

# The ACT and Queanbeyan

# 10

## 10.1 The population of the ACT and Queanbeyan has grown, and so has the region's transport task

### ACT and Queanbeyan transport network performance over the past decade

Between 2006 and 2016, the population of the Australian Capital Territory and the adjacent NSW town Queanbeyan grew from 369,000<sup>210</sup> to around 445,000. In 2016, the most densely populated areas were Belconnen and Gungahlin in the region's north, as well as Tuggeranong in the south. Queanbeyan, located 15 km to Canberra's west, also supports a significant share of the regional population, increasingly playing a role as a commuter settlement for people working in Canberra.

The outcome of more people living and working in the ACT and Queanbeyan has been a greater transport task. Over the past decade the distance travelled by users of Canberra's roads has increased by 7%. In 2016, Canberrans drove the most car kilometres per person of any Australian city.<sup>211</sup> In comparison, public transport patronage has not increased significantly, reflecting the city's continued dependence on cars as a primary mode of transport.

As a result of increased demand and heavy dependence on car transport, the performance of Canberra's roads has suffered, affecting all road users including commercial operators and bus passengers.



## 10.2 There are variations between the 2015 and 2019 Audit forecasts

### There have been substantial changes to the 2019 Audit inputs and assumptions

Since the 2015 Audit, ACT and Queanbeyan’s forecast cost of road congestion has decreased by 28% (Table 44 and Figure 118). This is largely due to a decrease in the forecast population compared to the 2015 Audit.

**Table 44:** The cost of road congestion and public transport crowding in the ACT and Queanbeyan, 2016 and 2031

	Cost of public transport crowding (\$ millions)	Cost of road congestion (\$ millions)	Total (\$ millions)
2016 (2019 Audit)	1	289	290
2031 (2019 Audit)	8	504	512
2031 (2015 Audit)	N/A	703	N/A
2031 (change from 2015 Audit)		-199 (-28%)	

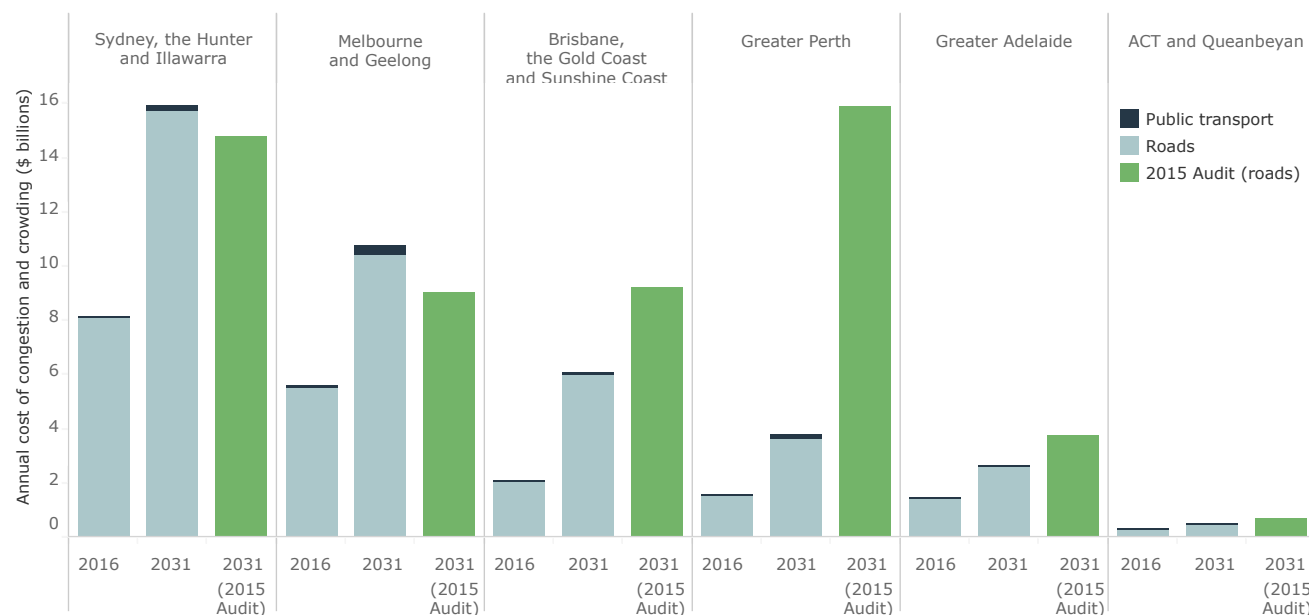
Source: Infrastructure Australia (2015) and Veitch Lister Consulting (2019)<sup>212</sup>

In the 2015 Audit, 2031 population projections for ACT and Queanbeyan were extracted from ABS Series B projections. In this latest Audit, projections have been provided by the ACT Government. The population forecast used in the 2019 Audit finds there will be 8% fewer people than forecast in the 2015 Audit. This population is also distributed slightly differently. Population is higher in Woden Valley (an extra 7,600 residents) and Western Creek (an extra 2,600 residents). However, population forecasts are much lower in Queanbeyan (25,500 fewer residents) and Gungahlin (20,500 fewer residents). Of particular note is Molonglo, which had zero population in the 2015 Audit, and 32,000 residents in the 2019 Audit. A map reflecting these changes is shown in Figure 119.

Forecast employment in the ACT and Queanbeyan is expected to be six percent less in the 2019 Audit. However, the proportion of employment in North and South Canberra is projected to be 2 percent more.

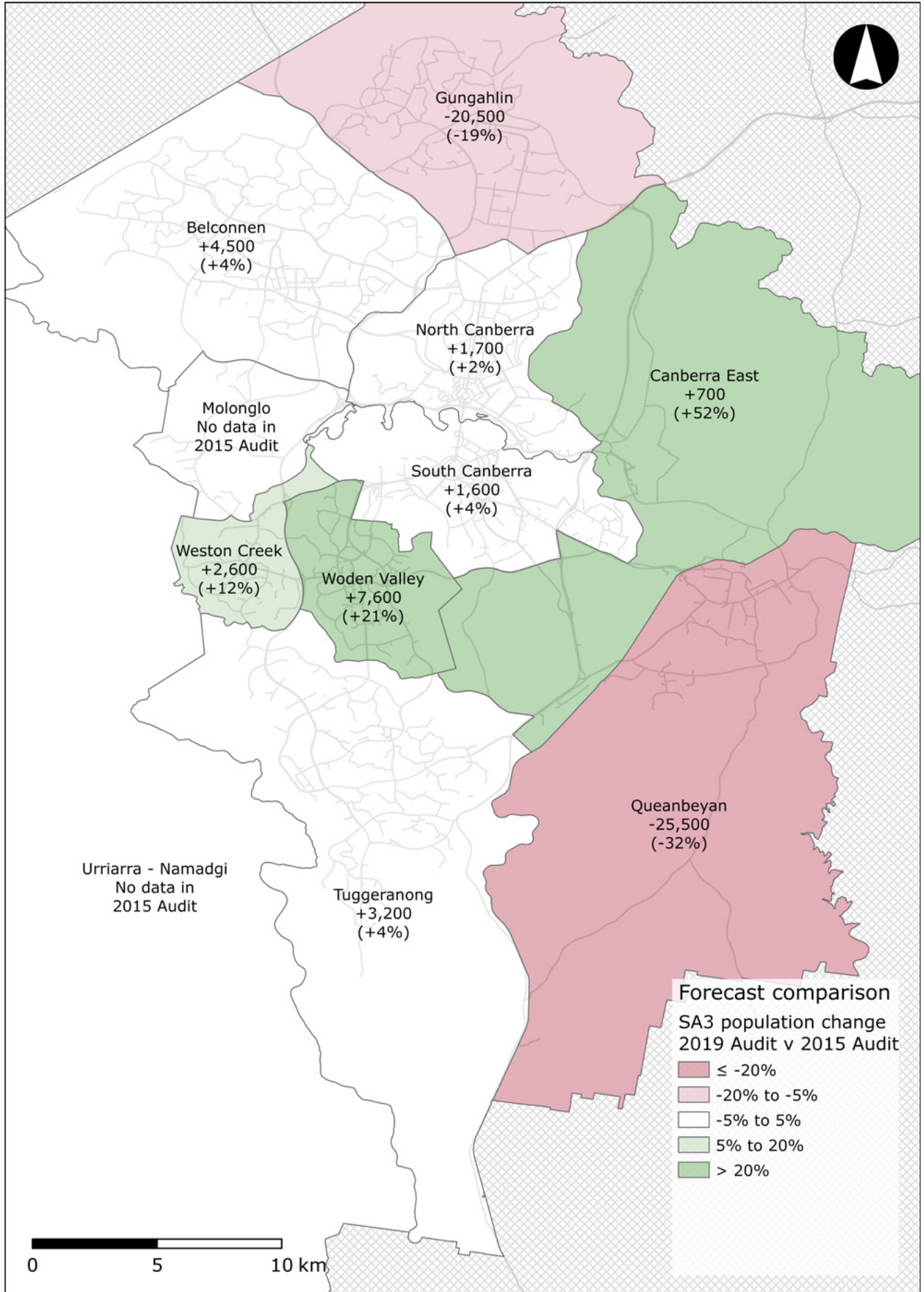
Table 45 reflects changes in model inputs and key outputs between 2015 and 2019 Audit modelling.

**Figure 118:** The cost of road congestion and public transport crowding, 2016 and 2031



Source: Infrastructure Australia (2015) and Veitch Lister Consulting (2019)<sup>213</sup>

**Figure 119:** 2031 population forecast for the ACT and Queanbeyan: 2019 Audit compared to the 2015 Audit



Source: Veitch Lister Consulting (2019)<sup>214</sup>

**Table 45:** Changes in key model inputs and outputs between 2015 and 2019 modelling in the ACT and Queanbeyan

		Demographic assumptions		Network assumptions		Travel cost assumptions			
		Population	Jobs	Road investment	Public transport investment	Fuel	PT fares	Parking	Tolls
<b>Change in inputs</b>		↓	↑	↑	↑	↓	—		
		Population forecasts have reduced (-8%)	Employment forecasts have reduced (-6%), however the proportion of jobs in North and South Canberra SA3s remains stable	More investment in the road network (+12% network lane km)	More investment in the PT network (+31% service kms)	Reduction in fuel price (140 c/L to 104 c/L AUD 2011)	No change in other transport costs		
<b>Impact on output (AM peak)</b>	Total trips (-6%)	↓	—						
		Lower total population reduces total modelled trips	Total trips are generated by population assumptions and model parameters only						
	Car trips (-10%)	↓	—	↑	↓	↑	—	—	
		Lower total population reduces total modelled car trips.	The distribution of employment is similar between the audits, as such a decline in overall employment does not substantially alter the balance between car and PT travel	Better roads encourage car travel	Better PT can encourage more PT travel and fewer car trips	Lower fuel prices encourage car travel	No change = no impact	Negligible impact	
Car vehicle kms travelled (-4%)	↓	—	↑	↓	↑	—	—		
	An overall reduction in population reduces car kilometres	The distribution of employment is similar between the audits, as such a decline in overall employment does not substantially alter the balance between car and PT travel	Better roads encourage car travel	Better PT can encourage more PT travel and fewer car kms	Lower fuel prices encourage car travel	No change = no impact	Negligible impact		
Public transport trips (+1%)	↓	—	↓	↑	↓	—	—		
	Lower total population should reduce total PT trips, but there appears to have been a slight mode shift away from car in favour of PT	The distribution of employment is similar between the audits, as such a decline in overall employment does not substantially alter the balance between car and PT travel	Better roads encourage car travel and fewer PT trips	Better PT can encourage more PT travel	Lower fuel prices encourage car travel and reduce PT travel	No change = no impact	Negligible impact		

Source: Veitch Lister Consulting (2019)<sup>215</sup>

## New network assumptions

Both audits use a similar approach to developing network assumptions that assumes only projects with funding or significant levels of political commitment will be completed by 2031. In the ACT and Queanbeyan major project assumptions are largely consistent between the audits. However, incremental impacts of more minor projects have results in higher in-service kilometres on public transport and more lane kilometres on the road network in the 2019 Audit compared with the 2015 Audit.

## Variation between road network capacities in 2031

Across the vast majority of the ACT and Queanbeyan network, forecast traffic volumes are lower in the 2019 Audit in the 2031 AM and PM peaks.

Congestion is still forecast for sections of major highways in the 2019 Audit, however it is lower and less widespread than in the 2015 Audit. For example, the 2019 Audit shows small sections of congestion on the Drakeford Drive, Tuggeranong Parkway and Parkes Way Corridor in the 2031 AM peak. By contrast, the 2015 Audit forecasts medium to high congestion across the entirety of this road in the 2031 AM peak. This trend is mirrored on the Monaro Highway, the Majura Parkway, the Federal Highway, Northbourne Avenue, the Barton Highway, Canberra Avenue and Commonwealth Avenue.

The 2019 Audit's road network volume over capacity is also significantly reduced in most arterial and local roads across the network. This change is most apparent in the CBD, Capital Hill, Gungahlin, Belconnen, Queanbeyan and Phillip.

Table 46 compares corridor-level average traffic and delay hours for the AM peak for the ten most delayed corridors in the 2019 Audit.

## Variation between public transport capacities in 2031

The outcomes of the public transport modelling in the 2019 Audit is different those forecast in the 2015 Audit.

Public transport trips increase marginally (+1%) between 2015 and 2019 Audit forecasts. This is due to incremental improvements to the public transport network that results in in-service kilometres being 31% higher in the 2019 Audit relative to the 2015 Audit. A lower total population also results in less total public transport trips.

In the 2019 Audit, the weekday bus passenger volume is far more concentrated in approaching the CBD from Barry Drive and Belconnen Way compared to the 2015 Audit. Conversely, much of the public transport forecast demand in the 2015 Audit was forecast to occur from around the CBD, along Northbourne Avenue towards Bonner, Amaroo, Gungahlin and Ngannalwal's arterial and local roads. This level of high congestion is largely absent in the 2019 Audit.

**Table 46:** Most congested roads ranked by total delay hours, 2031 AM Peak and ranking in 2015 Audit in the ACT and Queanbeyan

City rank (2019 Audit)	Corridor	Direction	Average peak hour traffic volumes			Total delay hours			City rank (2015 Audit)
			2015 Audit	2019 Audit	Difference	2015 Audit	2019 Audit	Difference	
1	Drakeford Drive / Tuggeranong Parkway / Parkes Way corridor	N/B	2,400	2,200	-7%	1,700	1,000	-43%	1
2	Canberra Avenue corridor	W/B	2,000	1,900	-8%	1,300	900	-27%	5
3	Monaro Highway corridor	N/B	3,000	2,600	-15%	900	700	-18%	9
4	Barton Highway / Northbourne Avenue corridor	S/B	2,200	1,900	-14%	1,400	600	-54%	3
5	Canberra Airport to Civic corridor	W/B	2,000	1,400	-26%	1,300	600	-51%	4
6	Athllon Drive / Commonwealth Avenue corridor	N/B	1,900	1,600	-13%	1,100	600	-51%	7
7	Gungahlin Drive corridor	S/B	2,600	2,300	-10%	1,300	500	-59%	6
8	Kingsford Smith Drive / William Hovell Drive corridor	S/B	1,500	1,800	23%	900	500	-46%	8
9	Belconnen Way / Barry Drive corridor	E/B	2,500	1,900	-27%	1,400	400	-70%	2
10	East-west corridor via Hindmarsh Drive	E/B	800	1,700	128%	0	300	985%	34

Note: N/B, S/B, W/B and E/B represent northbound, southbound, westbound and eastbound, respectively.

Source: Veitch Lister Consulting (2019)<sup>216</sup>

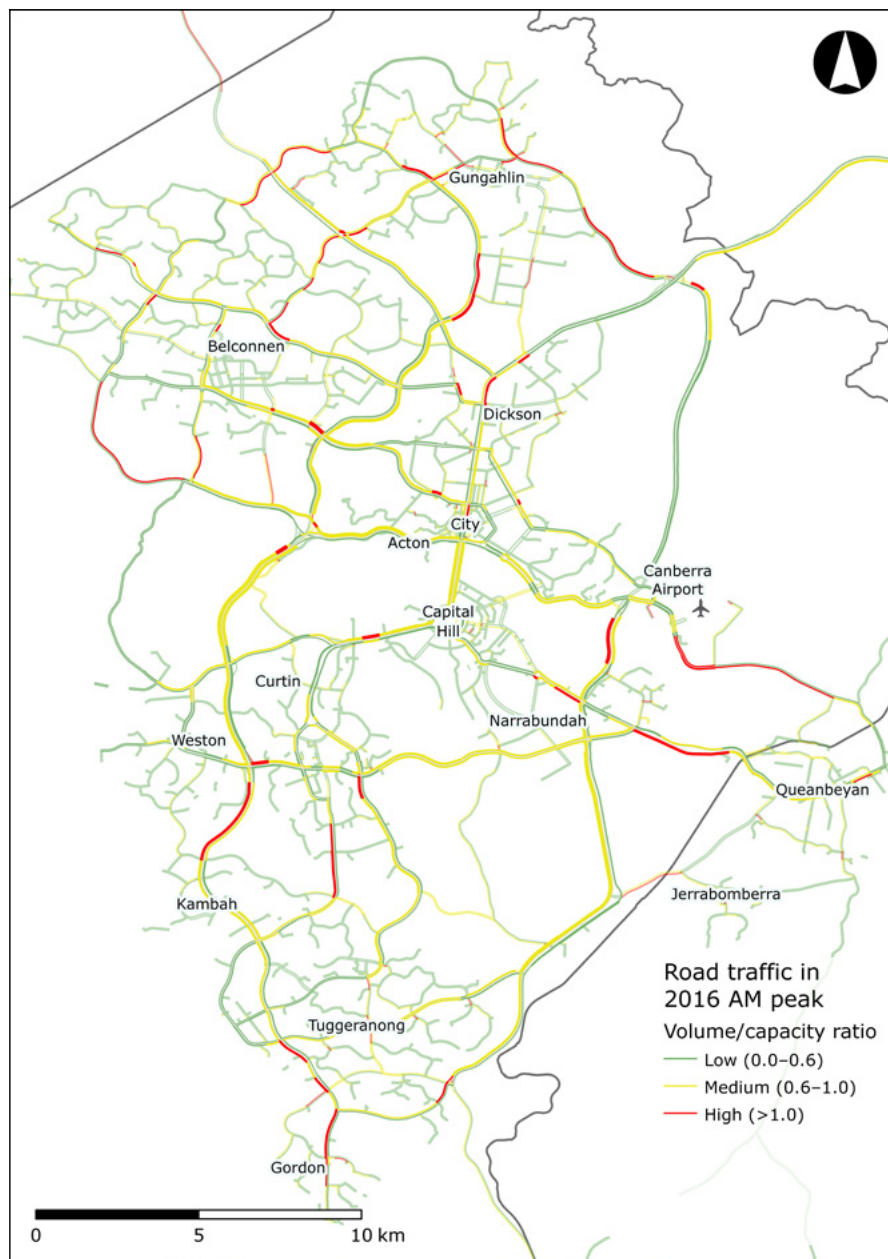
### 10.3 Commuters in the ACT and Queanbeyan experience little road congestion and public transport crowding

#### Snapshot of the ACT and Queanbeyan road network in 2016

In 2016, while drivers in the ACT and Queanbeyan experienced moderate levels of congestion at peak periods, their road network continued to offer a relatively high level of service. Our modelling indicates the annualised cost of road congestion and public transport crowding in the ACT and Queanbeyan was approximately \$290 million in 2016.

Roads radiating out from the ACT's urban centres have the city's highest levels of congestion (Figure 120), with routes connecting Civic, Canberra's CBD, with outer areas experiencing the most delay. Roads in Canberra's east, connecting the city centre with Queanbeyan, also experience peak congestion, exceeding design capacity on some corridors. Other congested corridors connect Tuggeranong in the region's south, and major northern suburbs such as Gungahlin and Belconnen, to its centre; some links are congested in both directions during a peak period.

**Figure 120: ACT and Queanbeyan weekday traffic volume / capacity ratio, 2016 AM peak**



Note: Volume / capacity ratios show the quantity of traffic relative to a road’s capacity. Any link operating at a VCR above 1.0 is coloured red, indicating that more vehicles are using the road than it was designed to accommodate under free-flow conditions.

Source: Veitch Lister Consulting (2019)<sup>27</sup>

**The ACT and Queanbeyan region’s most congested roads in 2016: what the driver experiences**

Canberra’s drivers experience congestion in the AM and PM peaks. Canberra was designed and has developed as a polycentric city, and congestion is unsurprisingly greatest on the arterial roads that connect its centres.

Infrastructure Australia has measured the most congested corridors in Canberra using several customer-focused metrics. The ten most congested corridors in the AM and PM peak periods from a user’s perspective are shown in Table 47 and Figure 121.

Canberra’s most congested roads as experienced by a driver in 2016 were arterials providing a north-south connection through the ACT. Canberra’s most congested road corridor in both peak periods was the William Slim Drive / Coulter Drive Corridor. This corridor carries traffic to and from the north of Belconnen. Users of this corridor can expect to spend 40% of their journey time in congested conditions. Canberra’s next most congested corridors in 2016 connect across Gungahlin, feeding Gungahlin Drive and Tuggeranong Parkway.

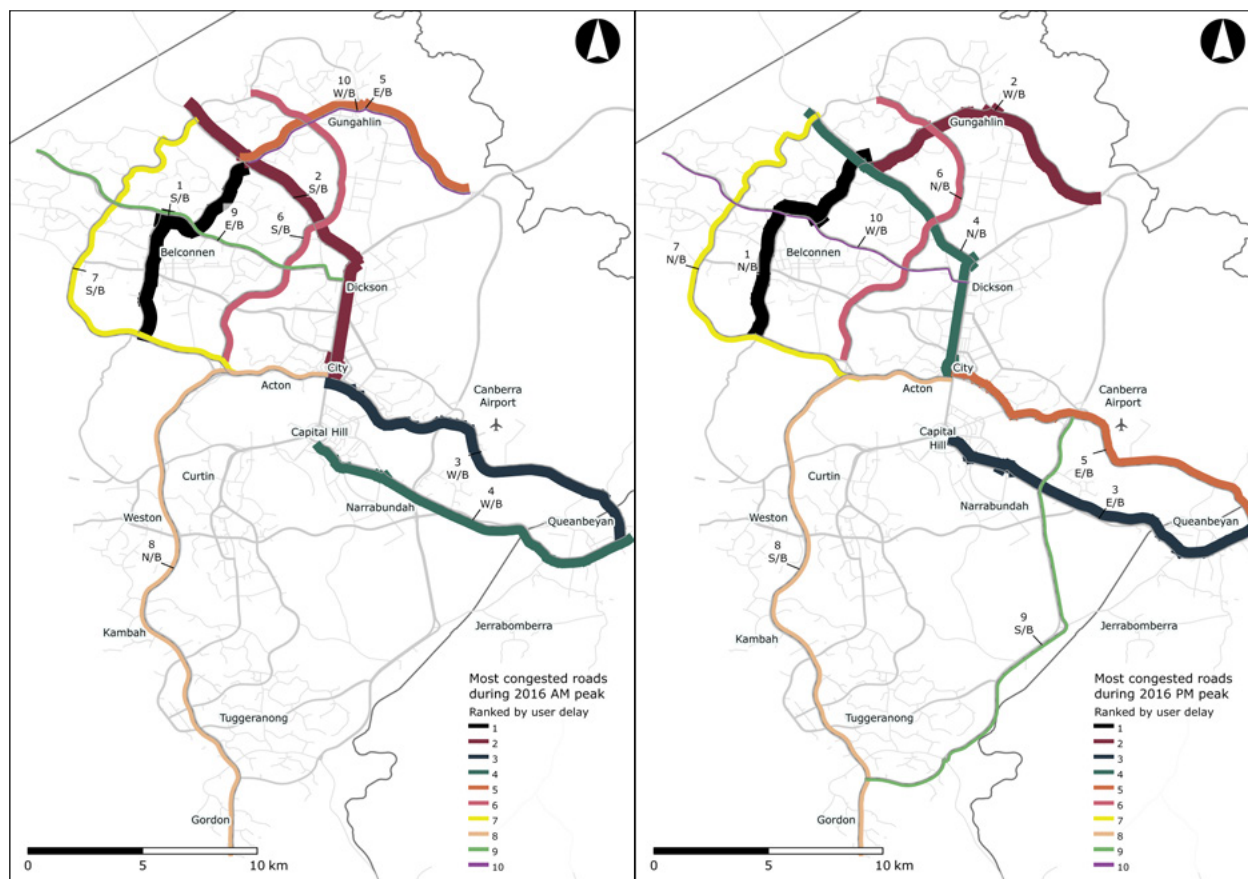
**Table 47: ACT and Queanbeyan most congested roads (user experience), 2016**

City rank	Corridor including origin / destination connected (direction)	Length (km)	Share of journey time due to congestion	Delay per vehicle (mins)	Cost of congestion for a car	Cost of congestion for a heavy commercial vehicle
<b>AM peak</b>						
1.	William Slim Drive / Coulter Drive corridor (S/B)	10	40%	6	\$1.66	\$7.14
2.	Barton Highway / Northbourne Avenue corridor (S/B)	14	39%	9	\$2.49	\$10.71
3.	Canberra Airport to Civic corridor (W/B)	15	39%	8	\$2.21	\$9.52
4.	Canberra Avenue corridor (W/B)	13	39%	8	\$2.21	\$9.52
5.	Gundaroo Drive / Horse Park Drive corridor (E/B)	11	39%	6	\$1.66	\$7.14
6.	Gungahlin Drive corridor (S/B)	15	38%	7	\$1.93	\$8.33
7.	Kingsford Smith Drive / William Hovell Drive corridor (S/B)	18	38%	9	\$2.49	\$10.71
8.	Drakeford Drive / Tuggeranong Parkway / Parkes Way corridor (N/B)	33	33%	12	\$3.31	\$14.28
9.	Ginninderra Drive corridor (E/B)	13	32%	5	\$1.38	\$5.95
10.	Horse Park Drive / Gunaroo Drive corridor (W/B)	11	29%	4	\$1.10	\$4.76
<b>PM peak</b>						
1.	Coulter Drive / William Slim Drive corridor (N/B)	10	39%	6	\$1.66	\$7.14
2.	Horse Park Drive / Gundaroo Drive corridor (W/B)	11	37%	6	\$1.66	\$7.14
3.	Canberra Avenue corridor (E/B)	13	35%	7	\$1.93	\$8.33
4.	Northbourne Avenue / Barton Highway corridor (N/B)	14	35%	7	\$1.93	\$8.33
5.	Civic to Canberra Airport corridor (E/B)	15	34%	7	\$1.93	\$8.33
6.	Gungahlin Drive corridor (N/B)	15	33%	6	\$1.66	\$7.14
7.	William Hovell Drive / Kingsford Smith Drive corridor (N/B)	18	33%	7	\$1.93	\$8.33
8.	Parkes Way / Tuggeranong Parkway / Drakeford Drive corridor (S/B)	32	30%	11	\$3.04	\$13.09
9.	Monaro Highway corridor (S/B)	21	29%	6	\$1.66	\$7.14
10.	Ginninderra Drive corridor (W/B)	13	27%	4	\$1.10	\$4.76

Note: N/B, S/B, W/B and E/B represent northbound, southbound, westbound and eastbound, respectively.

Source: Veitch Lister Consulting (2019)<sup>218</sup>

**Figure 121: ACT and Queanbeyan most congested roads (user experience), 2016 AM (left) and PM (right) peak**



Source: Veitch Lister Consulting (2019)<sup>219</sup>



### The ACT and Queanbeyan region's most congested roads in 2016: the cost to the community of total vehicle delays

As a measure of the whole-of-system impacts of congestion, Infrastructure Australia has also identified the most congested road corridors in the ACT and Queanbeyan region by aggregating the total delay hours experienced by all vehicles using the congested road during the modelled period. The ten most congested corridors under this approach are shown in Table 48 and Figure 122 for the AM and PM peak periods.

Based on an aggregated metric – total hours of vehicle delay experienced by all corridor users – the worst performer in 2016 was the Drakeford Drive / Tuggeranong Parkway / Parkes Way corridor, which connects Tuggeranong to the north of Civic. This corridor is the most delayed in both peak periods, but especially in the morning. Drivers on the Gungahlin Drive and Monaro Highway corridors also experienced significant delays in 2016.

High levels of congestion on Canberra's busiest roads is driven by people commuting to the region's main employment clusters from the outer northern and southern residential suburbs.

### The ACT and Queanbeyan region's public transport system in 2016

Demand for public transport in Canberra has grown in the last 10 years, but (uniquely among the six conurbations examined by this Audit) at a lower rate than for cars. In 2016, public transport use in the ACT and Queanbeyan accounted for just 3% of total daily trips, compared to the use of cars (75%) and active transport including walking and bike-riding (22%).<sup>220</sup>

The ACT and Queanbeyan region's public transport services connect surrounding areas with its urban centres, primarily Civic. In 2016, the region's public transport system was operated by buses providing mainly local services and some longer-distance connections. Service demand is modest and as a result low passenger crowding is experienced on most of the network. Demand is higher during peak periods and in peak directions.

The region's buses operate well below crush capacity on most routes in the AM peak period (Figure 123). Crowding does approach crush capacity on Belconnen Way services between Belconnen and Macquarie, as well as on Ginninderra Drive, towards the University of Canberra. In general, buses become more crowded in the areas surrounding Civic. Passenger volumes exceed seated capacity on the Barton Highway approach into North Canberra.

Very few commuters use bus transport between Queanbeyan and Canberra CBD. This reflects infrequent bus services in this area, the region's general reliance on car use, and cross-border differences between the ticketing and fare systems for ACT and regional NSW bus operations.<sup>221</sup>

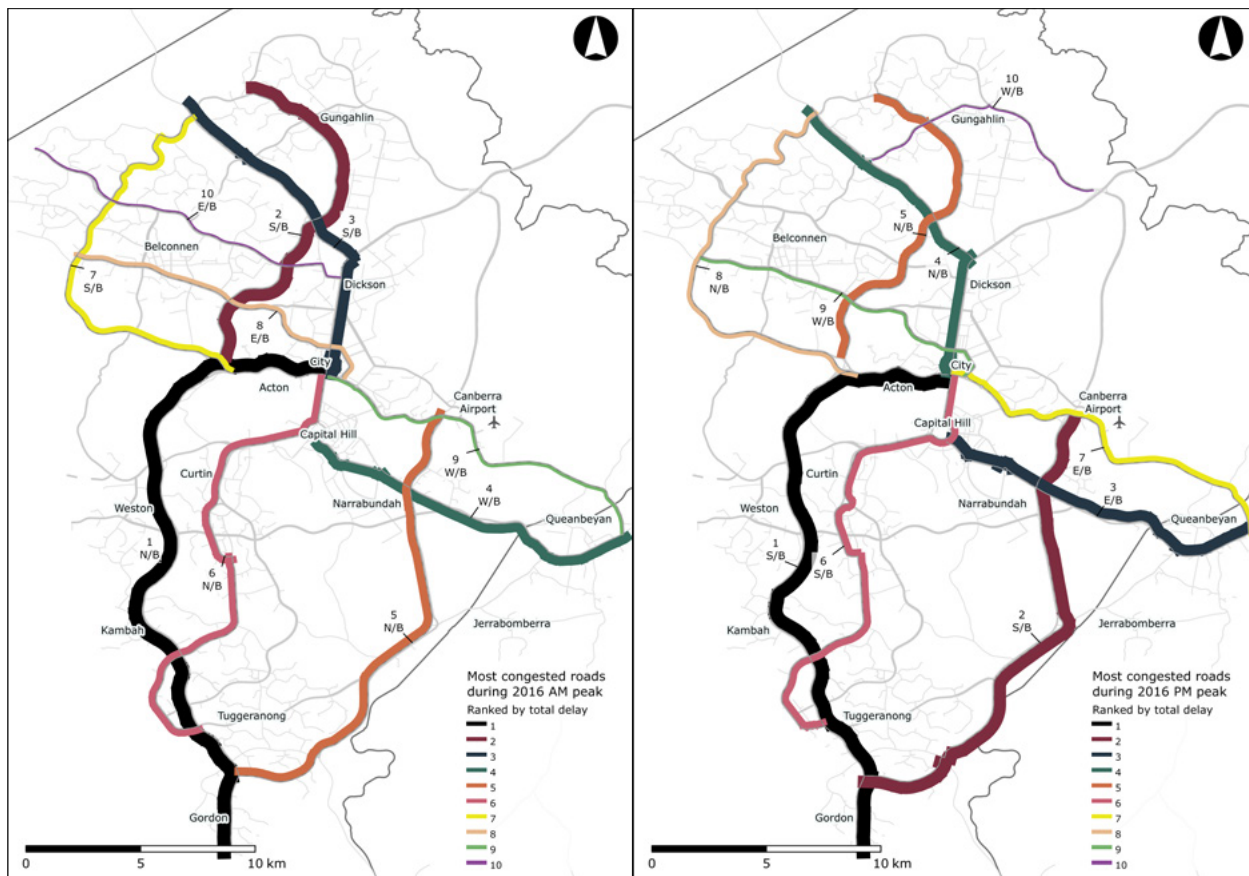
**Table 48: ACT and Queanbeyan’s most congested roads (total vehicle delays), 2016**

City rank	Corridor	Direction	Total delay hours	Cost of congestion (daily)
<b>AM peak</b>				
1.	Drakeford Drive / Tuggeranong Parkway / Parkes Way corridor	N/B	800	\$14,000
2.	Gungahlin Drive corridor	S/B	500	\$9,000
3.	Barton Highway / Northbourne Avenue corridor	S/B	500	\$10,000
4.	Canberra Avenue corridor	W/B	500	\$9,000
5.	Monaro Highway corridor	N/B	500	\$10,000
6.	Athllon Drive / Commonwealth Avenue corridor	N/B	400	\$7,000
7.	Kingsford Smith Drive / William Hovell Drive corridor	S/B	300	\$5,000
8.	Belconnen Way / Barry Drive corridor	E/B	300	\$5,000
9.	Canberra Airport to Civic corridor	W/B	300	\$6,000
10.	Ginninderra Drive corridor	E/B	200	\$4,000
<b>PM peak</b>				
1.	Parkes Way / Tuggeranong Parkway / Drakeford Drive corridor	S/B	700	\$13,000
2.	Monaro Highway corridor	S/B	500	\$10,000
3.	Canberra Avenue corridor	E/B	400	\$8,000
4.	Northbourne Avenue / Barton Highway corridor (N/B)	N/B	400	\$8,000
5.	Gungahlin Drive corridor	N/B	400	\$7,000
6.	Commonwealth Avenue / Athllon Drive corridor	S/B	300	\$5,000
7.	Civic to Canberra Airport corridor	E/B	300	\$6,000
8.	William Hovell Drive / Kingsford Smith Drive corridor	N/B	200	\$4,000
9.	Barry Drive / Belconnen Way corridor	W/B	200	\$4,000
10.	Horse Park Drive / Gundaroo Drive corridor	W/B	200	\$4,000

Note: N/B, S/B, W/B and E/B represent northbound, southbound, westbound and eastbound, respectively.

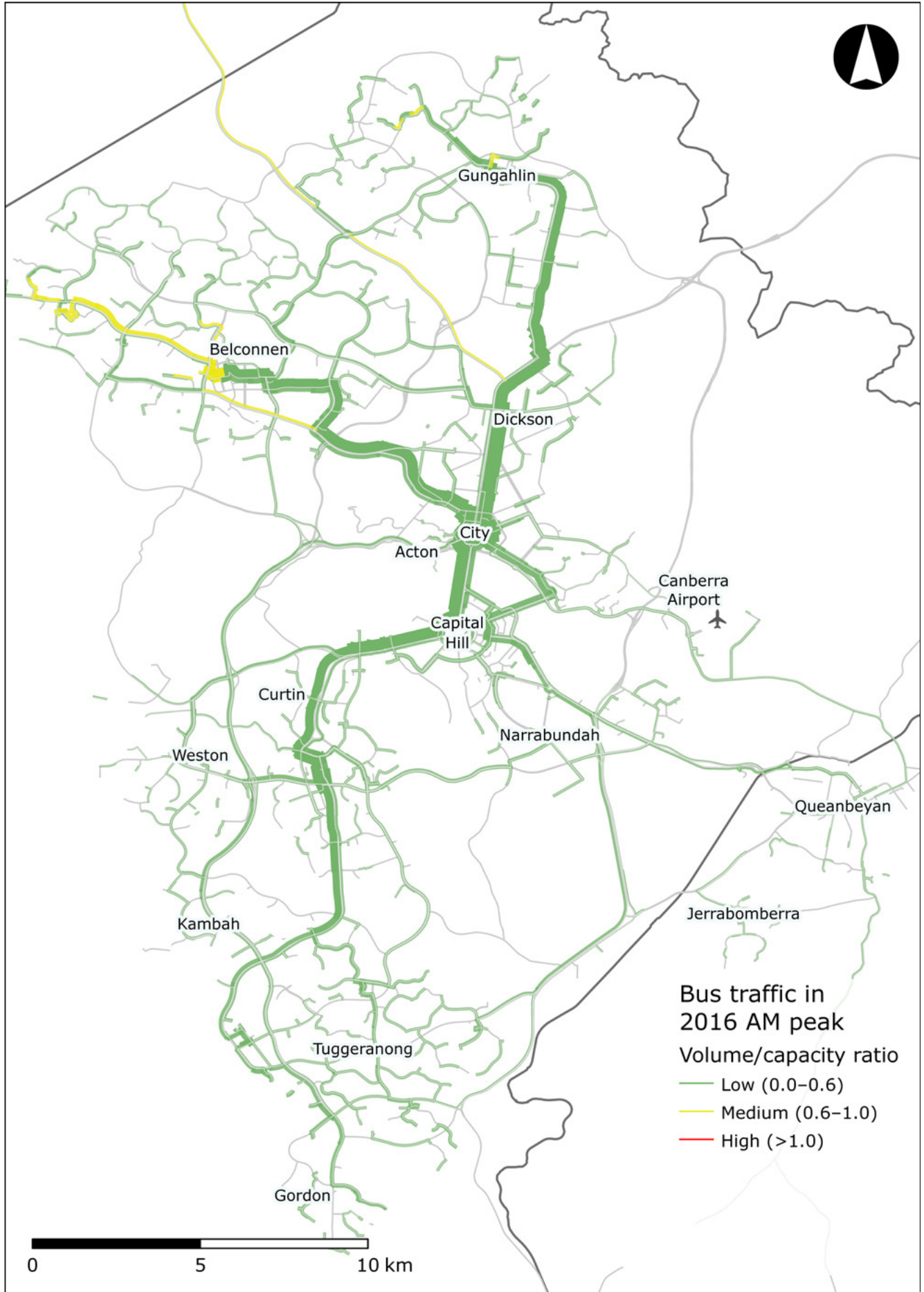
Source: Veitch Lister Consulting (2019)<sup>222</sup>

**Figure 122: ACT and Queanbeyan most congested roads (total vehicle delays), 2016 AM (left) and PM (right) peak**



Source: Veitch Lister Consulting (2019)<sup>223</sup>

Figure 123: ACT and Queanbeyan weekday bus passenger volume / capacity ratio, 2016 AM peak



Source: Veitch Lister Consulting (2019)<sup>224</sup>

## Findings

- Road congestion affects key arterial routes connecting Canberra’s city centre with surrounding residential areas and other urban centres.
- Regional highways experience high levels of congestion, delaying regional access.
- Bus services are delayed by traffic congestion, and public transport does not compete with car use for commuter travel to the same degree seen in Australia’s other largest cities.
- Some bus services do experience peak period crowding in Canberra’s north-western suburbs and close to Canberra’s CBD.
- Cross-border issues reduce the attractiveness of bus access to Canberra for Queanbeyan commuters.

### 10.4 The ACT and Queanbeyan region’s transport networks are forecast to become more congested

#### Snapshot of Canberra’s transport networks in 2031

By 2031, travel demand in the ACT and Queanbeyan is expected to increase significantly as a result of population growth. Between 2016 and 2031, the region’s population is expected to increase by 25% to approximately 558,000 people. The strongest growth is forecast in the Molonglo Valley, in Canberra’s west, as a result of greenfield development. Consequently, transport infrastructure connecting Molonglo Valley with central Canberra is expected to be challenged by a significant increase in demand. Population growth will also be concentrated in Canberra’s inner suburbs, with North and South Canberra expected to accommodate over 35% more residents in 2031.

Due primarily to this population growth, by 2031 the region will generate 27% more trips, seeing close to 3 million daily trips. Travel by public transport will grow at a significantly faster rate than car use, reversing recent trends and bringing the region into line with the other major cities considered by this Audit. This is forecast to result in an increase in public transport mode share, from 3% to a still modest 4%.

The expected increase in public transport use will result from numerous influences. Significant investment in Canberra’s Capital Metro light rail network will be complemented by improved bus services. In addition, higher urban densities, particularly in the inner city and along light rail corridors, will increase the proportion of Canberrans for whom the decision not to use or even own a car, and to use public and active transport instead, will be a natural one.

Notwithstanding this change, the congestion of Canberra’s roads is forecast to grow substantially to 2031, while crowding will be experienced on more public transport services than today. The daily cost of Canberra’s road congestion is expected to

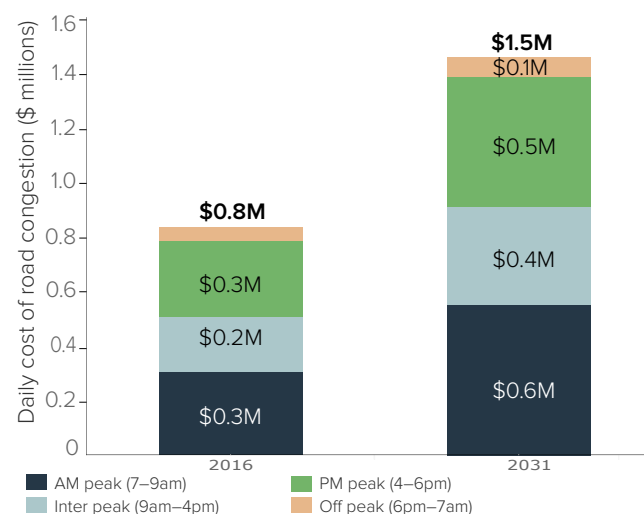
almost double, from about \$800,000 per day to \$1.5 million in 2031 (Figure 124). Our modelling indicates the annualised cost of road congestion in ACT and Queanbeyan will be approximately \$504 million in 2031. While the cost of public transport crowding will be significantly less than for road congestion, it is expected to increase at a rapid rate, from \$600,000 in 2016 to \$7.8 million in 2031.

These forecast outcomes account for projects that were either under construction, under procurement or had funding for construction committed from all relevant governments at the time of modelling for the *Australian Infrastructure Audit*.<sup>225</sup>

Major projects included in the ACT and Queanbeyan region’s 2031 forecast comprise:

- Capital Metro
- Duplication of Ashley Drive
- Duplication of Aikman Drive
- Widening of Gungahlin Drive
- Duplication of Gundaroo Drive.

**Figure 124: ACT and Queanbeyan average weekday cost of road congestion, 2016 and 2031**



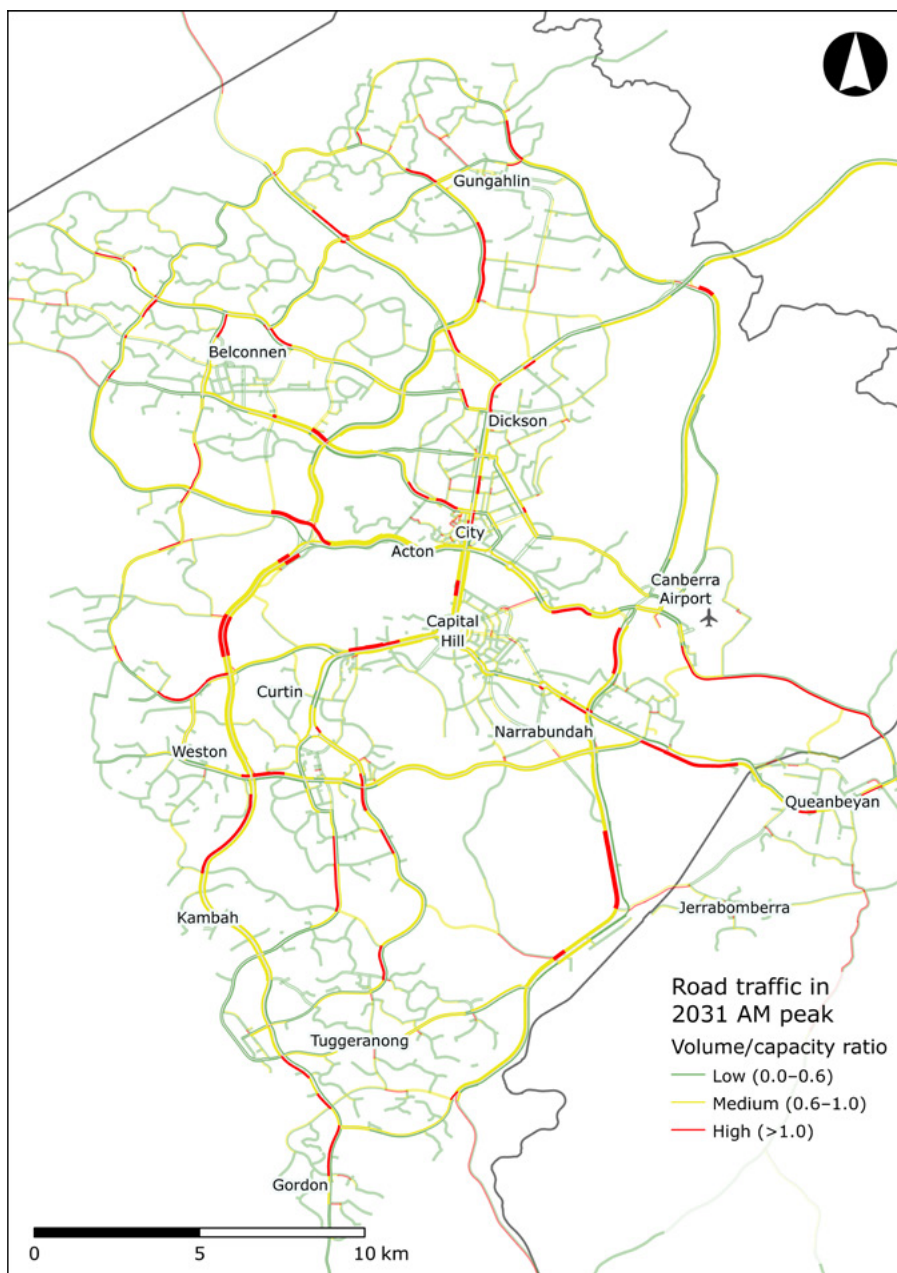
Source: Veitch Lister Consulting (2019)<sup>226</sup>

### The ACT and Queanbeyan region’s most congested roads in 2031: what the driver will experience

With population growth generating additional car use that will overwhelm some mode shift from cars to public transport, road congestion will continue to grow in the ACT and Queanbeyan (Figure 125). As for 2016, 2031 modelling has forecast the most congested road corridors in the region based both on an average individual driver’s peak period experience of driving on the busiest roads, and on aggregating the total delay hours experienced by all vehicles using an extended road corridor during the modelled time period.

Table 49 and Figure 126 show forecast 2031 outcomes under the first metric. Along the worst-performing routes, drivers can expect to spend close to half of their travel time in congested traffic (as opposed to about 40% in the 2016 base year). Many of the poorest performing routes in 2016 are forecast to occupy a similar position in 2031.

**Figure 125:** ACT and Queanbeyan weekday traffic volume / capacity ratio, 2031 AM peak



Source: Veitch Lister Consulting (2019)<sup>227</sup>

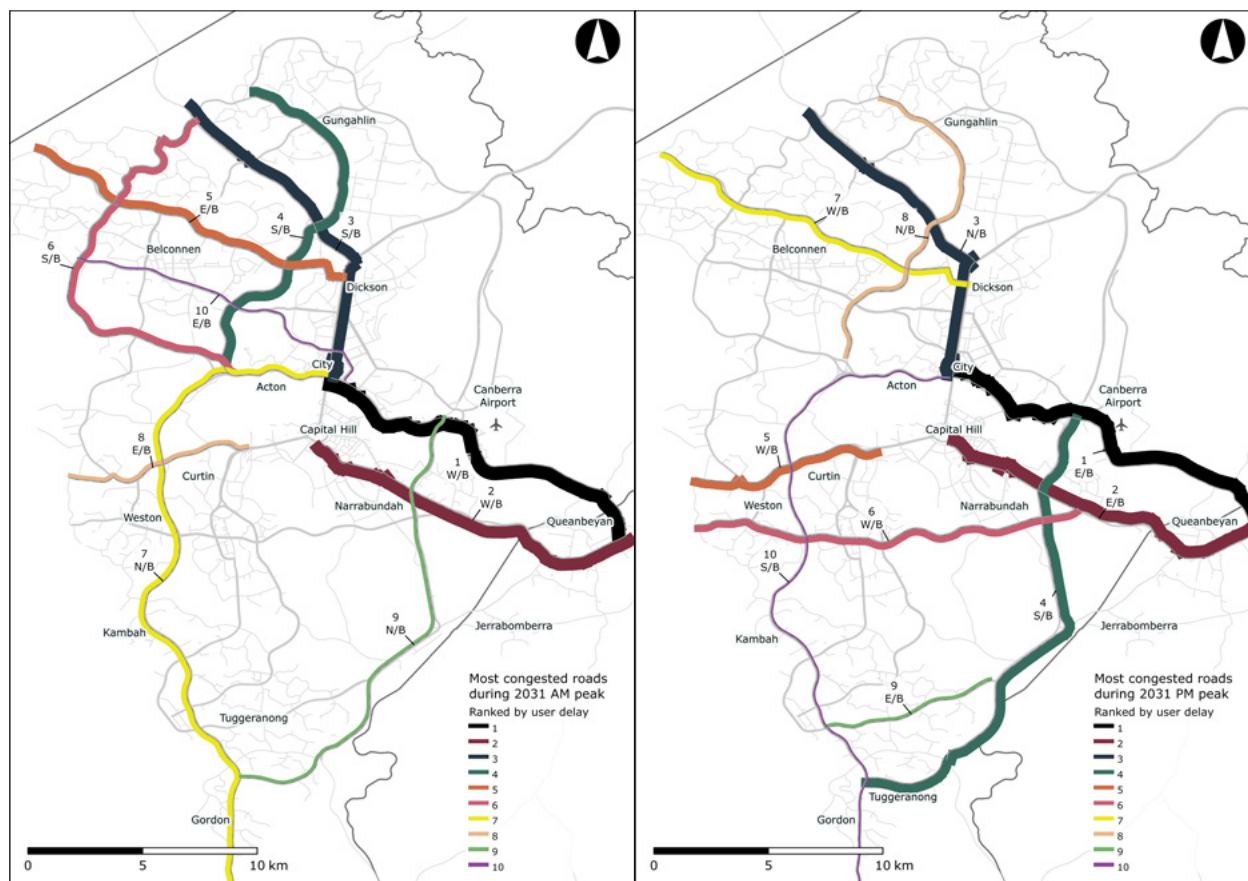
**Table 49: ACT and Queanbeyan most congested roads (user experience), 2031**

City rank	Corridor including origin / destination connected (direction)	Length (km)	Share of journey time due to congestion	Delay per vehicle (mins)	Cost of congestion for a car	Cost of congestion for a heavy commercial vehicle
<b>AM peak</b>						
1.	Canberra Airport to Civic corridor (W/B)	15	54%	15	\$4.14	\$17.85
2.	Canberra Avenue corridor (W/B)	13	51%	12	\$3.59	\$15.47
3.	Barton Highway / Northbourne Avenue corridor (S/B)	14	45%	11	\$3.04	\$13.09
4.	Gungahlin Drive corridor (S/B)	15	38%	7	\$1.93	\$8.33
5.	Ginninderra Drive corridor (E/B)	13	38%	7	\$1.93	\$8.33
6.	Kingsford Smith Drive / William Hovell Drive corridor (S/B)	18	35%	8	\$2.21	\$9.52
7.	Drakeford Drive / Tuggeranong Parkway / Parkes Way corridor (N/B)	33	35%	13	\$3.59	\$15.47
8.	Cotter Road corridor (E/B)	7	35%	3	\$0.83	\$3.57
9.	Monaro Highway corridor (N/B)	20	34%	8	\$2.21	\$9.52
10.	Belconnen Way / Barry Drive corridor (E/B)	12	34%	6	\$1.66	\$7.14
<b>PM peak</b>						
1.	Civic to Canberra Airport corridor E/B	15	50%	13	\$3.59	\$15.47
2.	Canberra Avenue corridor E/B	13	46%	11	\$3.04	\$13.09
3.	Northbourne Avenue / Barton Highway corridor (N/B)	14	39%	9	\$2.49	\$10.71
4.	Monaro Highway corridor (S/B)	21	35%	8	\$2.21	\$9.52
5.	Cotter Road corridor (W/B)	7	34%	3	\$0.83	\$3.57
6.	East-west corridor via Hindmarsh Drive (W/B)	14	33%	6	\$1.66	\$7.14
7.	Ginninderra Drive corridor (W/B)	13	33%	5	\$1.38	\$5.95
8.	Gungahlin Drive corridor (N/B)	15	32%	6	\$1.66	\$7.14
9.	East-west corridor via Isabella Drive (E/B)	6	31%	2	\$0.55	\$2.38
10.	Parkes Way / Tuggeranong Parkway / Drakeford Drive corridor (S/B)	32	31%	11	\$3.04	\$13.09

Note: N/B, S/B, W/B and E/B represent northbound, southbound, westbound and eastbound, respectively.

Source: Veitch Lister Consulting (2019)<sup>228</sup>

**Figure 126: ACT and Queanbeyan most congested roads (user experience), 2031 AM (left) and PM (right) peak**



Source: Veitch Lister Consulting (2019)<sup>229</sup>

The ACT and Queanbeyan region's key corridors are expected to carry much greater demand in 2031, causing delays for all road users, including motorists, commercial vehicle operators and bus passengers. One of the worst-performing roads in 2016, Gundaroo Drive, is expected to become even more congested by 2031. This population growth-driven forecast is in spite of plans for the road's duplication. This is expected to be completed by 2021, and to attract road users to this corridor in preference to other, even less attractive routes.

Queanbeyan regional growth, particularly in Tralee and Googong, is expected to increase congestion and delays on the Canberra Airport to Civic and Canberra Avenue corridors. By 2031, these corridors are forecast to be the worst performing in the region and will contribute nearly 900 hours of total delay in each peak period. Additionally, employment growth in Tuggeranong, in Canberra's south, is forecast to drive increased delays on both the Drakeford Drive and Monaro Highway corridors.

Conversely, congestion on the William Slim Drive / Coulter Drive corridor is forecast to improve as a result of duplication improvements to a parallel section of Gungahlin Drive. This is expected to encourage drivers to switch routes away from the William Slim Drive / Coulter Drive corridor, resulting in this no longer appearing among the ACT and Queanbeyan region's top ten most delayed corridors.

### **The ACT and Queanbeyan region's most congested roads in 2031: the forecast cost to the community of total vehicle delays**

The ACT and Queanbeyan region's ten most congested road corridors in the 2031 AM and PM peak periods, based on aggregating the total delay hours experienced by all vehicles using an extended corridor during the modelled time period, are shown in Table 50 and Figure 127.

Between 2016 and 2031 aggregate delays are expected to worsen substantially on some key roads. Traffic volumes will exceed capacity on more sections of the Tuggeranong Parkway, which runs north-south to Canberra's west past the Molonglo Valley growth area. Severe AM peak congestion is predicted in both directions. Similarly, bi-directional peak congestion will affect the north-south Monaro Highway, which skirts Canberra's east. The Barton Highway and William Hovell Drive are also forecast to be highly congested in both peak directions.

Generally, motorists traveling from outer areas to inner areas can expect by 2031 to encounter congestion earlier on their morning commute and for longer on the way home. These delays will have an impact on bus passengers as well as on travel time for motorists.

### **The ACT and Queanbeyan region's public transport system in 2031**

By 2031, the use of public transport in the ACT and Queanbeyan is expected to increase. This will occur as a result of population growth, the expansion of the public transport network and the introduction of more frequent services. Increased levels of road congestion and higher car parking charges will also contribute to greater public transport use, especially for light rail in its own right-of-way, and bus priority services which are protected from traffic delays.

Public transport boardings, in-vehicle passenger kilometres and in-vehicle passenger hours are all predicted to double between 2016 and 2031. Buses are expected to remain the most heavily used public transport mode, even after the construction of Canberra Metro light rail (with the first line operating in 2019). The Canberra Metro light rail will replace bus routes between Gungahlin and Civic. This will facilitate improvements to the broader bus network also programmed for 2019, including the introduction of the Rapid network of routes with extended operating hours and more frequent services. Canberra's bus services are expected to see a 66% increase in boardings by 2031.

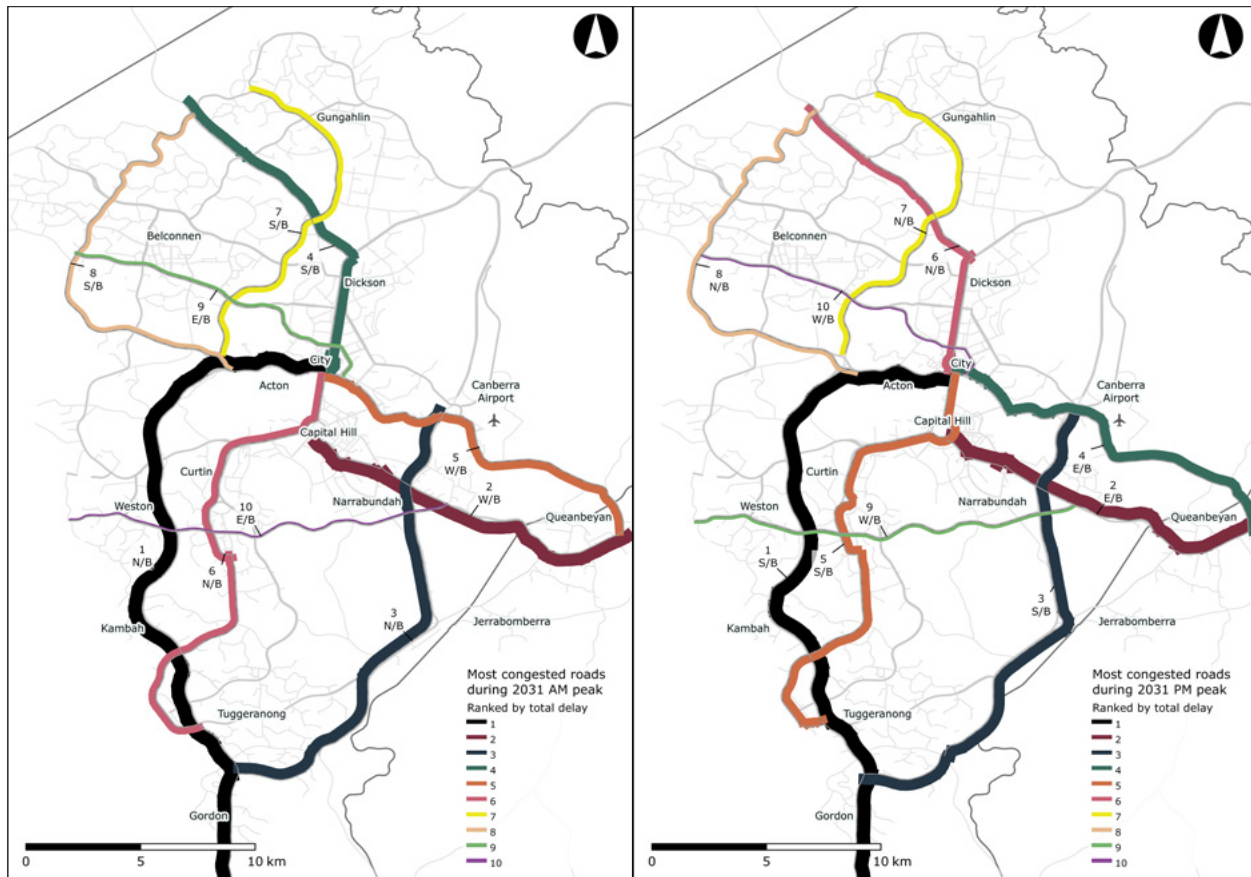
**Table 50: ACT and Queanbeyan most congested roads (total vehicle delays), 2031**

City rank	Corridor	Direction	Total delay hours	Cost of congestion
<b>AM peak</b>				
1.	Drakeford Drive / Tuggeranong Parkway / Parkes Way corridor	N/B	1,000	\$18,000
2.	Canberra Avenue corridor	W/B	900	\$17,000
3.	Monaro Highway corridor	N/B	700	\$14,000
4.	Barton Highway / Northbourne Avenue corridor	S/B	600	\$12,000
5.	Canberra Airport to Civic corridor	W/B	600	\$11,000
6.	Athllon Drive / Commonwealth Avenue corridor	N/B	600	\$11,000
7.	Gungahlin Drive corridor	S/B	500	\$9,000
8.	Kingsford Smith Drive / William Hovell Drive corridor	S/B	500	\$9,000
9.	Belconnen Way / Barry Drive corridor	E/B	400	\$7,000
10.	East-west corridor via Hindmarsh Drive	E/B	300	\$6,000
<b>PM peak</b>				
1.	Parkes Way / Tuggeranong Parkway / Drakeford Drive corridor	S/B	800	\$15,000
2.	Canberra Avenue corridor	E/B	800	\$15,000
3.	Monaro Highway corridor	S/B	800	\$16,000
4.	Civic to Canberra Airport corridor	E/B	600	\$12,000
5.	Commonwealth Avenue / Athllon Drive corridor	S/B	500	\$9,000
6.	Northbourne Avenue / Barton Highway corridor (N/B)	N/B	500	\$10,000
7.	Gungahlin Drive corridor	N/B	400	\$7,000
8.	William Hovell Drive / Kingsford Smith Drive corridor	N/B	400	\$7,000
9.	East-west corridor via Hindmarsh Drive	W/B	300	\$6,000
10.	Barry Drive / Belconnen Way corridor	W/B	300	\$5,000

Note: N/B, S/B, W/B and E/B represent northbound, southbound, westbound and eastbound, respectively.

Source: Veitch Lister Consulting (2019)<sup>230</sup>

**Figure 127: ACT and Queanbeyan most congested roads (total vehicle delays), 2031 AM (left) and PM (right) peak**



Source: Veitch Lister Consulting (2019)<sup>231</sup>

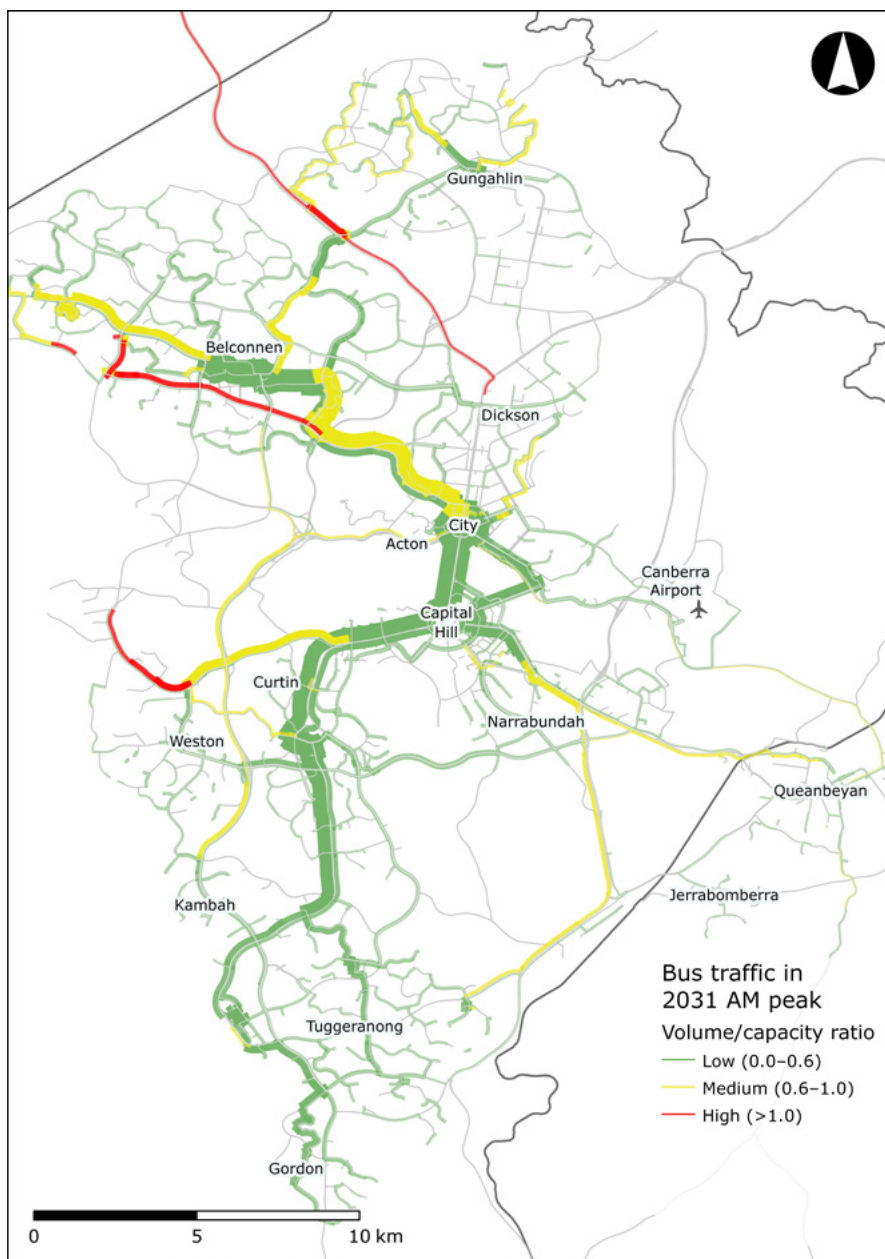


As a result of heightened demand, the region’s bus network is forecast to become increasingly crowded (Figure 128). Services along John Gorton Drive near Molonglo, Belconnen Way and some routes in outer Belconnen, in particular, are expected to exceed crush capacity by 2031. Higher levels of crowding than in 2016 are also forecast for commuters travelling by bus on the Monaro Highway, Canberra Avenue (between the city and Queanbeyan), Tuggeranong Parkway and on the local road network in Gungahlin. These outcomes will occur as a result of strong population growth in outer areas, and employment growth in Canberra’s urban centres, not being matched by an increase in the frequency and capacity of public transport services.

Decreased bus patronage is forecast on Northbourne Avenue in the 2031 scenario as a result of passengers using the Canberra Metro light rail. Small decreases on other routes into Dickson and Lyneham in Canberra’s north-east will result from the associated realignment of bus routes.

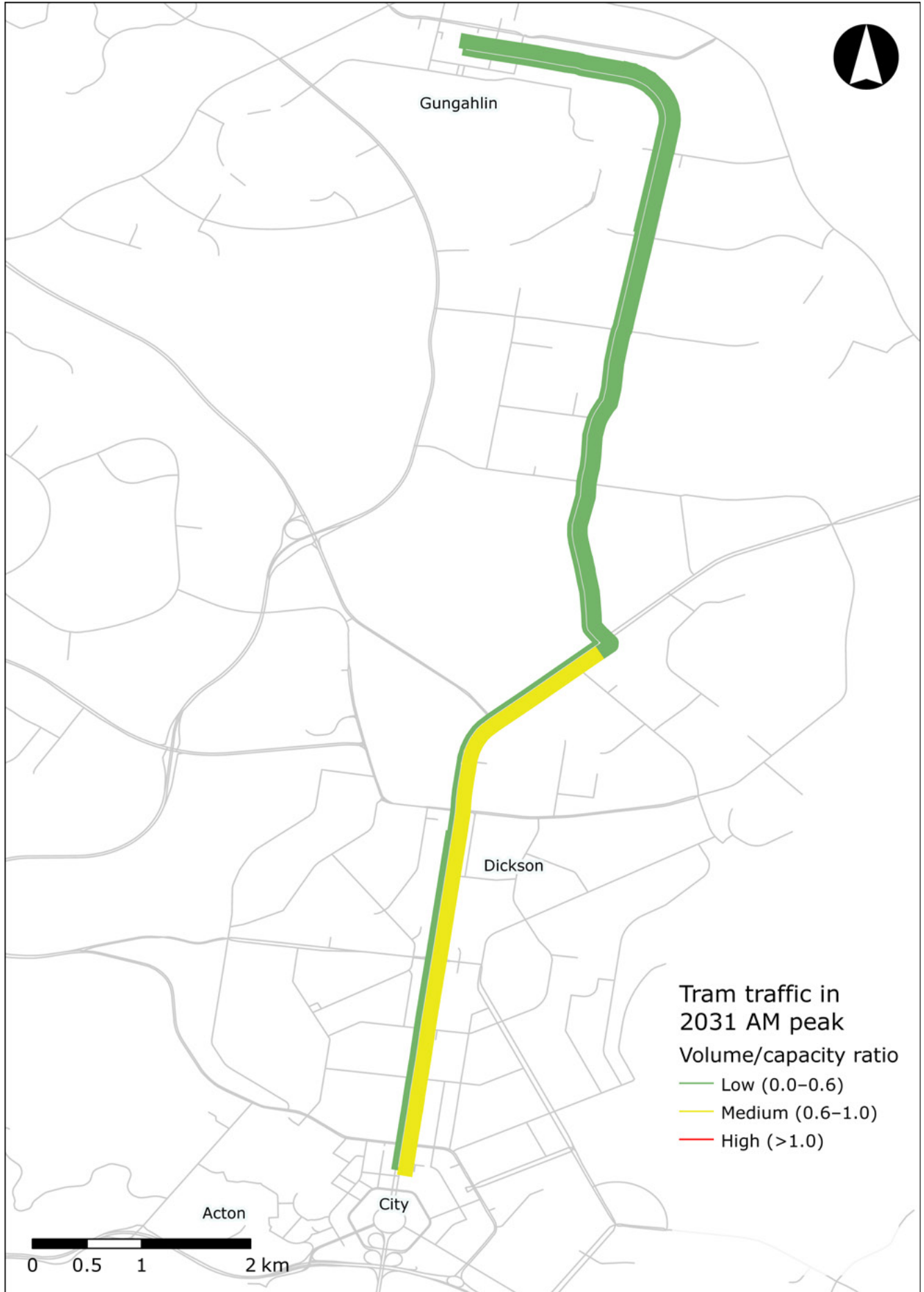
The Canberra Metro light rail will provide access to the CBD for residents in Canberra’s northern suburbs. The light rail is forecast to attract significant patronage, with particularly heavy usage predicted close to Civic. Between Gungahlin Place and Phillip Avenue light rail users can expect low levels of crowding in 2031. However, between Phillip Avenue, Dickson Interchange and Civic, passengers can expect moderate crowding as more citybound passengers join the service closer to the CBD, including those who transfer from buses at the Dickson Interchange (Figure 129).

**Figure 128: ACT and Queanbeyan weekday bus passenger volume / capacity ratio, 2031 AM peak**



Source: Veitch Lister Consulting (2019)<sup>232</sup>

Figure 129: ACT and Queanbeyan weekday light rail passenger volume / capacity ratio, 2031 AM peak



Source: Veitch Lister Consulting (2019)<sup>233</sup>

## Findings

- The 2019 Audit forecasts that the annualised cost of road congestion for the ACT and Queanbeyan will grow from approximately \$289 million in 2016 to \$504 million in 2031. This is 28% lower than the 2031 forecast cost of road congestion in the 2015 Audit.
- Roads connecting Canberra to western and north-western development areas are expected to become increasingly congested by 2031.
- Residents of the ACT and Queanbeyan will spend more time in traffic and crowded public transport by 2031.
- By 2031 drivers on the region's worst-affected routes are expected to spend half their journey time in congestion.
- Despite road improvements, congestion on Gundaroo Drive will increase due to population growth.
- Congestion is expected to increase on roads connecting Queanbeyan with Canberra's centre.
- The region's bus network is forecast to become increasingly crowded, with some parts of the network exceeding crush capacity.
- The construction of the Canberra Metro light rail will improve travel between Canberra's city centre and the north, however by 2031 peak crowding can be expected close to the CBD on this line.

### 10.5 Transport decisions impact access to jobs and services

#### Hospital access in the ACT and Queanbeyan region – by car and public transport, in 2031

Access to critical healthcare is measured by the travel time to their nearest public hospital, or hospital with an emergency department, by car versus public transport (Figure 130).

Access to public hospitals in Canberra is significantly faster by car than by public transport. In 2031, the average travel time to a public hospital by car in the ACT and Queanbeyan was 12 minutes, a small increase from 2016.

By public transport, the average time to a public hospital is forecast to be 48 minutes in 2031, three minutes longer than in 2016. This is partly due to the very long travel times modelled (in the absence of information on the location of new hospitals or the provision of public transport links) for the residents of fringe areas including Molonglo Valley. Residents of North and South Canberra, and Woden Valley, are forecast to have the shortest public transport travel time of around 30 minutes.

#### Access to childcare and schools in the ACT and Queanbeyan region – by car and public transport, in 2031

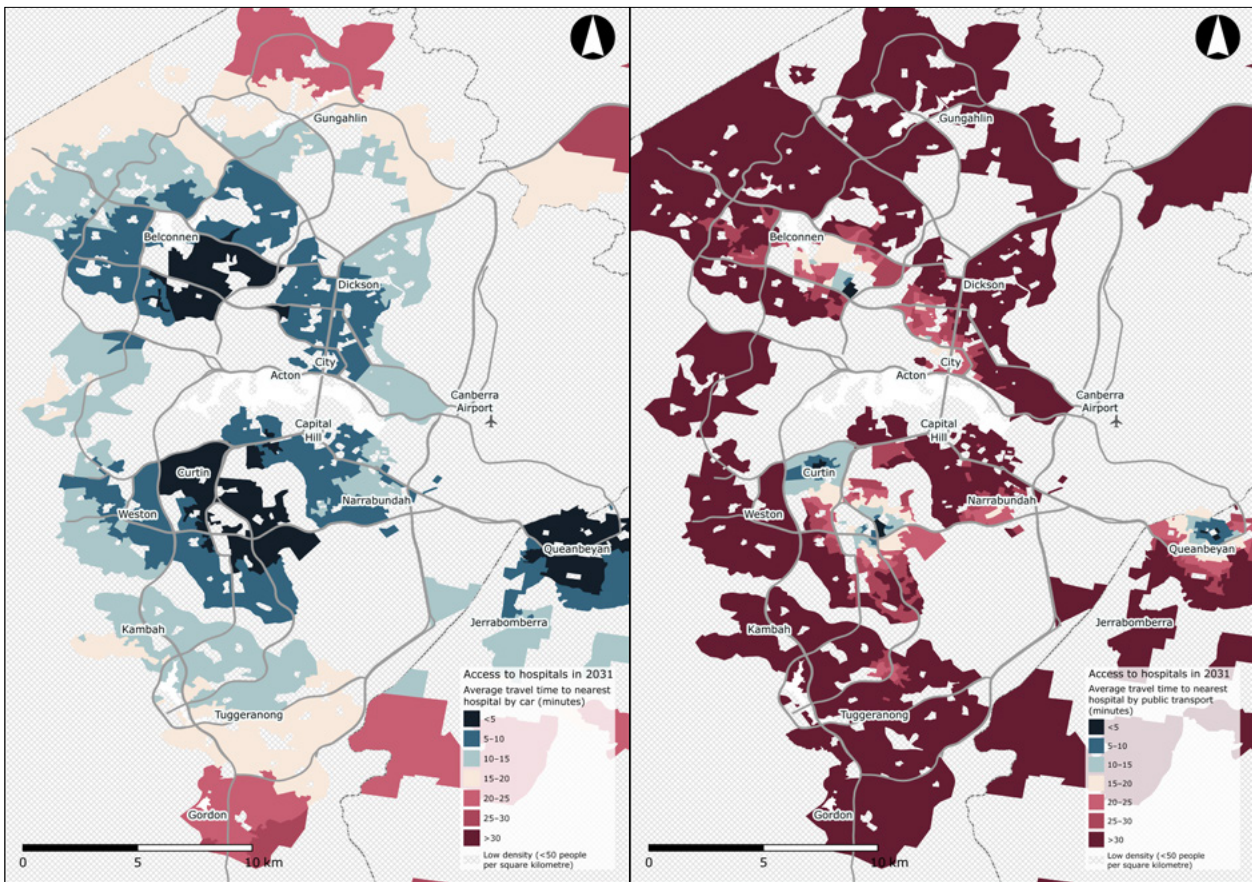
The average resident of the ACT and Queanbeyan region with access to a car can reach childcare services, public primary schools and public secondary schools within a five-minute trip in 2016. This is expected to extend to a six-minute trip by 2031 (Figure 131, Figure 132 and Figure 133).

For residents without access to a car, travel times are significantly longer on public transport. In 2031, forecast travel times generally average just over 25 minutes for childcare and public primary school services, and over 30 minutes for public secondary schools. These travel times are predicted to have increased from 2016.

While public transport may offer a realistic alternative for residents of the region's central areas, this is not the case for outer areas. Residents of Canberra East, Queanbeyan and Molonglo Valley are expected to approach 50 minutes of travel time, reflecting the limited public transport service improvements assumed for these regions compared to population growth.

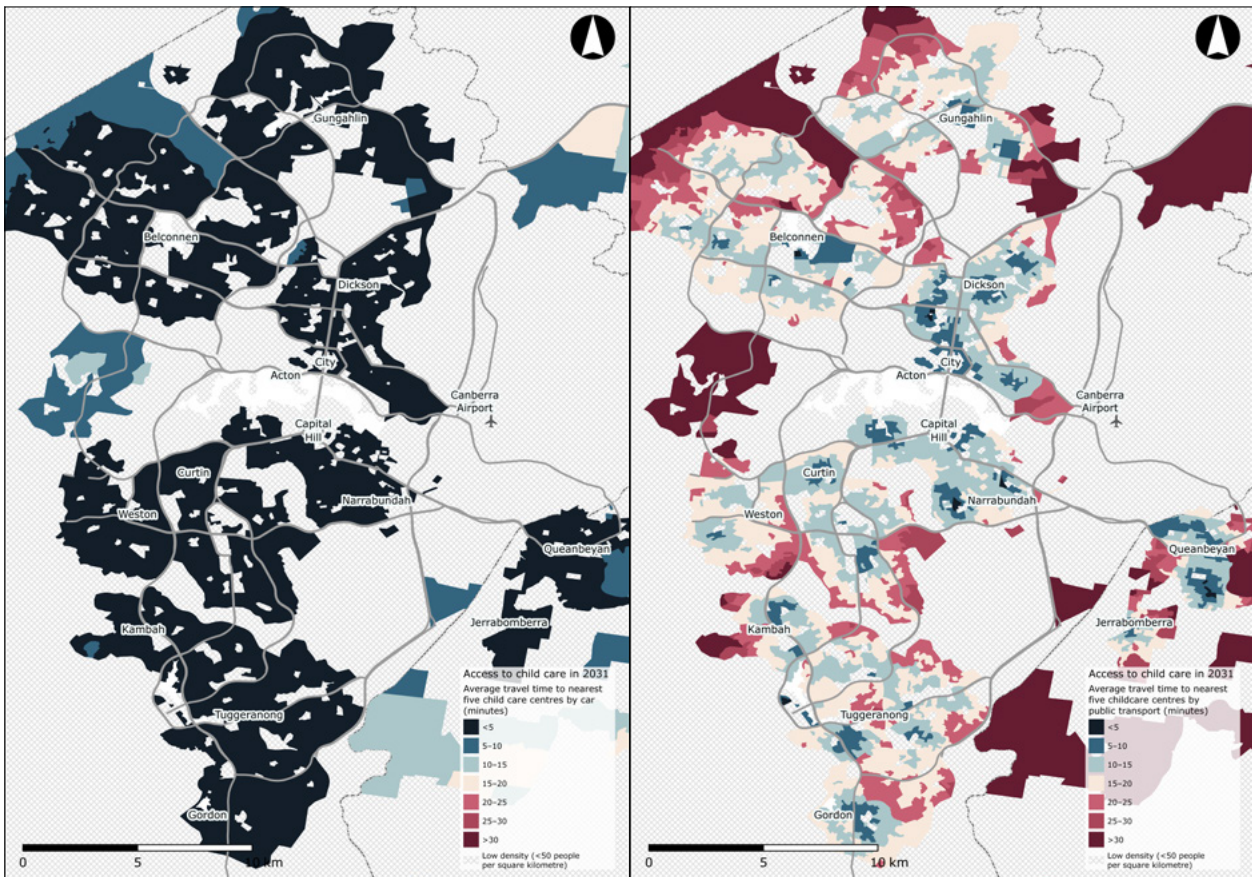
In contrast, public transport access to local social infrastructure in North and South Canberra, Tuggeranong and Woden Valley is forecast to improve slightly by 2031, reflecting improved bus service frequencies provided by an integrated public transport network.

**Figure 130:** ACT and Queanbeyan average time to nearest hospital by car (left) and public transport (right), 2031 AM peak



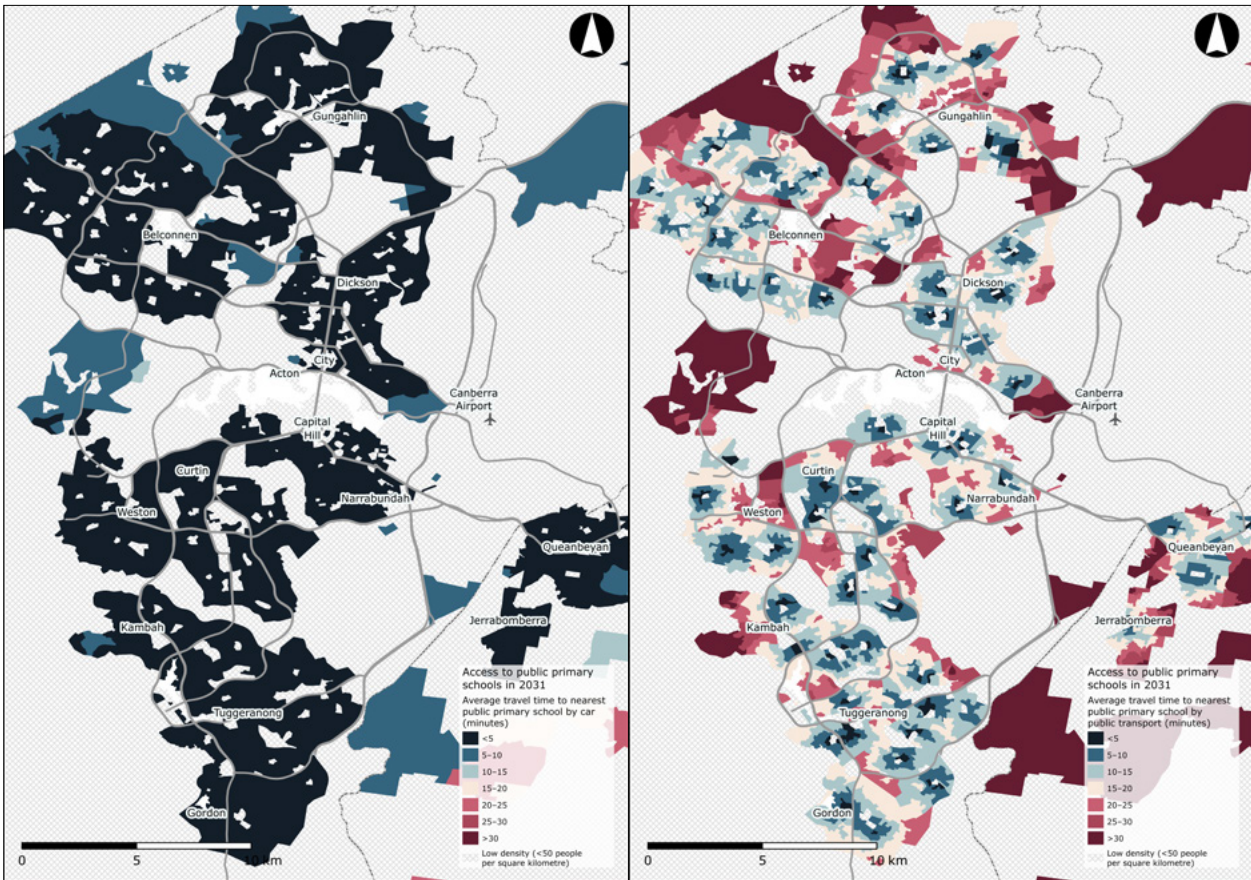
Source: Veitch Lister Consulting (2019)<sup>234</sup>

**Figure 131:** ACT and Queanbeyan average time to nearest five childcare centres by car (left) and public transport (right), 2031 AM peak



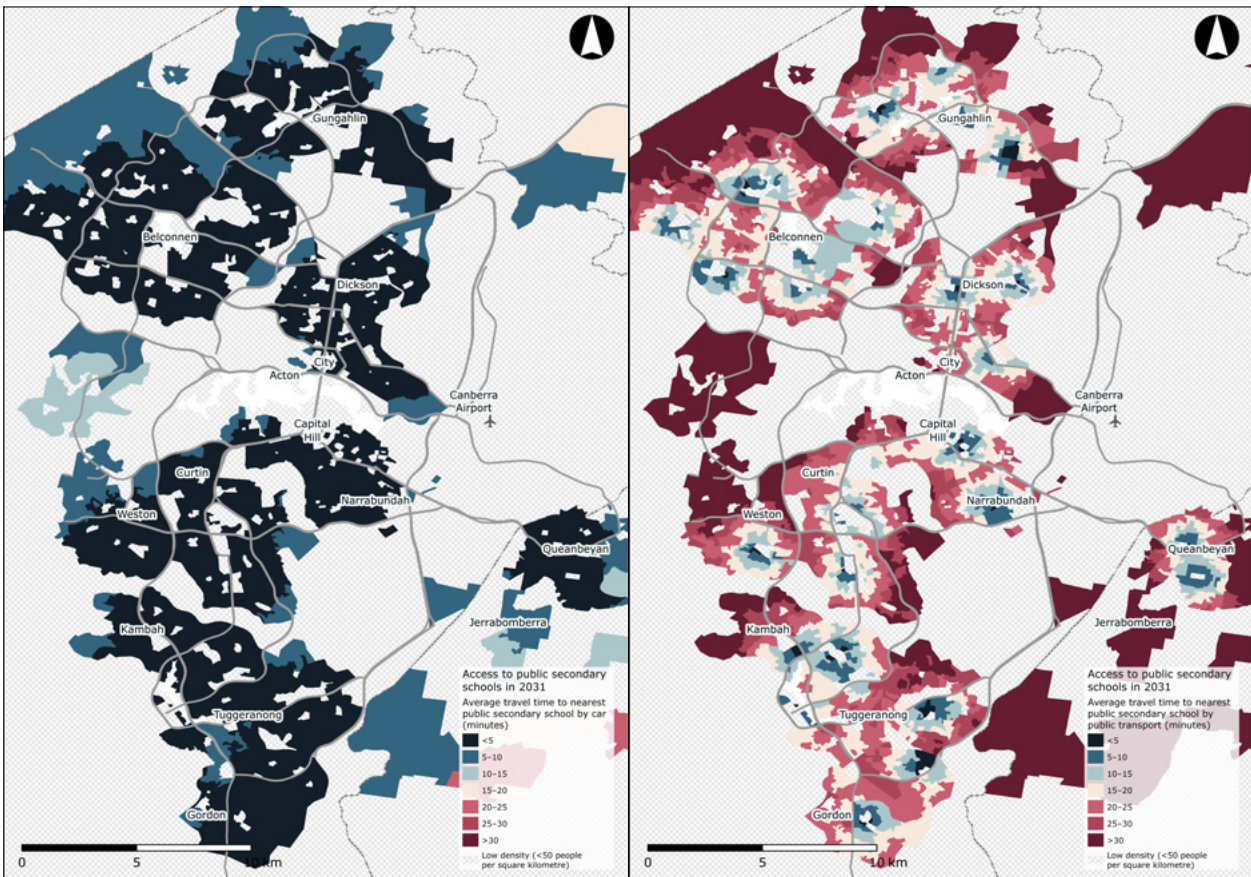
Source: Veitch Lister Consulting (2019)<sup>235</sup>

**Figure 132:** ACT and Queanbeyan average time to nearest public primary school by car (left) and public transport (right), 2031 AM peak



Source: Veitch Lister Consulting (2019)<sup>236</sup>

**Figure 133:** ACT and Queanbeyan average time to nearest public secondary school by car (left) and public transport (right), 2031 AM peak



Source: Veitch Lister Consulting (2019)<sup>237</sup>

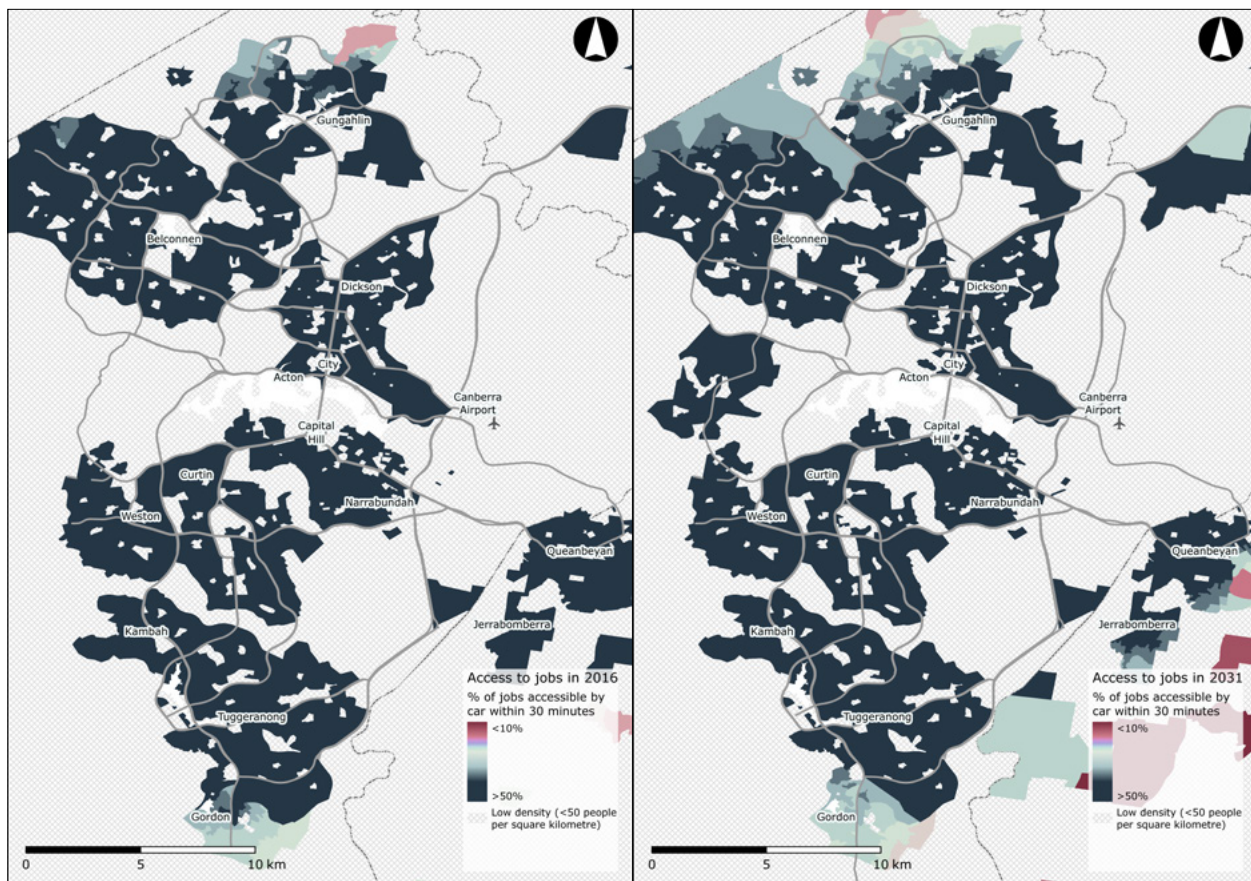
### Access to jobs in the ACT and Queanbeyan region – by car and public transport, in 2016 and 2031

Employment accessibility has been measured as the percentage of jobs that can be reached by ACT and Queanbeyan residents within 30 minutes of their home by car (Figure 135) and by public transport (Figure 135) in the two modelled years.

Access to employment across the ACT and Queanbeyan region differs based on where a person lives and which mode of transport they opt for. Given the region’s smaller geographical area compared to other Australian cities, as well as its well-developed road network, most jobs can be reached within a 30-minute drive from all urban areas, with some exceptions in outer suburbs.

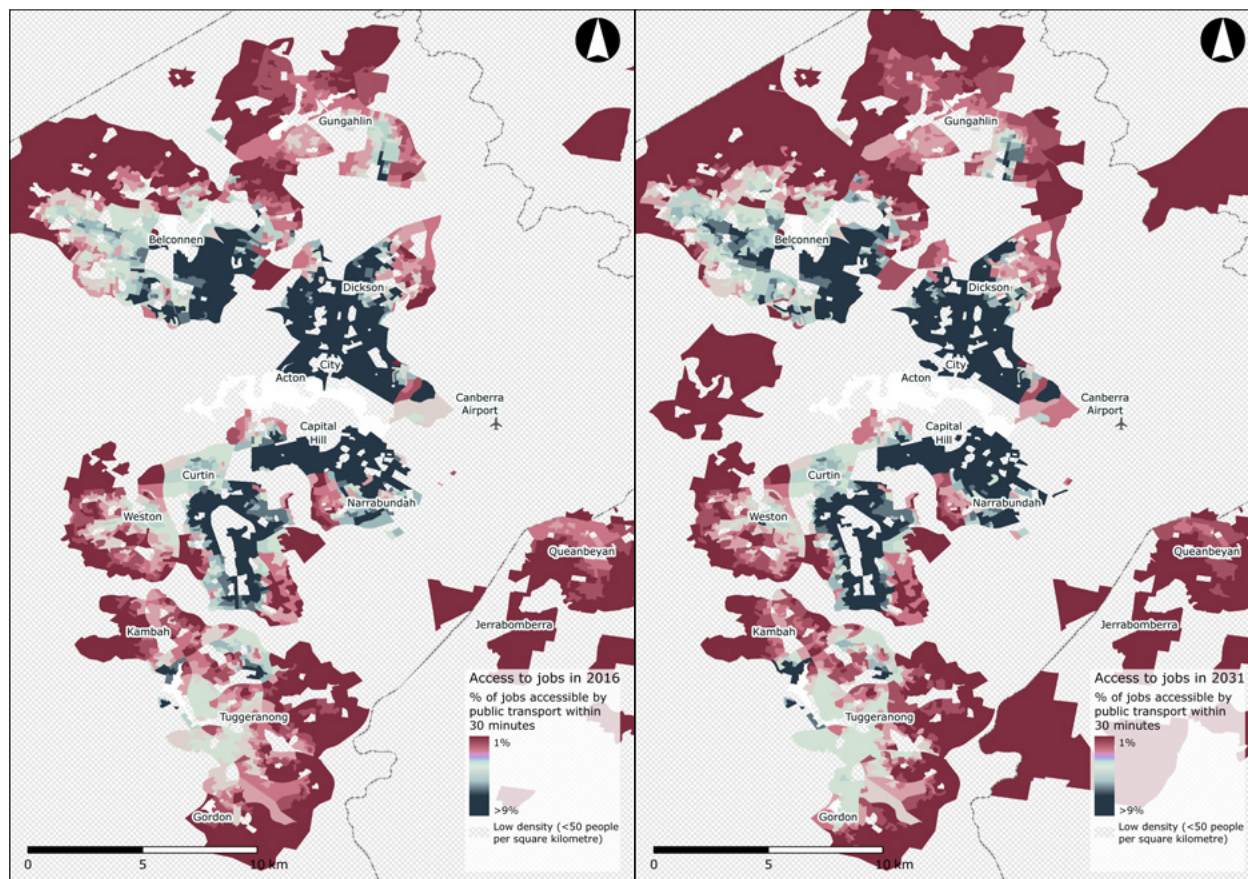
Job accessibility by public transport is forecast to be relatively stable, staying low, between 2016 and 2031. Many residents will continue to be unable to reach a significant choice of jobs within a 30-minute public transport commute. Residents of inner areas such as North and South Canberra, as well as Woden Valley and Belconnen, are forecast to have better access than those in outer ACT suburbs and Queanbeyan.

Figure 134: ACT and Queanbeyan access to jobs by car, 2016 and 2031 AM peak



Source: Veitch Lister Consulting (2019)<sup>238</sup>

Figure 135: ACT and Queanbeyan access to jobs by public transport, 2016 and 2031 AM peak



Source: Veitch Lister Consulting (2019)<sup>239</sup>

## Findings

- Travel by car will continue to be the quickest means to access the region’s social infrastructure in 2031, especially for residents of newer areas.
- Residents of Queanbeyan and outer ACT suburbs have significantly poorer access to jobs by public transport than the residents of inner suburbs, and this will not change over the next 15 years.

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