

Sustainability Framework- Calculation and Reporting of the Population Growth Ratio

1. Introduction

This document is intended to guide councils on calculating and reporting the Population Growth Ratio (PGR) as part of the reporting requirement. Councils are required to calculate and report actual growth for the current year, average for the past 5 years and forecast growth for the nine years following the current financial year.

2. Background

Population growth is a fundamental driver of local government planning, affecting income generation, service requirements and infrastructure development. The Department requires all councils to report actual and projected population growth. This measure is applicable to all councils irrespective of their Tier and is used solely for contextual purposes. Please note it is not being audited by the Queensland Audit Office (QAO).

3. Calculation of the Population Growth Ratio

Councils are required to calculate the current year's PGR using the latest available data, which is released in September every year by the Australian Bureau of Statistics (ABS). This results in the PGR being a lagging indicator – for example, the calculation for FY2023-24 will use the population data for the years 2021 and 2022, published by the ABS in September 2023.

Councils are also required to forecast the ratio for the next nine years and calculate a five-year average to provide a stable view of population trends.

3.1 Calculation of Current Year Ratio

The PGR for the current financial year reflects the changes experienced from the previous financial year. For instance, for FY2023-24 reporting, councils will calculate the change based on FY2021-22 data*. The necessary population figures required for this ratio will be provided on the [Department's website](#) and LG Central each year. The latest ABS data released in September 2023 is also included in Appendix A of this document.

**Data source - ABS category number 3235.0 (Population by Age and Sex, Regions of Australia)*

To calculate the current year PGR, councils should apply the following formula:

$$\text{Current Year Population Growth Ratio} = \left(\frac{\text{Prior year estimated population}}{\text{Previous year estimated population}} - 1 \right)$$

3.2 Calculation of Five-Year Average

Calculating a five-year average for the PGR provides a smoothed perspective on population trends, reducing the impact of anomalous yearly changes and providing a more stable basis for long-term planning. This method leverages historical data to offer a comprehensive view of population dynamics over a defined period.

The Department will provide the required population data on its [website](#) and LG Central, sourced from the ABS dataset 3235.0 (Population by Age and Sex, Regions of Australia). This ensures that all councils have access to consistent and reliable data for calculating the five-year average.

For the FY2023-24 reporting year, the Department will provide councils with Estimated Resident Population data spanning from 2017 to 2022. Using this data, councils can calculate the PGR annually for each of the five years from FY2019-20 to FY2023-24 (refer to section 3.1 for formula). The five-year average PGR for FY2023-24 is then calculated by averaging the following annual ratios:

- *FY2023-24 Population Growth Ratio (using 2021 and 2022 population data)*
- *FY2022-23 Population Growth Ratio (using 2020 and 2021 population data)*
- *FY2021-22 Population Growth Ratio (using 2019 and 2020 population data)*
- *FY2020-21 Population Growth Ratio (using 2018 and 2019 population data)*
- *FY2019-20 Population Growth Ratio (using 2017 and 2018 population data)*

Appendix A of this document contains the most recent ABS data from September 2023.

3.3 Calculation of Forecast Ratio

For projecting population growth for the nine years following the current financial year, councils have the option to choose from three methods, each allowing flexibility based on available data and specific local conditions:

(a) Local Data Method:

Councils with access to local population data are encouraged to use this data to calculate their population growth ratios. This approach allows for customised calculations that can more accurately reflect local changes and conditions.

(b) Constant Rate Method:

This method assumes that the growth rate observed in the current year will persist uniformly over the next nine years. It is suitable for councils experiencing stable growth conditions.

(c) Compound Annual Growth Rate (CAGR) Method

The CAGR method offers a systematic approach to estimating the average annual growth rate over a multi-year period. This method is recognised for its straightforward application and ability to deliver a smooth, consistent growth estimation that facilitates long-term planning.

Recommended Dataset and Rationale:

The Queensland Government Statistician's Office (QGSO) updates population projections for Local Government Areas, providing data in five-year increments (2021, 2026, 2031, 2036, 2041, and 2046). The Department has selected the projections for 2026 and 2036 to calculate the Compound Annual Growth Rate (CAGR). This 10-year span is chosen to provide a consistent basis for long-term planning and to align with standard demographic study intervals. Councils can use the calculated CAGR in the appendix below to report on projected population growth for the next nine years.

Generic Formula and Explanation:

The generic formula for calculating the Compound Annual Growth Rate is:

$$CAGR = \left(\frac{Estimated\ Population_{end}}{Estimated\ Population_{start}} \right)^{\frac{1}{n}} - 1$$

Where:

- *Estimated Population_{end}* represents the population at the end of the period (i.e. 2036)
- *Estimated Population_{start}* is the population at the beginning of the period (i.e. 2026)
- *n* is the number of years between the start and end population estimates (i.e. 10 years)

This formula calculates the average annual growth rate that would smooth any fluctuations over the period and provide a single growth rate that could, hypothetically, have been constant over the previous years.

***Please note:** *The Department has calculated the CAGR for all councils using the recommended dataset and the results can be found in Appendix B below.*

3.4 Reporting Requirement

Councils are required to document the methodology used for calculating the projected PGR in their Sustainability Statement. This documentation should detail the data sources utilised to ensure transparency and consistency in the reporting process.

Appendix A: Queensland Population by LGA 2017-2022



Australian Bureau of Statistics

Regional population by age and sex, 2022

Released at 11.30am (Canberra time) 28 September 2023

Table 3. Estimated resident population by age, Local Government Areas, persons – 30 June 2017 to 2022

Local Government Area	Estimated resident population at 30 June 2017	Estimated resident population at 30 June 2018	Estimated resident population at 30 June 2019	Estimated resident population at 30 June 2020	Estimated resident population at 30 June 2021	Estimated resident population at 30 June 2022
Aurukun	1,301	1,296	1,288	1,196	1,130	1,124
Balonne	4,394	4,372	4,389	4,392	4,378	4,353
Banana	14,573	14,525	14,581	14,587	14,657	14,779
Barcaldine	2,881	2,877	2,876	2,862	2,863	2,865
Barcoo	278	288	297	302	312	315
Blackall Tambo	1,895	1,901	1,916	1,919	1,918	1,934
Boulia	435	447	454	458	470	474
Brisbane	1,206,960	1,226,938	1,247,133	1,263,500	1,262,968	1,283,002
Bulloo	347	343	340	340	342	343
Bundaberg	95,354	96,599	97,801	98,883	100,095	102,076
Burdekin	17,224	17,086	17,003	16,934	16,836	16,869
Burke	362	381	399	415	430	432
Cairns	163,806	165,716	167,149	168,710	169,250	171,970
Carpentaria	2,034	2,050	2,089	2,118	2,158	2,171
Cassowary Coast	29,442	29,536	29,564	29,608	29,511	29,605
Central Highlands (Qld)	28,573	28,572	28,574	28,524	28,298	28,530
Charters Towers	12,021	11,954	11,890	11,923	11,920	11,981
Cherbourg	1,283	1,257	1,244	1,220	1,211	1,228
Cloncurry	3,260	3,351	3,442	3,528	3,704	3,789
Cook	4,414	4,471	4,532	4,579	4,631	4,673
Croydon	288	280	272	269	269	268
Diamantina	284	286	282	273	270	270
Doomadgee	1,495	1,486	1,479	1,459	1,434	1,442
Douglas	12,206	12,204	12,312	12,371	12,441	12,660
Etheridge	792	773	747	731	724	720
Flinders (Qld)	1,520	1,498	1,506	1,509	1,521	1,535

Local Government Area	Estimated resident population at 30 June 2017	Estimated resident population at 30 June 2018	Estimated resident population at 30 June 2019	Estimated resident population at 30 June 2020	Estimated resident population at 30 June 2021	Estimated resident population at 30 June 2022
Fraser Coast	104,509	106,379	108,146	109,938	112,070	115,079
Gladstone	62,859	63,077	63,495	63,890	64,275	65,302
Gold Coast	589,101	602,443	614,435	626,342	633,598	647,078
Goondiwindi	10,747	10,648	10,603	10,516	10,400	10,410
Gympie	51,110	51,665	52,489	53,021	53,851	55,112
Hinchinbrook	10,950	10,944	10,891	10,911	10,990	11,089
Hope Vale	1,005	1,011	1,013	1,007	998	1,004
Ipswich	205,588	211,946	219,893	226,778	233,314	242,653
Isaac	21,480	21,523	21,773	22,141	22,419	22,746
Kowanyama	990	1,014	1,045	1,076	1,107	1,137
Livingstone	37,452	37,950	38,548	39,206	39,877	40,905
Lockhart River	727	708	693	673	653	656
Lockyer Valley	40,003	40,539	41,020	41,366	41,750	42,625
Logan	321,102	327,769	335,955	343,821	350,673	363,057
Longreach	3,661	3,653	3,654	3,651	3,691	3,721
Mackay	117,513	118,352	119,529	121,395	123,148	124,963
Mapoon	344	369	393	418	442	454
Maranoa	12,927	12,914	12,835	12,891	12,957	13,100
Mareeba	22,227	22,501	22,681	23,010	23,171	23,367
McKinlay	811	817	822	828	838	846
Moreton Bay	448,559	458,013	467,314	476,622	484,353	496,777
Mornington	1,171	1,151	1,127	1,093	1,060	1,065
Mount Isa	19,363	19,241	19,159	19,315	19,217	19,047
Murweh	4,279	4,263	4,211	4,106	4,009	3,961
Napranum	973	958	943	923	906	906
Noosa	54,688	55,511	56,045	56,662	56,874	57,329
North Burnett	10,556	10,406	10,268	10,206	10,142	10,216
Northern Peninsula Area	2,935	2,923	2,904	2,891	2,885	2,890
Palm Island	2,465	2,369	2,274	2,205	2,180	2,194
Paroo	1,679	1,666	1,671	1,683	1,707	1,713
Porpuraaw	774	743	708	672	632	637
Quilpie	805	772	742	721	702	703
Redland	154,656	156,885	158,937	160,418	161,709	163,732
Richmond	791	785	777	769	769	777

Local Government Area	Estimated resident population at 30 June 2017	Estimated resident population at 30 June 2018	Estimated resident population at 30 June 2019	Estimated resident population at 30 June 2020	Estimated resident population at 30 June 2021	Estimated resident population at 30 June 2022
Rockhampton	81,322	81,406	81,842	82,352	82,882	83,604
Scenic Rim	41,643	42,371	42,856	43,255	43,592	44,333
Somerset	25,286	25,326	25,355	25,322	25,388	25,713
South Burnett	32,680	32,698	32,784	32,952	33,323	33,789
Southern Downs	35,899	36,118	36,239	36,393	36,637	36,994
Sunshine Coast	311,426	320,606	329,946	338,389	346,634	355,889
Tablelands	25,521	25,849	26,071	26,309	26,488	26,808
Toowoomba	166,901	169,319	171,566	173,562	175,255	178,399
Torres	3,784	3,721	3,652	3,589	3,532	3,518
Torres Strait Island	4,688	4,551	4,434	4,355	4,294	4,286
Townsville	192,475	193,105	193,687	194,679	195,457	198,143
Weipa	4,057	4,082	4,112	4,143	4,177	4,215
Western Downs	34,292	34,338	34,420	34,390	34,351	34,542
Whitsunday	35,083	35,651	36,266	37,105	37,642	38,506
Winton	1,149	1,155	1,150	1,130	1,133	1,134
Woorabinda	997	999	1,005	1,020	1,040	1,059
Wujal Wujal	292	290	289	287	284	286
Yarrabah	2,663	2,643	2,621	2,606	2,597	2,619

Source: ABS category number 3235.0 (Population by Age and Sex, Regions of Australia) ([Link to source](#))

Appendix B: Pre-Calculated Compound Annual Growth Rate

This appendix includes detailed CAGR estimates for each council, calculated using the QGSO's population projections for 2026 to 2036. These pre-calculated rates offer a standardised basis for forecasting population growth. However, using these estimates is optional, and councils can decide whether to incorporate them into their reports based on what best suits their specific needs.

Council Name	Projected Population 2026	Projected Population 2036	Compound Annual Growth Rate %
Aurukun	1,184	1,184	0.000%
Balonne	4,170	3,761	-1.027%
Banana	14,530	14,331	-0.138%
Barcaldine	2,807	2,559	-0.922%
Barcoo	305	278	-0.945%
Blackall Tambo	1,883	1,716	-0.922%
Boulia	460	418	-0.945%
Brisbane	1,347,337	1,467,709	0.859%
Bulloo	332	301	-0.960%
Bundaberg	103,553	109,790	0.587%
Burdekin	16,409	16,111	-0.183%
Burke	444	490	0.991%
Cairns	181,303	206,646	1.317%
Carpentaria	2,232	2,465	1.001%
Cassowary Coast	30,275	31,116	0.275%
Central Highlands (Qld)	28,657	29,251	0.205%
Charters Towers	11,875	11,553	-0.275%
Cherbourg	1,245	1,302	0.446%
Cloncurry	3,880	3,969	0.226%
Cook	4,689	4,726	0.078%
Croydon	261	245	-0.632%
Diamantina	264	240	-0.945%
Doomadgee	1,443	1,457	0.103%
Douglas	12,952	14,286	0.985%
Etheridge	703	660	-0.632%
Flinders (Qld)	1,462	1,280	-1.323%
Fraser Coast	119,950	130,237	0.826%
Gladstone	67,236	73,021	0.829%
Gold Coast	710,911	847,540	1.773%
Goondiwindi	10,093	9,712	-0.384%
Gympie	56,800	59,589	0.481%
Hinchinbrook	10,715	9,780	-0.909%
Hope Vale	1,030	1,082	0.492%
Ipswich	272,052	384,032	3.507%
Isaac	23,061	24,478	0.598%
Kowanyama	1,121	1,148	0.239%
Livingstone	44,143	54,697	2.167%

Council Name	Projected Population 2026	Projected Population 2036	Compound Annual Growth Rate %
Lockhart River	648	648	0.002%
Lockyer Valley	44,453	50,794	1.342%
Logan	395,967	485,613	2.062%
Longreach	3,607	3,219	-1.131%
Mackay	130,167	144,404	1.043%
McKinlay	806	705	-1.323%
Mapoon	480	503	0.470%
Maranoa	12,705	12,027	-0.547%
Mareeba	24,391	26,627	0.881%
Moreton Bay	551,701	676,171	2.055%
Mornington	1,061	1,005	-0.536%
Mount Isa	19,211	19,127	-0.044%
Murweh	3,925	3,619	-0.810%
Napranum	948	989	0.425%
Noosa	59,628	63,425	0.619%
North Burnett	9,753	9,587	-0.171%
Northern Peninsula Area	2,986	3,156	0.556%
Palm Island	2,201	2,457	1.109%
Paroo	1,656	1,504	-0.960%
Pormpuraaw	639	655	0.239%
Quilpie	681	618	-0.960%
Redland	170,015	179,685	0.555%
Richmond	762	723	-0.537%
Rockhampton	85,511	90,217	0.537%
Scenic Rim	47,030	52,976	1.198%
Somerset	26,791	30,775	1.396%
South Burnett	33,875	35,458	0.458%
Southern Downs	37,165	38,503	0.354%
Sunshine Coast	392,711	471,366	1.842%
Tablelands	27,398	29,122	0.612%
Toowoomba	182,290	197,694	0.815%
Torres	3,621	3,713	0.251%
Torres Strait Island	4,332	4,151	-0.427%
Townsville	207,512	236,434	1.313%
Weipa	4,314	4,748	0.963%
Western Downs	34,813	35,888	0.305%
Whitsunday	40,550	45,596	1.180%
Winton	1,107	977	-1.248%
Woorabinda	1,053	1,077	0.226%
Wujal Wujal	295	307	0.382%
Yarrabah	2,721	3,020	1.049%

Source: Queensland Government population projections (medium series), 2023 edition; Australian Bureau of Statistics, Regional population, 2021 ([Link to source](#))