Plan Policy) | Slope greater than 25% |

Table 6.3.6.2—Policy constraints not included in net developable area calculation for residential development

|  |  |  |
| --- | --- | --- |
| Constraints | Sub-category | Comments |
| Active frontages in residential zones | Active frontages | As the urban supply model is unable to calculate mitigation costs, this sub-category has not been used to calculate developable area. Development may be permissible if mitigation measures are taken. |
| Airport Environs | Obstacle Limitation Surface (OLS) | As the urban supply model is unable to calculate mitigation costs, this overlay has not been used to calculate developable area. Development may be permissible if mitigation measures are taken. |
| Procedures for Air Navigation Services (PANS) surface |
| Air Navigation Features |
| Australian Noise Exposure Forecast Contour (ANEF) |
| Bicycle Network | Primary Cycle Route | As the urban supply model is unable to calculate mitigation costs, this overlay has not been used to calculate developable area. Development may be permissible if mitigation measures are taken. |
| Secondary Cycle Route |
| Local Cycle Route |
| Riverwalk - Floating walkway |
| Biodiversity Areas | Koala habitat area | As the urban supply model is unable to calculate mitigation costs, this sub-category has not been used to calculate developable area. Development may be permissible if mitigation measures are taken. |
| Bushfire | High hazard area | As the urban supply model is unable to calculate mitigation costs, this overlay has not been used to calculate developable area. Development may be permissible if mitigation measures are taken. |
| Medium hazard area |
| High hazard buffer area |
| Medium hazard buffer area |
| Coastal hazard | Erosion prone area - coastal erosion | As the urban supply model is unable to calculate mitigation costs, this overlay has not been used to calculate developable area. Development may be permissible if mitigation measures are taken. |
| Erosion prone area - permanent inundation due to sea level rise at 2100 |
| High storm-tide inundation area |
| Medium storm-tide inundation area |
| Coastal management district |
| Critical infrastructure and movement network | Critical routes | As the urban supply model is unable to calculate mitigation costs, this overlay has not been used to calculate developable area. Development may be permissible if mitigation measures are taken. |
| Interim critical routes |
| Critical assets |
| Critical infrastructure and movement planning area |
| Flood | Creek/waterway flood planning area 2 | As the urban supply model is unable to calculate mitigation costs, this overlay has not been used to calculate developable area. Development may be permissible if mitigation measures are taken. |
| Creek/waterway flood planning area 3 |
| Creek/waterway flood planning area 4 |
| Creek/waterway flood planning area 5 |
| Brisbane River flood planning area 2a |
| Brisbane River flood planning area 2b |
| Brisbane River flood planning area 3 |
| Brisbane River flood planning area 4 |
| Brisbane River flood planning area 5 |
| Overland flow flood planning area |
| Heritage | Area adjoining local heritage | As the urban supply model is unable to calculate mitigation costs, this overlay has not been used to calculate developable area. Development may be permissible if mitigation measures are taken. |
| Area adjoining state heritage |
| Landslide | Landslide susceptibility area | As the urban supply model is unable to calculate mitigation costs, this overlay has not been used to calculate developable area. Development may be permissible if mitigation measures are taken. |
| Neighbourhood character | Local character significance | As the urban supply model is unable to calculate mitigation costs, this sub-category has not been used to calculate developable area. Development may be permissible if mitigation measures are taken. |
| Potential and actual acid sulphate soils | Potential and actual acid sulphate soils | As the urban supply model is unable to calculate mitigation costs, this overlay has not been used to calculate developable area. Development may be permissible if mitigation measures are taken. |
| Land at or below 5m AHD sub-category |
| Land above 5m AHD and below 20m AHD sub-category |
| Regional infrastructure corridors and substations | Roma to Brisbane gas pipeline 100m | As the urban supply model is unable to calculate mitigation costs, this overlay has not been used to calculate developable area. Development may be permissible if mitigation measures are taken. |
| Moonie to Brisbane oil pipeline 100m |
| Road hierarchy | Motorways | As the urban supply model is unable to calculate mitigation costs, this overlay has not been used to calculate developable area. Development may be permissible if mitigation measures are taken. |
| Arterial roads |
| Suburban roads |
| District roads |
| Neighbourhood roads |
| Local roads |
| Primary freight routes |
| Primary freight access |
| Wildlife movement solution |
| Significant landscape trees | Significant landscape trees - adjoining site | As the urban supply model is unable to calculate mitigation costs, this overlay has not been used to calculate developable area. Development may be permissible if mitigation measures are taken. |
| Streetscape hierarchy | Subtropical boulevard - in centre (SB1) | As the urban supply model is unable to calculate mitigation costs, this overlay has not been used to calculate developable area. Development may be permissible if mitigation measures are taken. |
| Subtropical boulevard - out of centre (SB2) |
| City street major (CS1) |
| City street minor (CS2) |
| Neighbourhood street major (NS1) |
| Neighbourhood street minor (NS2) |
| Industrial street (IS) |
| Cross block link (CBL) |
| Corner land dedication (CLD) |
| Locality street (LS) |
| Laneway (LW) |
| Transport air quality corridor | Motorway air quality corridor | As the urban supply model is unable to calculate mitigation costs, this overlay has not been used to calculate developable area. Development may be permissible if mitigation measures are taken. |
| Major air quality corridor |
| Intermediate air quality corridor |
| Minor air quality corridor |
| Major intersection |
| Tunnel ventilation stack 100m buffer |
| Queensland Development Code MP4.4 Noise: Sub-category 1 |
| Queensland Development Code MP4.4 Noise: Sub-category 2 |
| Queensland Development Code MP4.4 Noise: Sub-category 3 |
| Queensland Development Code MP4.4 Noise: Sub-category 4 |
| Water resource catchments | Water resource catchment | As the urban supply model is unable to calculate mitigation costs, this sub-category has not been used to calculate developable area. Development may be permissible if mitigation measures are taken. |
| Waterway corridors | Local waterway corridor | As the urban supply model is unable to calculate mitigation costs, this sub-category has not been used to calculate developable area. Development may be permissible if mitigation measures are taken. |

Table 6.3.6.3—Zone and zone precinct areas not included in the net developable area calculation for residential development

|  |  |
| --- | --- |
| City Plan 2014 zone | City Plan 2014 zone precinct |
| Community facilities | Cemetery |
| Conservation | Local |
| District |
| Metropolitan |
| Environmental management | N/A |
| Open space | Local |
| District |
| Metropolitan |
| Sport and recreation | Local |
| District |
| Metropolitan |

### Brisbane City Council policy constraints

Brisbane City Council policy constraints are defined to specific zones and zone precincts and land uses that if occurring on a site would exclude residential development. Policy constraints are not used in the net developable area calculation as other types of development could occur on these sites i.e. this type of constraints exclude residential development.

Table 6.3.7.1 provides an overview of the zones and zone precincts that have been excluded because these contain no residential development.

Table 6.3.7.2 provides an overview of land use / activity with no residential development opportunity.

Land use constraints typically represent land uses and activities related to community uses (such as hospitals), government owned land and sites that have been stated by Council as not being appropriate to be developed, particularly for residential purposes, such as existing caravan parks.

It is relevant to note that a policy constraint can be overridden by way of a neighbourhood plan or development application.

Table 6.3.7.1— Zones and zone precinct areas not included in net developable area calculation for residential development [[3]](#footnote-4)

|  |  |
| --- | --- |
| Zone | Zone precinct |
| Community facilities | Major health care |
| Community facilities | Major sports venue |
| Community facilities | Community purposes |
| Community facilities | Education purposes |
| Community facilities | Emergency services |
| Community facilities | Health care purposes |
| Extractive industry | N/A |
| General industry B zone precinct | N/A |
| General industry C zone precinct | N/A |
| Industry investigation area | N/A |
| Rural | N/A |
| Specialised centre | Major education and research facility |
| Specialised centre | Entertainment and conference centre |
| Specialised centre | Brisbane markets |
| Specialised centre | Large format retail |
| Specialised centre | Mixed industry and business |
| Specialised centre | Marina |
| Special Industry | N/A |
| Special purpose | Defence |
| Special purpose | Detention facility |
| Special purpose | Transport infrastructure |
| Special purpose | Utility services |
| Special purpose | Airport |
| Special purpose | Port |
| Township | N/A |
| Tourist accommodation | N/A |

Table 6.3.7.2— Land use activity and other policy constraints not included in the net developable are calculation for residential development

|  |  |  |
| --- | --- | --- |
| Land use / activity | Sub-category | Exception parameter (if applicable) |
| Caravan parks / mobile home |  |  |
| Residential welfare | Includes nursing homes, residential institutions etc. |  |
| Commercial character building |  |  |
| Heritage | Local heritage place  Local heritage area  State heritage place | Allow development when a site is greater or equal to 1,200m². Applicability of Inner-city sites assessed by Heritage Team  Applied as a soft constraint in calculations that relate to development potential. The BUG Residential Model allows for a proportion of these properties to develop consistent with observed historical rates. |
| Traditional building character | Neighbourhood character | Applied as a soft constraint in calculations that relates to development potential. The BUG Residential Model allows for a proportion of these properties to develop consistent with observed historical rates. |
| Pre 1911 building |  |  |
| Community – health | Includes private and public hospitals, does not include doctor surgeries located outside of a hospital |  |
| Community – education |  |  |
| Community – other | Includes funeral parlours, religious buildings, cemeteries, libraries, defence force establishments, welfare premises and community protection centres that are not primarily administrative |  |
| Open space | Includes parks and gardens /bushland and reserves |  |
| Sites outside the SEQ Urban Footprint |  |  |
| State owned land |  | Manual adjustment made for sites with residential potential. |
| Council owned land |  | Manual adjustment made for sites with residential potential. |
| Vacant land with no residential potential | Vacant land that is not suitable for residential development |  |
| Sites ‘excluded’ from development | Includes: walkways, ramps, access restriction strips, reservoirs, dams, bores, vacant State-owned land (typically road reserves, roads and state parks) |  |

### Existing level of development and base year as at June 2018

The existing level of development for all sites in Brisbane was based on the Council’s Rates Information Management System (RIMS) and was further refined to form the Land Use Activity Dataset (LUAD). This database classifies every site in Brisbane by 19 land use / activity categories (see Appendix D) and records the number of residential dwellings and gross floor area. To validate the information RIMS database has been cross analysed with other sources including the Queensland Government Fire Service Levy, planning scheme area classifications, development applications and aerial images. The database used is as at 30 June 2018, and forms the base year of the planning assumptions (2021 edition) for LGIP.

### Development and building approvals

Another primary dataset used in the BUG Residential model is a time series of residential development and building approvals. The development and building approvals utilise the proposed dwelling count and are treated as being more likely to be constructed in the first time periods from 2018.

The following provides an overview of the three types of development and building approvals data that were used at the time of preparing the residential component of the planning assumptions for the LGIP:

1. development approvals for Multiple Unit Dwellings from January 2010 to June 2020;
2. development approvals for Reconfiguration of a Lot for residential subdivision (primarily for detached sub-divisions) from January 2010 to June 2020;
3. building approvals for detached houses from January 2010 to June 2020;
4. development approvals for Multiple Unit Dwelling for Priority Development Areas from January 2010 to June 2020; and
5. development approvals for Reconfiguration of a Lot for residential subdivision from January 2010 to June 2020.

The development and building approvals data are sourced from internal datasets held by the Council.

### Allocation of predicted future private residential dwelling supply

For the final allocation of the predicted private residential dwelling supply, the pricing model is applied to calculate where and when future residential development is likely to occur.

In the first part of the allocation process the model categorises each developable site into one of the following:

1. development and building approval;
2. vacant land less than 800m²;
3. vacant land greater than 800m²;
4. redevelopment of existing residential;
5. redevelopment of existing non-residential.

One of the major factors in determining the likelihood of a site developing and the year of development is the propensity value. In the model, propensity value is a unique value generated by the model based on multiple factors including developable area, accessibility and dwelling density to determine the likelihood of a redevelopment for each site. The unimproved capital value (UCV) is used by the propensity calculation through a site value that is expressed in dollars per square metre. Where the UCV is zero or unknown a value of $200/m² is applied.

An accessibility-based factor is also applied to the calculation which reduces propensity in highly accessible areas and correspondingly increases propensity in less accessible areas to the calculation. The introduction of an accessibility-based factor is to consider the increased costs associated with development particularly in the CBD and inner-city areas and the generally cheaper cost of development in greenfield areas.

The attribute “Cost Constrained” considers the higher development costs of sites that are subject constraints, such as flooding. This feature recognises that constraints are not always black or white in terms of development potential. When a site is flagged to be “Cost Constrained”, the propensity value is reduced by a factor of 0.5. The reduction of propensity means that the site will either happen at a later date or possibly not at all depending on the extent of other cost-effective alternatives.

A “Plan Activation Timeframe” is also included in the model so that any specific planning assumptions for each plan can be manually activated unless the plan has reached its plan activation timeframe.

### Residential occupancy rates

The dwelling supply data was then converted into the estimated resident population using residential occupancy rates provided by the QGSO that were associated with the 2018 edition Population and Dwelling projections.

The occupancy rates for each SA2, period and dwelling type are set out in Appendix C.

# Methodology for future employment and non-residential floor space

## Introduction

For the purposes of the LGIP, employment projections are an essential component that informs the future employment numbers and the projected locations and timeframes of employment. The employment projections are then converted to provide the future non-residential floor space (Gross Floor Area, GFA) by five-year time periods.

The employment projections used in the LGIP were prepared by the National Institute of Economic and Industry Research (NIEIR) in 2019. This section provides an overview of the NIEIR 2019 employment projections and the resulting floor space projections used to create the non-residential component of the planning assumptions for the LGIP.

A requirement of the MGR is to produce the ultimate non-residential employment and floor space figures. This section provides an overview of the methodology undertaken by Council to calculate non-residential development projection figures.

Ultimate development has also been used to limit the employment projections to the capacity of the land. For employment demand that has exceeded ultimate development, this has been redistributed to other areas with capacity.

## Employment projections to 2041

The following describes a brief overview of the methodology undertaken by NIEIR in the preparation of their employment projections.

The employment projections dataset contains base year employment derived from actual data up to 2018 and includes employment projections for 2021, 2026, 2031, 2036, and 2041 years.

The base year employment data is derived from Census, labour force survey, tax data and other sources as a more accurate and up-to-date estimate of employment in the LGA than the unadjusted Census figures.

### LGIP non-residential development types and industrial classification

As per the MGR, the LGIP is grouped by a specified LGIP non-residential development type. These LGIP non-residential types have been specified by the State as Retail, Commercial, Industrial, Community Purpose and Other.

The employment data sourced from NIEIR is provided by industrial sectors defined by the Australian New Zealand Standard Industrial Classifications (ANZSIC) (2006 Edition). This data is provided at ‘1’ and ‘2’ digit levels which has 19 divisions and 86 subdivisions respectively. This data has then been converted to LGIP development types that align with land use using a concordance that was prepared by RPS in August 2015. This concordance was carried out at 2-digit level and proportionally assigned to LGIP development type taking into consideration of mobile workers, occupation type and geography.

### LGIP non-residential types and planning scheme uses

Planning scheme uses are also aligned to LGIP development type which is required for inclusion within the Local Government Infrastructure Plan. This was prepared by considering use definitions in the planning scheme in conjunction with ANZSIC categories (1- and 2-digit level) and LUAD classification. Table 7.2.2.1 shows each of the planning scheme uses and the LGIP non-residential development type.

For purposes of the LGIP, Mobile workers are included in the ‘Existing and projected employees’ table. Mobile workers are unable to be included in the ‘Existing and projected non-residential floor space’ table as they have no fixed place of work that has any associated floor space e.g. public transport drivers.

Table 7.2.2.1—LGIP non-residential development types and planning scheme uses

|  |  |
| --- | --- |
| LGIP non-residential development type | Planning Scheme Uses |
| Retail | Adult store, Agricultural supplies store, Bar, Brothel, Bulk landscape supplies, Car wash, Food and drink outlet, Function facility, Garden centre, Hardware and trade supplies, Hotel, Market, Motor sport facility, Nightclub entertainment facility, Outdoor sales, Resort complex, Roadside stall, Rooming accommodation, Parking station, Service industry, Service station, Shop, Shopping centre, Short term accommodation, Showroom, Theatre, Tourist attraction, Tourist park, Wholesale nursery |
| Commercial | Home-based business, Office, Research and technology industry, Sales office, Veterinary service |
| Industrial | Air service, High impact industry, Landing, Low impact industry, Marine industry, Medium impact industry, Port service, Special industry, Telecommunications facility, Transport depot, Warehouse, Winery |
| Community purpose | Cemetery, Child-care centre, Club, Community care centre, Community use, Crematorium, Detention facility, Educational establishment, Emergency services, Environment facility, Funeral parlour, Health care service, Hospital, Indoor sport and recreation, Major sport, recreation and entertainment facility, Nature-based tourism, Outdoor sport and recreation, Park, Place of worship |
| Other | Animal husbandry, Animal keeping, Aquaculture, Cropping, Extractive industry, Intensive animal industry, Intensive horticulture, Major electricity infrastructure, Permanent plantation, Renewable energy facility, Rural industry, Substation, Utility installation |
| Mobile worker | Note—There is no planning scheme use definition for mobile workers. Mobile workers include workers that have no fixed place of work e.g. construction workers. |

### BCC non-residential floor space projections

To convert employment projections to non-residential floor space, the rate of growth in jobs is applied to actual base floorspace (GFA) of the Land Use Activity Dataset (LUAD, 2018). The application of these rates is applied by LGIP development type and five-year time periods. The alignment of LUAD categories to LGIP development types are shown in Table 7.2.3.1 below.

Table 7.2.3.1—LUAD categories and LGIP non-residential development types

|  |  |
| --- | --- |
| LGIP non-residential development type | Planning Scheme Uses |
| Retail | Retail  Accommodation and Food Services and Arts and Recreation  Showroom, Retail Warehouse, Bulky Goods |
| Commercial | Office |
| Industrial | Industry – light  Industry – general  Industry – heavy  Industry – other  Warehouses, Bulk Stores, Logistics |
| Community purpose | Community - Health  Community – Education  Community - Other |
| Other | Rural Activities  All Other |

## Calculating ‘ultimate development’ figures for employment and floor space

As a requirement of MGR for the LGIP, an ultimate development figure for potential non-residential development (potential future floor space supply) was calculated for all relevant sites across Brisbane. It is important to note that ultimate development is calculated independently of the growth anticipated from the employment projections and may be higher or even lower than original projected demand at either the local projection area (SA2) or even at the LGA level. This is different to the residential modelling which directly links residential demand to residential land supply.

The following describes an overview of the methodology undertaken by Council in the preparation of an ultimate development figure for employment and non-residential floor space. An overview of each input required in the calculation is as follows:

1. The existing floor space (existing development) by non-residential use type across all sites in Brisbane City;
2. Planning scheme zoning;
3. Land use and yield provisions derived from the planned density of all zones, zone precincts and relevant neighbourhood plan precincts;
4. Planning scheme overlay and zoning constraints to determine developable area of land;
5. Brisbane City Council policy and other constraints to potential re-development; and
6. Conversion of ultimate GFA to ultimate employees.

### Existing floor space by non-residential use types

The existing level of development for all sites in Brisbane was based on the Council’s Rates Information Management System (RIMS) and was further refined to form a Land Use Activity Dataset (LUAD). This database classifies every site in Brisbane by the 19-land use/activity categories (see Appendix D) and records the number of dwellings and gross floor area. To validate the information RIMS database has been cross analysed with other sources including the Queensland Government Fire Service Levy, planning scheme zoning, development approvals and aerial images. The database is used to reflect the existing level of development for the non-residential ultimate development floor space figures for LGIP as at 30 June 2018.

### Land use and yield assumptions

For the purposes of calculating an ultimate development figure, all relevant sites in Brisbane that could yield potential new or additional non-residential development were allocated its’ equivalent land use and yield provisions. Appendix E is a summary table for each relevant planning scheme zone and precinct and neighbourhood plan precinct and sub-precinct which identifies the density assumptions used in calculating the type and extent of development that could occur on sites across Brisbane.

The method undertaken to derive the non-residential land use and yield assumptions are summarised below:

1. Analysis of zone, precinct and applicable development codes in order to understand the density parameters such as site cover, storeys, car parking configurations, non-GFA and GFA of buildings that could occur in the zone and precinct in order to ascertain ranges of plot ratios that could occur.
2. Urban planners / architects’ advice in building design.
3. Analysis of development approvals over a two-year period and modelling in Council’s Virtual Brisbane Model.
4. Analysis of the existing development in Brisbane to understand plot ratios of existing development.

All sites in Brisbane are allocated to a zone and where applicable a precinct. For those sites located in a neighbourhood plan area, the specific provisions of the neighbourhood plan will in most cases override the zone and precinct density assumptions. For precincts in Priority Development Areas these are also assigned land use and yield assumptions. Appendix B provides a list of all neighbourhood plans reflected in the land use and yield assumptions.

### Developable area

The developable area of land represents the site area minus constrained land. Constraints for the purpose of calculating developable area separated into two categories:

1. Physical and environmental constraints which are mostly obtained from Overlays (Table 7.3.3.1); and
2. Specific planning scheme zones and precincts used in the net developable area calculation primarily relate to environmental zones and precincts (Table 7.3.3.2).

Table 7.3.3.1— Constraints used that are included in determining to determine the net developable area calculation for potential non-residential development

|  |  |
| --- | --- |
| Constraints | Sub-category |
| Biodiversity Areas | High ecological significance |
| High ecological significance strategic |
| General ecological significance |
| General ecological significance strategic |
| Extractive resources | KRA resource/processing area |
| KRA separation area |
| KRA transport route separation area |
| KRA transport route |
| Flood | Brisbane River flood planning area 1 |
| Creek/waterway flood planning area 1 |
| Regional infrastructure corridors and substations | Roma to Brisbane gas pipeline 20m |
| Moonie to Brisbane oil pipeline 15m |
| Major electricity infrastructure high voltage powerline easement |
| Road hierarchy | Future arterial road (20m buffer) |
| Waterway corridors | Brisbane River corridor |
| Citywide waterway corridor |
| Wetlands | Wetland |
| Slope | Slope greater than 25% |

Table 7.3.3.2—Zones and zone precincts areas that are not included in the net developable area calculation for non-residential development

|  |  |
| --- | --- |
| Zone | Zone precinct |
| Community facilities | Cemetery |
| Conservation | Local |
| District |
| Metropolitan |
| Open space | Local |
| District |
| Metropolitan |
| Sport and recreation | Local |
| District |
| Metropolitan |

### Brisbane City Council policy constraints

Council policy constraints are defined to specific zones and zone precincts and land uses that if occurring on a site would exclude non-residential development. Policy constraints are not used in the net developable area calculation as other types of development could occur on these sites.

Table 7.3.4.1 provides an overview of the zones and zone precincts that have been excluded because of policy constraints for non-residential development.

Table 7.3.4.2 provides an overview of land use / activity with no non-residential development opportunity. Land use constraints typically represent land uses and activities related to select government owned land and sites that have been stated by Council as not being appropriate to be developed.

Table 7.3.4.1—Zones and zone precinct areas that are not included in the net developable area calculation for non-residential development[[4]](#footnote-5)

|  |  |
| --- | --- |
| Zone | Zone precinct |
| Low Density Residential | - |
| Low Medium Residential | 2 storey mix zone precinct, 2 or 3 storey mix zone precinct and Up to 3 storeys zone precinct |
| Medium Residential | - |
| High Density Residential | Up to 8 storeys zone precinct and Up to 15 storeys zone precinct |
| Character residential | Character zone precinct and Infill housing zone precinct |
| Emerging Community | - |
| Rural Residential | - |
| Limited development (c. land) | N/A |
| Township | N/A |

Table 7.3.4.2—Land use/activity and other policy constraint areas that are not included in the net developable area calculation for non-residential development[[5]](#footnote-6)

|  |  |  |
| --- | --- | --- |
| Land use / activity | Sub-category | Parameter (if applicable) |
| Caravan parks / mobile home |  |  |
| Residential welfare | Includes nursing homes, residential institutions etc. |  |
| Local heritage sites |  | Allow development when a site is greater or equal to 1,200m². |
| Open space | Includes parks and gardens /bushland and reserves |  |
| Sites outside the SEQ Urban Footprint |  |  |
| State owned land | Select land not suitable for non-residential development |  |
| Council owned land | Select land not suitable for non-residential development |  |
| Specific sites in the City Centre with no future development potential |  |  |
| Vacant land with no non-residential potential | Vacant land that is not suitable for non-residential development |  |
| Sites ‘excluded’ from development | Includes: walkways, ramps, access restriction strips, reservoirs, dams, bores, vacant State-owned land (typically road reserves, roads and state parks) |  |

### Ultimate employees

Following the development of non-residential ultimate floorspace (GFA), this data is then converted to calculate ultimate employees. This is developed by taking rate of growth in floorspace from the base year (LUAD 2018) to Ultimate and applying this to the base employment which in turn provides the ultimate capacity for employees. The difference in base dates of the two datasets is also accounted for.

# Appendices

## Appendix A: Land use and yield assumptions for residential development

For all residential and residential related zones and precincts in the planning scheme, the land use and yield assumptions that have been used in the BUG Residential model as the assumptions underpinning the potential future residential dwelling supply for all lots within LGA are contained in planning scheme, Schedule 3.1 Planning assumptions tables.

## Appendix B: Neighbourhood plans, and other areas reflected in the land use and yield assumptions

### Adopted neighbourhood plans

1. Acacia Ridge—Archerfield neighbourhood plan
2. Albion neighbourhood plan
3. Algester—Parkinson—Stretton neighbourhood plan
4. Ashgrove—Grange district neighbourhood plan
5. Aspley district neighbourhood plan
6. Australia TradeCoast neighbourhood plan
7. Banyo—Northgate neighbourhood plan
8. Bowen Hills neighbourhood plan
9. Bracken Ridge and district neighbourhood plan
10. Bulimba district neighbourhood plan
11. Calamvale district neighbourhood plan
12. Capalaba West neighbourhood plan
13. Carina—Carindale neighbourhood plan
14. Carindale centre neighbourhood plan
15. Centenary suburbs neighbourhood plan
16. Chermside centre neighbourhood plan
17. City Centre neighbourhood plan
18. City west neighbourhood plan
19. Clayfield—Wooloowin district neighbourhood plan
20. Coorparoo and districts neighbourhood plan
21. Darra—Oxley district neighbourhood plan
22. Doolandella neighbourhood plan
23. Dutton Park—Fairfield neighbourhood plan
24. East Brisbane—Coorparoo district neighbourhood plan
25. Eastern corridor neighbourhood plan
26. Enoggera district neighbourhood plan
27. Everton Park neighbourhood plan
28. Ferny Grove—Upper Kedron neighbourhood plan
29. Fig Tree Pocket neighbourhood plan
30. Forest Lake neighbourhood plan
31. Fortitude Valley neighbourhood plan
32. Hemmant—Lytton neighbourhood plan
33. Holland Park—Tarragindi district neighbourhood plan
34. Indooroopilly centre neighbourhood plan
35. Ithaca district neighbourhood plan
36. Kangaroo Point peninsula neighbourhood plan
37. Kangaroo Point south neighbourhood plan
38. Kelvin Grove urban village neighbourhood plan
39. Kuraby neighbourhood plan
40. Lake Manchester neighbourhood plan
41. Latrobe and Given Terraces neighbourhood plan
42. Lower Oxley Creek north neighbourhood plan
43. Lower Oxley Creek south neighbourhood plan
44. Lutwyche Road corridor neighbourhood plan
45. McDowall—Bridgeman Downs neighbourhood plan
46. Milton neighbourhood plan
47. Milton Station neighbourhood plan
48. Mitchelton centre neighbourhood plan
49. Mitchelton neighbourhood plan
50. Moggill—Bellbowrie district neighbourhood plan
51. Moorooka—Stephens district neighbourhood plan
52. Moreton Island settlements neighbourhood plan
53. Mt Coot-tha neighbourhood plan
54. Mt Gravatt corridor neighbourhood plan
55. New Farm and Teneriffe Hill neighbourhood plan
56. Newstead and Teneriffe waterfront neighbourhood plan
57. Newstead north neighbourhood plan
58. Nudgee Beach neighbourhood plan
59. Nundah district neighbourhood plan
60. Pinkenba—Eagle Farm neighbourhood plan
61. Racecourse precinct neighbourhood plan
62. Richlands—Wacol corridor neighbourhood plan
63. River gateway neighbourhood plan
64. Rochedale urban community neighbourhood plan
65. Sandgate district neighbourhood plan
66. Sandgate Road neighbourhood plan
67. Sherwood—Graceville district neighbourhood plan
68. South Brisbane riverside neighbourhood plan
69. Spring Hill neighbourhood plan
70. Taringa neighbourhood plan
71. The Gap neighbourhood plan
72. Toombul—Nundah neighbourhood plan
73. Toowong—Auchenflower neighbourhood plan
74. Toowong—Indooroopilly district neighbourhood plan
75. Wakerley neighbourhood plan
76. West End—Woolloongabba district neighbourhood plan
77. Western gateway neighbourhood plan
78. Willawong neighbourhood plan
79. Woolloongabba centre neighbourhood plan
80. Wynnum West neighbourhood plan
81. Wynnum—Manly neighbourhood plan
82. Yeerongpilly Transit Oriented Development neighbourhood plan

### Draft neighbourhood plans (as at March 2021)[[6]](#footnote-7)

1. Bridgeman Downs neighbourhood plan
2. Eight Mile Plains Gateway neighbourhood plan
3. Sandgate District neighbourhood plan

### Priority Development Areas

1. Albert Street Cross River Rail Priority Development Area
2. Boggo Road Cross River Rail Priority Development Area
3. Bowen Hills Priority Development Area
4. Fitzgibbon Priority Development Area
5. Northshore Hamilton Priority Development Area
6. Herston Quarter Priority Development Area
7. Oxley Priority Development Area
8. Roma Street Cross River Rail Priority Development Area
9. Queen's Wharf Priority Development Area
10. Woolloongabba Cross River Rail Priority Development Area
11. Yeronga Priority Development Area

## Appendix C: Residential occupancy rates

Table 8.3.1—Small area occupancy rates for detached dwellings (Note 1)

| **SA2 (ASGS 2016)** | **2016** | **2021** | **2026** | **2031** | **2036** | **2041** |
| --- | --- | --- | --- | --- | --- | --- |
| Albion | 2.48 | 2.48 | 2.50 | 2.51 | 2.53 | 2.55 |
| Alderley | 2.81 | 2.87 | 2.93 | 2.99 | 3.04 | 3.11 |
| Algester | 2.92 | 2.89 | 2.87 | 2.85 | 2.83 | 2.82 |
| Annerley | 2.82 | 2.85 | 2.93 | 2.99 | 3.07 | 3.15 |
| Ascot | 2.80 | 2.90 | 2.95 | 3.00 | 3.04 | 3.10 |
| Ashgrove | 3.03 | 3.07 | 3.11 | 3.14 | 3.18 | 3.23 |
| Aspley | 2.73 | 2.71 | 2.69 | 2.67 | 2.65 | 2.63 |
| Auchenflower | 2.99 | 3.03 | 3.08 | 3.13 | 3.18 | 3.24 |
| Bald Hills | 2.76 | 2.71 | 2.67 | 2.63 | 2.59 | 2.56 |
| Balmoral | 2.92 | 2.99 | 3.06 | 3.12 | 3.19 | 3.27 |
| Bardon | 2.97 | 3.03 | 3.10 | 3.17 | 3.24 | 3.31 |
| Bellbowrie - Moggill | 3.05 | 3.04 | 3.05 | 3.05 | 3.06 | 3.07 |
| Belmont - Gumdale | 3.07 | 3.00 | 2.94 | 2.88 | 2.82 | 2.77 |
| Boondall | 2.76 | 2.76 | 2.76 | 2.77 | 2.78 | 2.79 |
| Bracken Ridge | 2.87 | 2.87 | 2.86 | 2.85 | 2.84 | 2.84 |
| Bridgeman Downs | 3.04 | 3.00 | 2.94 | 2.89 | 2.84 | 2.79 |
| Brighton (Qld) | 2.61 | 2.64 | 2.69 | 2.73 | 2.77 | 2.83 |
| Brisbane Airport | 2.74 | 2.75 | 2.75 | 2.74 | 2.73 | 2.73 |
| Brisbane City | 2.43 | 2.40 | 2.42 | 2.43 | 2.44 | 2.46 |
| Brisbane Port - Lytton | 2.86 | 2.85 | 2.85 | 2.85 | 2.85 | 2.85 |
| Brookfield - Kenmore Hills | 3.01 | 2.97 | 2.93 | 2.88 | 2.83 | 2.79 |
| Bulimba | 2.99 | 3.05 | 3.12 | 3.19 | 3.26 | 3.34 |
| Calamvale - Stretton | 3.28 | 3.27 | 3.28 | 3.29 | 3.30 | 3.32 |
| Camp Hill | 2.89 | 2.92 | 2.96 | 2.99 | 3.03 | 3.07 |
| Cannon Hill | 2.85 | 2.87 | 2.91 | 2.94 | 2.98 | 3.02 |
| Carina | 2.62 | 2.69 | 2.72 | 2.75 | 2.78 | 2.82 |
| Carina Heights | 2.67 | 2.66 | 2.67 | 2.68 | 2.70 | 2.72 |
| Carindale | 2.99 | 2.95 | 2.89 | 2.82 | 2.76 | 2.71 |
| Carseldine | 2.75 | 2.70 | 2.64 | 2.59 | 2.53 | 2.49 |
| Chapel Hill | 2.92 | 2.90 | 2.89 | 2.88 | 2.87 | 2.87 |
| Chelmer - Graceville | 2.96 | 2.99 | 3.04 | 3.07 | 3.12 | 3.16 |
| Chermside | 2.46 | 2.49 | 2.54 | 2.59 | 2.64 | 2.70 |
| Chermside West | 2.69 | 2.72 | 2.75 | 2.77 | 2.80 | 2.84 |
| Clayfield | 2.89 | 2.94 | 3.01 | 3.07 | 3.14 | 3.21 |
| Coopers Plains | 2.88 | 2.83 | 2.90 | 2.97 | 3.04 | 3.12 |
| Coorparoo | 2.88 | 2.89 | 2.96 | 3.03 | 3.10 | 3.18 |
| Corinda | 2.95 | 3.00 | 3.05 | 3.10 | 3.15 | 3.21 |
| Darra - Sumner | 2.94 | 2.95 | 2.96 | 2.97 | 2.99 | 3.01 |
| Deagon | 2.48 | 2.49 | 2.53 | 2.58 | 2.63 | 2.69 |
| Durack | 3.07 | 3.05 | 3.08 | 3.10 | 3.12 | 3.15 |
| Eagle Farm - Pinkenba | 2.18 | 2.15 | 2.12 | 2.10 | 2.07 | 2.06 |
| East Brisbane | 2.68 | 2.69 | 2.71 | 2.73 | 2.76 | 2.79 |
| Eight Mile Plains | 3.20 | 3.18 | 3.21 | 3.23 | 3.25 | 3.28 |
| Enoggera | 2.72 | 2.72 | 2.75 | 2.77 | 2.80 | 2.83 |
| Enoggera Reservoir | 1.86 | 1.85 | 1.85 | 1.84 | 1.84 | 1.84 |
| Everton Park | 2.62 | 2.62 | 2.64 | 2.65 | 2.67 | 2.69 |
| Fairfield - Dutton Park | 2.98 | 2.92 | 2.99 | 3.06 | 3.13 | 3.21 |
| Fig Tree Pocket | 3.10 | 3.16 | 3.18 | 3.19 | 3.20 | 3.23 |
| Forest Lake - Doolandella | 3.03 | 3.03 | 3.04 | 3.05 | 3.06 | 3.08 |
| Fortitude Valley | 2.52 | 2.63 | 2.77 | 2.92 | 3.07 | 3.25 |
| Geebung | 2.64 | 2.62 | 2.63 | 2.64 | 2.65 | 2.66 |
| Grange | 2.97 | 3.04 | 3.11 | 3.18 | 3.25 | 3.32 |
| Greenslopes | 2.79 | 2.76 | 2.83 | 2.90 | 2.97 | 3.05 |
| Hamilton (Qld) | 2.75 | 2.85 | 2.92 | 2.97 | 3.03 | 3.10 |
| Hawthorne | 3.10 | 3.13 | 3.17 | 3.20 | 3.23 | 3.27 |
| Hendra | 2.65 | 2.69 | 2.73 | 2.77 | 2.82 | 2.87 |
| Highgate Hill | 3.04 | 3.09 | 3.16 | 3.22 | 3.28 | 3.36 |
| Holland Park | 2.81 | 2.84 | 2.88 | 2.92 | 2.97 | 3.02 |
| Holland Park West | 2.76 | 2.81 | 2.88 | 2.95 | 3.02 | 3.10 |
| Inala - Richlands | 3.09 | 3.10 | 3.12 | 3.14 | 3.16 | 3.19 |
| Indooroopilly | 2.85 | 2.88 | 2.91 | 2.95 | 2.99 | 3.04 |
| Ipswich - North | 3.05 | 3.05 | 3.02 | 2.99 | 2.96 | 2.93 |
| Jindalee - Mount Ommaney | 2.86 | 2.77 | 2.72 | 2.66 | 2.61 | 2.56 |
| Kangaroo Point | 2.72 | 2.72 | 2.75 | 2.78 | 2.80 | 2.84 |
| Karana Downs | 2.95 | 2.94 | 2.93 | 2.92 | 2.91 | 2.91 |
| Kedron - Gordon Park | 2.77 | 2.82 | 2.87 | 2.92 | 2.98 | 3.05 |
| Kelvin Grove - Herston | 2.81 | 2.85 | 2.91 | 2.96 | 3.02 | 3.09 |
| Kenmore | 2.78 | 2.79 | 2.79 | 2.80 | 2.81 | 2.82 |
| Keperra | 2.57 | 2.56 | 2.54 | 2.53 | 2.52 | 2.51 |
| Kuraby | 3.28 | 3.29 | 3.30 | 3.31 | 3.32 | 3.34 |
| Lake Manchester - England Creek | 2.86 | 0.75 | 0.75 | 0.74 | 0.74 | 0.74 |
| Macgregor (Qld) | 3.23 | 3.16 | 3.21 | 3.25 | 3.30 | 3.36 |
| Manly - Lota | 2.66 | 2.69 | 2.73 | 2.76 | 2.79 | 2.83 |
| Manly West | 2.80 | 2.81 | 2.81 | 2.81 | 2.81 | 2.82 |
| Mansfield (Qld) | 2.97 | 2.99 | 3.02 | 3.05 | 3.08 | 3.12 |
| McDowall | 2.97 | 2.91 | 2.88 | 2.84 | 2.81 | 2.79 |
| Middle Park - Jamboree Heights | 2.79 | 2.74 | 2.70 | 2.66 | 2.62 | 2.58 |
| Mitchelton | 2.78 | 2.80 | 2.83 | 2.85 | 2.88 | 2.92 |
| Moorooka | 2.65 | 2.68 | 2.72 | 2.76 | 2.80 | 2.84 |
| Morningside - Seven Hills | 2.80 | 2.86 | 2.93 | 2.99 | 3.06 | 3.13 |
| Mount Coot-tha | 2.86 | 2.87 | 2.87 | 2.87 | 2.87 | 2.87 |
| Mount Gravatt | 2.71 | 2.79 | 2.84 | 2.89 | 2.95 | 3.01 |
| Murarrie | 2.82 | 2.84 | 2.89 | 2.93 | 2.98 | 3.03 |
| New Farm | 2.81 | 2.84 | 2.89 | 2.93 | 2.98 | 3.04 |
| Newmarket | 2.94 | 3.00 | 3.06 | 3.12 | 3.18 | 3.25 |
| Newstead - Bowen Hills | 2.76 | 2.78 | 2.81 | 2.83 | 2.86 | 2.90 |
| Norman Park | 2.86 | 2.90 | 2.95 | 3.00 | 3.06 | 3.12 |
| Northgate - Virginia | 2.67 | 2.71 | 2.74 | 2.78 | 2.82 | 2.86 |
| Nudgee - Banyo | 2.74 | 2.79 | 2.86 | 2.93 | 3.01 | 3.09 |
| Nundah | 2.70 | 2.70 | 2.72 | 2.73 | 2.74 | 2.76 |
| Oxley (Qld) | 2.82 | 2.82 | 2.83 | 2.84 | 2.85 | 2.86 |
| Paddington - Milton | 2.78 | 2.84 | 2.92 | 2.99 | 3.06 | 3.14 |
| Pallara - Willawong | 3.16 | 3.04 | 3.07 | 3.10 | 3.13 | 3.17 |
| Parkinson - Drewvale | 3.38 | 3.39 | 3.40 | 3.41 | 3.42 | 3.45 |
| Pinjarra Hills - Pullenvale | 3.18 | 3.10 | 3.04 | 2.98 | 2.92 | 2.87 |
| Red Hill (Qld) | 2.72 | 2.77 | 2.85 | 2.92 | 2.99 | 3.07 |
| Riverhills | 2.74 | 2.70 | 2.68 | 2.66 | 2.64 | 2.63 |
| Robertson | 3.31 | 3.31 | 3.32 | 3.32 | 3.33 | 3.35 |
| Rochedale - Burbank | 3.17 | 3.15 | 3.14 | 3.13 | 3.12 | 3.12 |
| Rocklea - Acacia Ridge | 2.63 | 2.66 | 2.67 | 2.69 | 2.70 | 2.72 |
| Runcorn | 3.12 | 3.13 | 3.14 | 3.14 | 3.15 | 3.16 |
| Salisbury - Nathan | 2.68 | 2.70 | 2.74 | 2.78 | 2.82 | 2.87 |
| Sandgate - Shorncliffe | 2.67 | 2.73 | 2.79 | 2.84 | 2.89 | 2.95 |
| Scarborough - Newport - Moreton Island | 2.38 | 2.34 | 2.31 | 2.28 | 2.25 | 2.22 |
| Seventeen Mile Rocks - Sinnamon Park | 2.98 | 3.00 | 3.01 | 3.01 | 3.02 | 3.04 |
| Sherwood | 2.86 | 2.87 | 2.88 | 2.88 | 2.89 | 2.91 |
| South Brisbane | 2.77 | 2.75 | 2.80 | 2.84 | 2.88 | 2.93 |
| Spring Hill | 2.59 | 2.68 | 2.83 | 2.97 | 3.13 | 3.31 |
| St Lucia | 3.18 | 3.08 | 3.06 | 3.04 | 3.02 | 3.02 |
| Stafford | 2.47 | 2.53 | 2.59 | 2.65 | 2.70 | 2.77 |
| Stafford Heights | 2.56 | 2.53 | 2.51 | 2.48 | 2.45 | 2.44 |
| Sunnybank | 3.04 | 3.05 | 3.06 | 3.07 | 3.08 | 3.10 |
| Sunnybank Hills | 3.15 | 3.18 | 3.21 | 3.24 | 3.27 | 3.31 |
| Taigum - Fitzgibbon | 2.69 | 2.64 | 2.64 | 2.63 | 2.63 | 2.63 |
| Taringa | 2.78 | 2.83 | 2.89 | 2.95 | 3.02 | 3.09 |
| Tarragindi | 2.90 | 2.93 | 2.95 | 2.98 | 3.00 | 3.04 |
| The Gap | 2.92 | 2.92 | 2.93 | 2.93 | 2.94 | 2.96 |
| Tingalpa | 2.73 | 2.74 | 2.74 | 2.74 | 2.73 | 2.74 |
| Toowong | 2.84 | 2.87 | 2.91 | 2.94 | 2.98 | 3.03 |
| Upper Kedron - Ferny Grove | 3.10 | 3.04 | 3.00 | 2.95 | 2.91 | 2.88 |
| Upper Mount Gravatt | 2.63 | 2.63 | 2.64 | 2.65 | 2.66 | 2.67 |
| Wacol | 3.13 | 2.90 | 2.89 | 2.87 | 2.86 | 2.85 |
| Wakerley | 3.23 | 3.24 | 3.26 | 3.28 | 3.30 | 3.33 |
| Wavell Heights | 2.65 | 2.70 | 2.76 | 2.81 | 2.86 | 2.92 |
| West End | 2.89 | 2.94 | 3.00 | 3.05 | 3.11 | 3.17 |
| Westlake | 3.00 | 2.97 | 2.93 | 2.88 | 2.83 | 2.80 |
| Wilston | 3.02 | 3.07 | 3.12 | 3.16 | 3.21 | 3.27 |
| Windsor | 2.77 | 2.81 | 2.87 | 2.92 | 2.97 | 3.03 |
| Wishart | 3.03 | 3.03 | 3.05 | 3.07 | 3.08 | 3.11 |
| Woolloongabba | 2.82 | 2.75 | 2.83 | 2.90 | 2.97 | 3.05 |
| Wooloowin - Lutwyche | 2.88 | 2.92 | 2.96 | 3.00 | 3.04 | 3.09 |
| Wynnum | 2.68 | 2.73 | 2.78 | 2.82 | 2.87 | 2.92 |
| Wynnum West - Hemmant | 2.72 | 2.72 | 2.72 | 2.73 | 2.74 | 2.75 |
| Yeronga | 2.85 | 2.86 | 2.87 | 2.88 | 2.89 | 2.91 |
| Zillmere | 2.54 | 2.56 | 2.59 | 2.62 | 2.66 | 2.70 |

Source: Queensland Treasury, Population and dwelling projections, 2018 Edition.

Table Note:

1. Excludes occupancy rates for non-private dwellings and their residents, as well as caravans, houseboats and temporary residences.

Table 8.3.2—Small area occupancy rates for attached dwellings (Note 1)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| SA2 ASGS 2016 | 2016 | 2021 | 2026 | 2031 | 2036 | 2041 |
| Albion | 1.65 | 1.65 | 1.66 | 1.68 | 1.69 | 1.71 |
| Alderley | 1.67 | 1.68 | 1.69 | 1.70 | 1.72 | 1.73 |
| Algester | 2.19 | 2.19 | 2.20 | 2.20 | 2.20 | 2.21 |
| Annerley | 1.90 | 1.90 | 1.91 | 1.91 | 1.92 | 1.93 |
| Ascot | 1.56 | 1.56 | 1.57 | 1.57 | 1.58 | 1.59 |
| Ashgrove | 1.70 | 1.70 | 1.71 | 1.72 | 1.73 | 1.74 |
| Aspley | 1.53 | 1.51 | 1.50 | 1.49 | 1.47 | 1.47 |
| Auchenflower | 1.75 | 1.76 | 1.78 | 1.80 | 1.82 | 1.84 |
| Bald Hills | 2.69 | 2.70 | 2.72 | 2.73 | 2.75 | 2.77 |
| Balmoral | 1.77 | 1.79 | 1.81 | 1.82 | 1.84 | 1.86 |
| Bardon | 1.67 | 1.67 | 1.68 | 1.69 | 1.70 | 1.71 |
| Bellbowrie - Moggill | 1.73 | 1.72 | 1.72 | 1.71 | 1.71 | 1.71 |
| Belmont - Gumdale | 2.49 | 2.44 | 2.40 | 2.36 | 2.32 | 2.29 |
| Boondall | 1.98 | 1.99 | 2.01 | 2.02 | 2.04 | 2.06 |
| Bracken Ridge | 2.17 | 2.18 | 2.19 | 2.20 | 2.21 | 2.23 |
| Bridgeman Downs | 1.99 | 1.99 | 2.00 | 2.00 | 2.02 | 2.03 |
| Brighton (Qld) | 1.65 | 1.61 | 1.65 | 1.68 | 1.72 | 1.77 |
| Brisbane Airport | 1.83 | 1.77 | 1.77 | 1.77 | 1.77 | 1.77 |
| Brisbane City | 1.86 | 1.84 | 1.86 | 1.88 | 1.90 | 1.92 |
| Brisbane Port - Lytton | 1.83 | 1.82 | 1.82 | 1.82 | 1.82 | 1.82 |
| Brookfield - Kenmore Hills | 1.38 | 1.38 | 1.37 | 1.37 | 1.36 | 1.36 |
| Bulimba | 1.82 | 1.83 | 1.85 | 1.87 | 1.89 | 1.92 |
| Calamvale - Stretton | 2.75 | 2.77 | 2.79 | 2.80 | 2.82 | 2.85 |
| Camp Hill | 1.76 | 1.82 | 1.89 | 1.95 | 2.02 | 2.10 |
| Cannon Hill | 1.75 | 1.73 | 1.73 | 1.72 | 1.72 | 1.72 |
| Carina | 1.98 | 1.99 | 1.99 | 2.00 | 2.01 | 2.02 |
| Carina Heights | 1.96 | 1.99 | 2.02 | 2.05 | 2.08 | 2.11 |
| Carindale | 2.05 | 2.08 | 2.14 | 2.19 | 2.25 | 2.31 |
| Carseldine | 1.93 | 1.94 | 1.97 | 1.99 | 2.02 | 2.04 |
| Chapel Hill | 2.09 | 2.06 | 2.05 | 2.05 | 2.04 | 2.04 |
| Chelmer - Graceville | 1.92 | 1.94 | 1.96 | 1.98 | 2.00 | 2.02 |
| Chermside | 1.77 | 1.80 | 1.83 | 1.86 | 1.89 | 1.93 |
| Chermside West | 2.24 | 2.23 | 2.23 | 2.22 | 2.22 | 2.22 |
| Clayfield | 1.63 | 1.64 | 1.65 | 1.66 | 1.67 | 1.68 |
| Coopers Plains | 2.29 | 2.30 | 2.31 | 2.32 | 2.34 | 2.35 |
| Coorparoo | 1.75 | 1.83 | 1.90 | 1.98 | 2.05 | 2.14 |
| Corinda | 1.67 | 1.68 | 1.69 | 1.71 | 1.72 | 1.74 |
| Darra - Sumner | 2.48 | 2.55 | 2.55 | 2.54 | 2.53 | 2.53 |
| Deagon | 1.00 | 1.00 | 0.99 | 0.99 | 0.99 | 0.99 |
| Durack | 1.70 | 1.69 | 1.69 | 1.68 | 1.68 | 1.68 |
| Eagle Farm - Pinkenba | 1.39 | 1.40 | 1.42 | 1.44 | 1.46 | 1.48 |
| East Brisbane | 1.70 | 1.72 | 1.74 | 1.75 | 1.77 | 1.79 |
| Eight Mile Plains | 2.71 | 2.71 | 2.73 | 2.74 | 2.75 | 2.78 |
| Enoggera | 1.64 | 1.65 | 1.67 | 1.69 | 1.71 | 1.73 |
| Enoggera Reservoir | 1.83 | 1.84 | 1.84 | 1.84 | 1.84 | 1.84 |
| Everton Park | 1.63 | 1.67 | 1.70 | 1.73 | 1.76 | 1.80 |
| Fairfield - Dutton Park | 1.84 | 1.85 | 1.86 | 1.87 | 1.88 | 1.90 |
| Fig Tree Pocket | 1.83 | 1.84 | 1.84 | 1.84 | 1.82 | 1.82 |
| Forest Lake - Doolandella | 2.20 | 2.22 | 2.25 | 2.27 | 2.29 | 2.32 |
| Fortitude Valley | 1.63 | 1.62 | 1.62 | 1.62 | 1.63 | 1.63 |
| Geebung | 1.96 | 1.89 | 1.90 | 1.90 | 1.91 | 1.92 |
| Grange | 1.66 | 1.65 | 1.65 | 1.64 | 1.64 | 1.64 |
| Greenslopes | 1.80 | 1.92 | 2.01 | 2.10 | 2.19 | 2.29 |
| Hamilton (Qld) | 1.48 | 1.48 | 1.48 | 1.48 | 1.48 | 1.49 |
| Hawthorne | 1.78 | 1.79 | 1.81 | 1.83 | 1.85 | 1.87 |
| Hendra | 1.94 | 1.95 | 1.96 | 1.97 | 1.99 | 2.00 |
| Highgate Hill | 1.84 | 1.86 | 1.88 | 1.90 | 1.92 | 1.95 |
| Holland Park | 1.64 | 1.72 | 1.78 | 1.85 | 1.91 | 1.98 |
| Holland Park West | 1.78 | 1.79 | 1.80 | 1.80 | 1.81 | 1.82 |
| Inala - Richlands | 2.30 | 2.25 | 2.36 | 2.46 | 2.56 | 2.67 |
| Indooroopilly | 2.13 | 2.15 | 2.18 | 2.21 | 2.23 | 2.27 |
| Ipswich - North | 2.34 | 2.33 | 2.33 | 2.32 | 2.31 | 2.31 |
| Jindalee - Mount Ommaney | 1.95 | 1.94 | 1.94 | 1.93 | 1.93 | 1.93 |
| Kangaroo Point | 1.69 | 1.69 | 1.71 | 1.72 | 1.74 | 1.76 |
| Karana Downs | 2.19 | 2.18 | 2.17 | 2.17 | 2.16 | 2.16 |
| Kedron - Gordon Park | 1.71 | 1.75 | 1.79 | 1.82 | 1.86 | 1.91 |
| Kelvin Grove - Herston | 2.14 | 2.13 | 2.15 | 2.16 | 2.17 | 2.19 |
| Kenmore | 1.84 | 1.84 | 1.83 | 1.82 | 1.82 | 1.82 |
| Keperra | 1.31 | 1.32 | 1.32 | 1.31 | 1.30 | 1.30 |
| Kuraby | 2.89 | 2.91 | 2.94 | 2.96 | 2.98 | 3.01 |
| Lake Manchester - England Creek | 1.83 | 1.91 | 1.91 | 1.91 | 1.91 | 1.91 |
| Macgregor (Qld) | 2.31 | 2.35 | 2.35 | 2.35 | 2.35 | 2.35 |
| Manly - Lota | 1.52 | 1.46 | 1.44 | 1.43 | 1.42 | 1.41 |
| Manly West | 2.04 | 2.08 | 2.13 | 2.19 | 2.24 | 2.31 |
| Mansfield (Qld) | 2.17 | 2.17 | 2.18 | 2.18 | 2.18 | 2.19 |
| McDowall | 2.11 | 2.09 | 2.07 | 2.05 | 2.03 | 2.01 |
| Middle Park - Jamboree Heights | 1.82 | 1.82 | 1.81 | 1.81 | 1.80 | 1.80 |
| Mitchelton | 1.68 | 1.62 | 1.59 | 1.56 | 1.53 | 1.51 |
| Moorooka | 1.78 | 1.88 | 1.97 | 2.05 | 2.13 | 2.21 |
| Morningside - Seven Hills | 1.87 | 1.89 | 1.90 | 1.92 | 1.93 | 1.95 |
| Mount Coot-tha | 1.83 | 1.84 | 1.84 | 1.84 | 1.84 | 1.84 |
| Mount Gravatt | 1.86 | 1.96 | 2.05 | 2.14 | 2.24 | 2.33 |
| Murarrie | 2.29 | 2.27 | 2.27 | 2.26 | 2.26 | 2.26 |
| New Farm | 1.64 | 1.64 | 1.65 | 1.66 | 1.67 | 1.69 |
| Newmarket | 1.90 | 1.91 | 1.93 | 1.95 | 1.97 | 1.99 |
| Newstead - Bowen Hills | 1.67 | 1.67 | 1.68 | 1.68 | 1.69 | 1.71 |
| Norman Park | 1.76 | 1.77 | 1.79 | 1.80 | 1.81 | 1.83 |
| Northgate - Virginia | 1.70 | 1.71 | 1.73 | 1.74 | 1.75 | 1.77 |
| Nudgee - Banyo | 1.82 | 1.86 | 1.91 | 1.96 | 2.01 | 2.07 |
| Nundah | 1.77 | 1.78 | 1.80 | 1.82 | 1.84 | 1.86 |
| Oxley (Qld) | 2.09 | 2.08 | 2.08 | 2.07 | 2.06 | 2.06 |
| Paddington - Milton | 1.64 | 1.64 | 1.64 | 1.64 | 1.64 | 1.64 |
| Pallara - Willawong | 1.85 | 1.96 | 1.96 | 1.95 | 1.95 | 1.95 |
| Parkinson - Drewvale | 2.40 | 2.42 | 2.44 | 2.46 | 2.48 | 2.50 |
| Pinjarra Hills - Pullenvale | 1.14 | 1.13 | 1.13 | 1.13 | 1.12 | 1.12 |
| Red Hill (Qld) | 1.79 | 1.80 | 1.82 | 1.84 | 1.86 | 1.89 |
| Riverhills | 2.02 | 2.00 | 1.98 | 1.96 | 1.95 | 1.93 |
| Robertson | 2.41 | 2.42 | 2.43 | 2.44 | 2.45 | 2.47 |
| Rochedale - Burbank | 1.86 | 1.96 | 1.96 | 1.95 | 1.95 | 1.95 |
| Rocklea - Acacia Ridge | 2.25 | 2.26 | 2.28 | 2.30 | 2.32 | 2.34 |
| Runcorn | 2.83 | 2.85 | 2.86 | 2.87 | 2.89 | 2.91 |
| Salisbury - Nathan | 1.80 | 1.69 | 1.70 | 1.72 | 1.73 | 1.75 |
| Sandgate - Shorncliffe | 1.34 | 1.30 | 1.30 | 1.29 | 1.28 | 1.28 |
| Scarborough - Newport - Moreton Island | 1.47 | 1.51 | 1.56 | 1.61 | 1.66 | 1.71 |
| Seventeen Mile Rocks - Sinnamon Park | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 | 2.06 |
| Sherwood | 1.73 | 1.77 | 1.80 | 1.83 | 1.87 | 1.90 |
| South Brisbane | 1.88 | 1.86 | 1.89 | 1.91 | 1.94 | 1.97 |
| Spring Hill | 1.97 | 1.96 | 1.98 | 2.00 | 2.02 | 2.05 |
| St Lucia | 2.31 | 2.24 | 2.24 | 2.23 | 2.22 | 2.22 |
| Stafford | 1.50 | 1.51 | 1.52 | 1.53 | 1.54 | 1.55 |
| Stafford Heights | 1.53 | 1.54 | 1.56 | 1.58 | 1.59 | 1.61 |
| Sunnybank | 2.50 | 2.51 | 2.54 | 2.55 | 2.57 | 2.60 |
| Sunnybank Hills | 2.47 | 2.47 | 2.48 | 2.48 | 2.49 | 2.50 |
| Taigum - Fitzgibbon | 1.99 | 1.95 | 1.97 | 2.00 | 2.02 | 2.06 |
| Taringa | 1.88 | 1.89 | 1.90 | 1.91 | 1.92 | 1.94 |
| Tarragindi | 1.80 | 1.81 | 1.88 | 1.96 | 2.04 | 2.13 |
| The Gap | 1.92 | 1.91 | 1.90 | 1.89 | 1.88 | 1.88 |
| Tingalpa | 2.01 | 2.05 | 2.08 | 2.10 | 2.12 | 2.14 |
| Toowong | 1.92 | 1.93 | 1.94 | 1.96 | 1.97 | 1.99 |
| Upper Kedron - Ferny Grove | 2.07 | 2.07 | 2.07 | 2.08 | 2.08 | 2.10 |
| Upper Mount Gravatt | 2.10 | 2.10 | 2.11 | 2.11 | 2.12 | 2.14 |
| Wacol | 2.40 | 2.24 | 2.23 | 2.22 | 2.22 | 2.22 |
| Wakerley | 2.34 | 2.33 | 2.31 | 2.30 | 2.28 | 2.27 |
| Wavell Heights | 1.69 | 1.71 | 1.74 | 1.77 | 1.79 | 1.83 |
| West End | 1.84 | 1.88 | 1.92 | 1.96 | 2.01 | 2.05 |
| Westlake | 1.75 | 1.74 | 1.74 | 1.73 | 1.73 | 1.73 |
| Wilston | 1.76 | 1.77 | 1.79 | 1.81 | 1.83 | 1.85 |
| Windsor | 1.69 | 1.70 | 1.71 | 1.73 | 1.74 | 1.76 |
| Wishart | 2.32 | 2.32 | 2.34 | 2.34 | 2.35 | 2.37 |
| Woolloongabba | 1.70 | 1.69 | 1.70 | 1.71 | 1.72 | 1.73 |
| Wooloowin - Lutwyche | 1.69 | 1.70 | 1.72 | 1.74 | 1.75 | 1.77 |
| Wynnum | 1.56 | 1.60 | 1.66 | 1.73 | 1.80 | 1.88 |
| Wynnum West - Hemmant | 1.89 | 1.87 | 1.85 | 1.82 | 1.79 | 1.77 |
| Yeronga | 1.83 | 1.84 | 1.84 | 1.85 | 1.86 | 1.87 |
| Zillmere | 1.93 | 1.95 | 1.98 | 2.00 | 2.02 | 2.04 |

Source: Queensland Treasury, Population and dwelling projections, 2018 Edition.

Table Note:

1. Excludes occupancy rates for non-private dwellings and their residents, as well as caravans, houseboats and temporary residences.

## Appendix D: Land use groupings for existing level of development

Table 8.4.1—Land use groupings (June 2018)

|  |
| --- |
| Residential |
| Residential Attached |
| Residential Semi-detached |
| Residential Detached |
| Residential Welfare |
| **Non – Residential** |
| Retail |
| Accommodation and Food Services and Arts and Recreation |
| Showroom, Retail Warehouse, Bulky Goods |
| Office |
| Industry – light |
| Industry – general |
| Industry – heavy |
| Industry – other |
| Warehouses, Bulk Stores, Logistics |
| Community - Health |
| Community – Education |
| Community - Other |
| Rural Activities |
| Vacant Land |
| Open Space |
| All Other |

## Appendix E: Land use and yield assumptions for non-residential development

For all non-residential related zones and precincts in the planning scheme, the land use and yield assumptions that have been used in the non-residential ultimate calculator for all relevant lots within the LGA are contained in planning scheme, Schedule 3.1 Planning assumption tables.

## Appendix F: Demand conversion rates

Table 8.6.1—Demand conversion rates for the transport network (roads)

|  |  |  |  |
| --- | --- | --- | --- |
| Desired Standards of Service (DSS) Area | Type of development | Desired rate of provision per unit of Demand (vehicle trips per day/ dwelling or GFA) | ET Conversion Rate |
| Brisbane LGA | Detached dwelling | 6.50 | 1.00000 |
| Brisbane LGA | Attached dwelling | 4.20 | 0.64615 |
| Brisbane LGA | Other dwelling | 2.00 | 0.30769 |
| Brisbane LGA | Retail | 0.40 | 0.06154 |
| Brisbane LGA | Commercial | 0.16 | 0.02462 |
| Brisbane LGA | Industrial | 0.05 | 0.00769 |
| Brisbane LGA | Community purpose | 0.15 | 0.02308 |
| Brisbane LGA | Other | 0 | 0 |

Table 8.6.2—Demand conversion rates for the transport network (pathway)

|  |  |  |  |
| --- | --- | --- | --- |
| Desired Standards of Service (DSS) Area | Type of development | Desired rate of provision per unit of Demand (person trips per day/ dwelling or GFA) | ET Conversion Rate |
| Citywide | Detached dwelling | 2.30000 | 1.00000 |
| Citywide | Attached dwelling | 1.48615 | 0.64615 |
| Citywide | Other dwelling | 0.70769 | 0.30769 |
| Citywide | Retail | 0.14154 | 0.06154 |
| Citywide | Commercial | 0.05662 | 0.02462 |
| Citywide | Industrial | 0.01769 | 0.00769 |
| Citywide | Community purpose | 0.05308 | 0.02308 |
| Citywide | Other | 0 | 0 |

Table 8.6.3—Demand conversion rates for the transport network (ferry terminals)

|  |  |  |  |
| --- | --- | --- | --- |
| Desired Standards of Service (DSS) Area | Type of development | Desired rate of provision per unit of Demand (person trips per day/ dwelling or GFA) | ET Conversion Rate |
| Citywide | Detached dwelling | 0.07101 | 1 |
| Citywide | Attached dwelling | 0.04590 | 0.64615 |
| Citywide | Other dwelling | 0.02180 | 0.30769 |
| Citywide | Retail | 0.00440 | 0.06154 |
| Citywide | Commercial | 0.00170 | 0.02462 |
| Citywide | Industrial | 0.00050 | 0.00769 |
| Citywide | Community purpose | 0.00160 | 0.02308 |
| Citywide | Other | 0 | 0 |

Table 8.6.4—Demand conversion rates for the parks network

|  |  |  |  |
| --- | --- | --- | --- |
| Desired Standards of Service (DSS) Area | Type of development | Desired rate of provision per unit of demand (m2 park/dwelling or GFA) | ET Conversion Rate |
| Brisbane wide | Detached dwelling | 115.460 | 1.00000 |
| Brisbane wide | Attached dwelling | 74.192 | 0.64286 |
| Brisbane wide | Other dwelling | 40.000 | 0.34644 |
| Brisbane wide | Retail | 0.06799 | 0.00058 |
| Brisbane wide | Commercial | 0.15300 | 0.00130 |
| Brisbane wide | Industrial | 0.02782 | 0.00024 |
| Brisbane wide | Community purpose | 0 | 0 |
| Brisbane wide | Other | 0 | 0 |

Table 8.6.5—Demand conversion rates for the land for community facilities network

|  |  |  |  |
| --- | --- | --- | --- |
| Desired Standards of Service (DSS) Area | Type of Development | Desired rate of provision per unit of demand (m2/dwelling or GFA) | ET Conversion Rate |
| Centres | Detached dwelling | 5.7132 | 0.93103 |
| Centres | Attached dwelling | 3.8088 | 0.62069 |
| Centres | Other dwelling | 2.11600 | 0.34483 |
| Centres | Retail | 0.00433 | 0.00071 |
| Centres | Commercial | 0.01300 | 0.00212 |
| Centres | Industrial | 0.00306 | 0.00050 |
| Centres | Community purpose | 0 | 0 |
| Centres | Other | 0 | 0 |
| General Urban | Detached dwelling | 6.1364 | 1.00000 |
| General Urban | Attached dwelling | 4.02040 | 0.65517 |
| General Urban | Other dwelling | 2.11600 | 0.34483 |
| General Urban | Retail | 0.00433 | 0.00071 |
| General Urban | Commercial | 0.01182 | 0.00193 |
| General Urban | Industrial | 0.00236 | 0.00039 |
| General Urban | Community purpose | 0 | 0 |
| General Urban | Other | 0 | 0 |
| Fringe | Detached dwelling | 5.2680 | 0.85848 |
| Fringe | Attached dwelling | 2.2828 | 0.37201 |
| Fringe | Other dwelling | 1.75600 | 0.28616 |
| Fringe | Retail | 0.00433 | 0.00071 |
| Fringe | Commercial | 0.01040 | 0.00169 |
| Fringe | Industrial | 0.00236 | 0.00039 |
| Fringe | Community purpose | 0 | 0 |
| Fringe | Other | 0 | 0 |

## Appendix G: Demand generation rates

Table 8.7.1—Demand generation for the transport network (roads)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Service Catchment | Cumulative demand (ET) | | | | | |
| 2021 (base date) | 2026 | 2031 | 2036 | 2041 | Ultimate development |
| 1 | 64,134 | 68,161 | 71,036 | 72,677 | 74,476 | 90,798 |
| 2 | 9,776 | 10,301 | 10,784 | 11,395 | 12,315 | 14,363 |
| 3 | 55,319 | 58,297 | 60,354 | 63,147 | 66,749 | 112,172 |
| 4 | 52,019 | 53,932 | 56,428 | 59,441 | 61,905 | 75,487 |
| 5 | 41,593 | 43,867 | 46,193 | 48,016 | 50,409 | 64,284 |
| 6 | 74,854 | 77,388 | 80,755 | 84,250 | 88,902 | 113,491 |
| 7 | 92,127 | 94,205 | 97,023 | 99,360 | 102,802 | 133,080 |
| 8 | 424,827 | 458,044 | 492,355 | 524,875 | 555,098 | 673,790 |
| 9 | 42,801 | 44,571 | 46,422 | 48,207 | 50,472 | 64,380 |
| 10 | 79,013 | 83,469 | 87,743 | 91,575 | 97,054 | 133,087 |
| 11 | 40,775 | 42,199 | 43,808 | 45,647 | 47,506 | 58,709 |
| 12 | 19,883 | 20,633 | 21,413 | 22,249 | 22,997 | 26,135 |
| 13 | 44,512 | 49,438 | 52,353 | 54,294 | 57,300 | 69,386 |
| 14 | 81,393 | 85,387 | 90,077 | 93,822 | 98,471 | 130,706 |
| 15 | 90,204 | 95,774 | 100,290 | 104,277 | 108,348 | 138,995 |
| 16 | 99,256 | 106,988 | 109,105 | 111,531 | 115,539 | 169,344 |
| 17 | 9,935 | 10,386 | 10,493 | 10,539 | 10,652 | 13,574 |
| Citywide | 1,322,421 | 1,403,040 | 1,476,632 | 1,545,302 | 1,620,995 | 2,081,781 |

Table 8.7.2—Demand generation for the transport network (pathway)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Service catchment | Cumulative demand (ET) | | | | | |
| 2021 (base date) | 2026 | 2031 | 2036 | 2041 | Ultimate development |
| Citywide | 1,358,482 | 1,439,103 | 1,512,693 | 1,581,363 | 1,657,057 | 2,118,395 |

Table 8.7.3—Demand generation for the transport network (ferry terminals)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Service catchment | Cumulative demand (ET) | | | | | |
| 2021 (base date) | 2026 | 2031 | 2036 | 2041 | Ultimate development |
| Citywide | 1,247,146 | 1,326,450 | 1,399,160 | 1,466,523 | 1,540,842 | 2,000,427 |

Table 8.7.4—Demand generation (ETs) for the parks network

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Service catchment | Existing and projected demand (ET) | | | | | |
| 2021 (base date) | 2026 | 2031 | 2036 | 2041 | Ultimate development |
| East | 107,696 | 110,676 | 114,141 | 119,517 | 124,578 | 142,342 |
| North | 90,247 | 96,762 | 100,910 | 105,644 | 109,785 | 133,112 |
| South | 129,801 | 134,181 | 139,044 | 145,392 | 151,633 | 168,045 |
| West | 127,979 | 134,145 | 140,481 | 146,630 | 152,473 | 166,774 |

Table 8.7.5—Demand generation (ETs) for the land for community facilities network

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Service catchment | Cumulative demand (ET) | | | | | |
| 2021 (base date) | 2026 | 2031 | 2036 | 2041 | Ultimate development |
| Fringe | 7,345 | 7,432 | 7,482 | 7,831 | 7,926 | 7,940 |
| Urban East | 98,144 | 100,367 | 102,641 | 106,394 | 122,411 | 125,653 |
| Urban North | 143,696 | 154,716 | 163,571 | 171,839 | 204,721 | 201,128 |
| Urban South | 129,059 | 134,326 | 140,509 | 148,342 | 171,422 | 178,070 |
| Urban West | 87,244 | 89,263 | 91,236 | 93,932 | 103,836 | 105,139 |

1. Section 32 MGR, Queensland Government. [↑](#footnote-ref-2)
2. Priority Development Areas (PDAs). Assumed scale of development for PDAs is sourced externally from Economic Development Queensland and Cross River Rail Development Authority and introduced as an adjustment to the model system. [↑](#footnote-ref-3)
3. Table 6.3.7.1 is not used in the net developable area calculation. [↑](#footnote-ref-4)
4. Table 7.3.4.1 is not used in the net developable area calculation. [↑](#footnote-ref-5)
5. Table 7.3.4.2 is not used in the net developable area calculation. [↑](#footnote-ref-6)
6. This material includes amendments relating to select Neighbourhood Plans that were draft as at March 2021. These neighbourhood plans are yet to be included in City Plan 2014 as they are the subject of a separate planning scheme amendment process. The information has been included in anticipation of a neighbourhood plan progressing and is subject to change. [↑](#footnote-ref-7)