

Travel Zone Projections 2022 (TZP22) Summary Factsheet

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Place Forecasting, Advanced Analytics and
Insights, Customer Strategy and Technology

transport.nsw.gov.au





Acknowledgement of Country

Transport pays respect to Elders past and present, and recognises and celebrates the diversity of Aboriginal peoples and their ongoing cultures and connections to the lands and waters of NSW.

What are Travel Zone Projections (TZP)?

The Travel Zone Projections (TZP) are modelled small area estimates of land use (known as Travel Zones) for 2016-2066. At a high level, the data covers three dimensions:

- **Time Period:** Annual 2016-2026, 5 yearly 2026-2066
- **Geography:** 3,758 Travel Zones, in [Travel Zone 2016](#) (TZ16) geography across NSW
- **Variables:** 60+ variables covering population, households, students and employment

TZP provide a long-term view of the future aligned with the NSW Government's Common Planning Assumptions (CPA) population and employment projections.

The projections are developed to support a strategic view of NSW and are calibrated as an input into TfNSW travel models, including the Strategic Travel Model (STM).

The TZP projections are not based on specific assumptions about future new transport infrastructure, but do take into account known land-use developments underway or planned, and strategic plans.

Travel Zone Projections 2022 (TZP22) are the latest projections and align with the 2022 NSW Government CPA for Population and Employment.

- The projections present a small area geography, long-term view of the future patterns of population, dwellings, workforce and employment across NSW.
- The projections rely on best available information from early-mid 2022. Caution is recommended as they are forward looking estimates only and not meant to be absolute forecasts of population and employment for NSW.
- The projections do not incorporate results of the National Census conducted by ABS in 2021, as the required information is not available from the 2021 Census at the time of production of the projections.
- The projections are not government targets.

TZP22 – Limitations & cautions

Travel Zone Projections are a strategic state-wide dataset and caution should be exercised when considering results at detailed breakdowns.

- The TZP22 outputs represent a point in time set of projections.
- Travel Zone (TZ) level outputs are projections only and should be used as a guide.
- As a general rule, TZ level projections are illustrative of a possible future only.
- A high degree of caution should be exercised when using the TZP dataset at more detailed levels. Results for an individual TZ should not be considered accurate, even in base or historic years, as source data is generally not available at this geographic extent. Instead, estimates have been derived using rules to disaggregate source data from larger geographic areas down to this level. As with all small area data, aggregating of travel zone projections to higher geographies leads to more robust results.
- Users should further note that comprehensive analysis of individual sites or precincts has not been undertaken in the development of TZP.

- Employment estimates in the base year (2016) may not align with published ABS Census results as they are adjusted for Census undercount and in some cases to correct known issues with ABS small area employment data (e.g. misallocation of data to incorrect DZNS).

Alignment to 2022 Common Planning Assumptions

- TZP22 Estimated Resident Population (ERP) outputs align with DPE's ERP control totals for the State and SA2.
- Population in Occupied Private Dwellings (POPD) and Population in Non Private Dwellings (PNPD) added together in TZP22 align with DPE's ERP at the SA2 level.
- More detailed breakdowns of the population dataset, such as by age and sex may not align perfectly due to minor differences in modelling approach and the use of spatial concordances.
- TZP22 projections for Occupied Private Dwellings vary from DPE's Implied Dwellings projections because they are different measures of dwellings.
- An assessment of the reliability of the TZP data has been completed, with a view to inform the best way to use it.

Key inputs to Travel Zone Projections 2022

The base year distribution of population is aligned to the National Census conducted by ABS in 2016 and future growth in population is aligned with population projections and housing supply forecasts prepared by Department of Planning and Environment (DPE) in 2022.

Future employment is aligned with NSW Treasury economic forecasts and industry forecasts prepared using a Computerised General Equilibrium (CGE) model by Victoria University. The future distribution of employment growth is informed by TfNSW custom-built database, the Future Employment Development Database (FEDD).

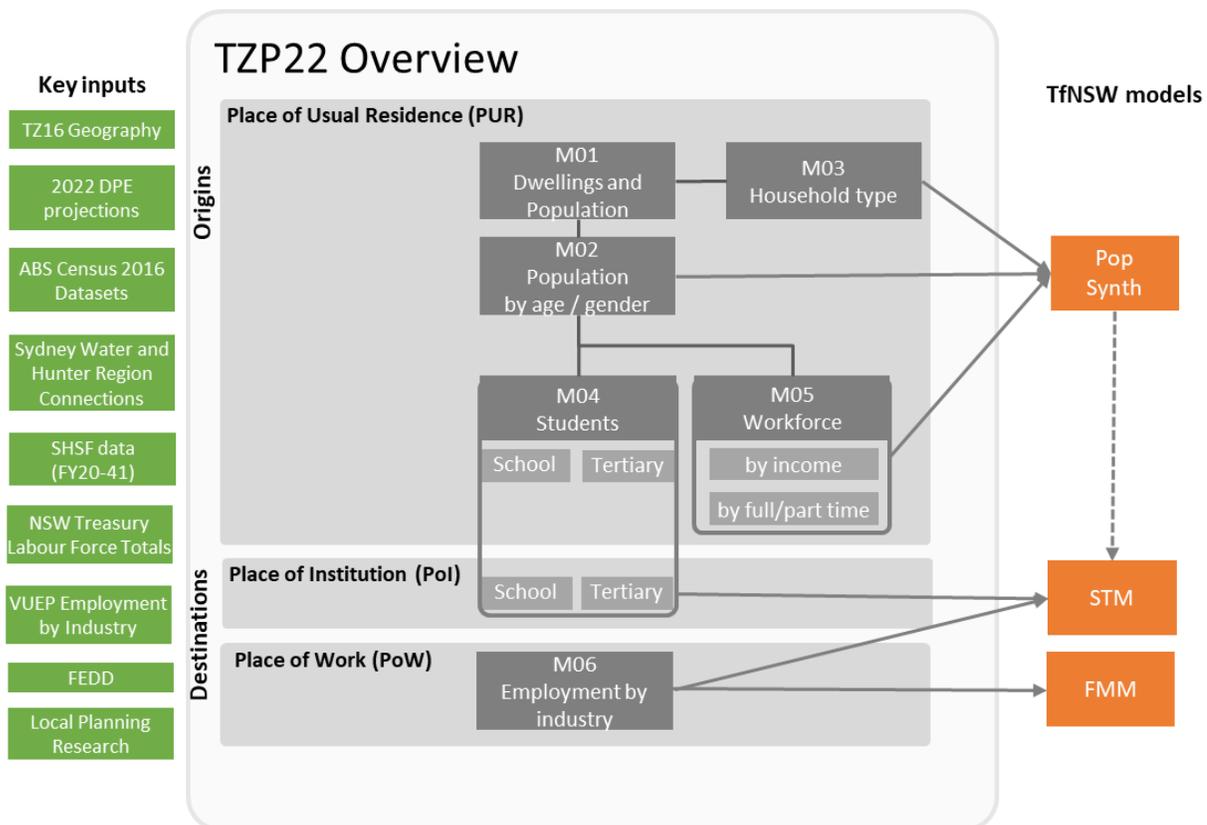
Summary of key data inputs:

- 2022 NSW Common Planning Assumptions Population Projections (CPA - main series) - DPE
- Sydney Housing Supply Forecast (SHSF) - DPE
- Regional Housing Forecast (Illawarra/Shoalhaven + Greater Newcastle) - DPE
- Sydney + Hunter Water Connections - DPE
- NSW Building Approvals - ABS
- Treasury Forecasts (Intergenerational Report model outputs)
- Victoria University Employment Projections 2022 (VUEP)
- Future Employment Developments Database (FEDD)
- School Infrastructure NSW, new schools data
- Department of Education, Tertiary enrolments

Future Employment Development Database (FEDD)

- The FEDD is created to provide detailed assumptions about the likely timing, industry breakdown and spatial location of employment generating non-residential development.
 - The 2022 FEDD includes 154 projects, ranging from precincts, to more localised developments such as hospitals.
 - A large proportion of projects fall within Greater Sydney.
 - Additional projects were added to the FEDD after consultation with various parts of Transport including Regional & Outer Metro and Greater Sydney, other government agencies and review of other sources such as the DPE major projects register.
 - Users can ascertain whether a particular Travel Zone is impacted by a FEDD project from the employment projections summary spreadsheet, which notes the relevant FEDD project number. Users can request more information about the specific assumptions related to a project's size and timing.
- FEDD inputs to TZP22 were tempered where necessary using professional judgement to ensure a reasonable balance between population and employment emerges in future years.
- The FEDD contains significant caveats because:**
- revisions to projects and plans occur on an ongoing basis
 - job estimates found in planning documentation are often optimistic or 'best case' scenarios and require adjustment
 - job types identified in planning documentation tend to favour the ability of a project to attract white-collar knowledge workers. As such, the FEDD tends to skew towards knowledge intensive employment, such as Professional, Scientific and Technical Services.
 - project data for many projects is incomplete or contain discrepancies about the number, type and timing of project jobs and
 - there is limited planning documentation about projects beyond a 20-year time horizon.

TZP22 Model Overview



At a high level, official DPE SA2 population and household projections are disaggregated to travel zones using a number of small area input sources on current and future development trends. From this, the population is further segmented by age and sex, household type, school and tertiary enrolment type, and workforce status.

State employment projections undertaken by Victoria University provide the industry employment numbers. These are first disaggregated from the State level to regions (SA3s) and finally to travel zones using a number of small area input sources on historical and future employment trends.

Note more details are available in TZP22 Technical Guide

A Glossary of Terms is available at the end of this document.

Key outputs – Variables projected

Dwellings and Population

- Structural Private Dwellings (SPD) and Occupied Private Dwellings (OPD)
- Estimated Resident Population (ERP) = Population in Occupied Private Dwellings (POPD) + Population in Non-Private Dwellings (PNPD)

Age and Gender

- POPD by Age and Sex - 5 year age groups up to 100+

Workforce

- Workforce (or Labour Force), Persons Aged 15+ - Employed, Unemployed, Not In Labour Force

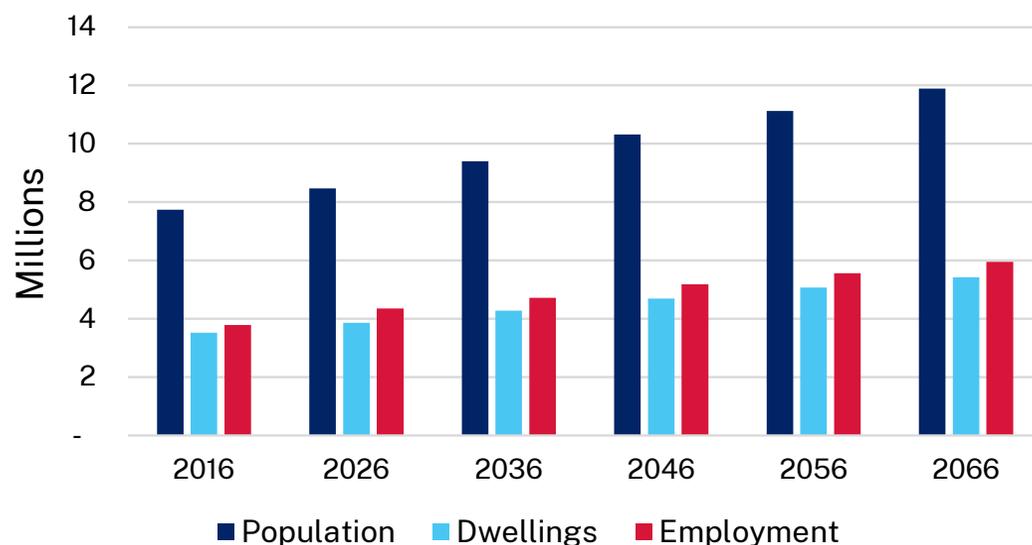
Employment

- Employment (jobs at Place of Work [PoW]) by 33 Industry categories, 1-digit ANZSIC** and 2-digit for Manufacturing.

** ANZSIC – Australian and New Zealand Standard Industry Classifications (see ABS Cat. 1292.0 for more information).

Key insights NSW

TZP22 - NSW



NSW Population is projected to grow from 7.7 million in 2016 to almost 11.9 million in 2066. Much of this growth will occur in the Sydney Greater Metropolitan Area (GMA) which currently has around 79% of the NSW population, and will increase to 83% of the population by 2066. The growth in Dwellings shows a similar trend.

Employment in NSW is projected to grow from around 3.8 million in 2016 to 6.0 million in 2066. The GMA had 81% of the states jobs in 2016 this will increase to 84% by 2066. The ratio of population to jobs across NSW was approximately 2.04 persons for every job in 2016, this will decline by 2066 to 2.00.

Growth rates for both population and employment are similar post 2026, however there are deviations in the 2016-2026 period due to the impact of the COVID-19 pandemic and its recovery.

Forecast	2016	2026	2036	2046	2056	2066	AAGR 2016-26	AAGR 2026-46	AAGR 2046-66
Population	7,732,900	8,462,800	9,404,900	10,320,300	11,129,000	11,893,700	0.9%	1.1%	0.8%
Dwellings	3,517,400	3,865,400	4,273,500	4,689,300	5,064,200	5,424,200	1.0%	1.1%	0.8%
Employment	3,784,100	4,346,500	4,715,500	5,179,700	5,562,600	5,955,500	1.5%	1.0%	0.7%

Key insights Six Cities - Definition

The Greater Sydney Six Cities, are as follows:

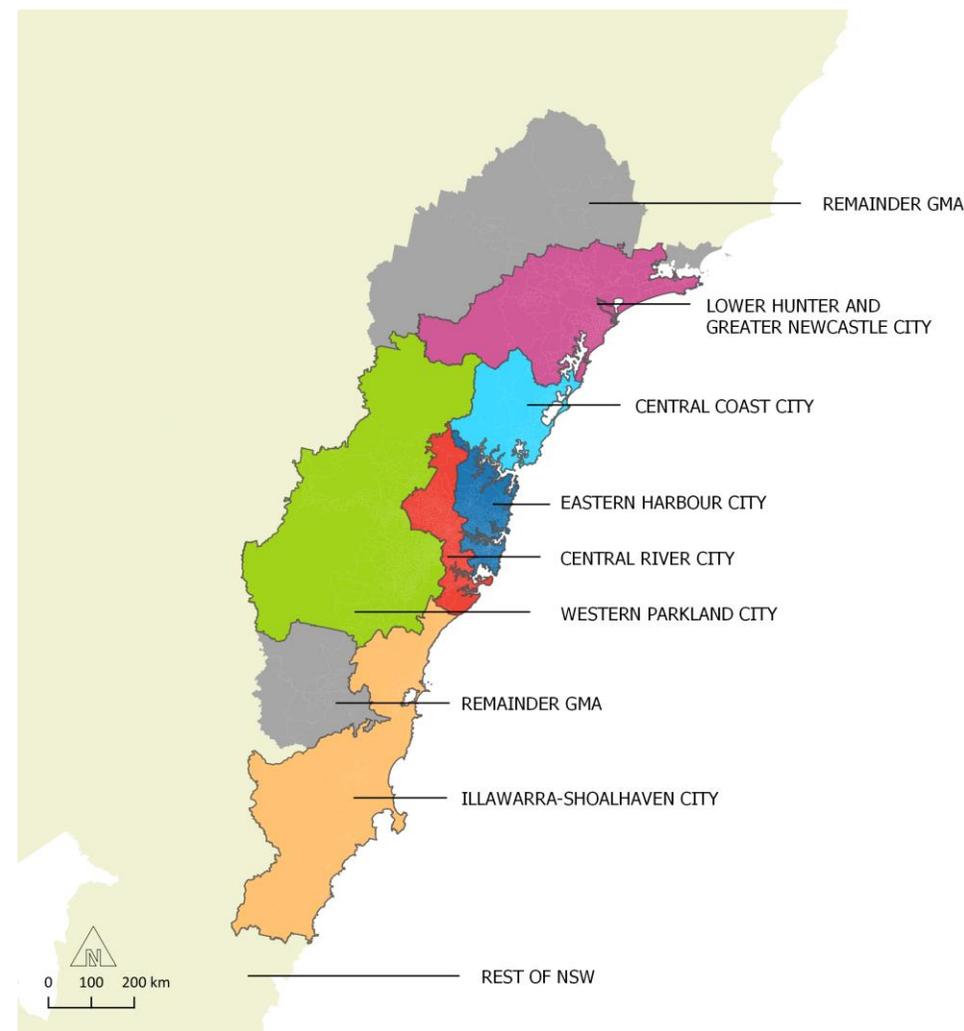
- Eastern Harbour City
- Central River City
- Western Parkland City
- Central Coast City
- Lower Hunter and Greater Newcastle City
- Illawarra-Shoalhaven City

These Six Cities represent the Greater Sydney region as defined by the Greater Cities Commission (GCC).

The Six Cities definition forms part of TfNSW's Sydney Greater Metropolitan Area (GMA) which also includes the LGAs of Dungog, Singleton, and Wingecarribee.

Anything outside of this area is considered as the Rest of NSW.

Map sourced from TZP22 Technical Guide



Key insights Six Cities - Population

Growth across the Six Cities is focused on the continued development of the Central River and Western Parkland Cities with 59% of growth between 2016 and 2066 occurring in these areas. This encompasses the key growth areas in Western Sydney as well as the continued development of Greater Parramatta.

19% of total growth in the Six Cities is projected for the key regional cities of Greater Newcastle and the Illawarra, while consolidation of the Eastern Harbour City continues with 18% of growth between 2016 and 2066.

The projections show that population density will increase in the highly urbanised Eastern Harbour City and Central River City as well as growing in the Western Parkland City, where population densities will remain low.

City	2016	2026	2036	2046	2056	2066	AAGR 2016-26	AAGR 2026-46	AAGR 2046-66
Eastern Harbour City	2,143,200	2,279,700	2,458,900	2,604,300	2,719,200	2,827,600	0.6%	0.7%	0.4%
Central River City	1,488,200	1,691,600	1,962,000	2,228,900	2,473,400	2,707,200	1.4%	1.6%	1.1%
Western Parkland City	1,056,900	1,197,900	1,393,700	1,624,000	1,840,200	2,048,900	1.3%	1.8%	1.3%
Central Coast City	336,600	360,300	389,900	417,700	441,000	462,000	0.7%	0.8%	0.5%
Lower Hunter and Greater Newcastle City	570,100	643,400	731,300	817,100	894,600	967,900	1.3%	1.3%	0.9%
Illawarra-Shoalhaven City	404,600	454,800	523,500	592,100	655,500	716,300	1.2%	1.5%	1.0%
Total Six Cities	5,999,600	6,627,800	7,459,400	8,284,200	9,024,000	9,729,800	1.0%	1.2%	0.9%

Key insights Six Cities - Employment

Growth in jobs across the Six Cities is focused on the continued development of Sydney, with 80% of growth occurring in this area between 2016 and 2066. Employment will continue to consolidate in the Eastern Harbour City and Central River City. Strong growth will occur in the Western Parkland City with the emergence of the Aerotropolis.

Lower Hunter and Greater Newcastle City is projected to grow strongly, with 11.5% of total jobs growth in the Six Cities occurring in this region between 2016 and 2066. Illawarra-Shoalhaven City will also experience solid growth in jobs over the projection period.

City	2016	2026	2036	2046	2056	2066	AAGR 2016-26	AAGR 2026-46	AAGR 2046-66
Eastern Harbour City	1,485,800	1,702,700	1,785,900	1,912,800	2,013,900	2,138,900	1.5%	0.6%	0.6%
Central River City	608,600	713,800	800,900	893,500	969,900	1,037,900	1.7%	1.3%	0.8%
Western Parkland City	376,900	458,400	537,500	655,300	765,700	834,600	2.2%	2.1%	1.4%
Central Coast City	123,800	136,300	141,600	151,400	158,300	169,700	1.0%	0.6%	0.6%
Lower Hunter and Greater Newcastle City	264,400	333,700	374,500	416,400	447,200	485,100	2.6%	1.2%	0.8%
Illawarra-Shoalhaven City	159,800	187,600	216,600	234,300	250,200	270,300	1.7%	1.2%	0.8%
Total Six Cities	3,019,300	3,532,500	3,857,000	4,263,700	4,605,300	4,936,600	1.7%	1.0%	0.8%

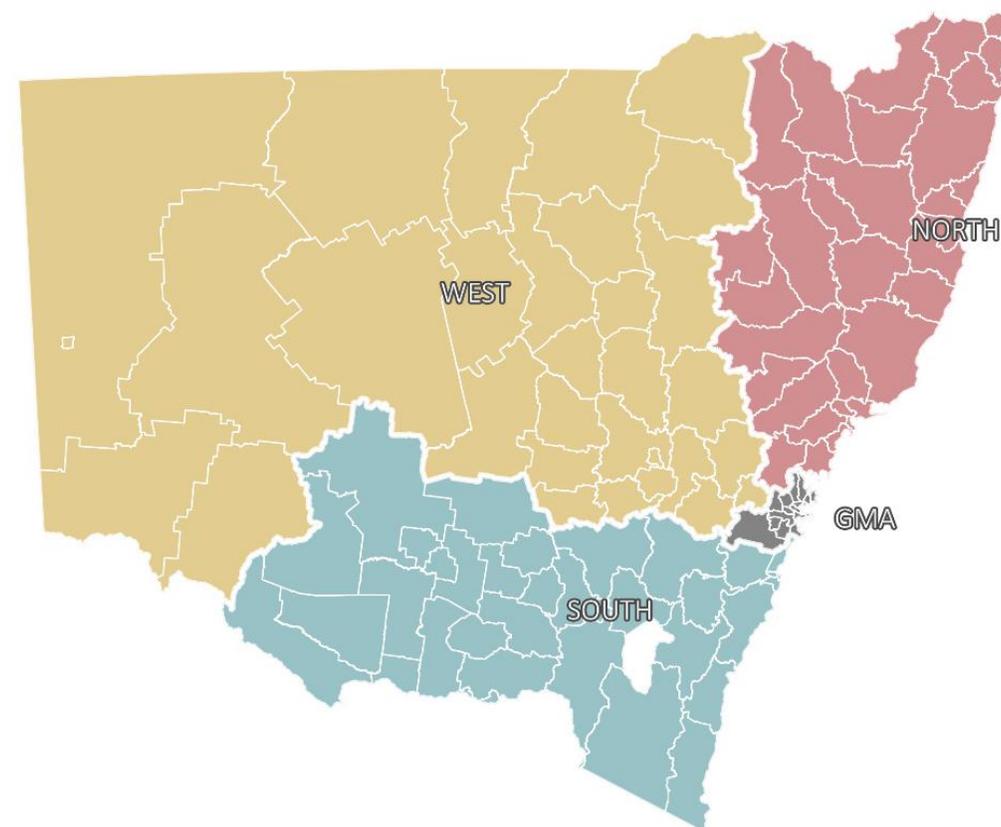
Key insights Regional NSW - Definition

TfNSW has defined Regional Outer Metropolitan (ROM) areas outside of Greater Sydney.

These are the North, South and West Regions.

- North includes Central Coast City and Lower Hunter and Greater Newcastle City
- West includes regional towns such as Bathurst, Parkes and Orange as well as the Blue Mountains LGA which falls in the Six Cities - Western Parkland City
- South includes Illawarra-Shoalhaven City

Region	No. LGAs	No. Travel Zones
North	33	663
West	30	170
South	33	396



Key insights Regional NSW - Population

A summary of the population growth by region shows all regions are projected to grow. This growth will occur on the fringes of Greater Sydney and existing regional towns.

The North region includes the GCC Cities of the Central Coast and Lower Hunter and Greater Newcastle, these two cities contain approximately 52% of the population in the region in 2016, increasing to 59% by 2066.

The Illawarra-Shoalhaven City contains approximately 43% of population of the South region in 2016, increasing to 48% by 2066.

Region	2016	2026	2036	2046	2056	2066	AAGR 2016-26	AAGR 2026-46	AAGR 2046-66
North	1,736,400	1,880,900	2,040,100	2,183,300	2,302,300	2,408,600	0.8%	0.8%	0.5%
West	435,000	445,200	460,100	473,400	483,500	492,100	0.2%	0.3%	0.2%
South	951,400	1,046,900	1,171,800	1,291,200	1,397,400	1,497,100	1.0%	1.2%	0.8%
Total ROM	3,122,800	3,372,900	3,672,000	3,947,800	4,183,200	4,397,800	0.8%	0.9%	0.6%

Key insights Regional NSW - Employment

The employment summary shows similar levels of growth to population. Employment in the North region is boosted by employment opportunities in the Lower Hunter and Greater Newcastle City, while the south is boosted by Illawarra-Shoalhaven City.

Other key drivers of employment growth in regional NSW are the Special Activation Precincts of Parkes, Wagga Wagga, Moree and Williamtown and the Regional Jobs Precincts in Albury and South Jerrabomberra (near Queanbeyan).

Region	2016	2026	2036	2046	2056	2066	AAGR 2016-26	AAGR 2026-46	AAGR 2046-66
North	740,200	844,100	908,500	983,100	1,037,700	1,112,800	1.4%	0.8%	0.7%
West	188,700	197,900	204,000	214,500	221,500	233,900	0.5%	0.4%	0.5%
South	405,100	454,000	504,400	548,500	583,800	629,900	1.2%	1.0%	0.7%
Total ROM	1,334,000	1,496,000	1,617,000	1,746,100	1,842,900	1,976,600	1.2%	0.8%	0.7%

Useful links

[Open Data Hub](#)

Many of the TZP22 variables are available for download from the Open Data Hub, including population, dwellings, workforce and employment. The TZP22 Technical Guide and spatial files for TZ 2016 Geography can also be found here.

The screenshot shows the Open Data Hub interface. At the top, there is a search bar with the text 'projections' and a search icon. Below the search bar, there are navigation links: BROWSE DATA, DEVELOPERS, INNOVATION, FORUM, GTFS STUDIO, BLOG, and MY ACCOUNT. The main content area displays '37 results' for the search term 'projections'. On the left, there is a sidebar with 'Content Types' (Resource (32), Dataset (4), Page (1)), 'Topics' (Public Information (3), Statistical Information (1)), and 'Tags' (Format, License). The search results list three items: 'Employment Projections', 'Workforce Projections', and 'Population Projections'. Each item includes a brief description and a 'Public Information' icon.

[Travel Zone Explorer](#)

The explorer is available on the TfNSW website and allows users to search for Travel Zones and find out current and future population, workforce and employment.

Travel Zone Dashboard - Population

This visualisation displays Travel Zone Projections 2019 (TZP19) in TZ16 geography

The screenshot shows the Travel Zone Dashboard - Population interface. It features a map of New South Wales and Victoria, Australia, with travel zones highlighted. The map includes labels for 'SOUTH AUSTRALIA', 'NEW SOUTH WALES', and 'VICTORIA'. Key locations like Whyalla, Port Lincoln, Adelaide, Wangaratta, and Sydney are marked. The interface includes several dropdown menus for filtering: 'Select Land Use Variable' (Population), 'Select level of Geography' (Travel Zones), 'Select Geography Code' ((All)), and 'Select Geography Name' ((All)).

Population

Population projections represent the number of people who reside in occupied private dwellings, by Travel Zone.

How to navigate and select geographies on the map: You can select travel zones with the cursor which will update the table below. Hold the ctrl key to select/deselect multiple travel zone

Click on the Geography in the below table to expand/collapse the Travel Zones.

	2016	2021	2026	2031	2036	2041
Grand Total	7,587,769	8,252,772	8,830,318	9,356,098	9,844,661	10,307,754
1 Barangaroo_Headland Park	0	1	1	1	1	1
2 Barangaroo_Northern Cove	0	20	20	20	20	20
3 Barangaroo_Southern Cove	0	0	0	0	0	0
4 Barangaroo_Jenkins Lane	59	102	115	189	254	264
5 Barangaroo_Ferry Terminal	144	220	251	430	588	612

Glossary of terms – General

Abbreviation	Term	Definition
AAI	Advanced Analytics and Insights	Branch within CST, lead data, analytics and insights across Transport to deliver impactful solutions through analytics, data and insights. Our branch supports strategic business decision making for a better customer future.
ABS	Australian Bureau of Statistics	The ABS is Australia's national statistical agency, providing trusted official statistics on a wide range of economic social, population and environmental matters of importance to Australia.
CPA	Common Planning Assumptions	Common Planning Assumptions are agreed information assets (data sets, parameters and assumptions, models and analytical tools) used by NSW Government and external stakeholders, to prepare proposals, business plans and strategies that rely on projections. https://www.treasury.nsw.gov.au/information-public-entities/nsw-common-planning-assumptions
CST	Customer Strategy and Technology	TfNSW Division that leads the long-term planning for our transport network, enabling the use of data in decision making, transforming customer experience by building collaborative partnerships, embracing innovative thinking and new technologies, and supporting sustainable movement of people and goods.
DPE	Department of Planning & Environment	NSW Government Agency
GCC	Greater Cities Commission	The Commission is a statutory body and reports directly to the NSW Government. GCC is an independent agency within the Transport and Infrastructure cluster. Their work covers the Six Cities region.
PF	Place Forecasting	Place forecasting (often referred to as land use forecasting) provides a long-term view of the future population and employment across the state at a Travel Zone level. The team generate the Travel Zone Projections.
TMF	Transport Modelling Function	Function within AAI, providing evidenced-based insights and modelling across transport and freight networks. It is used to inform decision making in planning and operations to improve customer journeys.
TZ	Travel Zone	TZs are the smallest standard geography used for a number of transport datasets in NSW.
TZP	Travel Zone Projections	Long term small area projections for Population, Dwellings, Workforce, Students and Employment

Glossary of terms -Travel Zone Projection variables

Abbreviation	Term	Definition
EMP	Employment	Employed person by Place of Work
ERP	Estimated resident population	The total number of people that live within a defined area. This includes both people residing in private and non-private dwellings (i.e. student accommodation, correctional facilities, aged care facilities). Occupied private dwellings are categorised in 5 household types:
HHlds	Household types	-Couples with children, -Couples only, -Single parent, -Single person and -Other (Group households and multiple and other family households).
NPD	Non private dwellings	Communal accommodation provided by institutions such as hospitals, aged care facilities, correctional facilities and transitory accommodation such as hotels and motels.
OPD	Occupied private dwellings	A private dwelling that is occupied on Census night.
PoI	Place of Institution	Refers to variables which are based on education (primary, secondary & tertiary) locations
POPD	Population in Occupied Private Dwellings	Estimated resident population who reside in occupied private dwellings.
PoW	Place of Work	Refers to variables which are based on place of employment
PUR	Place of Usual Residence	Refers to variables which are based on where people live
SPD	Structural private dwellings	A privately owned building or structure that people live in.
WF	Workforce	Persons of working age who are employed or are unemployed but actively seeking work by place of residence

Glossary of terms – Key TfNSW models

Abbreviation	Term	Definition
FMM	Freight Movement Model	Road-based freight demand forecasting and assignment model.
GMA	Greater Metropolitan Area	The Greater Metropolitan Area is the area used for TfNSW's Strategic Travel Model. The GMA includes the Sydney Greater Capital City Statistical Area (GCCSA), the Southern Highlands and Shoalhaven SA4, Illawarra SA4, Newcastle and Lake Macquarie SA4 and Lower Hunter, Port Stephens, Maitland SA3s as defined by the ABS.
Pop Synth	Population Synthesiser	A model that uses land use data to create 'agents' for input into STM.
STM	Strategic Travel Model	The Strategic Travel Model (STM) projects travel patterns in the Sydney Greater Metropolitan Area (GMA) under different land use, transport and pricing scenarios. The STM can be used to test alternative settlement, employment and transport policies, to identify likely future capacity constraints, or to determine potential usage levels of proposed new transport infrastructure or services. The STM is a strategic multi-mode travel demand model. It consists of four stages, trip generation, trip distribution, mode choice, and path assignment.