



Census

Journey to work

3 November 2022





Census

Speakers

Mark Harding, Program Manager, Census Branch, ABS

Caroline Deans, Director, Census Dissemination, ABS

Gary Allen, Principal for Regional Planning, Transurban

Covid context



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The employment questions



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39 Last week, did the person have a job of any kind?

- A 'job' means any type of work including casual, temporary, part-time or full-time work, if it was for one hour or more.

• Mark one box, like this:

i Go to www.census.abs.gov.au/questions for more information.

Yes, worked for payment or profit ▶ **Go to 40**

Yes, but absent on holidays, on paid leave, on strike, or temporarily stood down

▶ **Go to 40**

Yes, unpaid work in a family business ▶ **Go to 43**

Yes, other unpaid work

▶ **Go to 51**

No, did not have a job

▶ **Go to 51**

Last week, did Person 1 have a job of any kind?

A 'job' means any type of work including casual, temporary, part-time or full-time work, if it was for one hour or more.

▼ [More information](#)

Last week refers to the week before Census night – Tuesday 10 August 2021.

- People who did some work for which they will receive some payment (including casual, temporary or part-time work) and it was for one hour or more in the last week select the 'Yes, worked for payment or profit' response.
- **People not working due to a COVID lockdown...**
 - who worked at all in the four weeks before the current lockdown, select 'Yes, but absent on holidays, on paid leave, on strike, or temporarily stood down'.
 - who did not work in the four weeks before the current lockdown, select 'No, did not have a job'.

Deriving journey to work information



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48 For the main job held *last week*, what was the person's workplace address?

- For people with no fixed place of work:
 - if the person usually travels to a depot to start work, write the depot address
 - otherwise, write 'NONE' in the 'Suburb/Locality' box.
- This information is used to calculate daytime populations and to plan transport activities.

Street number

--	--	--	--	--	--	--	--	--	--

Street name

--	--	--	--	--	--	--	--	--	--

Suburb/Locality

--	--	--	--	--	--	--	--	--	--

State/Territory Postcode

--	--	--	--	--	--	--	--	--	--

Property/Building name (if any)

--	--	--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--	--	--

49 How did the person get to work on Tuesday 10 August 2021?

- If the person used more than one method of travel to work, mark all that apply, like this:

- Train
- Bus
- Ferry
- Tram (including light rail)
- Taxi or ride-share service
- Car – as a driver
- Car – as a passenger
- Truck
- Motorbike or motor scooter
- Bicycle
- Walked only
- Other
- Worked at home
- Did not go to work

Accessing journey to work data



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Find Census data
2021 Census data and historical data.

Search Census data by topic
Census data by geography
Historical Census data
Which Census tool is best for you?

Search Census data by topic
Basic search by topic
Advanced search by topic
Historical search by topic

Census data tools
Search Census data through
Community Profile
Interactive Search and
Toolbox

Historical Census data
View and download historical
Australian Census (1981 to 2016)

Which Census tool is best for you?
Which census tool is best for your search criteria?

Home > Census > Find Census data > Census data by topic

Find Census data

Census data by topic

- Aboriginal and Torres Strait Islander peoples
- Cultural Diversity
- Disability and carers
- Education and training
- Health
- Household and families
- Housing
- Income and work
- Location
- Population
- Service with the Australian Defence Force
- Transport
- Unpaid work and care
- National reporting indicators
- Census stories
- Conceptual articles

Census data by topic

Data stories and information presented by topic.

- Aboriginal and Torres Strait Islander peoples**
Indigenous language and status topics
- Cultural Diversity**
Ancestry, Religion, Language, citizenship and year of arrival topics
- Disability and carers**
Need for assistance and unpaid assistance topics
- Education and training**
Qualifications, educational attendance and type of educational institution topics
- Health**
New Long-term health conditions and related topics
- Household and families**
Relationships in household and family topics
- Housing**
Dwelling and housing costs
- Income and work**
Individual and family income, occupation and employment topics
- Location**
Place of usual residence and migration topics
- Population**
National reporting indicators
- Service with the Australian Defence Force**
- Transport**
- Unpaid work and care**
- National reporting indicators**
- Census stories**
- Conceptual articles**

Find Census data by area or topic

Home > Census > Find Census data > Search Census data

Search Census data

To view Census data, use the search options on the left of the page or select an area using the map. The data is accessed by links that will appear below the map. You can view summary statistics for the area as QuickStats for all persons, or for the Indigenous population specifically. To view more detailed statistics, you can download a Community Profile spreadsheet. For summary statistics on people born overseas, you can use the Country of birth search on the left.

Search by area name
2016 Enter a location, post code or geography code.

Search by geography
Search by address
Search by country of birth

Search by map
2016 State/Territory

Map data © OpenStreetMap contributors, CC-BY-SA
Powered by Esri

Results summary Selected region: Rest of WA Greater Capital City Statistical Area

View QuickStats

Download Community profile XLSX

All persons

Aboriginal and Torres Strait Islander peoples

General community profile

Aboriginal and Torres Strait Islander profile

Working population profile

Time series profile

Useful resources

Resources to assist you with your data search.

About this search page

About Census geographies

Other useful resources

Accessing journey to work data continued



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Australian Bureau of Statistics

Statistics Census Participating in a survey About

Home > Census > Find Census data > Census data tools

Census data tools

Census data can be accessed using a variety of tools

- TableBuilder**
Create customised tables, graphs and thematic maps with data from 2006 to 2016.
- DataPacks**
Bulk download data for multiple areas in CSV files.
- GeoPackages**
Bulk download data for multiple areas in geospatially enabled files.
- More Census products**
SEIFA, Census microdata, Australian Census Longitudinal Dataset, Mesh block counts.
- Data Explorer**
Create tables and visualisations based on aggregate data.

Find Census data

Census data by topic

- Census data tools
- TableBuilder
- DataPacks
- GeoPackages
- More Census products
- Data Explorer

Which Census tool is best for you

Snapshot of Australia

Historical Census data

Register and
Log in

Australian Bureau of Statistics

TableBuilder Datasets

Select dataset or table

Datasets

- Data
 - 2006 Census of Population and Housing
 - 2011 Census of Population and Housing
 - 2016 Census of Population and Housing
 - 2021 Census of Population and Housing

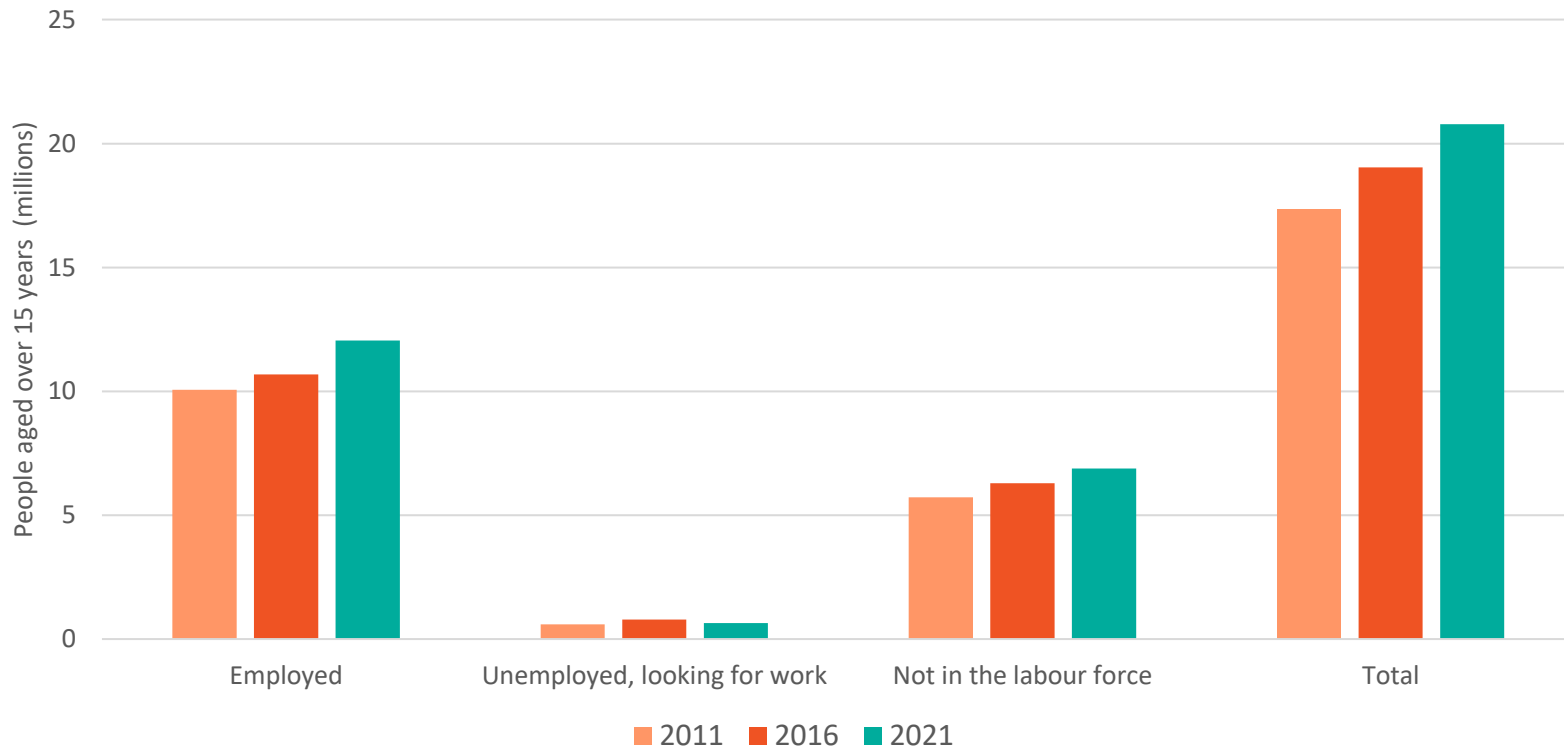


Census

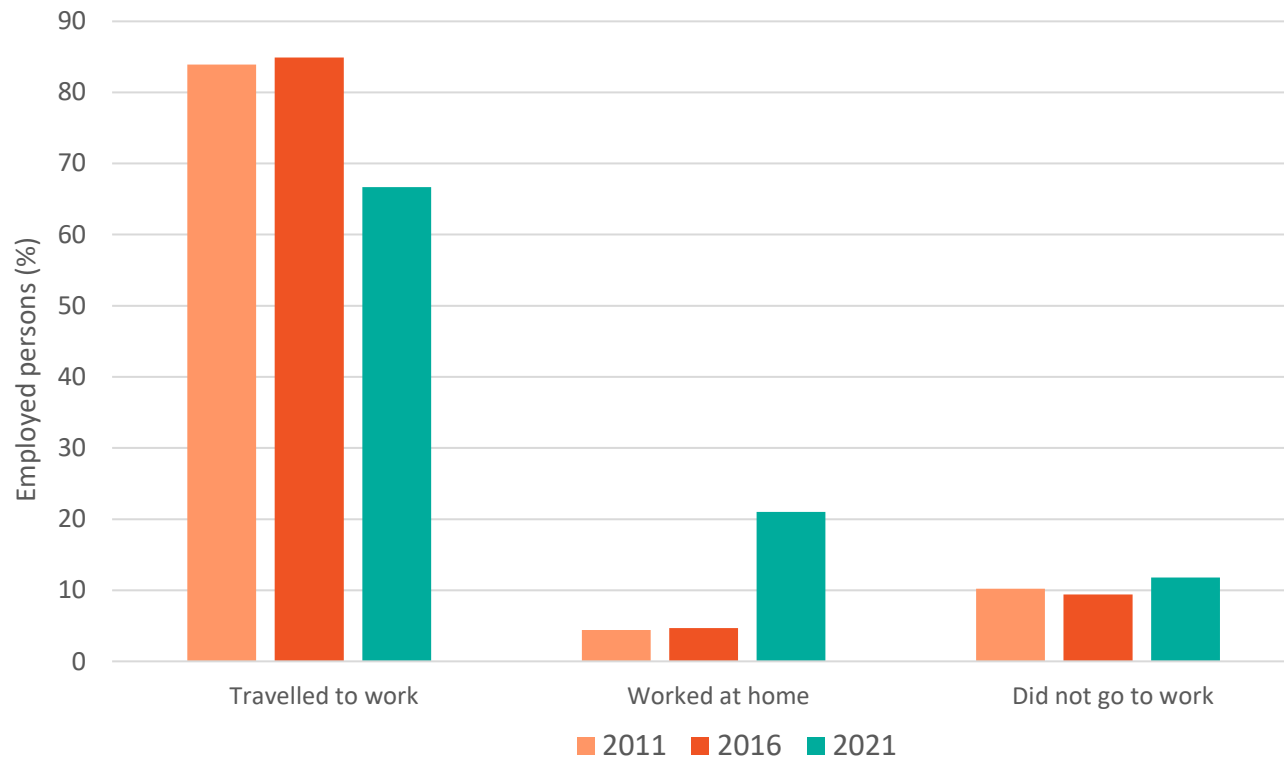
Data overview



Labour force participation



Method of travel to work



Main mode of travel to work - 2021



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Main mode	Number	%
Car, as driver	6,397,539	53.1
Worked at home	2,531,262	21.0
Did not go to work	1,417,449	11.8
Car, as passenger	471,127	3.9
Walked only	306,045	2.5
Train	299,053	2.5
Bus	212,919	1.8
Bicycle	79,457	0.7
Truck	77,151	0.6
Other Mode	74,310	0.6
Not stated	59,167	0.5
Motorbike/scooter	50,146	0.4
Tram/light rail	34,275	0.3
Taxi/ride-share service	31,057	0.3
Ferry	8,470	0.1
Total	12,049,410	100.0



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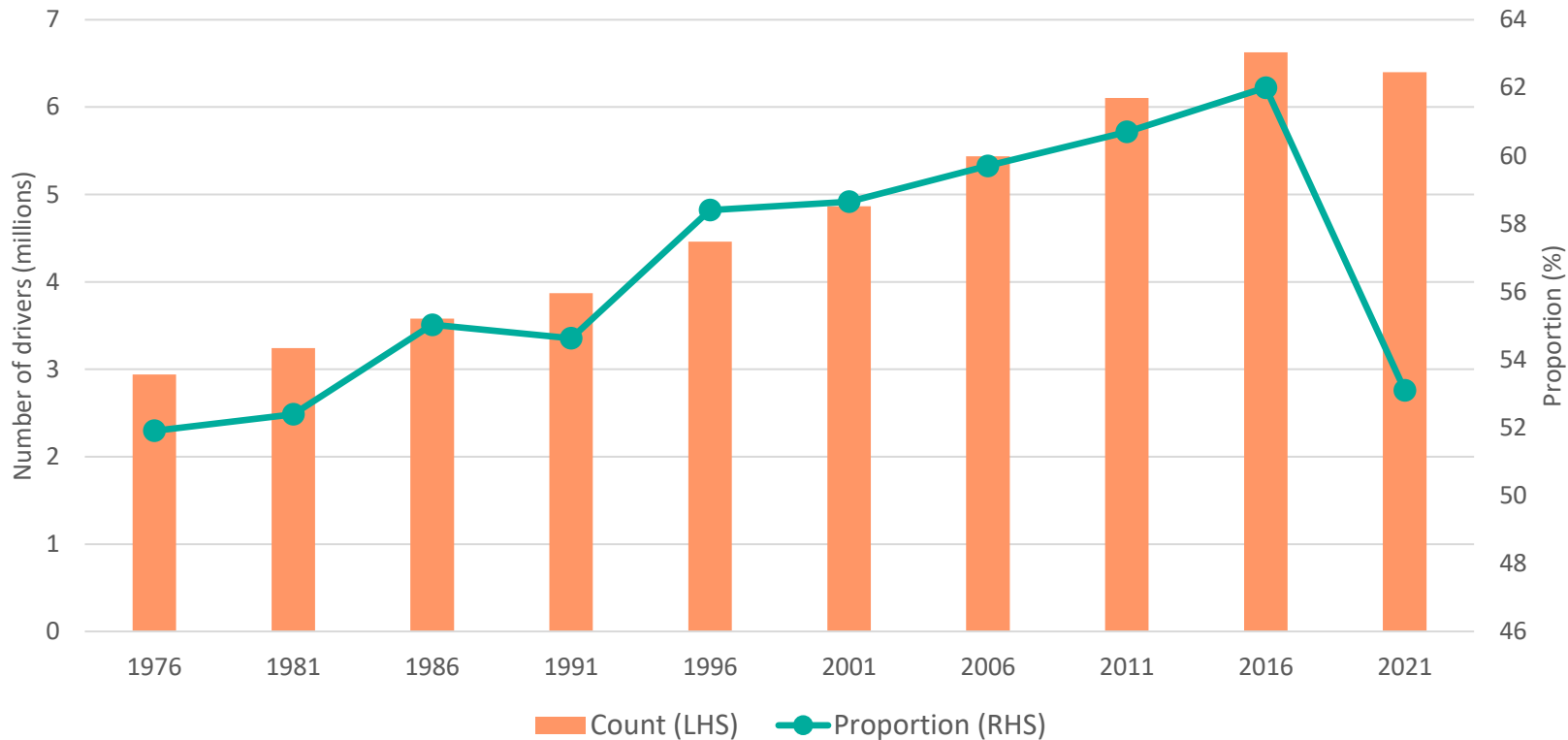
Travelling to work by car



Car as driver



Census



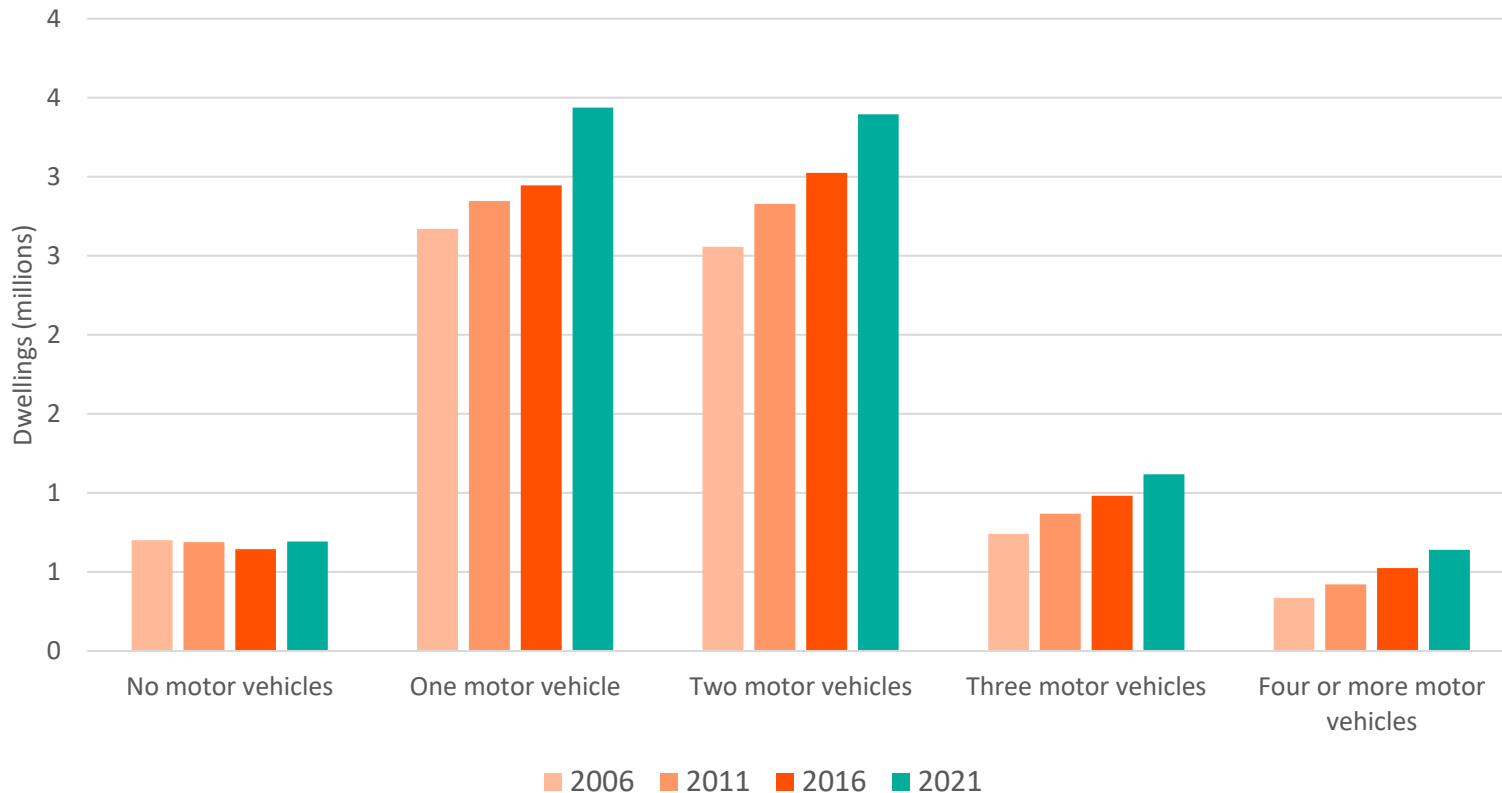
Which occupations travelled by car?



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	Occupation (3 digit)	Count	% of occupation
1	Panel beaters, and Vehicle Body Builders, Trimmers and Painters	21,119	82.9%
2	Automotive Electricians and Mechanics	80,714	80.9%
3	Fabrication Engineering Trades workers	56,058	80.0%
4	Bricklayers, and Carpenters and Joiners	108,816	79.7%
5	Floor Finishers and Painting Trades workers	38,997	79.0%
1	Business and Systems Analysts, and Programmers	17,726	10.9%
2	ICT Managers	13,821	18.5%
3	Information and Organisation Professionals	42,686	21.6%
4	ICT Network and Support Professionals	10,582	22.5%
5	Media Professionals	11,311	22.8%

Dwellings with motor vehicles



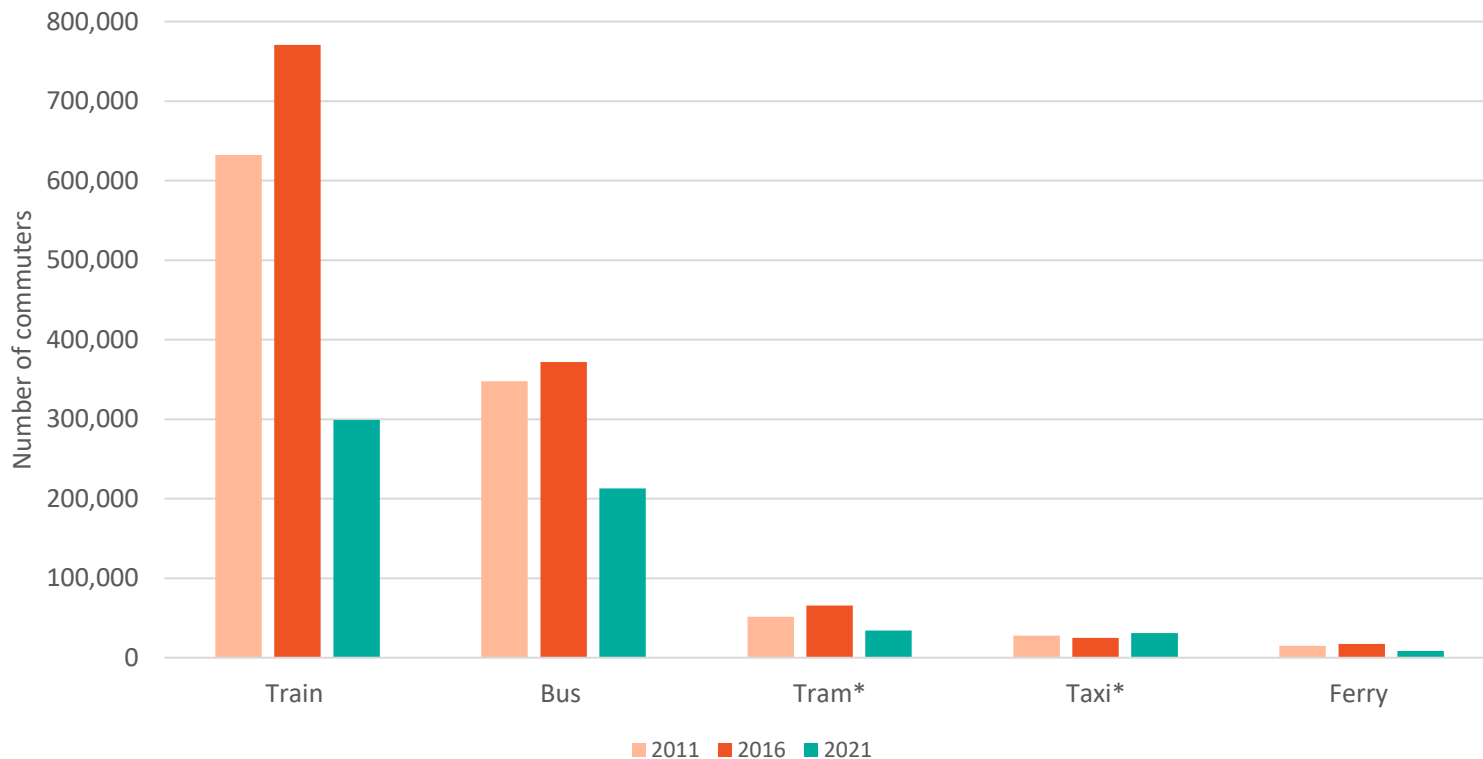


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Travelling to work by public transport



Public transport over the years



*In 2021 'Taxi' was changed to 'Taxi/ride-share service', 'Tram' was changed to 'Tram/light rail'.

Public transport use



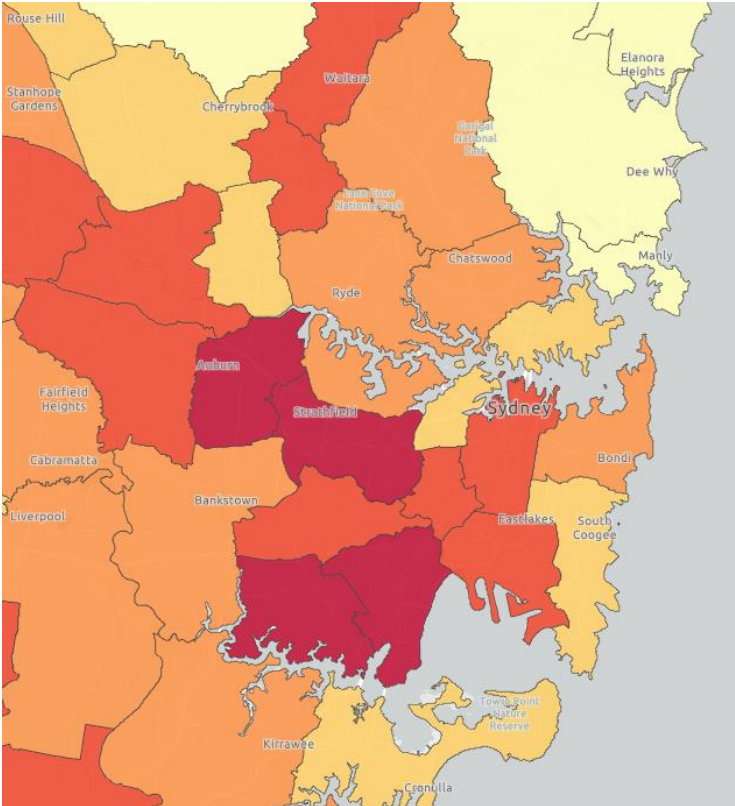
Census



Train use in and around Sydney and Perth 2021

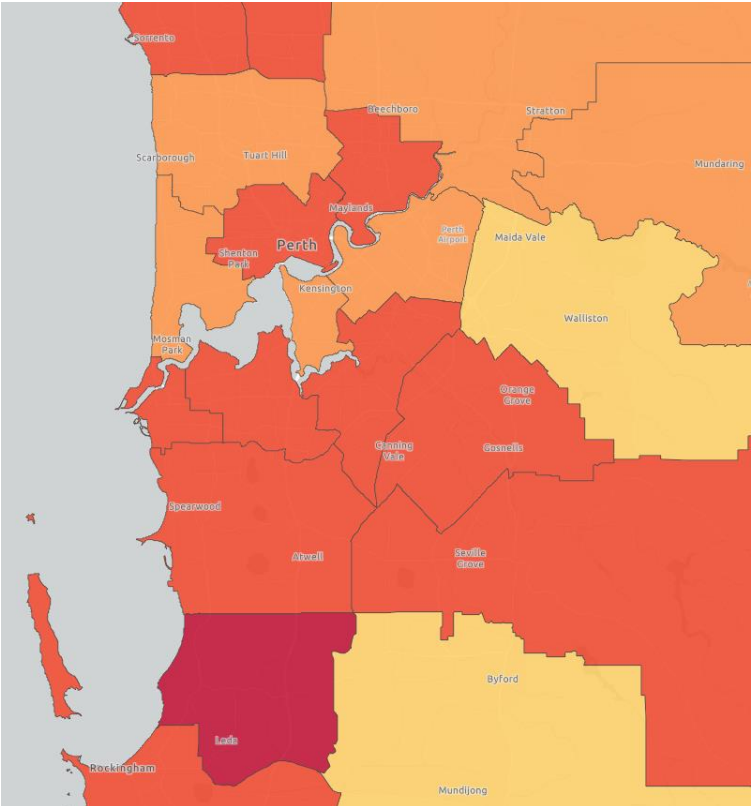
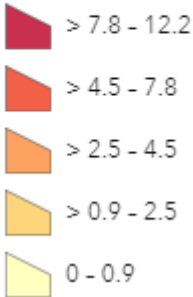


Census



Commute by Train

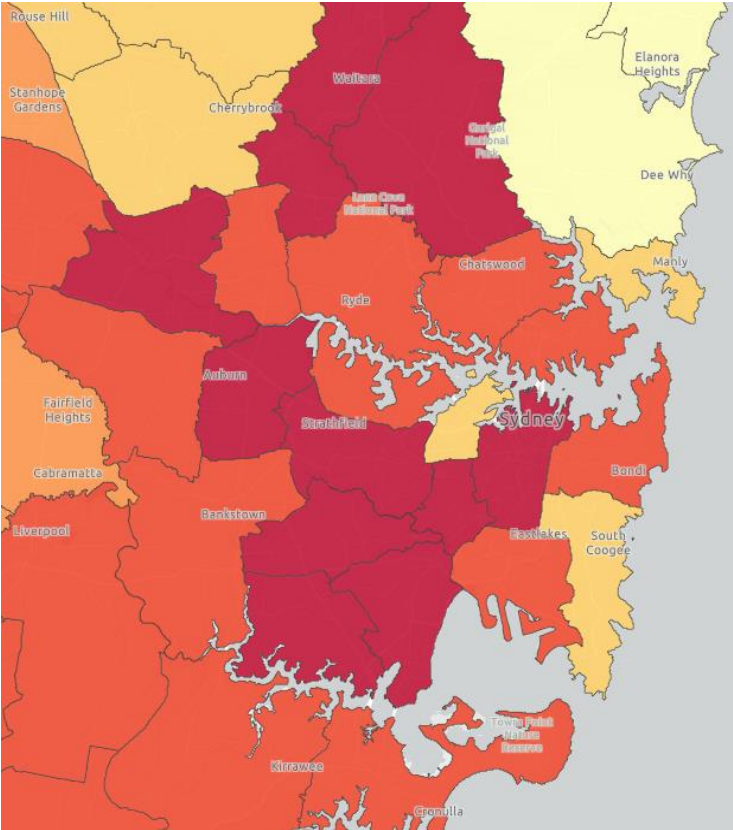
Train %



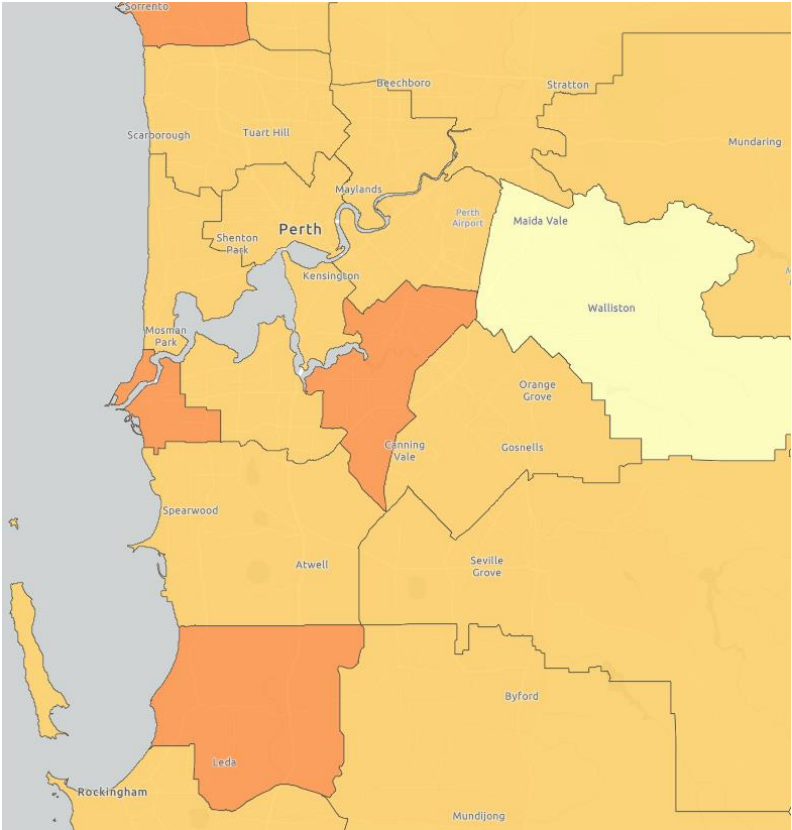
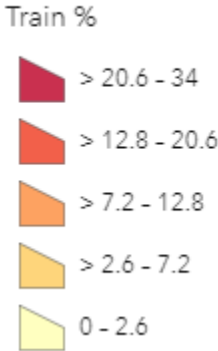
Train use in and around Sydney and Perth 2016



Census



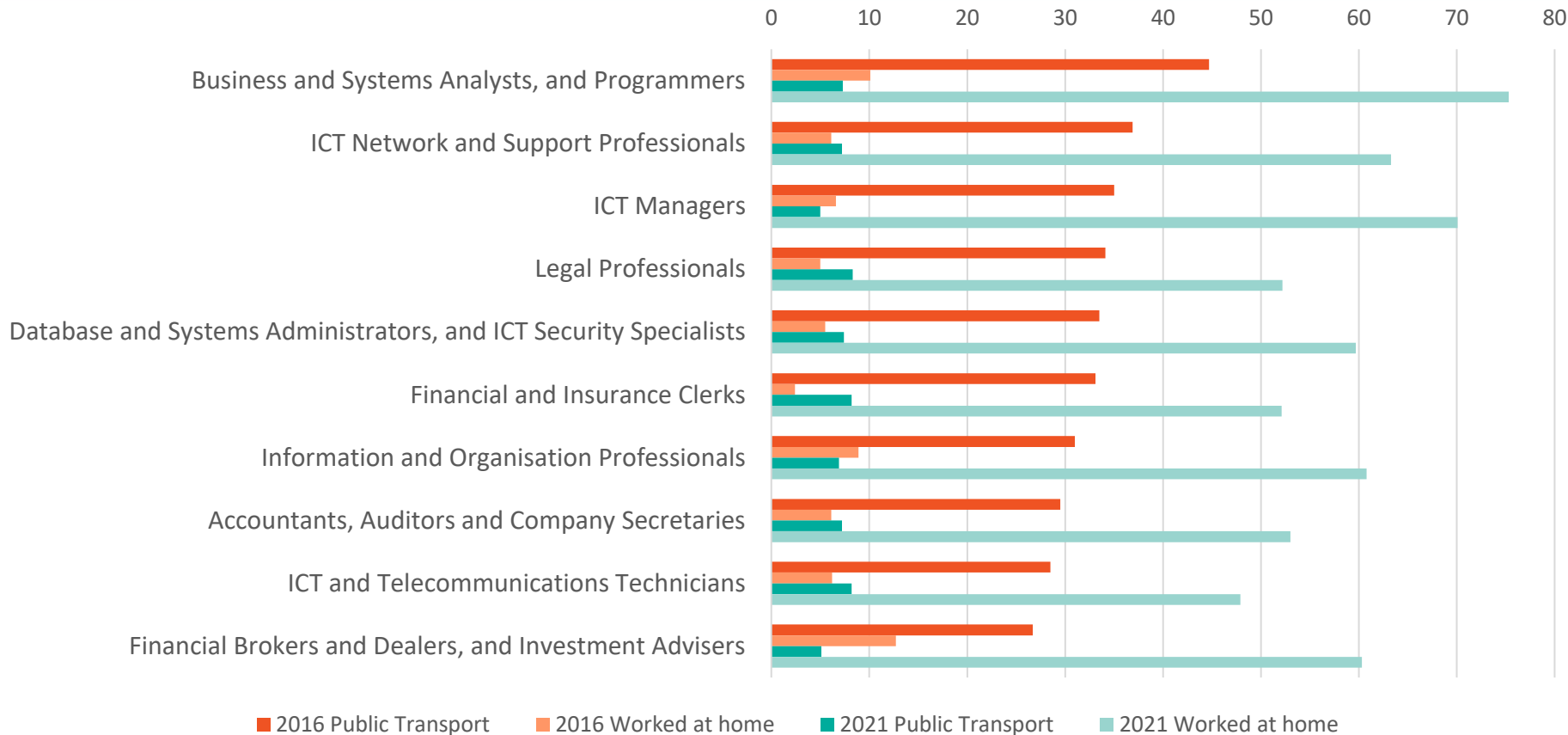
Commute by Train



Top occupations using public transport



Census



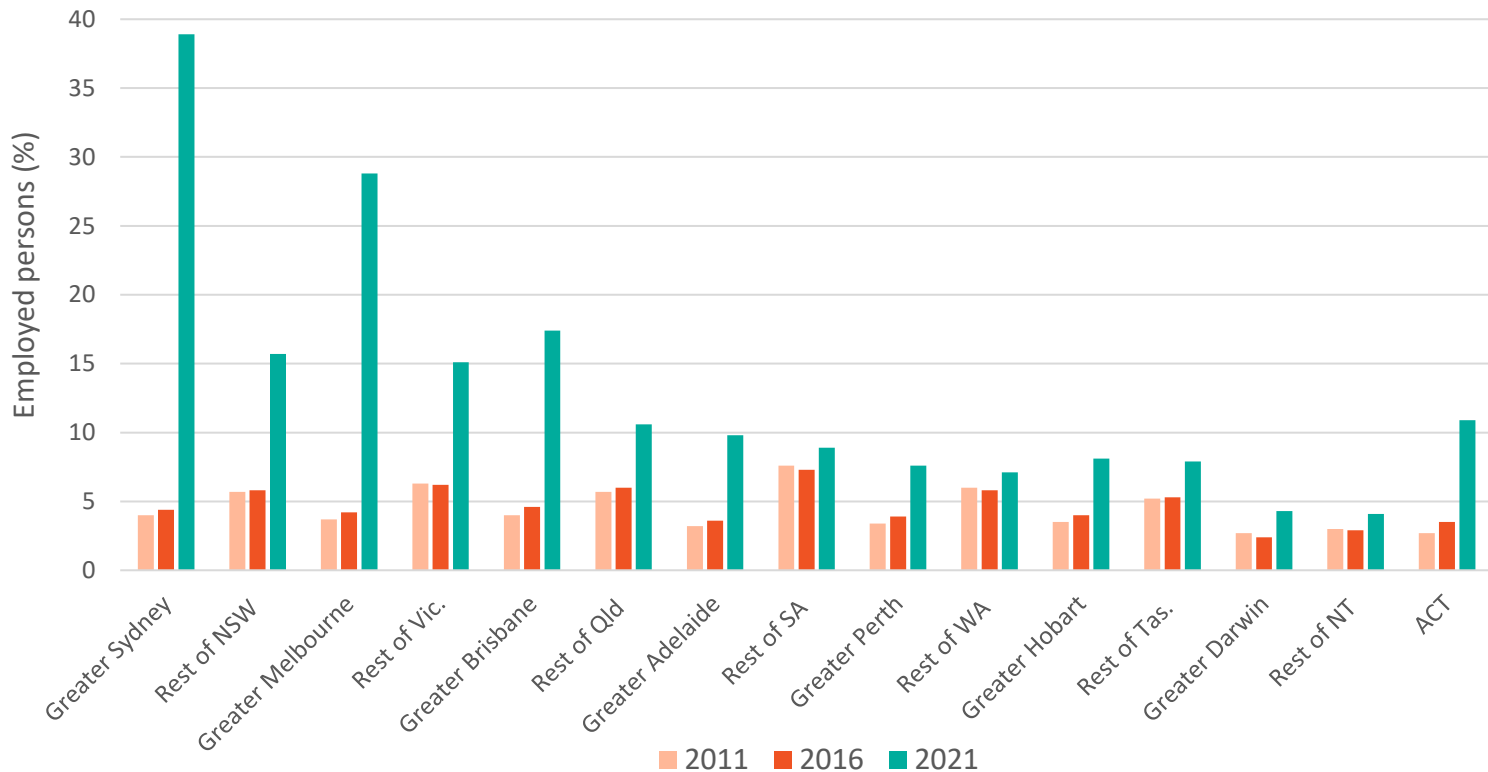


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Working from home



Working from home over the years

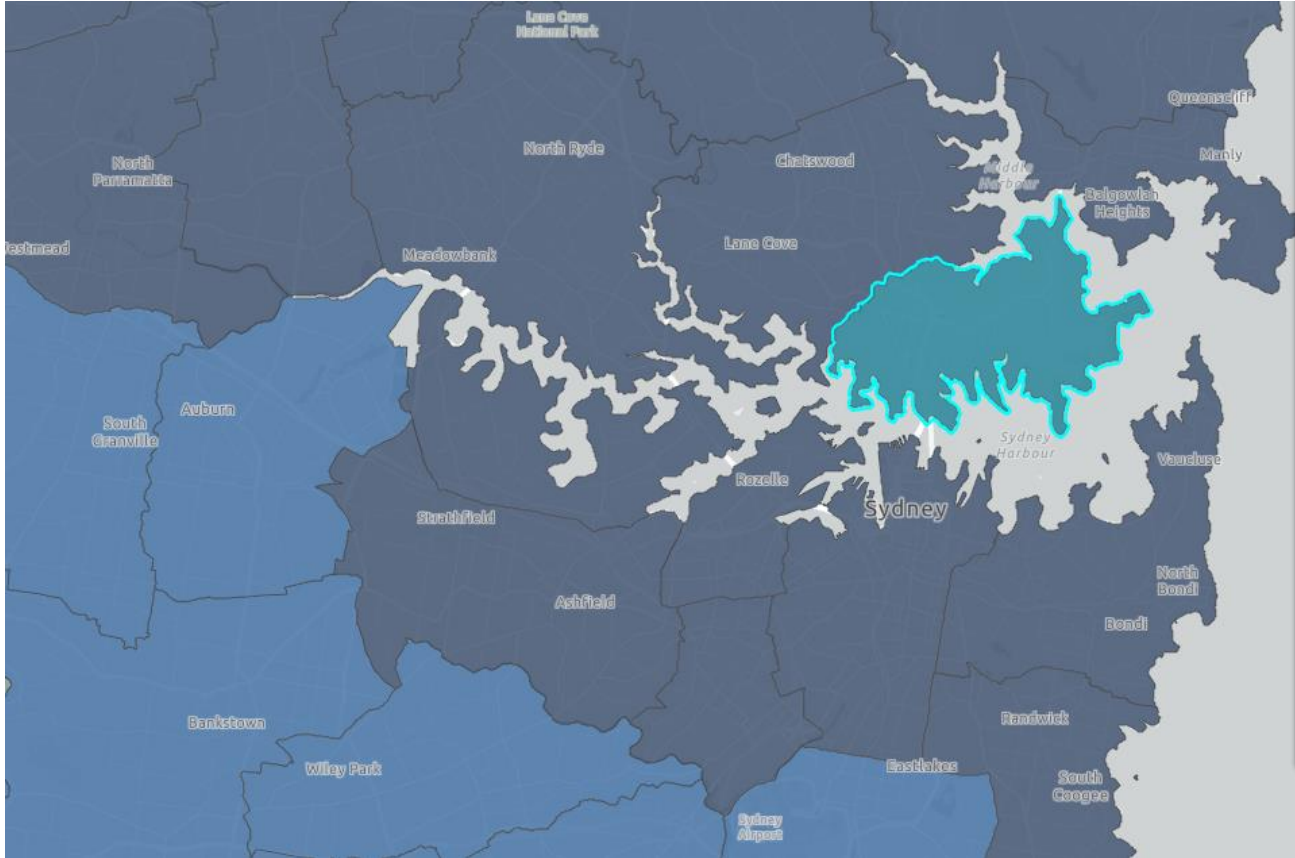
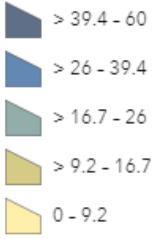


Working from home in Sydney



Census

Worked at home %

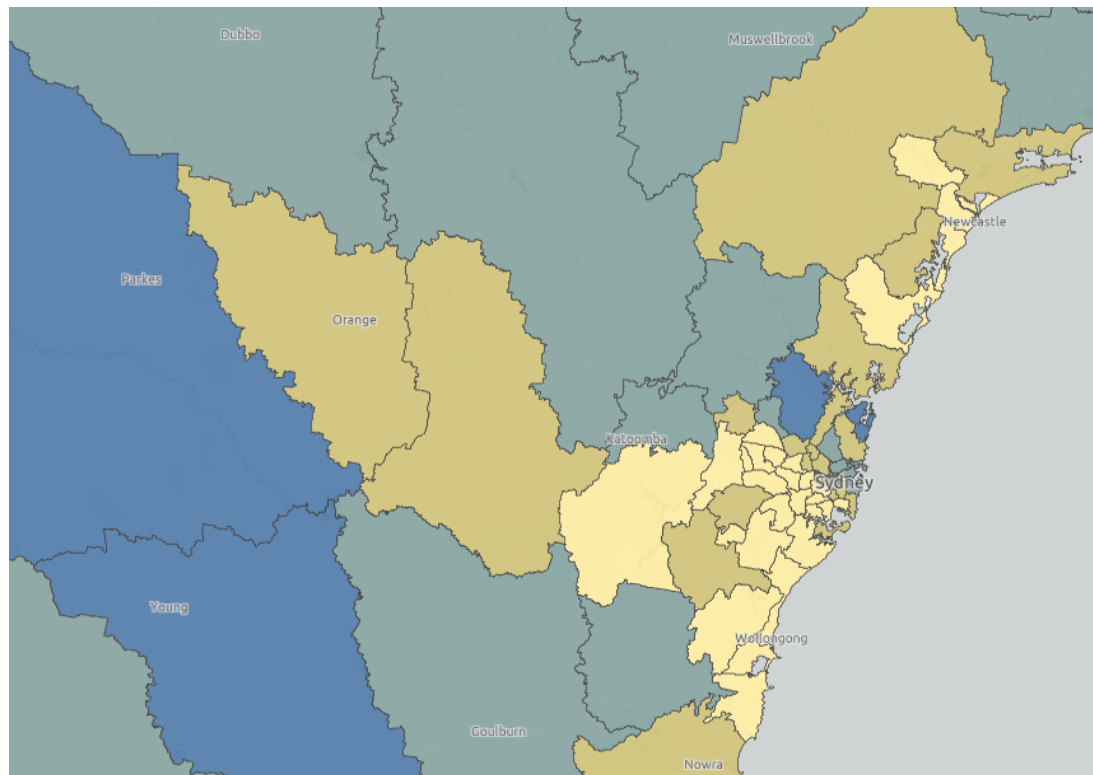
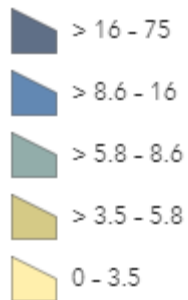


NSW in 2011



Census

Worked at home %

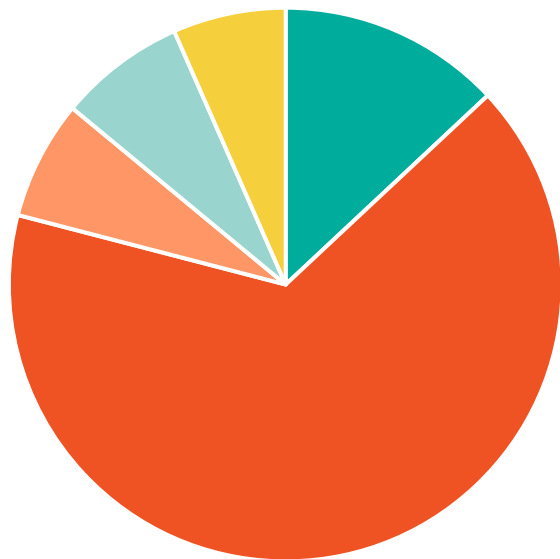


How has commuting changed?

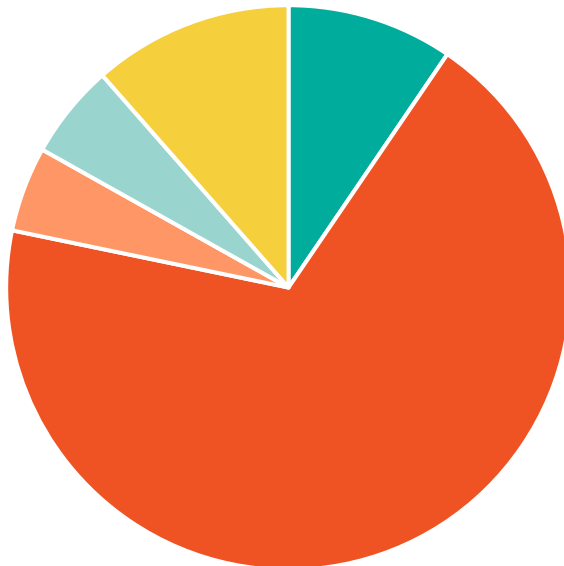


Census

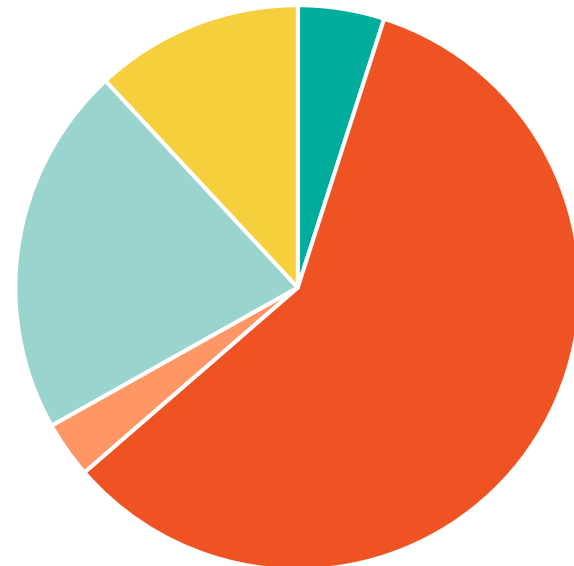
1981



2001



2021



■ Public Transport ■ Vehicle ■ Active ■ Worked at home ■ Did not go to work

Totals include 'Other mode' and 'Not Stated' responses

Who worked from home?



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Census year	Occupations	Count	%
2021	Business and Systems Analysts, and Programmers	122,675	75.3
	ICT Managers	52,228	70.1
	ICT Network and Support Professionals	29,843	63.3
	Media Professionals	30,477	61.4
	Sales, Marketing and Public Relations Professionals	94,176	61.1
2001	Livestock Farmers	49,968	56.6
	Mixed Crop and Livestock Farmers	24,609	55.3
	Authors and Related Professionals	2,150	52.7
	Caravan Park and Camping Ground Managers	1,949	52.6
	Crop Farmers	23,132	44.4
1981	Dairy Farmers	26,673	80.1
	Wheat and Sheep Farmers (so described)	16,674	73.1
	Rice Growers	451	71.5
	Tobacco Growers	10,88	70.0
	Poultry Farmers	2,544	68.9

Using Journey to Work data in traffic modelling

Gary Allen, Transurban Limited, November 2022



Transurban run strategic traffic demand models to enable a set of traffic forecasts to be created.

- Strategic Models capture the relationships between traffic demand and the key drivers (population, employment, households, wealth, etc.)
- They explain the interaction between residential areas and employment centers and other trip generators
- Include elements such as roadway and transit network, population and employment data in order to estimate the expected demand for transportation facilities
- Mathematical equations are used to represent traveler's decision-making process of: "Why", "When", "Where", and "How" to make the trip, and "What" route to follow to complete the trip
- ABS Census Journey to Work is just one of a number of datasets utilised in both the validation of inputs and the production of ratios used within the models

The major uses of the Journey to Work data are:

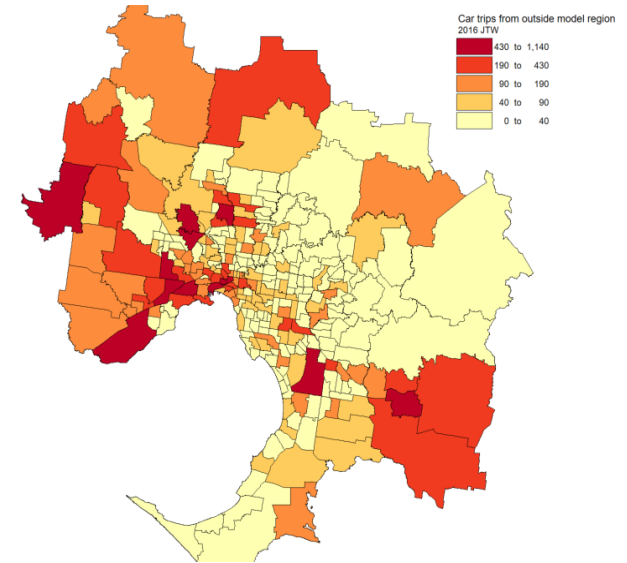
- Distribution of demand from external areas into the model regions
- Validation and calibration of the demand model and the Household Travel Survey
- Enable the development of trip relationships – modes, types, lengths, time of day
- Work from home estimation
- Estimation of public transport diversion curves

External trip distribution

Where are the external trips going?

Transurban has model regions set up across each of our markets – Sydney, Brisbane, Melbourne. We have observed data on the number of trips coming into these markets from outside these regions.

- JTW data is used to distribute trips into our Traffic zones and catchment areas at base year.
- Using usual residence and place of work data we develop origin/destination pairs for trips originating outside our model areas
- Origin and destination relationships by trip type are also produced at a Traffic zone level within our model regions



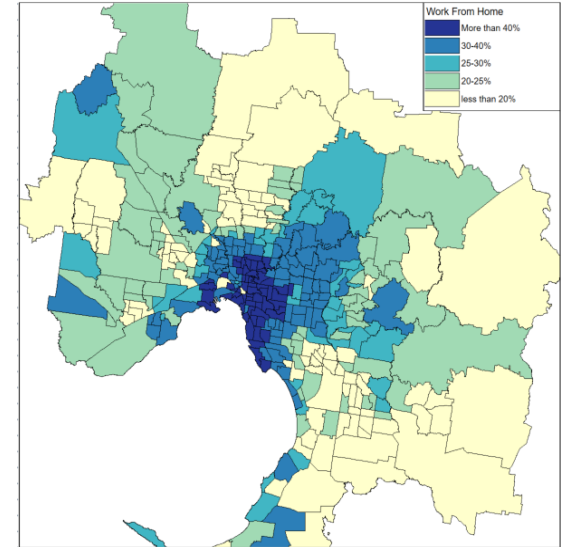
Each State government run a household travel survey

- The surveys provide information on the day-to-day travel behaviour of Queensland households, including how, where and why they travel, at what time of day trips are made and the average trip distance and duration.
- Results inform infrastructure and public transport planning, helping to ensure the transport system is ready for future growth and demand.
- Trip rates are established based on observed data from the Household Travel Survey.
- Using Census JTW data we can validate and calibrate the trip generation ratios that are developed from the HTS, particularly as it relates to home-based work trips.
- JTW data helps to validate the trip rates, mode share and trip lengths that are incorporated into our models.

Working from home

Proportion of employed persons working from home by industry and occupation

- JTW data is also used in estimating the number and type of person working from home.
- We use JTW to develop matrices around working from home rates by industry and occupation at the base year level.
- We also utilise other data such as office occupancy rates to determine the level or likelihood of people working at home into the future.
- Persons working from home by Industry and Occupation allow assumptions around the potential of working from home by type of jobs into the future



Location of industry jobs

Growth in location of Transport and Warehousing jobs 2001-2016 in relation to TU assets

- JTW data is also used in looking at the location of industry jobs, and the mode of travel by industry and occupation
- Below are maps showing the growth in location of Transport and Warehousing jobs where people are driving to work between 2001 and 2016 in relation to Transurban assets.



- Mode Choice is the modeling step that simulates the choice of the transport mode
- Mode Choice factors are used to estimate the share of Public Transport for each sector-to-sector pair and each trip purpose. We use JTW data to get our destination mode shares
- Mode shares are adjusted into the future via diversion curves that consider the change in the cost of travel between highway and transit. PT mode shares will increase as highway congestion worsen over times. Likewise with new public transport projects, PT mode shares within the project's catchment corridor will increase.
- While driving as a proportion of modal choice has increased – it has not adopted all abandoned public transport trips

	2016	2021
Public Transport	18%	6%
Vehicle	67%	51%
Active/other Transport	5%	3%
Worked at home or Did not go to work	10%	40%