# CHAPTER 7

## TRANSPORT

# Key points

- Private vehicle was the most frequently used transport mode in South East Queensland (SEQ). About 79 per cent of employed residents travelled to work by private vehicle in 2016, while about 10 per cent used public transport and just below 6 per cent worked at home.
- Amongst employed residents of the Brisbane LGA, 70 per cent journeyed to work by private vehicles and 18 per cent by public transport in 2016. The public transport mode was much less popular in other LGAs. In Lockyer Valley, Scenic Rim, Somerset and Toowoomba LGA, less than 2 per cent of employed residents used public transport.
- Transport mode use varies across the BCARR rings. Only 57 per cent of Inner Brisbane employed residents journeyed to work by private vehicle, whereas about 85 per cent did so in the Rest of SEQ in 2016. About 21 per cent of Inner Brisbane employed residents travelled to work by public transport, but the public transport mode share was just 3 per cent for the Rest of SEQ. The Rest of SEQ had a higher proportion of employed residents who worked at home (7 per cent).
- The Inner Brisbane sub-region had the highest public transport mode use by place of work (36 per cent). Inner Brisbane was the place of work for 73 per cent of all journeys to work by public transport in SEQ in 2016.
- From 2011 to 2016, across the LGAs of SEQ, commuting to work by private vehicle increased by 0.9 per cent points and working at home increased by 0.5 percentage points. The public transport mode share declined by 1.1 percentage points across the SEQ LGAs. The decline was evident in most of the LGAs, but was the most pronounced for the Brisbane LGA (–1.8 percentage points). The active transport mode share fell by 0.3 percentage points across the SEQ LGAs between 2011 and 2016.
- The pandemic has caused SEQ passengers to switch from public transport to private vehicles in recent years.
- During the pandemic, the total passenger trips recorded in the SEQ public transport network dropped and only partially recovered in 2021.
- Work from home uptake by employees in Brisbane was 35 per cent at the peak of the pandemic, compared to 27 per cent for the whole of SEQ. SEQ employees preference for future work from home uptake is well above pre-pandemic uptake (21 per cent and 15 per cent, respectively).

# 7.1 Introduction

This chapter investigates the use of different travel modes across the decade from 2011 to 2021 in SEQ. Specifically, Australian Bureau of Statistics (ABS) 2011 and 2016 Census of Population and Housing data are used to understand patterns in journey to work by place of residence and place of work. Additionally, changes in transport mode use after 2016 are examined using data from the Queensland government, Google COVID–19 Community Mobility Reports and the University of South Australia iMOVE project (see Vij et al. 2021). Only passenger transport and not freight transport is covered in this chapter.

This chapter first provides a snapshot of transport mode use in 2016. Secondly, changes in transport mode use between 2011 and 2021 are discussed.

# 7.2 Snapshot of transport mode use in 2016

## Place of residence

This section investigates the journey to work data by place of residence for different geographical classifications of SEQ. Box 7.1 provides contextual information about the journey to work data. As shown in Table 7.1, private vehicle mode was the most popular accounting for 79.3 per cent of the SEQ total. About 10 per cent of employed residents journeyed to work by public transport, while 5.7 per cent worked at home and 4.3 per cent used active transport.

### Table 7.1: Journey to work by transport modes for usual residents in SEQ in 2016

| Modes of transport | Place of usual residence | |
|---|---|---|
| | Employed persons | Share of total (per cent) |
| **Private vehicle** | 1,104,731 | 79.3 |
| **Car (as driver)** | 998,613 | 71.7 |
| **Car (as passenger)** | 77,996 | 5.6 |
| **Truck** | 13,655 | 1.0 |
| **Motorbike/scooter** | 14,467 | 1.0 |
| **Public transport** | 139,555 | 10.0 |
| **Train** | 66,919 | 4.8 |
| **Bus** | 64,135 | 4.6 |
| **Ferry** | 3,628 | 0.3 |
| **Tram** | 2,002 | 0.1 |
| **Taxi** | 2,871 | 0.2 |
| **Active transport** | 59,549 | 4.3 |
| **Bicycle** | 15,712 | 1.1 |
| **Walked only** | 43,837 | 3.1 |
| **Worked at home** | 79,530 | 5.7 |
| **Other mode** | 9,891 | 0.7 |
| **Total** | **1,393,256** | **100** |

Notes: Total excludes did not go to work, not stated and not applicable responses.
Source: BCARR analysis of ABS Census of Population and Housing, 2016.

The car (as driver) mode was the key contributor to the private vehicle mode in the detailed travel modes. Buses and trains are the most frequently used of the public transport modes. Taxis are used less frequently (i.e. about 0.2 per cent mode share).[23] For active transport, bicycle travel was less commonly reported than walk only trips to work.

23 The 2016 Census does not report ride-share services like Uber. Hence, the taxi data in 2016 cannot distinguish taxi use from ride-share service use. In the 2021 Census, taxi and ride-share services together are considered to be the same travel method under the public transport mode. The 2021 census data was released by ABS in October 2022, after the completion of this research project.

### Box 7.1 What is the Journey to Work data?

According to the ABS, a journey to work captures individuals' location of usual residence and the location of the workplace along with the mode by which they commuted. As Table 7.2 shows, there are 11 detailed modes of transport in the journey to work data, which is categorised into the following 5 modes of transport for the analysis of this chapter.

**Table 7.2: Modes of transport**

| Modes of transport | Detailed modes of transport |
|---|---|
| **Private Vehicle** | Car (as driver), Car (as passenger), Truck and Motorbike/scooter |
| **Public Transport** | Train, Bus, Ferry, Tram and Taxi |
| **Active Transport** | Bicycle and Walk only |
| **Worked at Home** | N/A |
| **Other Mode** | N/A |

To calculate each of the 5 transport mode shares, the total trips recorded by these 5 modes are computed first. Next, each mode share is equal to its recorded trips divided by the total recorded trips of these 5 modes. For example, if the total trips made by these 5 transport modes were 100 among which 10 were made by vehicles in 2016, the vehicle mode share was therefore 10 per cent. Hence, the total of the 5 mode shares is always equal to 100 per cent in the analysis of this chapter, as 'did not go to work' and 'not applicable' responses are excluded.

Individuals can report that they used multiple transport modes when responding to the census (e.g. car as driver and train). Where multiple methods of work are used, ABS has used a priority hierarchy to make assumptions for the 'main mode'. The priority hierarchy underlying the data in this chapter is:

- Train
- Bus
- Ferry
- Tram
- Taxi
- Vehicle driver
- Vehicle passenger
- Truck
- Motorbike or motor scooter
- Bicycle
- Other mode (not elsewhere specified
- Walked only

For example, if a person selected, 'Train' and 'Car driver', their mode of transport would be coded to 'Train' for Mode of travel to work (15 modes). 'Train' forms part of BCARR's 'Public transport' category.

## Transport modes by place of residence in 2016: LGAs

Table 7.3 summarises transport mode shares by LGAs of usual residence in SEQ in 2016. As shown, use of the 5 transport modes varies significantly among the 12 LGAs. For example, 69.5 per cent of residents in Brisbane LGA used a private vehicle to journey to work. This was the lowest of all the LGAs, and was considerably lower than the 12 LGAs total of 79.1 per cent. In Ipswich and Logan, about 86 per cent of employed residents travelled to work by private vehicle.

Use of public transport was relatively uncommon in the outlying LGAs. In Lockyer Valley, Scenic Rim, Somerset and Toowoomba, less than 2 per cent of employed residents used public transport for the journey to work. In contrast, about 18 per cent of Brisbane LGA employed residents travelled to work by public transport. In the outer suburban LGAs of Ipswich, Logan, Redland and Moreton Bay, about 5 per cent of employed residents used public transport. These results show a pattern whereby public transport use tends to decline in line with the distance of the LGA from central Brisbane.

Among the 12 LGAs, the Brisbane LGA had the highest share of employed residents who travelled to work by active transport in 2016 (6.6 per cent). About 4.6 per cent of Toowoomba's employed residents used active transport to travel to work, which was slightly above the 12 LGAs total of 4.3 per cent. Over 10 per cent of Noosa and Scenic Rim employed residents worked at home on the 2016 census day. Their work at home mode share was higher than the 12 LGA total of 5.8 per cent.

**Table 7.3: Transport mode share for the journey to work by LGAs of residence in SEQ in 2016**

| LGAs | Private vehicle | Public transport | Active transport | Worked at home | Other mode |
|---|---|---|---|---|---|
| | | | (per cent) | | |
| **Brisbane** | 69.5 | 18.0 | 6.6 | 5.3 | 0.6 |
| **Gold Coast** | 84.0 | 4.9 | 3.8 | 6.6 | 0.8 |
| **Ipswich** | 86.3 | 7.9 | 1.9 | 3.3 | 0.6 |
| **Lockyer Valley** | 88.5 | 1.3 | 3.0 | 6.6 | 0.6 |
| **Logan** | 87.0 | 6.7 | 1.5 | 4.2 | 0.6 |
| **Moreton Bay** | 83.0 | 9.0 | 2.2 | 5.2 | 0.7 |
| **Noosa** | 79.9 | 2.7 | 4.4 | 11.8 | 1.3 |
| **Redland** | 83.6 | 8.0 | 2.1 | 5.6 | 0.7 |
| **Scenic Rim** | 82.7 | 1.5 | 4.2 | 10.7 | 0.9 |
| **Somerset** | 83.7 | 2.0 | 4.0 | 9.5 | 0.8 |
| **Sunshine Coast** | 84.5 | 2.8 | 3.7 | 8.1 | 1.0 |
| **Toowoomba** | 87.3 | 1.0 | 4.6 | 6.4 | 0.7 |
| **12 LGAs Total** | 79.1 | 10.1 | 4.3 | 5.8 | 0.7 |

Note: The 12 LGAs total differs from the total for SEQ, as the rural areas of Toowoomba LGA are excluded from the definition of SEQ. Total excludes did not go to work, not stated and not applicable responses.

Source: BCARR analysis of ABS Census of Population and Housing, 2016.

## Transport modes by place of residence in 2016: BCARR rings and sub-regions

Several noticeable patterns show in Table 7.4 and Figure 7.1. The first pattern was that private vehicle use increased with distance from Inner Brisbane. Only 57.4 per cent of Inner Brisbane residents used private vehicles to journey to work compared to 84.8 per cent of Rest of SEQ residents. About 73.7 per cent of Middle Brisbane residents commuted to work by private vehicles. In Outer Brisbane, it was 84.9 per cent. Within these two rings, the Middle East sub-region and Ipswich sub-region had private vehicle mode share over 78 per cent. The second pattern was that public transport use decreased with distance from Inner Brisbane. About 21 per cent of Inner Brisbane residents travelled to work by public transport, but the public transport mode share dropped to 3.4 per cent in the Rest of SEQ. The third pattern was that the active transport mode share was much higher in Inner Brisbane (14.5 per cent) than elsewhere, and was particularly low in Outer Brisbane (1.9 per cent). The last pattern was that the worked-at-home mode share was highest in the Rest of SEQ (7.1 per cent), reflecting the high rate of working from home in Noosa, Scenic Rim and Somerset.

**Table 7.4: Transport mode share for the journey to work by sub-regions of residence in SEQ in 2016**

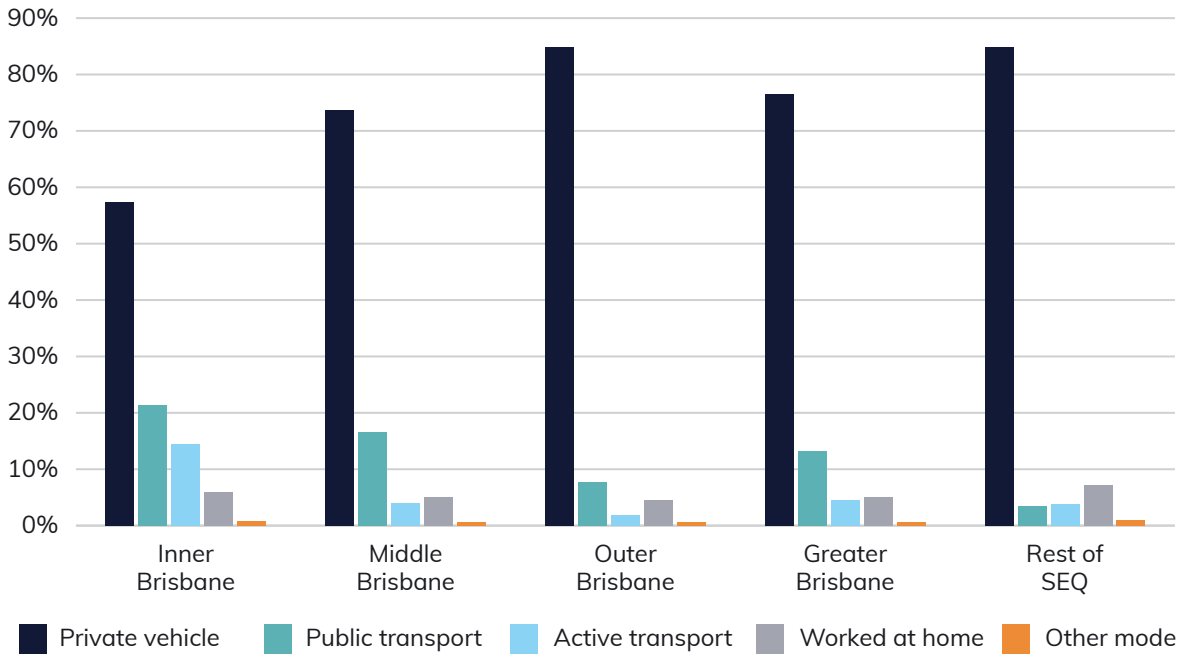
| BCARR rings/sub-regions | Private vehicle | Public transport | Active transport | Worked at home | Other mode |
|---|---|---|---|---|---|
| | | | (per cent) | | |
| **INNER Brisbane** | 57.4 | 21.4 | 14.5 | 5.9 | 0.8 |
| **MIDDLE Brisbane – Total** | 73.7 | 16.6 | 4.0 | 5.1 | 0.6 |
| **Middle East** | 78.8 | 12.1 | 2.7 | 5.7 | 0.7 |
| **Middle North** | 74.4 | 17.3 | 3.3 | 4.4 | 0.6 |
| **Middle South** | 73.0 | 17.6 | 4.1 | 4.8 | 0.5 |
| **Middle West** | 72.5 | 15.9 | 4.9 | 6.1 | 0.6 |
| **OUTER Brisbane – Total** | 84.9 | 7.8 | 1.9 | 4.6 | 0.6 |
| **Ipswich** | 86.6 | 7.6 | 1.9 | 3.3 | 0.5 |
| **Redland** | 83.8 | 7.9 | 2.1 | 5.6 | 0.7 |
| **Logan** | 87.2 | 6.6 | 1.5 | 4.2 | 0.6 |
| **Moreton Bay** | 83.1 | 8.8 | 2.2 | 5.2 | 0.7 |
| **GREATER BRISBANE – Total** | 76.6 | 13.3 | 4.5 | 5.0 | 0.6 |
| **Rest of SEQ-Total** | 84.8 | 3.4 | 3.8 | 7.1 | 0.9 |
| **Gold Coast** | 84.1 | 4.7 | 3.8 | 6.6 | 0.8 |
| **Sunshine Coast** | 84.7 | 2.6 | 3.7 | 8.0 | 1.0 |
| **Noosa** | 79.9 | 2.5 | 4.3 | 12.0 | 1.3 |
| **Toowoomba (urban part)** | 89.7 | 1.0 | 4.3 | 4.4 | 0.6 |
| **Scenic Rim** | 82.7 | 1.5 | 4.2 | 10.8 | 0.8 |
| **Lockyer Valley** | 88.7 | 1.1 | 3.0 | 6.6 | 0.6 |
| **Somerset** | 83.8 | 1.9 | 3.9 | 9.5 | 0.8 |
| **South East Queensland – Total** | 79.3 | 10.0 | 4.3 | 5.7 | 0.7 |

Note: The SEQ total differs from the 12 LGA total in the preceding table, which includes the whole of Toowoomba LGA. This table includes only the urban parts of Toowoomba LGA. Total excludes did not go to work, not stated and not applicable responses.

Source: BCARR analysis of ABS Census of Population and Housing, 2016

Overall, the share of private vehicle use in the whole of SEQ was higher than in Greater Brisbane (79.3 versus 76.6 per cent). However, the public transport mode share in the former was lower than in the latter (10.0 versus 13.3 per cent).

**Figure 7.1: Transport mode share for journey to work by BCARR rings of residence for SEQ in 2016**

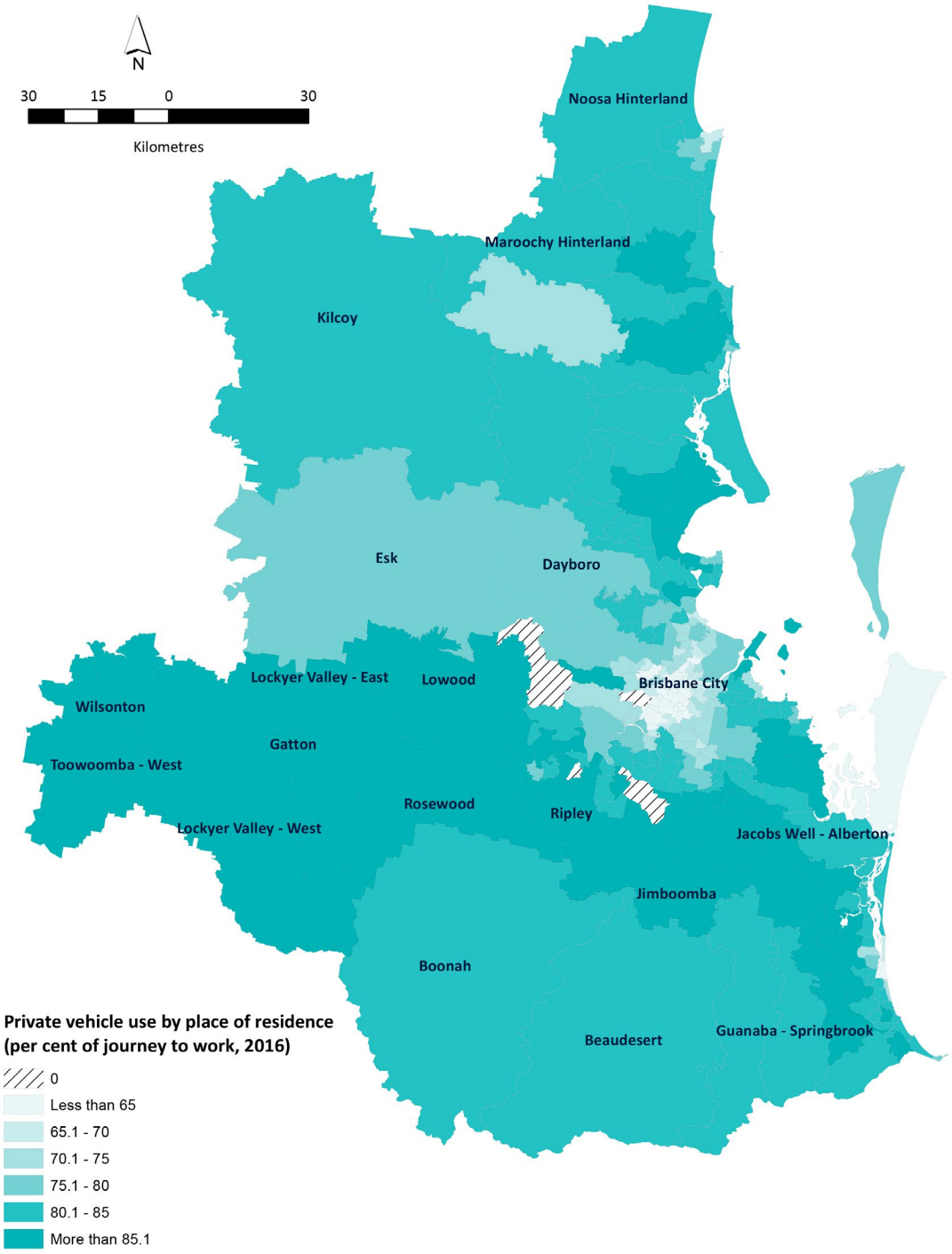



Source: BCARR analysis of ABS Census of Population and Housing, 2016

## Transport modes by place of residence in 2016: SA2s

Figure 7.2 shows private vehicle use varied significantly across SA2s in SEQ in 2016. Less than 65 per cent of employed residents in the SA2s of the Inner Brisbane used a private vehicle to get to work. However, over 90 per cent of employed residents in some of the SA2s from the Rest of SEQ did so. As Table 7.5 shows, the private vehicle mode share in Spring Hill in Inner Brisbane was only 29.4 per cent, but, it was 93.7 per cent in Gowrie, which is part of the Rest of SEQ.

**Figure 7.2: Private vehicle mode share for the journey to work by SA2s of residence in SEQ in 2016**




Note: The values of zero reflect a zero count of employed persons, rather than a genuine zero per cent mode share.

Source: BCARR analysis of ABS Census of Population and Housing, 2016.

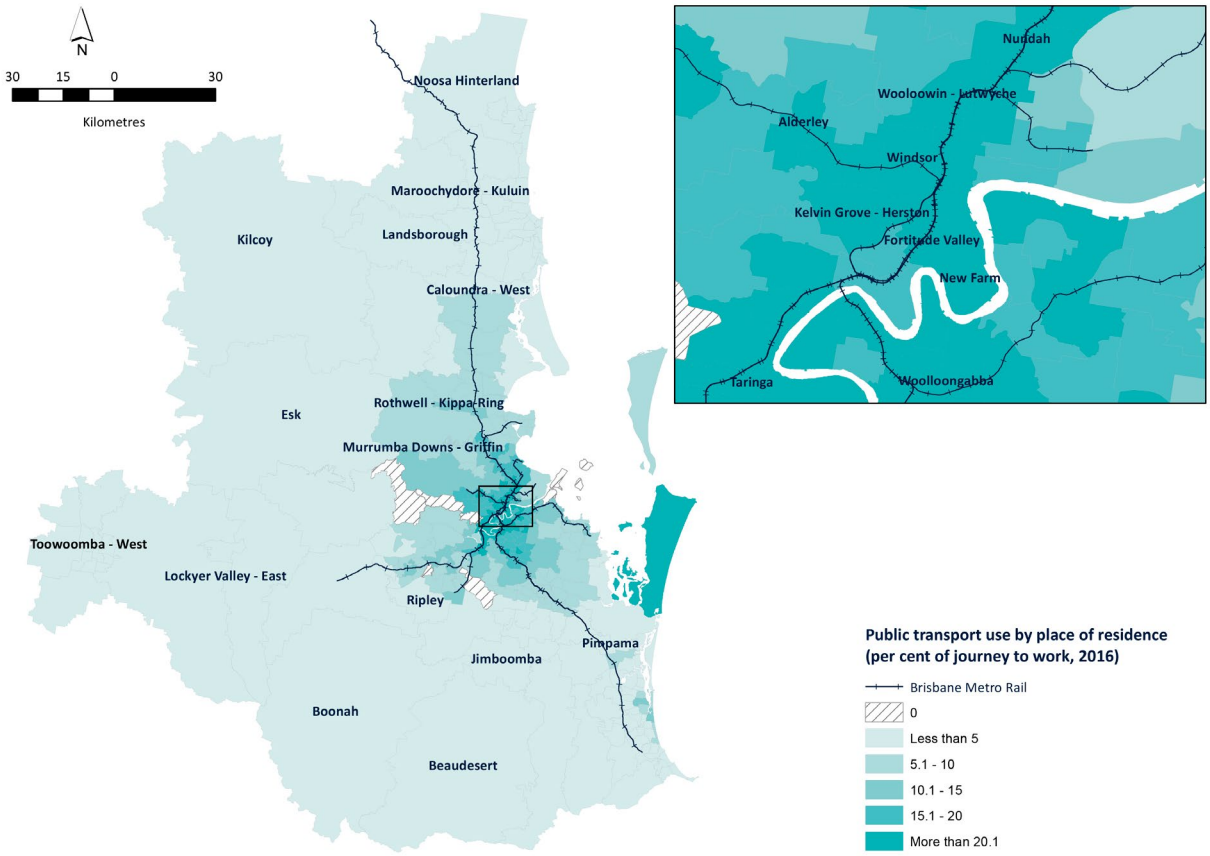
**Table 7.5: SA2s of residence with the largest and smallest private vehicle mode share for the journey to work for SEQ in 2016**

| SA2s | BCARR rings/sub-regions | Private vehicle mode share (per cent) |
|---|---|---|
| **Top 5 largest** | | |
| Gowrie | Toowoomba | 93.7 |
| Toowoomba – West | Toowoomba | 92.5 |
| Wilsonton | Toowoomba | 91.9 |
| Gatton | Lockyer Valley | 91.2 |
| Leichhardt – One Mile | Brisbane Outer – Ipswich | 91.1 |
| **Top 5 smallest** | | |
| Spring Hill | Inner Brisbane | 29.4 |
| Brisbane City | Inner Brisbane | 29.7 |
| Fortitude Valley | Inner Brisbane | 35.2 |
| South Brisbane | Inner Brisbane | 37.5 |
| West End | Inner Brisbane | 47.1 |

Note: Each of these SA2s above had over 100 residents individually.
Source: BCARR analysis of ABS Census of Population and Housing, 2016.

Figure 7.3 shows that public transport use is centralised in Brisbane's inner and middle rings. Examples include Woolloongabba and Nundah, which both have public transport mode shares of over 25 per cent as Table 7.6 shows. These SA2s are not far away from the Brisbane Central Business District (CBD). The Outer Brisbane SA2 of Redland Islands is an exception to the pattern, with a very high public transport mode share due to the use of ferries. Public transport is generally used much less in the Rest of SEQ. For example, Cambooya-Wyreema in the Toowoomba sub-region has a public transport mode share of less than 1 per cent.

## Figure 7.3: Public transport mode share for the journey to work by SA2s of residence in SEQ in 2016




Noted: The values of zero reflects a small count of employed persons, rather than a genuine zero per cent mode share.
Source: BCARR analysis of ABS Census of Population and Housing, 2016

## Table 7.6: SA2s of residence with the largest and smallest public transport mode shares for the journey to work in SEQ in 2016

| SA2s | BCARR sub-region | Public transport mode share (per cent) |
|---|---|---|
| **Top 5 largest** | | |
| Redland Islands | Outer Brisbane – Redland | 33.3 |
| Nundah | Middle Brisbane – North | 28.3 |
| Woolloongabba | Middle Brisbane – South | 27.9 |
| Wooloowin – Lutwyche | Inner Brisbane | 27.2 |
| Taringa | Middle Brisbane – West | 26.9 |
| **Top 5 smallest** | | |
| Cambooya – Wyreema | Toowoomba | 0.4 |
| Lockyer Valley – West | Lockyer Valley | 0.4 |
| Toowoomba – East | Toowoomba | 0.6 |
| Toowoomba – West | Toowoomba | 0.7 |
| Gowrie | Toowoomba | 0.8 |

Note: Each of these SA2s above had over 100 residents individually.
Source: BCARR analysis of ABS Census of Population and Housing, 2016

# Analysis by place of work

This section uses the place of work data from the 2016 Census of Population and Housing to investigate the transport mode shares in SEQ. As shown in Table 7.7, there were over 1.3 million employed persons with an identifiable place of work in SEQ.[24] Over 1 million of them used private vehicles to travel to work (78.8 per cent). The car (as driver) mode represented over 71 per cent of all recorded journeys. The private vehicle mode played a dominant role in the journey to work by place of work (and residence). However, the private vehicle mode share by place of work was a little smaller than by place of residence. This was due to the difference in the spatial distribution of the usual resident population and the distribution of jobs with a fixed place of work in SEQ. Employed SEQ residents with no fixed address of work are excluded from the place of work total, but have a very high rate of private vehicle use.

Public transport consisted of about 10 per cent of total recorded trips. In this mode, trains and buses were used most frequently. The worked-at-home mode accounted for about 6 per cent of the total. Fewer commuters used the active transport mode (4.4 per cent) such as bicycles (1.2 per cent) and walk-only (3.2 per cent).

**Table 7.7: Journey to work by transport mode for the place of work in SEQ in 2016**

| Modes of transport | Place of work | |
|---|---|---|
| | Employed persons | Share of total (per cent) |
| **Private vehicle** | 1,041,482 | 78.8 |
| **Car (as driver)** | 943,743 | 71.4 |
| **Car (as passenger)** | 73,443 | 5.6 |
| **Truck** | 10,111 | 0.8 |
| **Motorbike/scooter** | 14,185 | 1.1 |
| **Public transport** | 137,248 | 10.4 |
| **Train** | 67,032 | 5.1 |
| **Bus** | 61,475 | 4.7 |
| **Ferry** | 3,806 | 0.3 |
| **Tram** | 2,057 | 0.2 |
| **Taxi** | 2,878 | 0.2 |
| **Active transport** | 57,440 | 4.4 |
| **Bicycle** | 15,544 | 1.2 |
| **Walked only** | 41,896 | 3.2 |
| **Worked at home** | 77,704 | 5.9 |
| **Other mode** | 7,353 | 0.6 |
| **Total** | **1,321,227** | **100.0** |

Note: Date is for employed persons aged 15 years and over. Total excludes did not go to work, not stated and not applicable responses. Total also excludes those who reported no fixed work address.

Source: BCARR analysis of ABS Census of Population and Housing, 2016

24 The total of 1.32 million is lower than the 1.39 million total in Table 7.1 due to about 5 per cent of employed persons reporting they had no fixed address of work. This can include occupations such as truck drivers, couriers, mobile salespeople, construction workers etc.

## Transport modes by place of work in 2016: LGAs

Patterns in the place of work data were similar to the place of residence data at the LGA level, although there are some key differences across the 5 travel modes and LGAs. While private vehicle use increased gradually with distance from Brisbane, its use in place of work was smaller than in place of residence. For example, the private vehicle mode share by place of work in Scenic Rim and Somerset were 78.6 and 79.8 per cent, respectively, which were smaller than their shares by place of residence (See Table 7.8). This is not surprising given the different distribution of usual residents and employment. People residing in these LGAs were likely to travel to their workplace in Brisbane or its surrounding areas by private vehicles.

Public transport use by place of work decreased steadily with distance from Brisbane. In the Brisbane LGA the public transport mode share was 18.8 per cent (which was the highest among all the LGAs). However, the Lockyer Valley, Scenic Rim, Somerset and Toowoomba LGAs had less than 1 per cent public transport use. This reflects the focus of the public transport network being to move people in and out of the CBD, with limited public transport services available in outlying and rural areas.

The share of active transport and worked-at-home mode by place of work varied significantly across all the LGAs. In Brisbane, Scenic Rim and Somerset, their active transport use shares were 5.3, 6.1 and 5.5 per cent, individually. However, Logan had less than 2.5 per cent active transport. The worked-at-home mode shares for Scenic Rim and Somerset were 13.9 and 13.4 per cent respectively. However, Brisbane's worked-at-home share was only 4.4 per cent, which was the lowest among all the LGAs.

**Table 7.8: Transport mode share for the journey to work by LGA of employment in SEQ in 2016**

| LGAs | Private vehicle | Public transport | Active transport | Worked at home | Other mode |
|---|---|---|---|---|---|
| | | | (per cent) | | |
| **Brisbane** | 71.0 | 18.8 | 5.3 | 4.4 | 0.5 |
| **Gold Coast** | 85.1 | 3.4 | 3.9 | 6.9 | 0.6 |
| **Ipswich** | 90.7 | 2.3 | 2.3 | 4.2 | 0.5 |
| **Lockyer Valley** | 85.9 | 0.6 | 3.9 | 8.9 | 0.7 |
| **Logan** | 89.2 | 2.6 | 1.9 | 5.8 | 0.5 |
| **Moreton Bay** | 86.2 | 2.3 | 3.0 | 7.9 | 0.6 |
| **Noosa** | 80.8 | 2.1 | 4.2 | 12.1 | 0.8 |
| **Redland** | 83.9 | 3.6 | 3.1 | 8.8 | 0.5 |
| **Scenic Rim** | 78.6 | 0.6 | 6.1 | 13.9 | 0.9 |
| **Somerset** | 79.8 | 0.5 | 5.5 | 13.4 | 0.8 |
| **Sunshine Coast** | 85.0 | 1.6 | 3.9 | 8.9 | 0.6 |
| **Toowoomba** | 87.5 | 0.8 | 4.6 | 6.4 | 0.6 |
| **12 LGAs Total** | **78.8** | **10.3** | **4.4** | **6.0** | **0.6** |

Note: The 12 LGAs total differs from the total for SEQ, as the rural areas of Toowoomba LGA are excluded from the definition of SEQ. Total excludes did not go to work, not stated and not applicable responses. Total also excludes those who reported no fixed work address.

Source: BCARR analysis of ABS Census of Population and Housing, 2016

## Transport modes for the place of work in 2016: BCARR rings and sub-regions

Table 7.9 and Figure 7.4 present transport mode shares by place of work for sub-regions and BCARR rings. Private vehicle mode use in Inner Brisbane was 52.6 per cent, whereas Outer Brisbane and the Rest of SEQ were above 80.0 per cent. Ipswich and Toowoomba (urban part) sub-regions had private vehicle mode shares of 90 per cent or above. Public transport use was concentrated in Inner Brisbane. Additionally, public transport use for Inner Brisbane as a place of work was larger than as the place of residence (35.7 versus 21.4 per cent). Inner Brisbane's active transport mode share was the largest (7.7 per cent) whereas its work at home mode share was the smallest (3.5 per cent). In Greater Brisbane, the public transport and active transport mode share was 13.9 and 4.5 per cent respectively, which were higher than relevant mode shares for SEQ.

Inner Brisbane was the place of work for 73 per cent of all journeys to work by public transport in SEQ in 2016. This highlights the radial nature of the public transport network (particularly the rail network), which is focused on transporting commuters to and from the city centre, and is much less useful for cross-suburban travel.

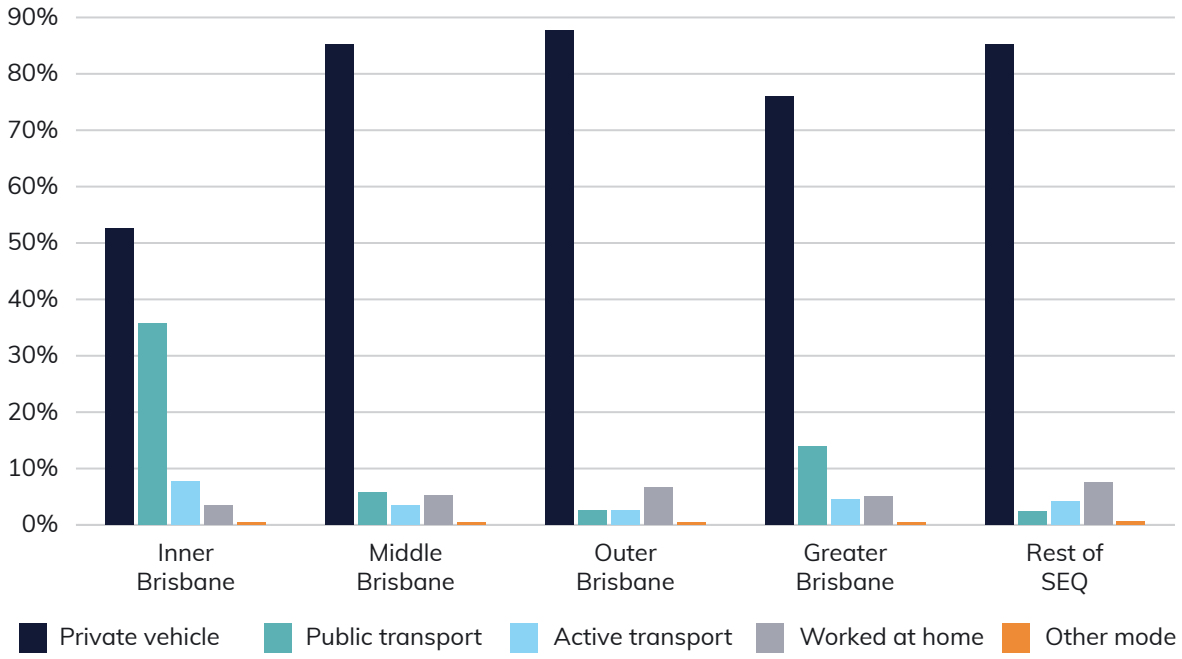
**Table 7.9: Transport mode share for the journey to work by sub-regions of employment in SEQ in 2016**

| BCARR rings/sub-regions | Private vehicle | Public transport | Active transport | Worked at home | Other mode |
|---|---|---|---|---|---|
| | | | (per cent) | | |
| **INNER Brisbane** | 52.6 | 35.7 | 7.7 | 3.5 | 0.5 |
| **MIDDLE Brisbane-Total** | 85.2 | 5.7 | 3.4 | 5.2 | 0.5 |
| **Middle East** | 89.5 | 2.8 | 2.1 | 5.0 | 0.5 |
| **Middle North** | 88.1 | 4.8 | 2.7 | 3.9 | 0.5 |
| **Middle South** | 85.2 | 6.2 | 3.1 | 5.0 | 0.5 |
| **Middle West** | 80.0 | 7.0 | 5.2 | 7.1 | 0.6 |
| **OUTER Brisbane – Total** | 87.7 | 2.6 | 2.6 | 6.7 | 0.5 |
| **Ipswich** | 90.7 | 2.2 | 2.3 | 4.2 | 0.5 |
| **Redland** | 83.9 | 3.6 | 3.1 | 8.8 | 0.6 |
| **Logan** | 89.2 | 2.6 | 1.9 | 5.8 | 0.5 |
| **Moreton Bay** | 86.1 | 2.3 | 3.1 | 7.9 | 0.6 |
| **GREATER BRISBANE-Total** | 76.0 | 13.9 | 4.5 | 5.1 | 0.5 |
| **Rest of SEQ – Total** | 85.3 | 2.4 | 4.1 | 7.6 | 0.6 |
| **Gold Coast** | 85.1 | 3.4 | 3.9 | 6.9 | 0.6 |
| **Sunshine Coast** | 85.1 | 1.6 | 3.9 | 8.8 | 0.6 |
| **Noosa** | 80.1 | 2.0 | 4.3 | 12.8 | 0.8 |
| **Toowoomba (urban part)** | 90.0 | 0.9 | 4.2 | 4.5 | 0.5 |
| **Scenic Rim** | 78.5 | 0.6 | 6.1 | 13.9 | 0.9 |
| **Lockyer Valley** | 85.9 | 0.6 | 4.0 | 8.9 | 0.6 |
| **Somerset** | 79.8 | 0.5 | 5.7 | 13.4 | 0.7 |
| **South East Queensland – Total** | 78.8 | 10.4 | 4.3 | 5.9 | 0.6 |

Note: Data is for employed persons aged 15 years and over. The SEQ total differs from the 12 LGA total in the preceding table, which includes the whole of Toowoomba LGA. This table includes only the urban parts of Toowoomba LGA. Total excludes did not go to work, not stated and not applicable responses. Total also excludes those who reported no fixed work address.

Source: BCARR analysis of ABS Census of Population and Housing, 2016.

**Figure 7.4: Transport mode share for the journey to work by BCARR rings of work for SEQ in 2016**

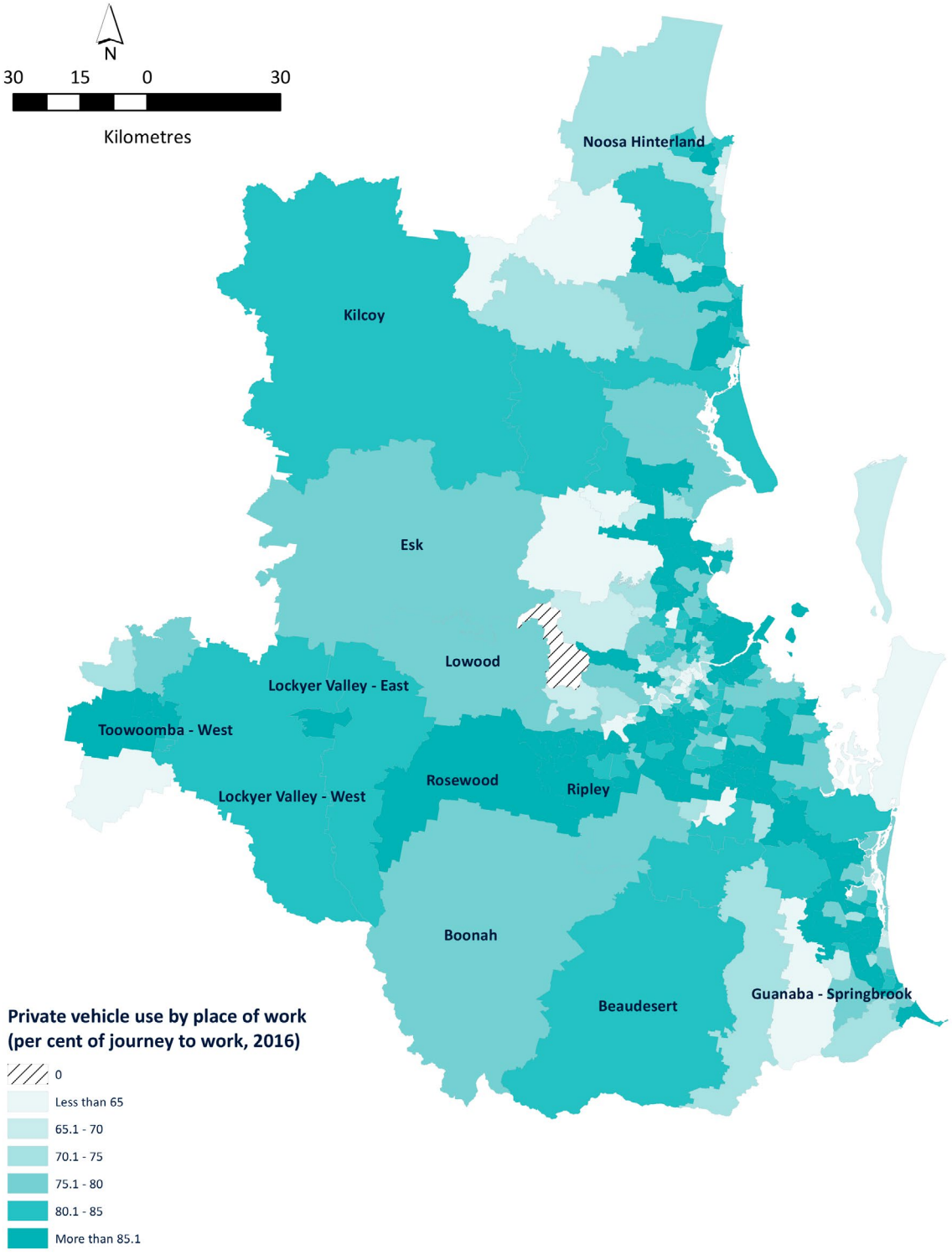



Source: BCARR analysis of 2016 Census of Population and Housing.

## Transport modes for the place of work in 2016: SA2s

Figure 7.5 shows that the private vehicle mode shares were relatively low in Brisbane City SA2 and its nearby SA2s. Table 7.10 shows that private vehicle mode shares in Fortitude Valley and Brisbane City were only 53.1 and 29.1 per cent, respectively. SA2s that were more distant from Brisbane City tended to have a higher private vehicle mode share. These SA2s included, but were not limited to, New Chum, Carole Park and Riverview, which each had a private vehicle mode share of over 94.0 per cent. Riverview has a mix of residential and industry land use, with the majority of its jobs in Manufacturing. New Chum and Carole Park are industrial areas, with virtually no residents. Workers in industrial areas tend to be highly reliant on private vehicles. This may be because private vehicles are needed to carry tools and equipment, access their place of work and travel to other locations during the course of their work day. Industrial areas also tend to have limited public transport provision.

## Figure 7.5: Vehicle mode share for journey to work by SA2s of employment in SEQ in 2016




Note: The values of zero count of employed persons, rather than a genuine zero per cent mode share.
Source: BCARR analysis of ABS Census of Population and Housing, 2016.

**Table 7.10: SA2s of employment with the largest and smallest private vehicle mode share for the journey to work in SEQ in 2016**

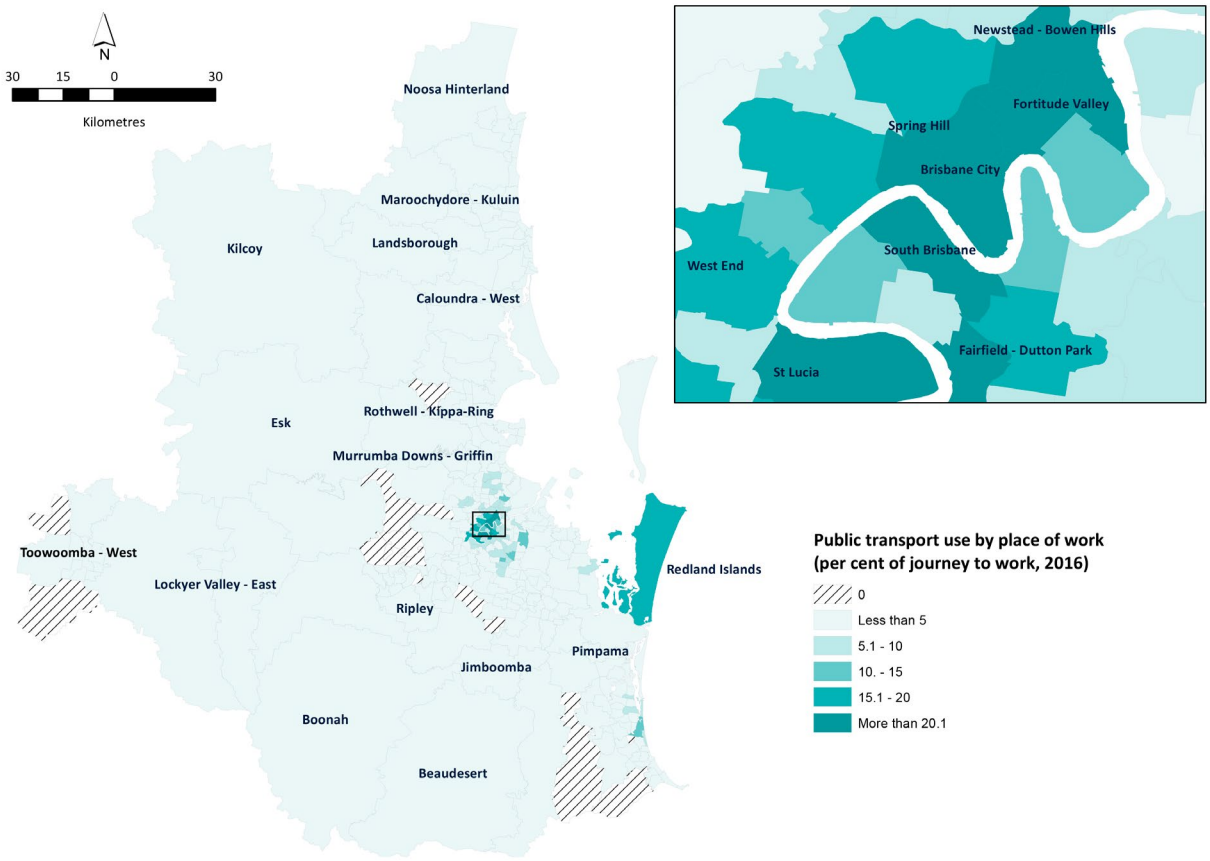
| SA2s | BCARR sub-region | Private vehicle mode share (per cent) |
|---|---|---|
| **Top 5 largest** | | |
| New Chum | Brisbane Outer-Ipswich | 100.0 |
| Carole Park | Brisbane Outer-Ipswich | 97.9 |
| Riverview | Brisbane Outer-Ipswich | 96.0 |
| Brisbane Port – Lytton | Middle Brisbane- East | 95.9 |
| Wacol | Middle Brisbane-West | 95.9 |
| **Top 5 smallest** | | |
| Brisbane City | Inner Brisbane | 29.1 |
| Westlake | Middle Brisbane-West | 40.7 |
| St Lucia | Middle Brisbane-West | 50.9 |
| Fortitude Valley | Inner Brisbane | 53.1 |
| Upper Caboolture | Outer Brisbane-Moreton Bay | 53.5 |

Note: Date is for employed persons aged 15 years and over and each of these SA2s had over 100 workers individually.
Source: BCARR analysis of ABS Census of Population and Housing, 2016.

Figure 7.6 illustrates the public transport mode share by SA2s of employment in SEQ in 2016. The patterns here were opposite to the private vehicle mode use discussed previously. Specifically, public transport use was high in Brisbane City (59.8 per cent) and its nearby suburbs. The high public transport mode share of St Lucia, Fairfield and Dutton Park reflects the presence of the University of Queensland and frequent public transport services. SA2s from the Rest of SEQ and Outer Brisbane tended to record very low public transport use. Some of the SA2s with the lowest public transport use included Highfields, Esk, North Toowoomba – Harlaxton, Lockyer Valley–West and Boonah.[25]

25 Each of them has over 100 employed persons working there in 2016.

## Figure 7.6: Public transport mode share for the journey to work by SA2s in employment of SEQ in 2016




Note: The value of zero may reflect a small count of employed persons, rather than a genuine zero per cent mode share.
Source: 2016 Census of Population and Housing.

## Table 7.11: SA2s of employment with the largest and smallest public transport mode share for the journey to work in SEQ in 2016

| SA2s | BCARR sub-region | Public transport mode share (per cent) |
|---|---|---|
| **Top 5 largest** | | |
| Brisbane City | Inner Brisbane | 59.8 |
| Fortitude Valley | Inner Brisbane | 34.7 |
| South Brisbane | Inner Brisbane | 31.1 |
| Spring Hill | Inner Brisbane | 30.0 |
| St Lucia | Middle Brisbane- West | 28.9 |
| **Top 5 smallest** | | |
| Highfields | Toowoomba | 0.1 |
| Esk | Somerset | 0.3 |
| North Toowoomba – Harlaxton | Toowoomba | 0.3 |
| Lockyer Valley – West | Lockyer Valley | 0.3 |
| Boonah | Scenic Rim | 0.3 |

Note: Date is for employed persons aged 15 years and over and each of these SA2s above had over 100 workers individually.
Source: BCARR analysis of ABS Census of Population and Housing, 2016.

# 7.3 Changes in transport mode use over time in SEQ

This section aims to analyse changes in transport mode use over time in SEQ. Firstly, 2011 and 2016 census data were used to capture mode use change in this five-year period. Secondly, data between 2016 and 2021 from different sources were employed to investigate the most recent mode use changes.

## Change of transport modes used from 2011 to 2016

Table 7.12 shows the change of mode use shares for LGAs from 2011 to 2016 on a place of usual residence basis. Please note that at the time of the 2011 census, there was not a separate Noosa LGA, and the Sunshine Coast LGA boundary encompassed what is now the Noosa LGA. Noosa Shire Council was re-established as a local government on 1 January 2014. In the remainder of this chapter, data is reported for the combination of Sunshine Coast and Noosa (i.e. the 2011 Sunshine Coast LGA boundary) to support like-for-like comparisons of changes between 2011 and 2016. Table 7.12 shows that for the SEQ LGAs as a whole there was a significant shift away from public transport between 2011 and 2016 (–1.1 percentage points) and a significant shift towards private vehicles (0.9 percentage points).

Table 7.12 documents four major differences in mode use between 2011 and 2016 at the LGA scale. Firstly, private vehicle use increased in all LGAs except Gold Coast during this period (by between 0.2 and 1.5 percentage points). Secondly, public transport use decreased in all LGAs except Sunshine Coast-Noosa and Gold Coast. Thirdly, active transport use reduced slightly across all LGAs. One exception was Brisbane where its use remained constant. Fourthly, most of the LGAs experienced an increase in the worked-at-home mode share whereas Lockyer Valley and Scenic Rim recorded a modest reduction. In Somerset, the worked-at-home mode share did not change.

**Table 7.12: Change in modes share for the journey to work by LGAs of residence in SEQ from 2011–2016**

| LGAs | Private vehicle | Public transport | Active transport | Worked at home | Other mode |
|---|---|---|---|---|---|
| | (percentage point) | | | | |
| **Brisbane** | 1.0 | –1.8 | 0.0 | 0.7 | 0.1 |
| **Gold Coast** | –0.4 | 0.2 | –0.4 | 0.5 | 0.1 |
| **Ipswich** | 1.0 | –0.8 | –0.5 | 0.3 | 0.0 |
| **Lockyer Valley** | 1.4 | –0.4 | –0.3 | –0.6 | –0.1 |
| **Logan** | 1.3 | –1.4 | –0.4 | 0.4 | 0.0 |
| **Moreton Bay** | 1.5 | –1.7 | –0.4 | 0.5 | 0.1 |
| **Redland** | 0.9 | –1.0 | –0.2 | 0.4 | 0.0 |
| **Scenic Rim** | 1.5 | –0.2 | –0.7 | –0.4 | –0.1 |
| **Somerset** | 0.8 | –0.1 | –0.7 | 0.0 | –0.1 |
| **Sunshine Coast & Noosa** | 0.2 | 0.1 | –0.8 | 0.4 | 0.1 |
| **Toowoomba** | 0.7 | –0.1 | –0.8 | 0.2 | 0.0 |
| **11 LGAs Total** | **0.9** | **–1.1** | **–0.3** | **0.5** | **0.1** |

Note: The 11 LGAs total differs from the total for SEQ, as the rural areas of Toowoomba LGA are excluded from the definition of SEQ. The Sunshine Coast and Noosa LGAs are combined in the table, to reflect census data only being available on a combined basis for 2011.

Source: BCARR analysis of ABS Census of Population and Housing, 2011 and 2016.

# Change of transport mode use from 2016 to 2021

Table 7.13 presents the change in mode use by total passenger kilometres travelled for the Brisbane GCCSA from 2016 to 2021. There are 6 transport modes in the dataset, with active transport excluded – these transport modes are passenger cars, commercial vehicles, motorcycles, heavy rail, bus and ferry. In the Brisbane GCCSA, transport use reduced dramatically in 2019–2020, reflecting the impact of COVID–19 and associated lockdowns and travel restrictions. As shown, passenger cars, commercial vehicles and heavy rail use increased from 2016 to 2019. When the pandemic started in 2019–2020, passenger car, commercial vehicles, heavy rail and bus saw reduced activity. Among them, passenger car use experienced the most significant drop. In 2020–2021, passenger cars and commercial vehicles use improved whereas heavy rail and bus use continued to decline. The cumulative change from 2019 to 2021 for the passenger cars mode was positive, whereas heavy rail and bus modes experienced a negative cumulative change. Hence, the COVID–19 pandemic caused passengers to switch from public transport to private vehicles.

**Table 7.13: Change from current to the previous financial year in transport mode use by total passenger kilometres travelled in Brisbane from 2016–2021**

| Financial year | Passenger cars | Commercial vehicles | Motor cycles | Heavy Rail | Bus | Ferry |
|---|---|---|---|---|---|---|
| | (billion passenger kilometres) | | | | | |
| **Change relative to previous financial year** | | | | | | |
| **2016–17** | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| **2017–18** | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| **2018–19** | 0.2 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 |
| **2019–20** | –1.1 | –0.1 | 0.0 | –0.2 | –0.3 | 0.0 |
| **2020–21** | 1.8 | 0.1 | 0.0 | –0.2 | –0.2 | 0.0 |
| **Cumulative change** | | | | | | |
| **2019–2021** | 0.7 | 0.0 | 0.0 | –0.4 | –0.5 | 0.0 |
| **2016–2021** | 1.3 | 0.4 | 0.0 | –0.3 | –0.5 | 0.0 |

Source: BCARR analysis of Table 5.3c of the Australian Infrastructure and Transport Statistics Yearbook 2021 from the Bureau of Infrastructure, Transport and Regional Economics (2021b).

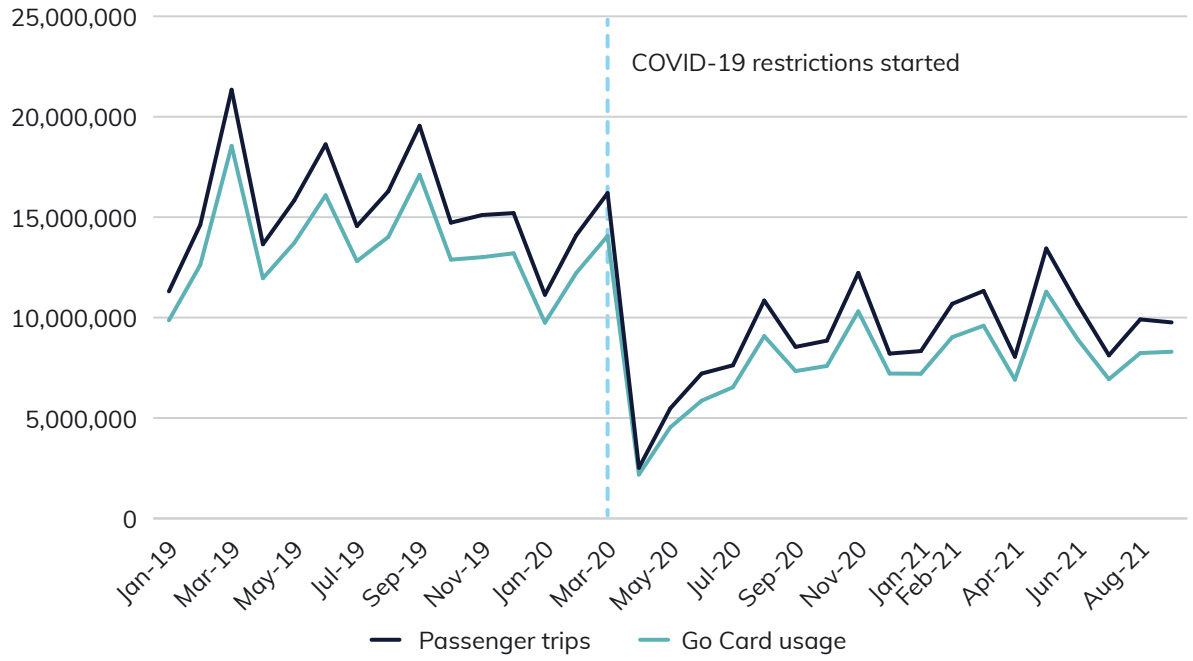
To understand the reduction of public transport use in the whole of SEQ during the pandemic, the number of monthly passenger trips made and Go card usage were analysed.[26] Figure 7.7 shows that passenger trips and Go card usage reduced dramatically after restrictions were imposed on border movements and business operations in March 2020.[27] Although they improved slowly from May 2020 to September 2021, as restrictions were eased, they did not reach the pre-restriction level.

26 This data recorded by TransLink's South East Queensland public transport network, which can be download from the Department of Transport and Main Roads. Go Card trips record the usage of bus, train, ferry and light rail.

27 Restricted entry into Queensland from other states was introduced from 26 March. Some non-essential businesses were required to stop operating or operate under new restrictions from 23 March, including sporting facilities, licensed premises, churches, restaurants, cafés and fast-food outlets. It was also announced on 26 March that state schools would be student-free until the end of term 1 (which was subsequently extended). Stay at home restrictions were introduced in Queensland on 2 April 2020. Further details available from Storen and Corrigan (2020).

To stop the spread of the virus during the pandemic, governments ordered people to work from home where it was reasonable to do so. For example, on 2 April 2020, the Queensland Government introduced a home confinement direction that prevented people from leaving their residence, except for permitted purposes. People were permitted to leave home to work for an employer engaged in an essential business or activity, or if the work could not reasonably be performed from home (Queensland Government 2020b). A significant proportion of the workforce did not meet these criteria and were therefore required to work from home. As restrictions eased, many employees chose to continue to work from home. Therefore, there was a positive link between the pandemic and working from home in SEQ.

**Figure 7.7: Public transport patronage and Go card usage in SEQ from January 2019 to September 2021**




Source: BCARR analysis of public transport patronage and Go card usage data from Queensland Government (2022).

To provide more evidence on the role of working from home and impacts on transport use, two different data sources are employed. The first data source is the Google COVID–19 Community Mobility Reports. These reports tracked people's daily movements to 6 different categories of places. These places were retail and recreation, groceries and pharmacies, parks, public transport stations, workplaces and residential. These reports measured changes in the length of stay at these six categories of places compared to a pre-COVID baseline (3 January 2020 to 6 February 2020) at country, state and LGA levels in Australia. Details of how the data was transformed are provided in Box 7.2.

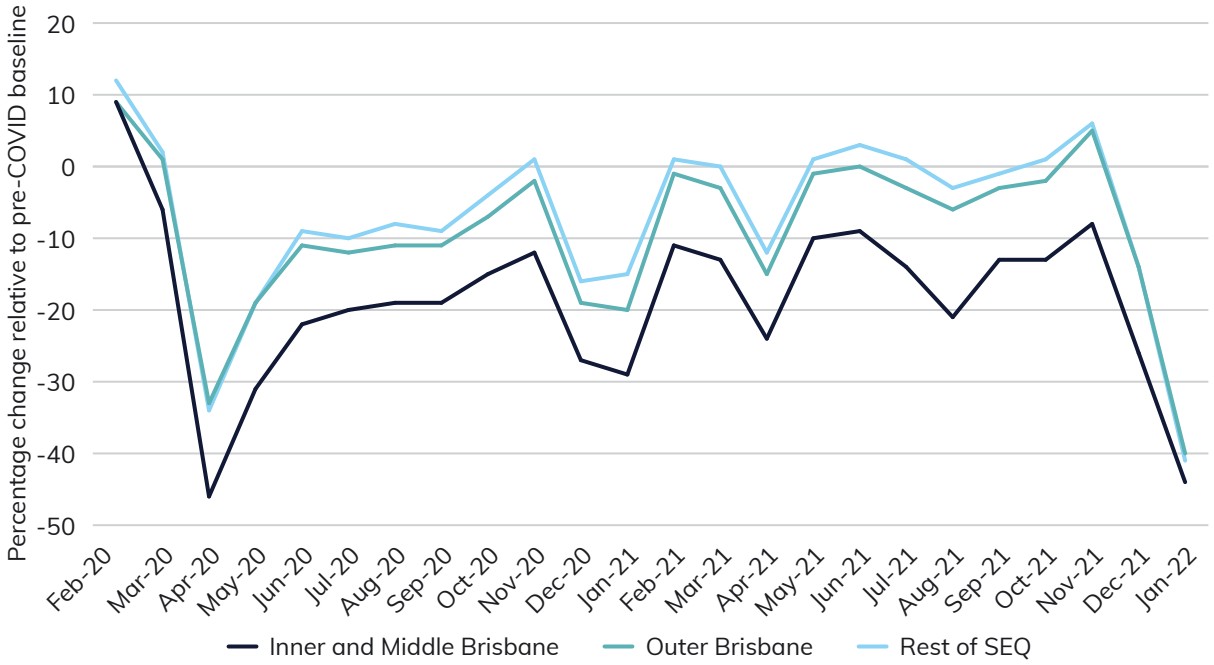
### Box 7.2 Data transformation

Google mobility data presented in Figure 7.8 and 7.9 has undergone some transformations by BCARR. Firstly, the daily data in these reports was transformed into monthly data by using the average of daily values. Secondly, the LGA data in these reports was transformed into BCARR ring data by using the average of the associated LGA values. For example, the LGAs of Ipswich, Redland, Logan and Moreton Bay belong to Outer Brisbane. The average of these LGA values is used to represent Outer Brisbane.

As Figure 7.8 shows, compared to the pre-COVID baseline, people visited their workplace much less during the early stages of the pandemic than before the pandemic. However, the impact was less pronounced in Outer Brisbane and the Rest of SEQ than it was for the Brisbane LGA (i.e. Inner and Middle Brisbane). Throughout the winter and spring of 2021, time spent at workplaces was around pre-pandemic levels for Outer Brisbane and the Rest of SEQ, but remained significantly lower than pre-pandemic levels in the Brisbane LGA.

Figure 7.9 shows the other side of the picture, focusing on time spent at home. It shows that people stayed at home longer after the onset of the pandemic than before the pandemic, which would be consistent with stay-at-home restrictions and increased working from home. Again, the impact is greatest for Inner and Middle Brisbane, and gradually declines after peaking in April of 2020, with short-term spikes occurring during 2021 and early 2022 as restrictions were temporarily tightened in SEQ. Throughout 2021, time spent at home remained above pre-COVID levels in all 3 rings, but the difference is most pronounced for Inner and Middle Brisbane.

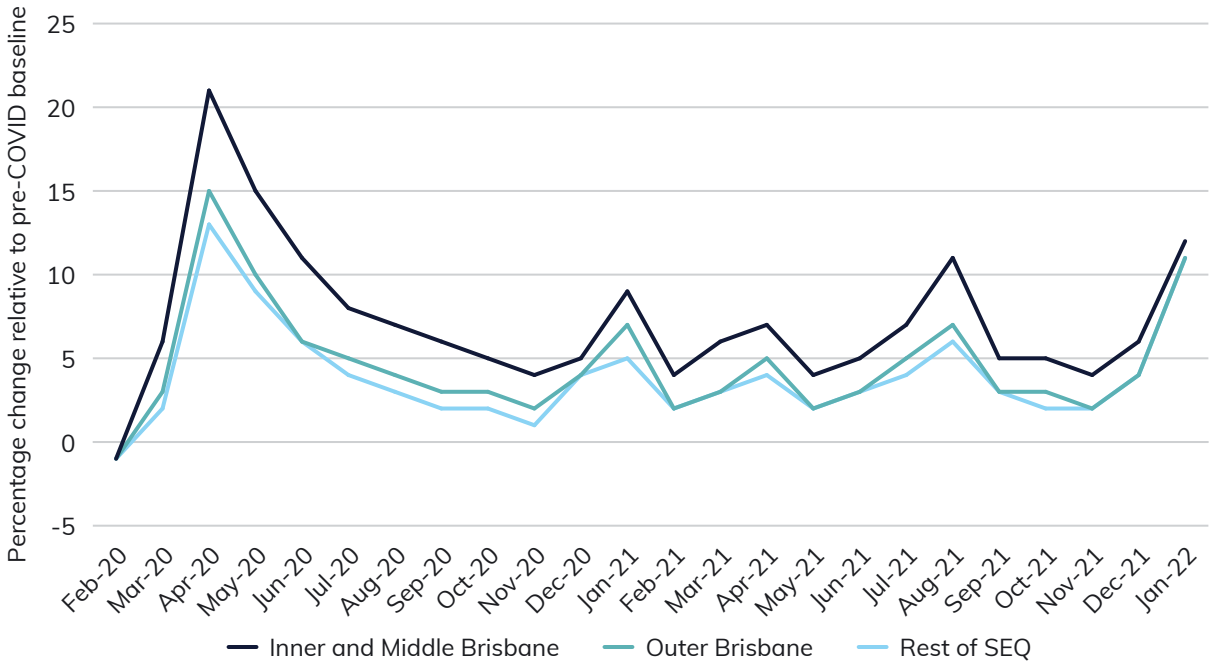
**Figure 7.8: Mobility change for workplace by BCARR rings in SEQ from February 2020 to January 2022**




Note: The blue line represents the Brisbane LGA, which corresponds to the combination of the BCARR Inner and Middle Brisbane rings

Source: BCARR analysis of Google COVID–19 Community Mobility Reports (2022)

**Figure 7.9: Mobility change for residence by BCARR rings in SEQ from February 2020 to January 2022**

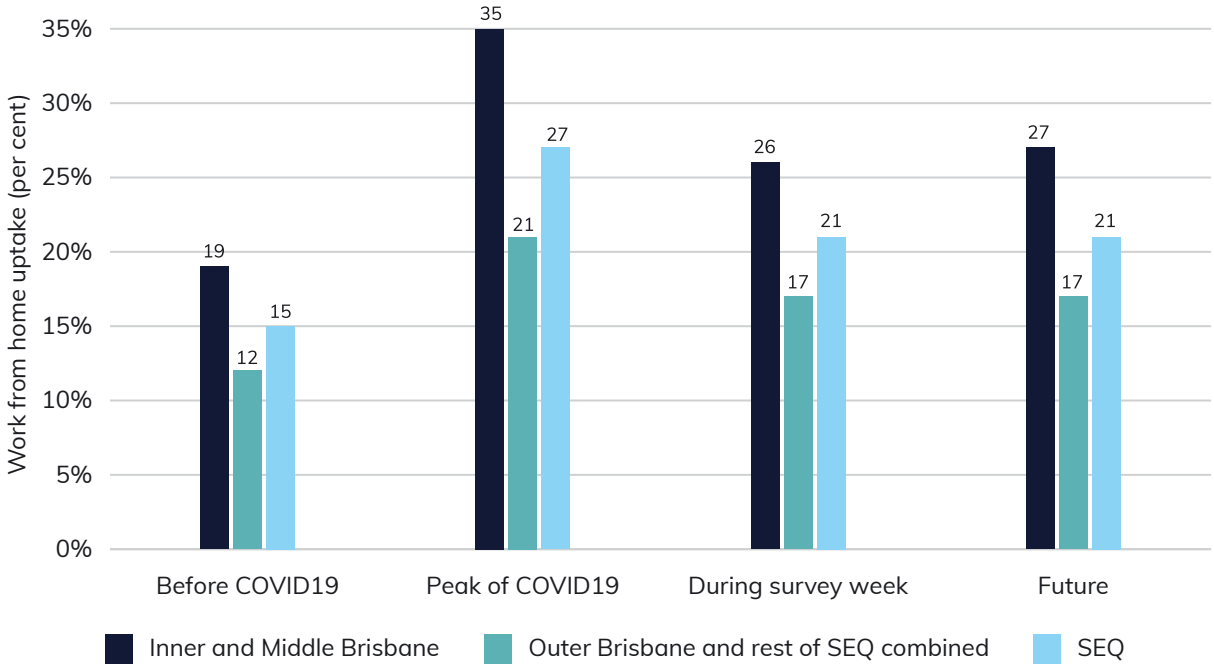



Note: The blue line represents the Brisbane LGA, which corresponds to the combination of the BCARR Inner and Middle Brisbane rings
Source: BCARR analysis of Google COVID–19 Community Mobility Reports (2022)

The second data source is the University of South Australia iMOVE survey data (Vij et al. 2021). In this dataset, over 3000 employed individuals from 17 Australian cities were surveyed about their work from home practice between 11 December 2020 and 4 May 2021. Particularly, people were asked about their work from home uptake during four time periods (i.e. before COVID–19, at the peak of COVID–19, during survey week and in the future/after the pandemic is gone).

Figure 7.10 documents the work from home uptake in the Brisbane LGA, Outer Brisbane and the Rest of SEQ combined and for the whole of SEQ. Work from home uptake is consistently higher for the Brisbane LGA across all four time periods. The three regions all show a similar pattern with uptake lowest pre-COVID, surging during the initial COVID peak, and then lower but remaining above pre-COVID levels during survey week and into the future. For instance, Brisbane's work from home uptake increased from 19 to 35 per cent at the pandemic's peak, but then declined to 26 per cent during survey week, with desired future uptake standing at 27 per cent.

**Figure 7.10: Change in work from home practice in SEQ from December 2020 to May 2021**




Note: The Brisbane LGA corresponds to the combination of the BCARR Inner and Middle Brisbane rings.

Source: BCARR analysis of University South Australia iMOVE survey data extracted from 2020–2021

# 7.4 Conclusion

This chapter analysed the transport modes used for journeys to work in SEQ over time. Private vehicle, public transport and active transport modes use varied significantly within SEQ. Private vehicle was the most dominant transport mode for both SEQ residents and workers (over 79 per cent). Public transport was less widely used in SEQ (with a mode share of around 10 per cent). Inner Brisbane residents used public transport the most, whereas the Rest of SEQ residents used it the least.

From 2011 to 2016, there was a significant shift away from public transport (–1.1 percentage points) and a significant shift towards private vehicles (0.9 percentage points) for the SEQ LGAs as a whole. Public transport and private vehicle use both declined dramatically in 2019–2020 due to the COVID–19 pandemic outbreak and associated restrictions on movement, and public transport use has not yet returned to pre-pandemic levels. The pandemic was also associated with an increase in working from home, and while the incidence of working from home has declined from its initial COVID peak, it remains above pre-pandemic levels into early–2022.

While this chapter has focused on the transport modes used by commuters in SEQ, the next chapter provides a more in-depth analysis of these commuter flows, including analysis of self-containment rates, the main types of commuter flows, commuting distances and durations, 30 and 45 minute job access, and traffic congestion.