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Economists

Traffic speed trends on Queensland roads, 2015 to 2018

A report for Transport and Main Roads

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Executive Summary

Speeding on roads is a serious societal and public health concern. Understanding speed performance on the Queensland road network is important to ensure that Transport and Main Roads, as well as the government more generally, can strive towards reducing road accidents and improving safety for road users through speed management policies.

This report provides the first comprehensive assessment of road speeds and compliance with speed limits across the Queensland road network.

We use GPS probe data provided by HERE Technologies to analyse trends in average speeds and compliance with speed limits between 2015 and 2018, across urban and regional roads, and for each local government area. The results provide a clear picture of changes in compliance with speed limits and help to identify geographic areas and roads where speeding is becoming systemic and road speeds are excessive.

When interpreting the results, it is important to understand that at higher levels of road aggregation (eg, Brisbane, arterial roads in Queensland, etc.), year-on-year speed changes tend to be relatively small. Investigating the aggregated results further, we observe considerable speed trend variability on parts of the road network. The aggregated results reflect decreasing speeds in parts of the road network being offset by increasing speeds in other parts of the road network. This highlights the usefulness of using GPS probe data to identify route and area priorities for speed performance and road safety improvement.

Box E.1 provides a summary of the four key metrics that we report in this assessment.

Box E.1: Speed metrics for the Queensland road network

Average speed – average hourly speed across each road segment within a geographic area and for arterial and local roads.

Percentage of speed limit (PoSL) – average speed divided by the posted speed limit, which allows speed performance comparisons to be made between areas with different speed zone configurations.

Speed compliance – the proportion of roads by length in an area where there were no incidences of speeding, which measures extent of speed limit compliance in an area.

Margin in excess of speed limit – the severity of speeding in an area or for arterial and local roads, which provides insights on how the severity of speeding has been changing.

After a decline in 2016, average speeds have been increasing across Queensland's road network

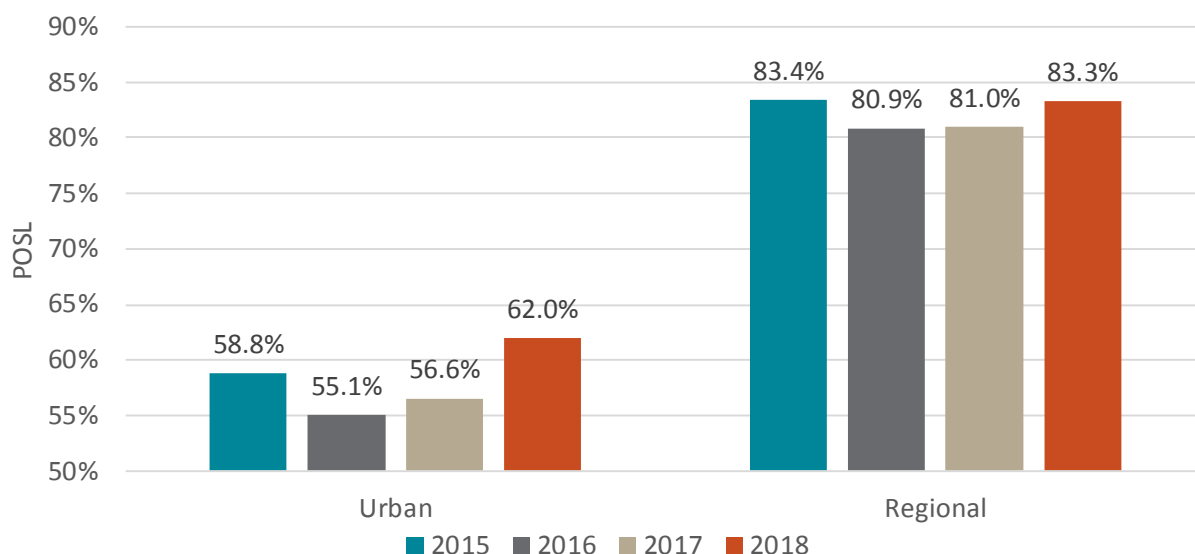
Between 2015 and 2016 average speeds fell across the Queensland road network by 8.9 per cent. The falls in average speeds were higher for urban roads than regional roads, consistent with expectations about worsening traffic congestion in built-up parts of the network. The greatest average speed falls occurred in 50 km/h speed zones.

That said, 2018 saw a turnaround in average speeds with increases across both regional and urban areas. Average speed in urban areas increased by 8.6 per cent, while the average speed in regional areas increased by 2.5 per cent.

The average speed in Brisbane has fallen from 38.8 km/h in 2015 to 38.6 km/h in 2018, a 0.4 per cent fall. As for the rest of Queensland, average speed increased in 2018 from a low of 35.6 km/h in 2016.

While average speeds have increased between 2015 and 2018 for both urban and regional roads, when it comes to the percentage of speed limit (PoSL) only urban roads experienced an increase –Figure E.1.

Figure E.1: Percentage of speed limit, urban and regional areas, Queensland, 2015 to 2018



We find that the percentage of speed limit is lower for regional roads in 2018 compared to 2015, and this difference in the trend for the percentage of speed limit compared to average speed likely reflects changes in speed zones in regional areas following road works compared to urban areas. Increasing speed zones in regional areas can lead to increases in average speeds within the road network without commensurate improvements in the percentage of speed limit.

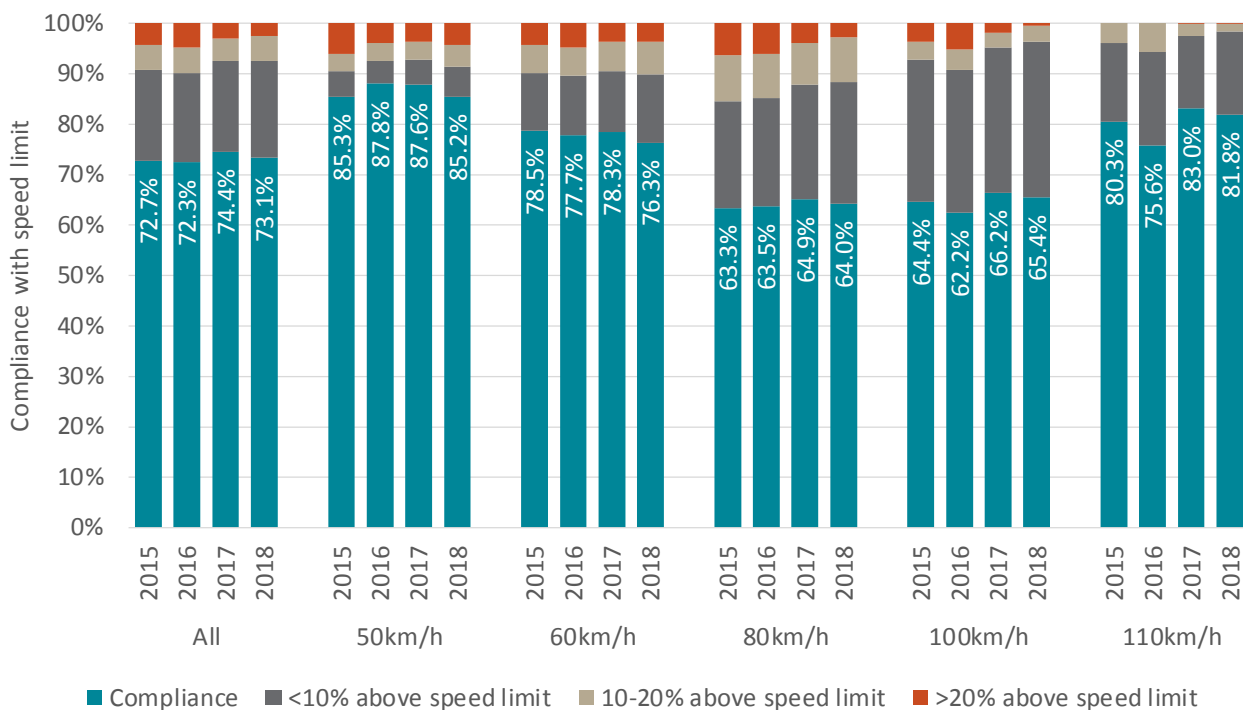
Speed limit compliance has been improving across Queensland

Our results demonstrate that, despite increases in average speed, compliance with speed limits has been improving across Queensland, with speed compliance improving from 72.7 per cent in 2015 to 73.1 per cent in 2018. That said, 2018 saw a decline in speed compliance from the historical high of 74.4 per cent in 2017.

Breaking down the results by speed zone shows that speed compliance is lowest for 80 km/h and 100 km/h speed zones, with the highest compliance for 50 km/h roads – Figure E.2.

Importantly, excessive speeding (defined as a speeding margin greater than 20 per cent of the speed limit) has declined significantly on 100 km/h roads between 2015 and 2018, with some improvements for 80 km/h roads. The incidence of excessive speeding on 110 km/h roads is insignificant. That said, excessive speeding on 50 km/h and 60 km/h speed zone roads has been relatively stable over the period.

Figure E.2: Compliance with speed limits, Queensland, 2015 to 2018

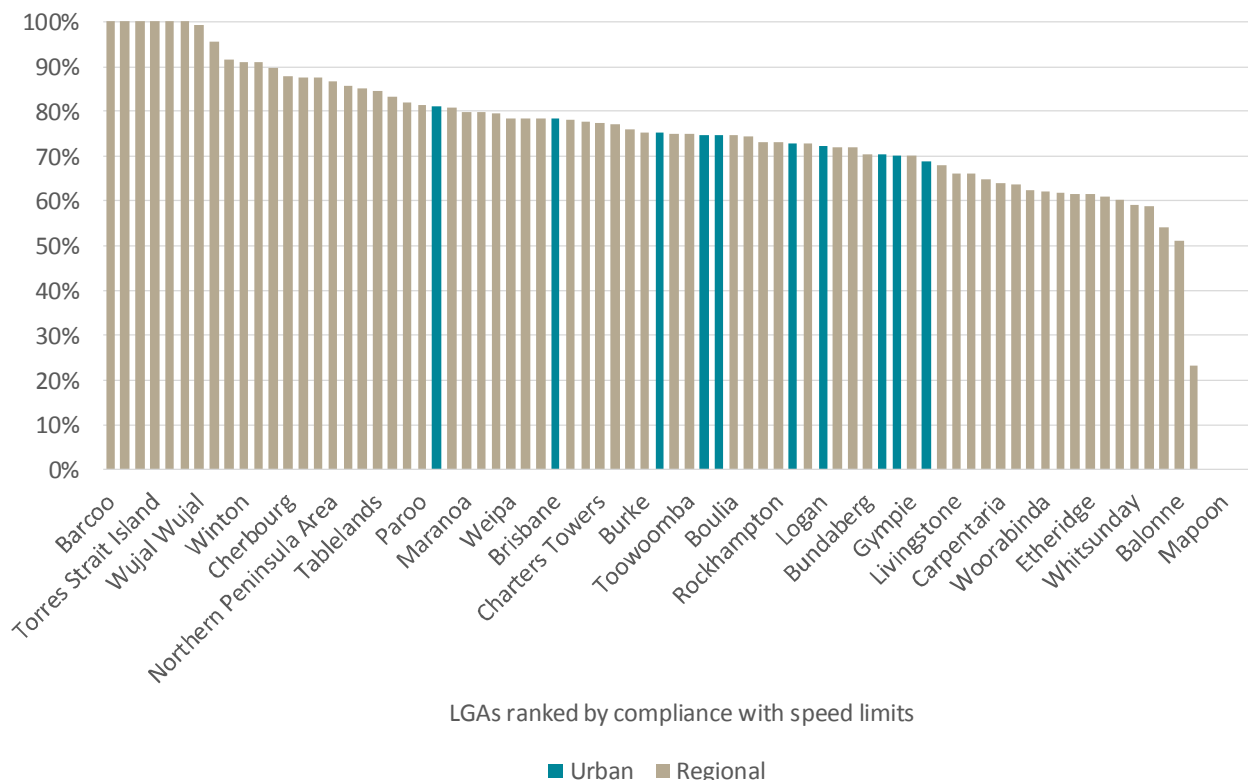


Compliance with speed limits was 75.1 per cent in Brisbane in 2018, which was an improvement of 1.4 per cent compared to 2015. This result is slightly higher than for Queensland as a whole. The extent of compliance with speed limits by local government area in 2018 is summarised in Figure E.3.

We find that speed compliance has been relatively stable across the urban local government areas, which average 73.9 per cent in 2018. The highest speed compliance across this group was Cairns with a compliance of 81.2 per cent. The greatest fall in compliance was Noosa, falling from a speed compliance rate of 77.6 per cent in 2015 to 68.8 per cent in 2018.

Reflective of the significant diversity of road networks in regional areas, speed compliance ranged from highly compliant (over 90 per cent) to low compliance, with less than 60 per cent compliance.

Figure E.3: Compliance with speed limits by local government area, Queensland, 2018



Average speed when speeding is improving across the road network

In addition to improving compliance with speed limits, mostly due to a reduction in excessive speeding, there has also been improvements in average speed by which speeders are exceeding speed limits. Across all roads in Queensland, improvements were most pronounced in 80 km/h and 100 km/h zones, where average speeds when speeding each having decreased by more than 2 per cent.

Urban roads showed slightly better improvements than regional roads, having achieved larger reductions in the average speed of speeders across 60 km/h, 80 km/h and 100 km/h zones

There has been very little improvement in speeding margins when speeding was below ten per cent above the limit. However, in cases where speeding exceeded the speed limit by ten per cent or more, speeding margins improved across most speed zones. The largest overall improvement is in the 80 km/h zone, where excessive speeding speeds fell from 105.3 km/h to 102.0 km/h.

The Peaks Downs Highway was the worst performing road from a speed safety perspective in 2018

We have analysed all roads within the Queensland network to identify the top ten worst performing roads from the perspective of:

- the extent of non-compliance with speed limits, where the speed margin is greater than 10 per cent; and
- the average speeding margin.

We find that the Peaks Downs Highway between Mackay and Clermont was the worst performing from a speed safety perspective in 2018.

The top ten roads in order are listed in Table E.1 below.

Table E.1: Top 10 worst performing speed safety roads in Queensland, 2018

Rank	Road name	Statistical Area Level 2
1	Peak Downs Highway	Broadsound - Nebo
2	Teviot Road	Greenbank
3	Mount Cotton Rd (State Highway 45)	Sheldon – Mount Cotton
4	Beaudesert Nerang Rd	Tamborine – Canungra
5	Maudsland Road	Oxenford - Maudsland
6	Cunningham Highway	Boonah
7	Bruce Highway	Gympie – North
8	Beenleigh Redland Bay Rd	Comubia - Carbrook
9	Bruce Highway	Gympie Region
10	Bruce Highway	Babinda

1. Introduction

Road safety is a critical public concern because serious road casualties have a significant and lasting social and economic impact on local communities. To achieve safer roads, the Queensland Department of Transport and Main Roads (TMR) launched a Safer Roads, Safer Queensland - Queensland's Road Safety Strategy, which seeks to achieve an ambitious vision of zero deaths and serious injuries on Queensland roads.

As managing excessive traffic speed is the cornerstone of achieving safer roads, TMR and other government agencies undertake a number of activities to monitor and manage speed across the road network. An important activity has been the annual collection and reporting of data on observed traffic speeds within urban and rural areas, to provide information on how speeds have been changing across the road network over time. Historically, this has involved the collection and analysis of data collected from pneumatic tube speed survey sites located across the road network to produce an annual speed survey report.

While the previous methodology for conducting speed surveys has been providing valuable insights, technological advancements and data availability present an opportunity to conduct more insightful and wider reaching speed surveys, using GPS speed probe data.

It is within this context that HoustonKemp Economists has been engaged by TMR to:

- develop a methodology for conducting speed surveys using GPS speed probe data;
- apply the methodology to conduct a speed survey for 2017 and 2018, drawing out comparisons with 2015 and 2016; and
- provide recommendations on any additional ways that speed probe data can be used to provide insights on road speeds across the Queensland road network.

An important advantage of using speed probe data for monitoring speed performance across road networks is the breadth of coverage across the road network. The data allows us to provide estimates of road speed performance for roads and geographic areas, at a level of detail that has never been previously analysed.

The speed probe data that we have used for this study is provided on licence to TMR by HERE Technologies (HERE).

Box 1 provides a brief description of the coverage of this report and the metrics that we report.

Box 1: Speed metrics and definitions

We present speed metrics for urban and rural areas across Queensland based on the Significant Urban Area definitions provided by the Australian Bureau of Statistics.¹

In addition, we provide results for arterial and local roads, based on road classes provided by HERE. Arterial roads are typically designed for high volume, high speed travel through and between major metropolitan areas, cities and towns, whereas local roads tend to be designed for a lower volume of

¹ See ABS, *Australian statistical geography standard (ASGS) volume 4*, cat. no. 1270.0.55.004, available at <http://www.abs.gov.au/ausstats/abs@.nsf/mf/1270.0.55.004>. See appendix A2.3 for a complete description of urban and regional areas.

traffic, travelling inside and between neighbourhoods.² Specifically, we have defined for this report arterial roads as HERE road functional classes 1, 2 and 3 (where the speed limit exceeds 50 km/h).³

The key speed metrics that we report are:

Average speed – average hourly speed across each road segment within the area and road classification. Differences in average speed between areas can be a result of different speed zone configurations and so this metric is best used to understand changes in speed performance for a given area or road over time.

Percentage of Speed Limit (PoSL) is calculated by dividing the observed average speed for each road segment within the area and road classification by the posted speed limit. This measure normalises between areas for differences in speed zones and so is best used to measure differences in speed performance between areas and roads.

Speed compliance measures the proportion of roads by length in an area where there were no incidences of speeding. Changes in the percentage of speed compliance provides an indication of changes in the incidence of speeding over time.

Margin in excess of speed limit measures the severity of speeding in an area or road classification. Changes in the speeding margin provides insights on how the severity of speeding has been changing.

Despite HERE data having hundreds of millions of observations across the road network, there are areas, particularly in regional Queensland, where coverage might not be adequate to provide a complete representation of the traffic speeds or trends on the roads. We have included information on network coverage and data adequacy as part of our reporting of the road speed results at a local government area level (LGA).

This report sets out the results of our analysis of speed performance across the entire Queensland road network for the period 2015 to 2018 in detail. It is structured as follows:

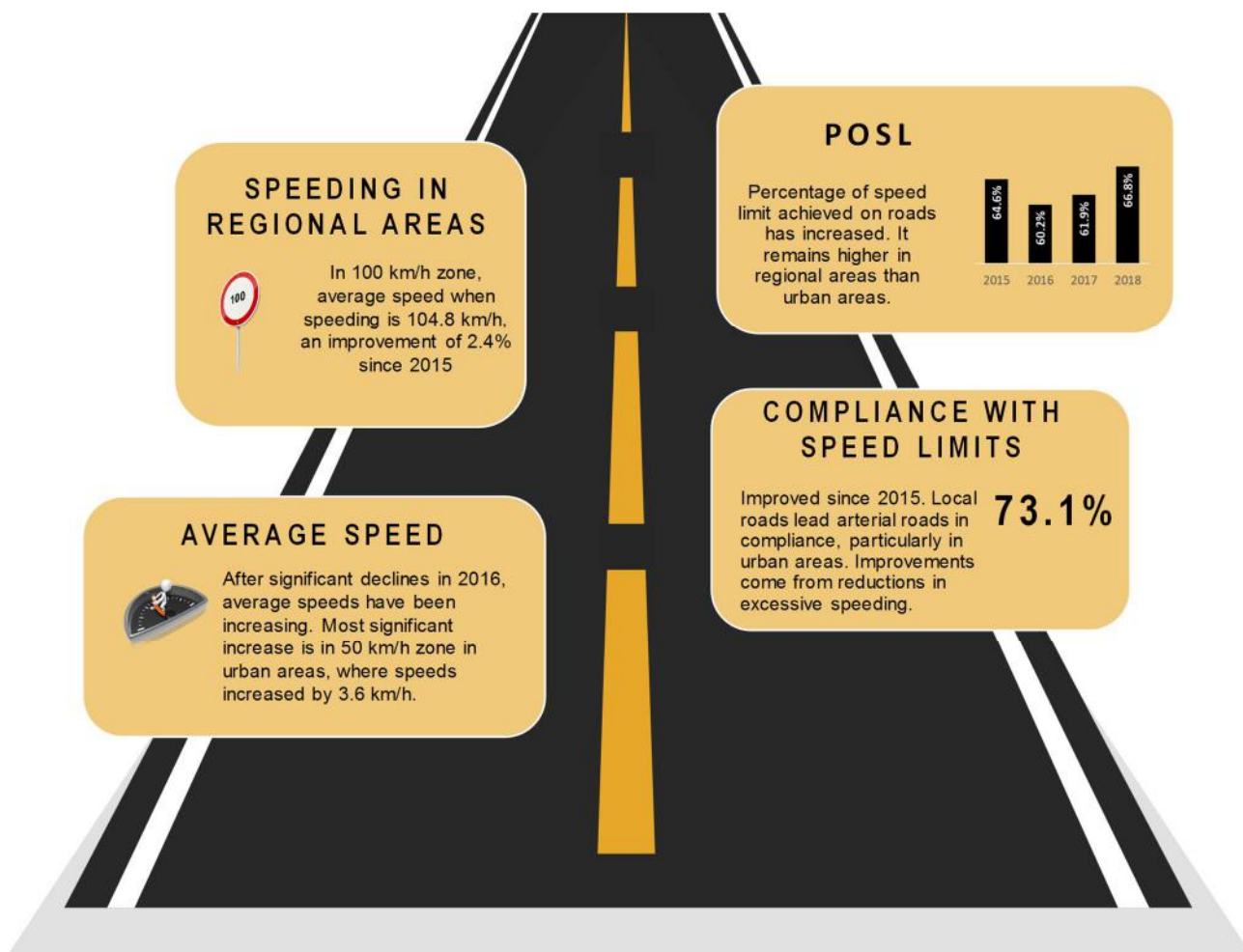
- section 6 summarises the comparative analysis of current and proposed survey methodologies;
- section 2 summarises speed performance for Queensland as a whole;
- section 3 summarises speed performance for Brisbane;
- section 4 summarises speed performance for local government areas across Queensland; and
- section 5 provides a set of recommendations for additional uses for GPS speed probe data.

In addition, Appendix A1 summarises the comparative analysis of the methodology used in this report and the previous speed surveys. Appendix A2 describes the methodology that has been used in our analysis, and Appendix A4 contains summary speed data tables for reference.

² See appendix A2.2 for a more detailed definition of arterial and local roads.

³ This definition differs from the definition of arterial roads that we have used in other reports. Specifically, we sometimes define arterial roads with reference to HERE road functional classes 1 and 2 only. It follows that the results in this report may differ from other published results reflecting differences in the road definitions used.

2. Road speed performance across Queensland



2.1 After falling in 2016, average speeds have been increasing across Queensland

Regional areas in Queensland have a high proportion of roads with high speed limits, with 100 km/h roads being most common. It follows that average speeds for regional areas tend to be higher than in urban areas, where 50 km/h and 60 km/h zones dominate.

Regional areas also tend to experience less traffic congestion, resulting in higher average speeds across all key speed zones. The average speed on 100 km/h roads in regional areas reached 89.0 km/h in 2018 while in urban areas the average speed was 84.8 km/h. Even lower speed zones have faster average speeds, with 60 km/h roads averaging 45.1 km/h in 2018, while urban areas averaged 41.3 km/h.

Urban areas experienced a large decline in 2016, where average speeds fell by 8.0 per cent, but started to creep higher in 2017. In 2018, average speeds experienced significant increases finishing higher than they were in 2015. The most significant change has been in 50 km/h zones, where average speed from 2017 to 2018 increased by 4.1 km/h.

Table 2.1: Average speed, urban and regional areas, Queensland, 2015 to 2018

Area	Speed zone	2015	2016	2017	2018
Regional	60 km/h	44.5	42.9	43.2	45.1
	80 km/h	67.6	67.0	66.7	67.3
	100 km/h	89.4	88.7	88.2	89.0
	110 km/h	96.5	95.7	92.4	95.0
Urban	60 km/h	39.4	39.2	39.6	41.3
	80 km/h	64.8	64.2	64.4	65.7
	100 km/h	87.4	84.9	83.8	84.8
	110 km/h	96.0	95.7	97.6	98.4

Both urban and regional areas have a higher average speed in 110 km/h zones in 2018, relative to 2017. 110 km/h is the only speed zone where urban speeds have consistently been higher than in regional areas. The Bruce Highway Upgrade program, which is the largest road infrastructure program in Queensland's history, has had an impact on speeds as the highway is being upgraded between Brisbane and Cairns. We expect to see some increases in speed as sections of roadworks are completed.

2.2 Percentage of speed limit increased in urban areas but marginally declined in regional areas between 2015 and 2018

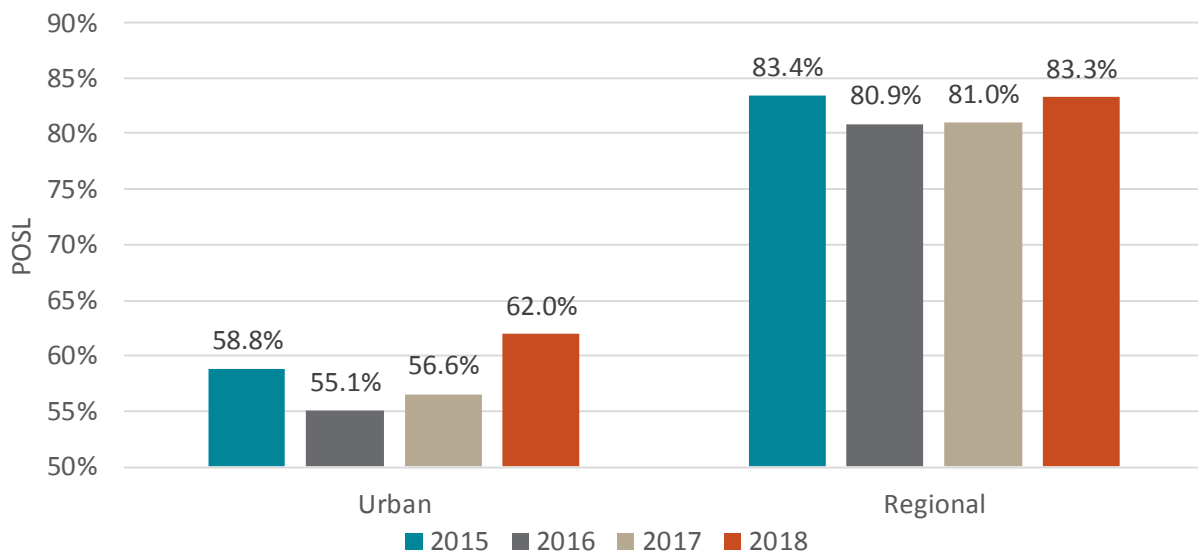
Percentage of speed limits for all Queensland roads initially fell from 64.6 per cent in 2015, only to increase significantly in 2018 reaching 66.8 per cent.

In general, roads with higher speed limits achieve a higher percentage of speed limit. In 2018, the difference in percentage of speed limit between 50 km/h and 60 km/h zones was 23 per cent, and between 60 km/h and 80 km/h it was 13 per cent. Once speed limits are 80 km/h or more, the percentage of speed limit differences between speed zones become less significant.

It follows that in regional areas, roads generally have a higher percentage of speed limit. In 2018, the percentage of speed limit was 83.3 per cent, representing a large increase from 2017 but still slightly below 2015 levels.

In urban areas, the percentage of speed limit in 2018 increased quite significantly to 62.0 per cent, finishing higher than it was in 2015 (58.8 per cent).

Figure 2.1: Percentage of speed limit, urban and regional areas, Queensland, 2015 to 2018



2.3 Compliance with speed limits is improving

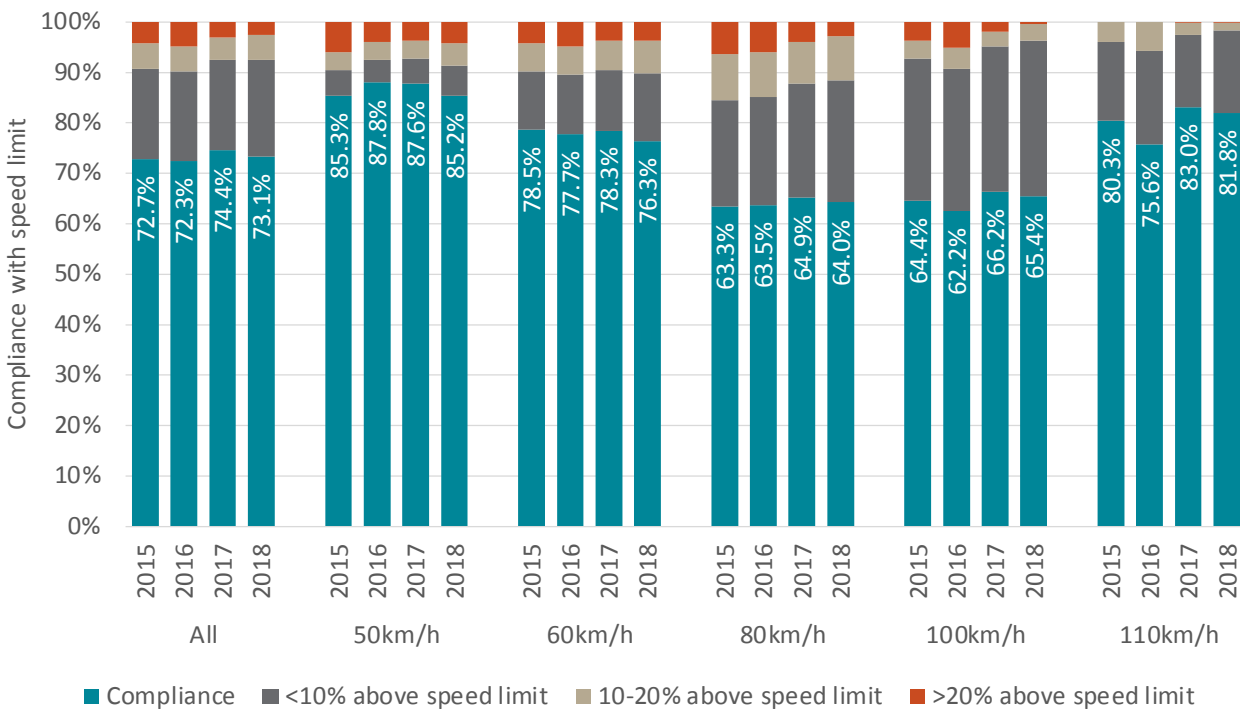
For the whole of Queensland, compliance with speed limits improved from 72.7 per cent in 2015 to 73.1 per cent in 2018. It reached 74.4 per cent in 2017 but has retreated somewhat over the last year, indicating that the incidence of speeding increased in 2018 relative to 2017.

To determine what is driving overall improvements in speed limit compliance, we analysed the speeds above the speed limit and decomposed it into ranges based on the margin by which the speed limit was exceeded. The ranges we have considered are:

- up to ten per cent over the limit (low level speeding);
- between ten per cent and 20 per cent over the limit; and
- more than 20 per cent over the limit (excessive speeding).

For the whole of Queensland, low level speeding represents about double the contribution to overall speed limit non-compliance compared to speeding in excess of ten per cent over the limit. Importantly, the contribution is not uniform across all speed limits, with 50 km/h and 60 km/h zones having speeding across the ranges distributed more evenly (see Figure 2.2).

Figure 2.2: Compliance with speed limits, Queensland, 2015 to 2018



Considering that both low level speeding and overall compliance with speed limits have increased over the years, it follows that improvements are driven by reductions in excessive speeding. Across all roads in Queensland, excessive speeding has reduced from 4.5 per cent in 2015 to 2.7 per cent in 2018, mostly driven by reductions in speeding on higher speed zones roads (80 km/h and above).

The reduction in excessive speeding is smaller in urban areas than in regional areas, with almost no reduction in the 60 km/h zone. Excessive speeding in the 100 km/h zone has been reduced to less than one per cent across both urban and regional areas.

Compliance with speed limits also varies depending on whether the road is an arterial or local road. Arterial roads in general experience more speeding relative to local roads, and that relationship holds across both regional and urban areas.

The best performing road segment in 2018 was local roads in urban areas, despite compliance with speed limits declining by 2.3 per cent since 2015. A consistent worst performing road segment is arterial roads in regional areas, that remained unchanged at 66.7 per cent. Most improved were local roads in regional areas which increased their compliance by 3.4 per cent, driven by a reduction in excessive speeding from 10.6 per cent in 2015 to 6.2 per cent in 2018 (see Table 2.2 below).

Table 2.2: Compliance with speed limits by road segment, Queensland, 2015 to 2018

Segment	2015	2016	2017	2018
Arterial roads in urban areas	68.3%	68.0%	70.3%	69.1%
Local roads in urban areas	83.6%	83.4%	83.4%	81.3%
Arterial roads in regional areas	66.8%	64.0%	68.3%	66.7%
Local roads in regional areas	75.1%	77.4%	79.0%	78.5%

2.4 Average speed when speeding is declining

In addition to improving compliance with speed limits, mostly due to a reduction in excessive speeding, there has also been improvements in average speed by which speeders are exceeding speed limits. Across all roads in Queensland, improvements were most pronounced in 80 km/h and 100 km/h zones, where average speeds when speeding each having decreased by more than 2 per cent.

Urban roads showed slightly better improvements than regional roads, having achieved larger reductions in the average speed of speeders across 60 km/h, 80 km/h and 100 km/h zones.

Table 2.3: Average speed when speeding, Queensland, 2015 to 2018

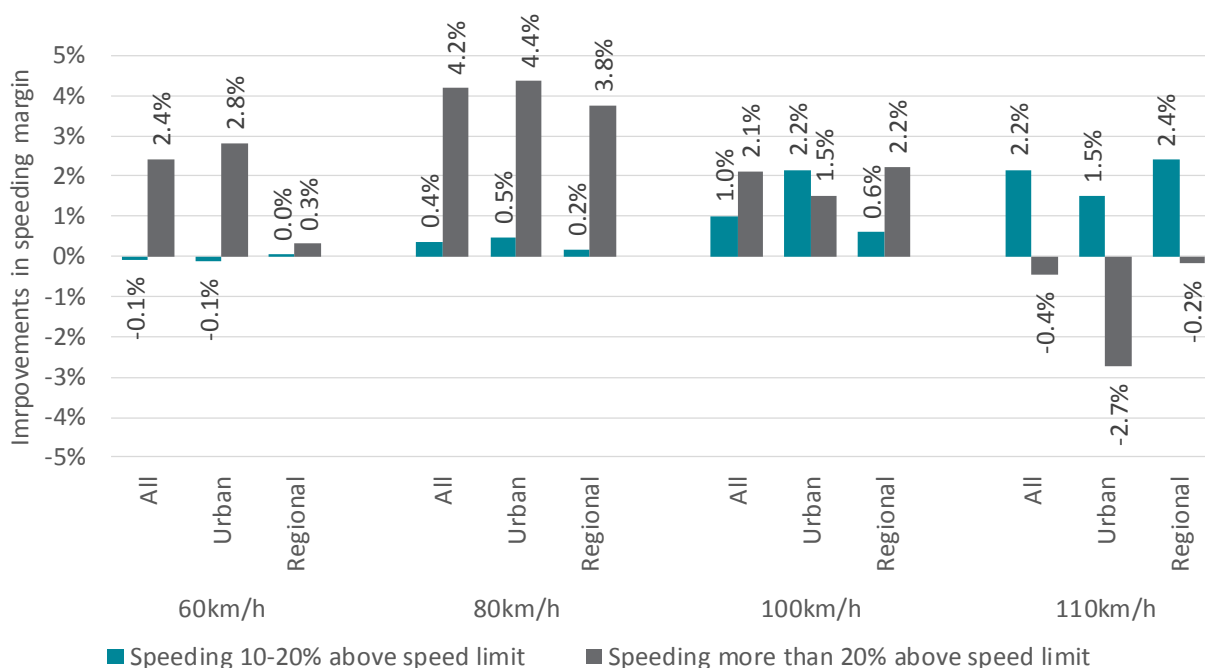
Area	Speed limit	2015	2016	2017	2018
All roads	60 km/h	67.1	67.3	66.6	66.4
	80 km/h	88.5	88.6	87.2	86.7
	100 km/h	107.0	108.1	105.5	104.6
	110 km/h	117.6	118.3	116.5	115.3
Regional	60 km/h	68.1	68.3	67.8	67.6
	80 km/h	89.3	89.6	88.4	87.6
	100 km/h	106.8	107.7	105.3	104.5
	110 km/h	117.7	118.2	116.6	115.4
Urban	60 km/h	67.0	67.1	66.5	66.3
	80 km/h	88.2	88.2	86.7	86.3
	100 km/h	107.7	109.2	106.2	105.1
	110 km/h	117.4	118.3	116.3	115.3

After decomposing speeding into ranges in the same manner as for compliance with speed limits, it is evident that there has been generally less improvement in the average speed when speeding by less than 10 per cent. Higher speed roads did see some improvement, particularly in urban areas, where the speeding margin reduced by 1.1 percentage points in 100 km/h zone and 1.2 percentage points in 110 km/h zone. Average speed when speeding for vehicles travelling up to ten per cent over the speed limit in these zones fell to 104.5 km/h and 114.8 km/h.

In cases where speeding exceeded the speed limit by ten per cent or more, improvements are more visible across most speed zones, including the 60 km/h zone where speeding margins improved by 2.4 percentage points for excessive speeding. The largest overall improvement is in the 80 km/h zone, where excessive speeding speeds fell from 105.3 km/h to 102.0 km/h.

The only exception was the 110 km/h zone, where excessive speeding margins worsened in urban areas. However, vehicles travelling at such speeds represent only a small proportion of all vehicles on 110 km/h roads (around 0.1 per cent), and urban roads with 110 km/h zone are only a very small proportion of the network.

Figure 2.3: Improvements in excessive speeding margins, Queensland, 2015 to 2018



2.5 Worst performing roads in Queensland from a road safety perspective

Finally, we have investigated the ‘worst’ performing roads in Queensland in terms of two metrics, namely:⁴

- the extent of non-compliance with speed limits when speeding was in excess of 10 per cent above the speed limit; and
- average speeding margin by which the speed limits were exceeded.

⁴ We also disregarded road segments where the number of non-compliant hours was less than 365 (ie, equivalent to one hour of data for each day).

To identify the worst performing roads, we have calculated non-compliance and average speeding margin across all road segments in Queensland and then aggregated the results for each SA2 geographical area and road name. This allows us to identify those roads that have a large number of segments that rate poorly on our two metrics, and to rank them accordingly.

Table 2.4 ranks the top 10 worst performing roads from a speed safety perspective in 2018.

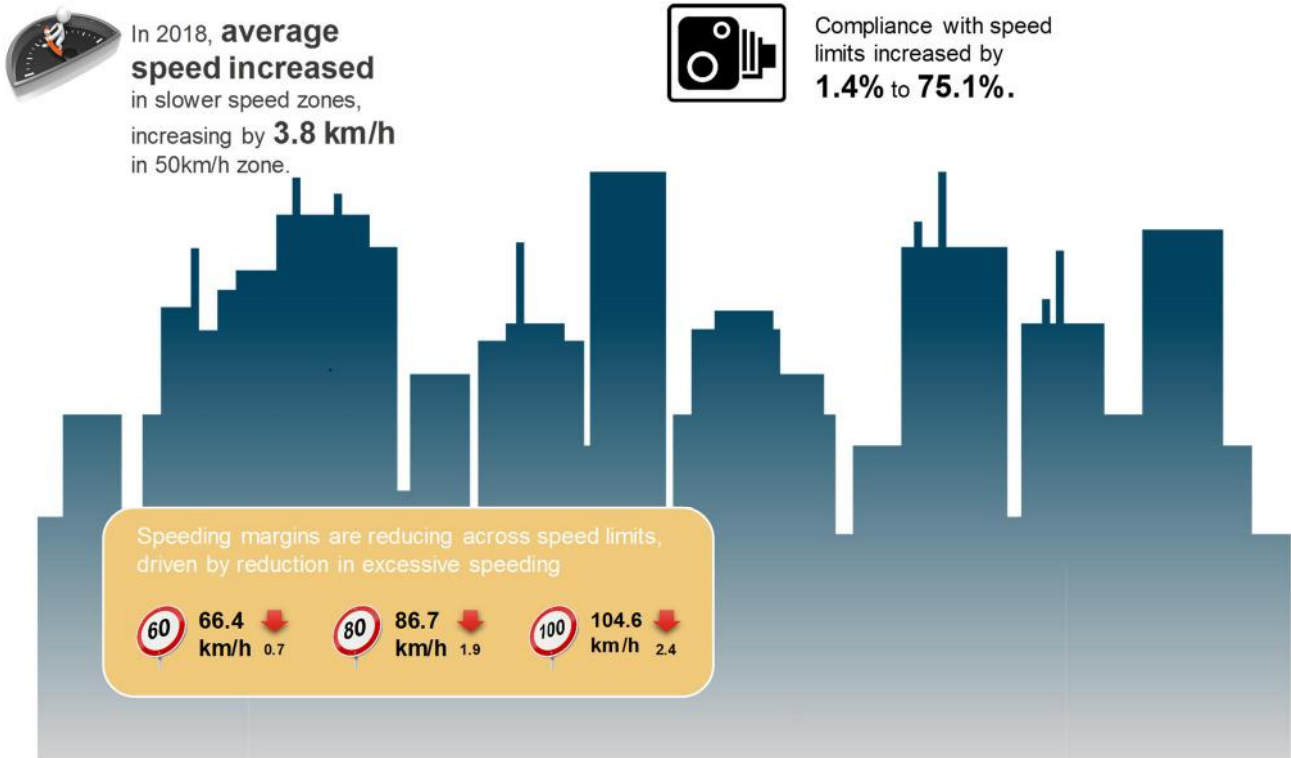
Table 2.4: Worst performing speed safety roads in Queensland, 2018

Rank	Road name	Statistical Area Level 2
1	Peak Downs Highway	Broadsound - Nebo
2	Teviot Road	Greenbank
3	Mount Cotton Rd (State Highway 45)	Sheldon – Mount Cotton
4	Beaudesert Nerang Rd	Tamborine – Canungra
5	Maudsland Road	Oxenford - Maudsland
6	Cunningham Highway	Boonah
7	Bruce Highway	Gympie - North
8	Beenleigh Redland Bay Rd	Cornubia - Carbrook
9	Bruce Highway	Gympie Region
10	Bruce Highway	Babinda

Applying the above ranking, we have identified a list of 100 ‘worst’ roads in Queensland (see Table A3.11 in the appendix). It is important to note that, while the top 10 worst roads clearly stand out in terms of number of segments, the rankings become less clear once we go further down the list.

Further in-depth analysis can be performed to establish a more precise measurements of speed performance of roads, but that was not within scope of this report.

3. Road speed performance in Brisbane



3.1 Average speed increases in 2018 for slower speed zones in Brisbane

Average speeds across slower speed zones have increased in 2018, reversing the declines that happened between 2015 and 2016, and speeds in 50 km/h and 60 km/h zones are now above the 2015 levels. However, this is not the case for faster speed zones, where speeds still remain below 2015 speeds, particularly on roads in 100 km/h zones (a 4.1 per cent fall to 85.0 km/h).

Table 3.1: Average speeds for key speed zones, Brisbane, 2015 to 2018

Speed zone	2015	2016	2017	2018
50 km/h	19.4	17.2	18.5	22.3
60 km/h	39.2	38.9	39.0	40.6
80 km/h	65.1	63.8	64.0	65.0
100 km/h	88.6	86.8	85.3	85.0

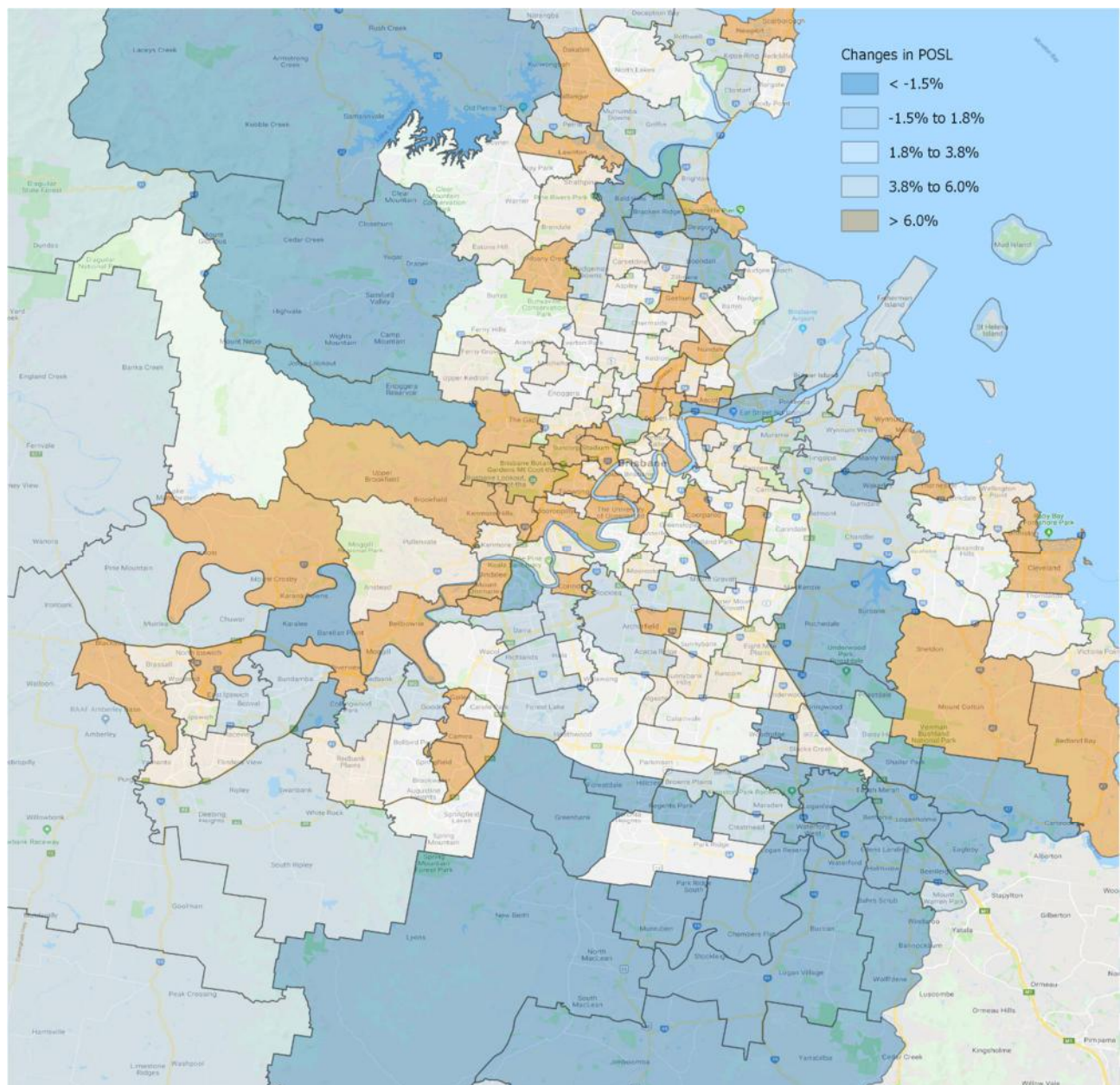
While overall the percentage of speed limit increased from 60.0 per cent to 61.6 per cent in Brisbane between 2015 and 2018, there was a large difference between arterial and local roads. The percentage of speed limit on arterial roads increased slightly from 76.1 per cent to 76.8 per cent, driven largely by increasing speeds on 60 km/h roads. On local roads, the percentage of speed limit increased from 50.5 per cent to 54.8 per cent, with significant rises in 50 km/h and 60 km/h zones.

Figure 3.1 below shows changes in percentage of speed limit since 2015, with increases in percentage of speed limit shaded green and decreases shaded red. In particular, figure 3.1 shows that:

- the areas with largest falls in percentage of speed limit were Karalee - Barellan Point, New Chum, Wolffdene - Bahrs Scrub, Greenbank and Eagleby; and
- the areas with largest increases in percentage of speed limit were Scarborough - Newport - Moreton Island, Sheldon - Mount Cotton, Woolloowin - Lutwyche, Westlake and New Farm.

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Figure 3.1: Change in percentage of speed limit by SA2 area, Brisbane, 2015 to 2018



3.2 Compliance with speed limits is improving in Brisbane

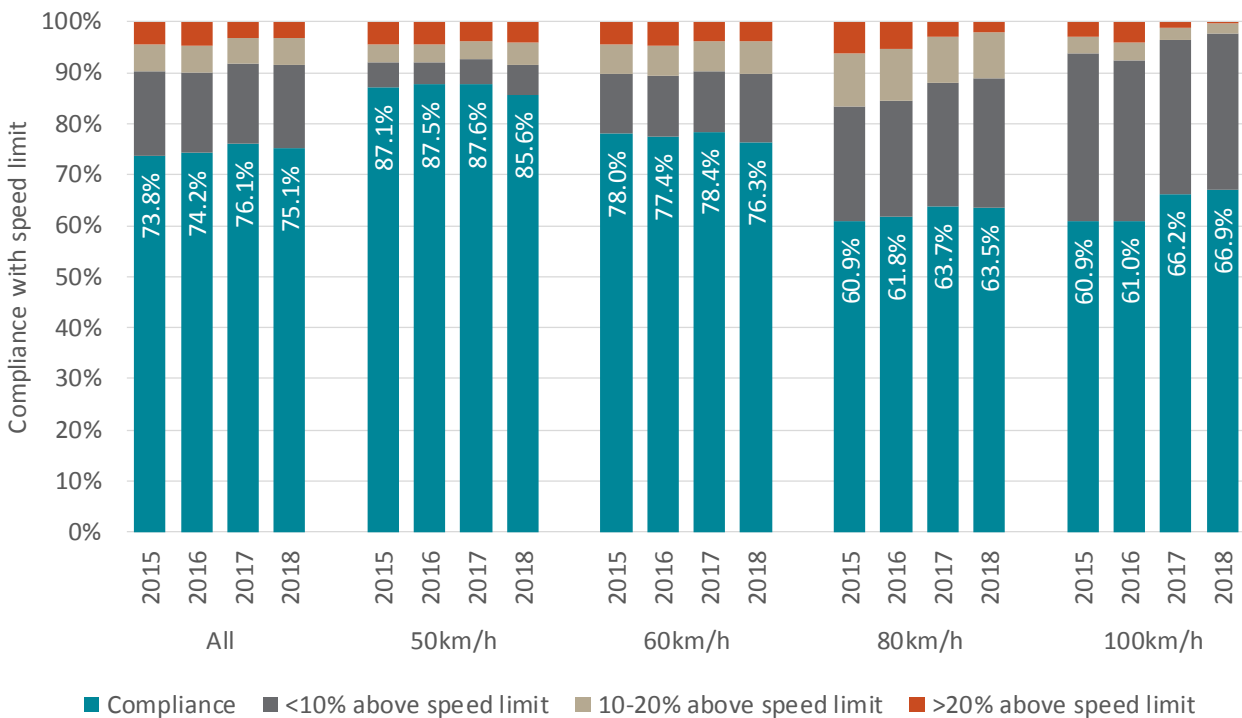
Compliance with speed limits in 2018 for Brisbane was 75.1 per cent, which represents an increase of 1.4 per cent relative to 2015.

While arterial roads have lower compliance at 68.4 per cent, they are showing improvement of 1.5 per cent since 2015. The largest improvement is in the 100 km/h zone, where compliance increased by 5.2 percentage points.

Compliance with speed limits on local roads, reaching 81.0 per cent in 2018, is much higher than compliance on arterial roads. However, this represents a decline in compliance relative to 2015, and is driven mainly by declines in slower speed zones.

Most of the reduction in speeding has been driven by a reduction in excessive speeding, a trend that is evident across the whole of Queensland.

Figure 3.2: Compliance with speed limits, Brisbane, 2015 to 2018



Based on compliance with speed limits in 2018:

- the highest complying areas are Spring Hill, Balmoral, West End, East Brisbane, Fortitude Valley, Bulimba, Woodridge, Sherwood, South Brisbane and Annerley, all with compliance greater than 90 per cent; and
- the lowest complying areas are New Chum, Sheldon / Mount Cotton, Burpengary East, Ipswich North, Wamuran, Riverview, Chambers Flat / Logan Reserve, Boronia Heights / Park Ridge and Lockyer Valley East.

Figure 3.3 shows that most areas in Brisbane had increasing compliance with speed limits between 2015 and 2018, with the exception of parts of west, south-west and south-east Brisbane.

Based on improvements in compliance with speed limits from 2015 to 2018, the following are the top and bottom ten areas:

- the most improved areas in terms of compliance are Nudgee - Banyo, Parkinson - Drewvale, Hamilton, Browns Plains, Beachmere - Sandstone Point, Bracken Ridge, Eagleby, Redland Islands, Loganlea and Calamvale – Stretton, with an average improvement in compliance of 16 per cent; and
- the areas where compliance has worsened are Sheldon - Mount Cotton, Wamuran, Redbank Plains, Mount Coot, Pinjarra Hills - Pullenvale, Ormiston, Carina Heights, Westlake, Brookfield - Kenmore Hills and Cannon Hill, with an average decline in compliance of 11 per cent.

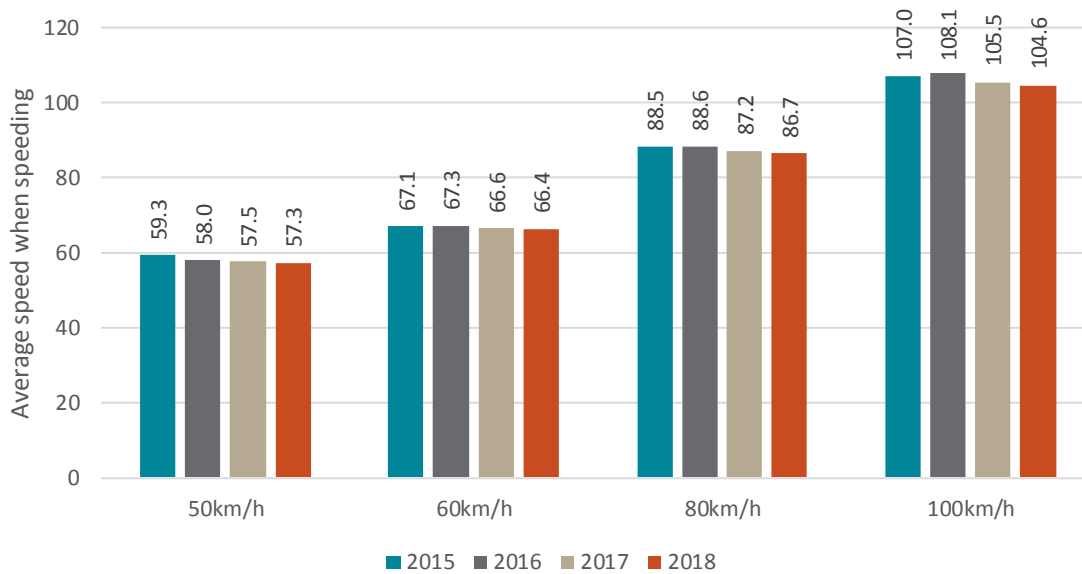
Figure 3.3: Changes in compliance with speed limits, Brisbane, 2015 to 2018



3.3 Average speed when speeding is declining

In line with the Queensland-wide results, Brisbane also experienced a consistent reduction in speeding margins across all speeding zones.

Figure 3.4: Average speed when speeding, Brisbane, 2015 to 2018



The main driver behind the improvement is again the reduction in speeding margins in excessive speeding (ie, speeding in excess of 20 per cent above the speed limit). There were improvements across all speed zones.

The least improved speed zone was the 60 km/h zone, where average speed when speeding excessively improved by only 0.7 km/h to 66.4 km/h in 2018. The most improved speed zone was 100 km/h, with the improvement of 2.4 km/h reducing the average speed down to 104.6 km/h.

Brisbane areas where there was most improvement in excessive speeding margins are Springfield, Loganlea, North Ipswich - Tivoli, Redcliffe, Daily Hill, Seventeen Mile Rocks - Sinnamon Park, Browns Plains, Chermside, Stafford and Nudgee – Banyo.

Areas where excessive speeding margins increased were St Lucia, Fairfield – Dutton Park, Sunnybank, Cannon Hill, Carina Heights, Highgate Hill, Sandgate - Shorncliffe, West End, Holland Park West and Cleveland.

4. Road speed performance across Queensland local government areas

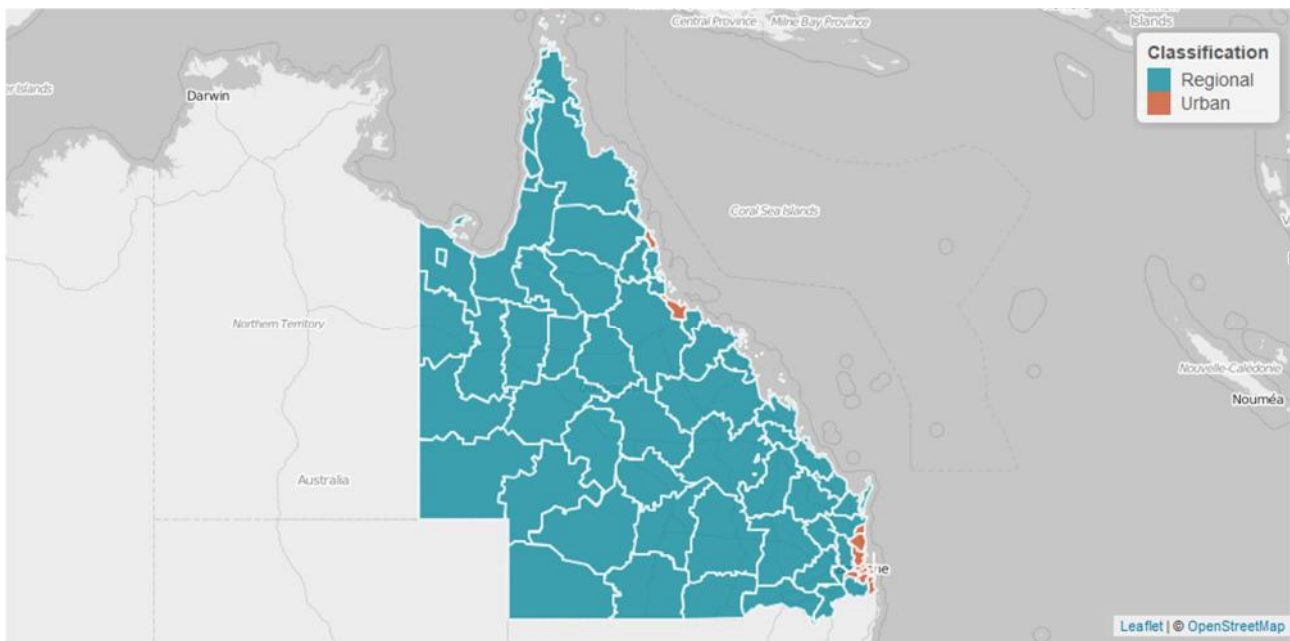
To help us understand differences in road speed performance across Queensland, we have investigated all of the speed metrics across each local government area (LGA) in Queensland. This section sets out the results of our speed analysis across the Queensland LGAs.

4.1 Classification of local government areas into urban and regional

There are 78 local government areas in Queensland, with the breakdown between regional and urban set out in figure 4.1 below. We define a local government area as urban if 50 per cent of the road network (measured in kilometres) within the local government area is designated as urban.

Under this definition, ten local government areas are considered urban – Brisbane, Moreton Bay, Gold Coast, Sunshine Coast, Logan, Townsville, Ipswich, Cairns, Redland and Noosa. The remainder of the local government areas are defined as regional.

Figure 4.1: Classification of local government areas between regional and urban in Queensland



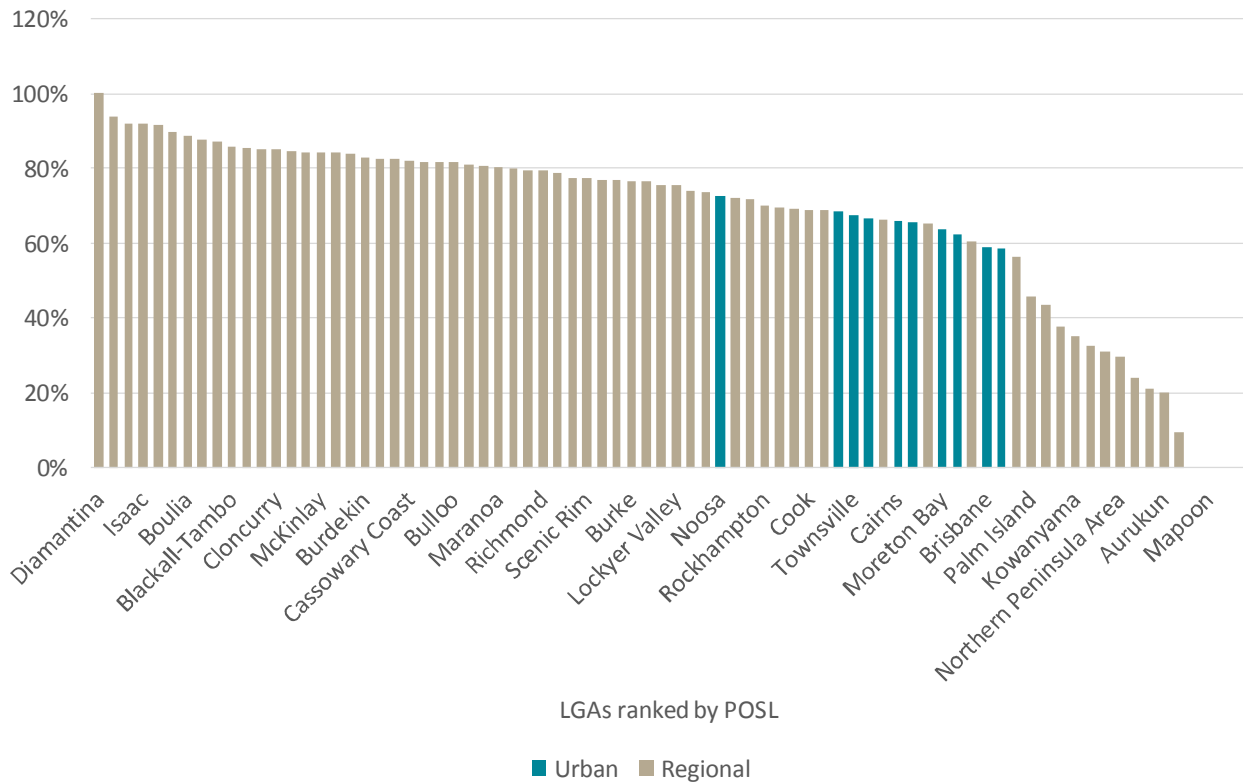
4.2 Percentage of speed limit in urban local government areas ranged between 58.7 and 72.6 per cent in 2018

The percentage of speed limit in the urban local government areas in 2018 ranged from 58.7 (Logan) to 72.6 per cent (Noosa). All urban local government areas, except for Logan, had an increase in the percentage of speed limit between 2015 and 2018.

Regional local government areas display a wide range in percentage of speed limit, consistent with the varied road conditions and environmental factors in these areas. More than half of the regional local government areas had a percentage of speed limit of above 75 per cent in 2018. The majority of them experienced a decrease in percentage of speed limit over the analysis period.

Figure 4.2 shows the percentage of speed limit for each LGA in 2018.

Figure 4.2: Percentage of speed limit by local government area, Queensland, 2018



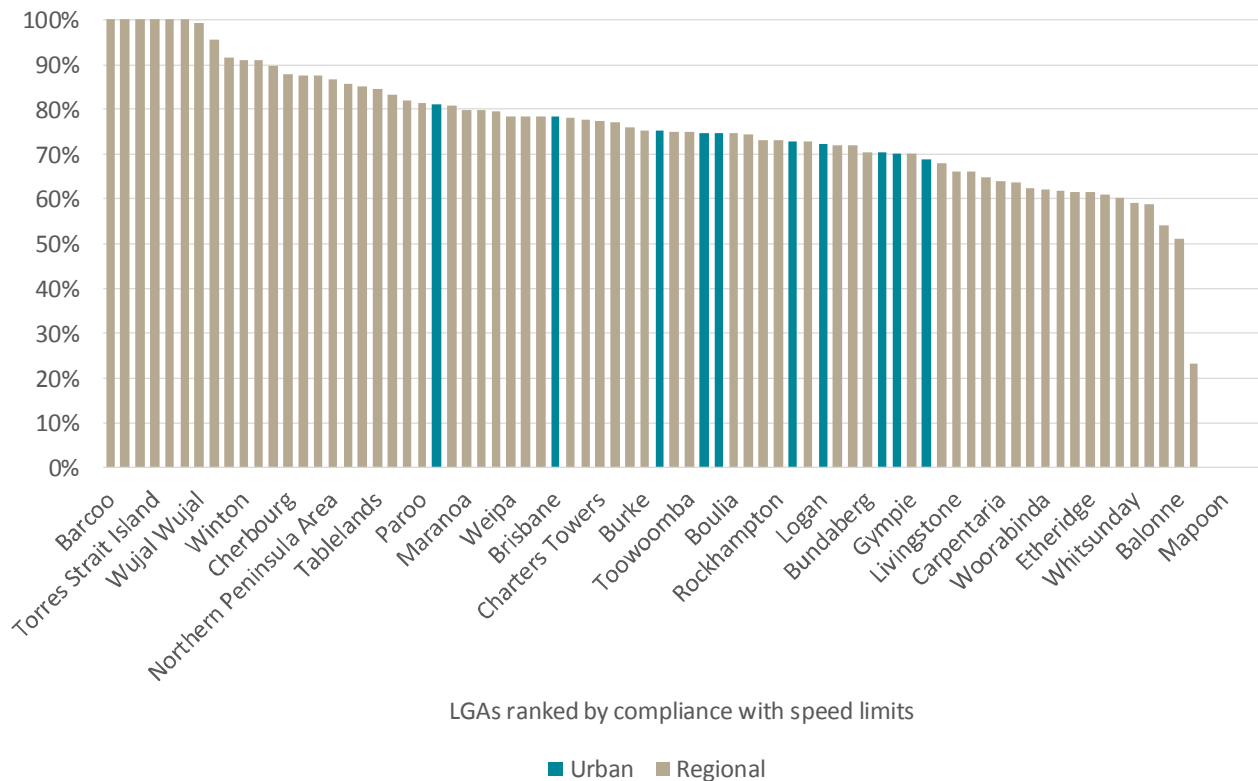
4.3 Compliance with speed limits has been stable for urban local government areas

Compliance with speed limits has generally been relatively stable for urban local government areas, which averaged 73.9 per cent compliance in 2018. Cairns had the highest compliance with 81.2 per cent, whereas Noosa fell from the second highest in 2015 (79.4 per cent) to the lowest across the urban local government areas in 2018 with 68.8 per cent.

Regional local government areas range from highly compliant with speed limits (over 90 percent) to not very compliant, with five local government areas having less than 60 per cent compliance. 22 regional local government areas have higher compliance with speed limits than the urban local government area with the highest compliance.

Figure 4.3 shows the range in speed compliance across local government areas in 2018.

Figure 4.3: Compliance with speed limits by local government area, Queensland, 2018



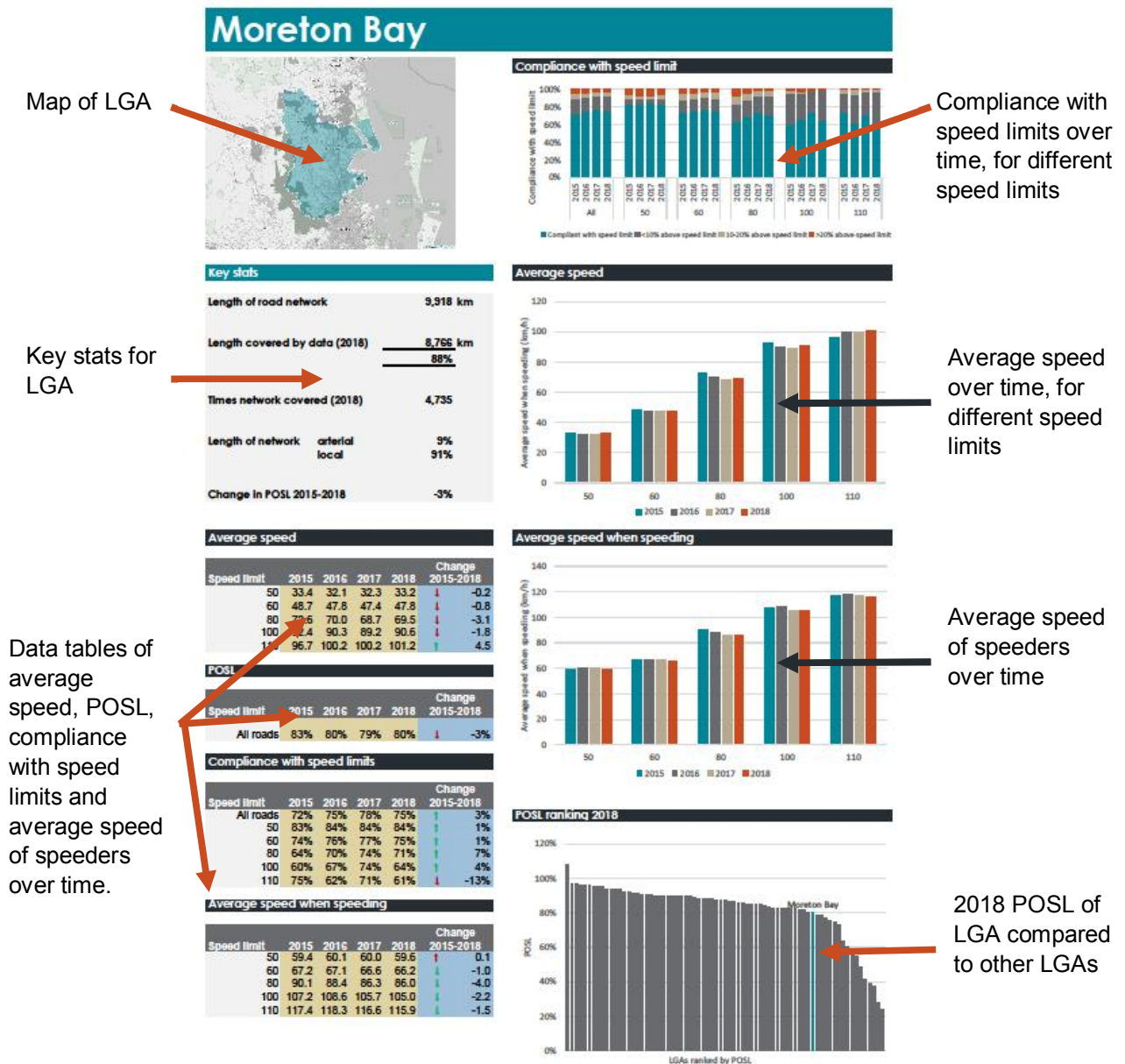
4.4 Individual local government area results

For each local government area, we have prepared an information page summarising road performance over time. The page includes:

- four charts, comprising of:
 - > compliance with speed limit;
 - > average speed;
 - > average speed when speeding; and
 - > percentage of speed limit ranking, which ranks each local government area by percentage of speed limit in 2018;
- four data tables which show:
 - > average speed;
 - > percentage of speed limit;
 - > compliance with speed limits; and
 - > average speed when speeding;
- key stats for the local government area, including the length of the roads network and what proportion of the network is comprised of arterial roads; and
- a map of the local government area.

Figure 4.4 below shows an example information page for Moreton Bay. One page summaries are separately provided for each local government area.

Figure 4.4: Example local government area speed performance summary



5. Observations and further analysis

In this report we have analysed the speed performance of Queensland's road network by focusing on comparisons of trends in average speed and compliance with speed limits, and reporting it at the Queensland, greater Brisbane and local government area levels. However, much deeper analysis can be performed using GPS speed probe data when focusing on specific risk areas, particularly when combined with other data sources containing information on accidents or other factors that impact on traffic.

In this section we provide recommendations on additional uses of HERE data to provide further insights into the performance of the road network in Queensland and to assist TMR with their road safety initiatives.

Such additional analysis can be used:

- to perform more in-depth analysis of speed performance for more granular parts of the road network;
- as an input into infrastructure investment and planning; and
- as an input into road safety initiatives.

These benefits are summarised in Figure 5.1 below.

Figure 5.1: Key benefits of additional analysis with GPS speed probe data



5.1 Analysis of peak traffic speed times (traffic analysis)

Metrics have been calculated for this speed survey across all days of the week and spanning all hours in a day. However, the road network, particularly in urban areas, performs very differently depending on the time of day. Morning peak times and afternoon peak times are the busiest times for the road network, while traffic tends to flow much more freely during late evenings and night time periods.

We recommend calculating average speed, the percentage of speed limit and compliance with speed limits metrics using the following dimensions:

- AM Peak and PM peak hours;
- weekdays excluding public holidays; and
- weekends including public holidays.

Calculating the metrics using these dimensions will allow for deeper insights in traffic patterns and speed performance, allowing for more detailed application of the data.

Relevantly, this will also provide insights on:

- the extent to which AM and PM peak periods are lengthening over time;
- speed performance by the time of day, and whether there are systematic times where action to improve speed outcomes might be targeted; and
- to prioritise the timing of compliance efforts to improve speed compliance.

5.2 Analysis of point-to-point routes (traffic analysis)

The speed analysis undertaken as part of our study, has focused on understanding trends in speed performance for geographic areas and defined road types (ie, arterial and local roads).

In addition to this analysis, it would be possible to analyse speed performance for specific point-to-point routes.

An example would be to investigate say the Brisbane Airport to CBD route, a route that most visitors flying into Brisbane would experience. In addition to providing average speed and the percentage of speed limit across the route, and providing insights into compliance with speed limits, this analysis would also allow for a consideration of how travel times have changed across the route. This could be expressed in terms of the number of minutes gained/lost for the whole route or per each 5km of the journey.

Additional examples might be to monitor other important or commonly used routes (eg, routes in the Port of Brisbane, etc). Indeed, a bundle of routes could be identified to provide TMR with a performance metric that is based on high-priority routes to support other road transport objectives for government.

We recommend selecting a number of commonly travelled routes for analysis, including an airport to CBD route, typical weekday commutes to and from work as well as some weekend travel, and setting up regular monitoring and reporting of road conditions.

5.3 Monitoring and analysis of P2P cameras (investments and planning)

Point-to-point (P2P) cameras (also known as average speed cameras) are a relatively recent form of speed enforcement that measures sustained speeding over distances, as opposed to transitory speed of a vehicle at a particular point on the road and establish minimum travel time over a specific distance.

With HERE data, we can analyse potential locations for P2P cameras by providing historical P2P route analysis, as well as analysis of surrounding roads. Results of this analysis would provide an input into the prioritisation process for establishing the P2P camera sites.

Additionally, we can analyse the impact of existing P2P cameras on average speeds before and after the cameras, to determine whether drivers are resuming speeding outside of the specific route or whether the camera has a wider ranging effect on driver behaviour.

5.4 Accident impact analysis (investments and planning)

Even the smallest of accidents can cause significant delays on roads, adding to congestion and extending travel time. With HERE data coupled with data of events that impact traffic (primarily accidents, but this can also include events such as concerts and large sports events), we can analyse what impact accidents have on road conditions and develop a framework for estimating the impacts.

Defining impacts of accidents involves defining “normal” (accident free) road conditions, analysing the impact of the accident on usual metrics, as well as determining how long it takes for post-accident conditions to return to normal.

In addition, it would be possible to undertake ex-post evaluations of accident clearance protocols to determine the relatively effectiveness of such protocols.

The results of this analysis could be used as an input into planning of improving road signage, installation of traffic controls, prioritisation of certain parts of the road network for improvement and installation of cameras. Another potential use would be for planning for the availability and location of tow trucks during high peak times.

5.5 School zone and other key risk area analysis (road safety)

HERE data can be utilised to analyse and monitor speeds at which vehicles are travelling not just through immediate school zones, but also in adjacent roads, to help identify key areas where children are at risk of high vehicle speeds.

One approach to readily accessing this data would be to build a dashboard which would allow TMR, and potentially other interested users such as school administrators, to monitor the vehicle speeds on school roads on an ongoing basis, to be proactively aware of any concerning trends and demonstrating the efficacy of any features implemented to improve the safety of school zones. Such a tool would be helpful both for road safety policy development, and to build objective awareness of school zone road safety trends over time.

5.6 Prioritisation of speed compliance and enforcement activity (road safety)

By matching accident data to speed data at a road link level, we believe that it would be possible to identify specific locations of relatively higher accident risks associated with speeds. This could in turn be used to assist with planning and prioritising police enforcement activity, as well as monitoring how effective the enforcement activity has been at improving speed compliance.

We believe that such prioritisation in combination with the annual speed compliance analysis will provide the tools necessary to target speed compliance efforts to areas of greatest risk, thereby improving compliance for the same enforcement effort.

A1. Appendix – Comparative analysis of survey methodologies

In this appendix, we set out the results of our comparative analysis of the speed survey methodology used in this report, and the methodology that has previously been used.

A1.1 Description of the previous speed survey methodology

The previous speed survey methodology has been developed based on the availability of data from TMR's pneumatic tube speed data collection sites. This section provides a brief overview of the current methodology.

Data sources

There are two sources of survey data that have been used for the speed survey, namely:

- binned survey data from selected TMR sites, and
- individual vehicle speed data from commissioned survey sites.

TMR's binned survey data

TMR conducts traffic surveys, primarily for the purposes of measuring traffic volumes, at a large number of set sites across the state using pneumatic tubes laid across the road. A subset of these sites is used for the purpose of the speed survey, with the aim of reflecting the population distribution around Queensland.

A minimum of three weeks of data is typically used from each site, although some sites may only have one week of data available. A continuous week of data is selected at each site where possible.

The binned data survey records, for each site, one record per hour. Data recorded consists of:

- site identifier;
- direction of travel;
- date;
- hour of day;
- number of vehicles;
- average speed of all vehicles; and
- number of vehicles in each of the 12 bins of speed.

Due to the nature of the data, an approximation method is used to determine the median and 85th percentile speeds.

Individual data survey

To supplement TMR sites and provide individual vehicle data, a contractor is commissioned to conduct speed surveys at a number of additional sites. Pneumatic tubes laid across the road are used to record data.

These surveys record one line of data for each vehicle passing a site. Data consists of:

- date and time (to the nearest second);
- direction of travel;
- speed (to nearest 0.1 km/h);
- wheelbase of vehicle (to nearest 0.1 m);

- headway (to nearest 0.1 second);
- gap (to nearest 0.1 second);
- number of axles; and
- vehicle class (based on number of axles and wheelbase).

Survey site selection

Speed surveys are collected at more sites than included in the final speed survey report. This is because not all sites satisfy the criteria used for site selection for the purposes of the previous speed survey methodology. The methodology guideline requires sites not to be within 500 meters of an intersection, on a steep gradient, subject to major seasonal variation (such as flooding), likely to undergo change in layout in the near future, or be too close to another site. Any sites with these characteristics are excluded from the speed survey.

In addition, some of the sites suffer equipment malfunction, resulting in a failure to collect data or collecting incomplete data that is unusable for the survey. Sites may also become unsuitable for further data collection because of changes in speed limits or changes in road layouts near the site, which result in the site no longer being eligible for the survey. To counter some of these problems with sites becoming unsuitable for survey purposes, new sites are being added over time, as well as some old sites are being rezoned and treated like new sites.

For the purposes of the survey, sites are categorised by speed limits and remoteness (major cities, inner regional, outer regional, remote and very remote), and each speed zone would ideally be analysed for each remoteness category. However, in practice this is not possible because there are not enough sites available to produce meaningful results. As a result, the analysis by remoteness category was performed across all speed limits, while 50km/h roads were only analysed for major cities and inner regional areas.

Survey time periods

Speed surveys are conducted once a year over a period of up to three weeks, with an aim to produce one continuous typical week of data for each site. To observe speed trends through time, the periods used need to be consistent. During the early periods of data collection, surveys were conducted at inconsistent times across 50 km/h and 60-100 km/h zones, making providing a consistent and wholistic picture of the road network difficult. However, in the recent years inconsistencies resulting from timing differences have been minimised through better collection of data.

Previously, surveys were conducted during the months of May and June.

A1.2 Comparative analysis methodology

To evaluate the alternative speed survey methodologies, we considered how the survey methodology used in this report, using probe data compared to the current speed survey methodology in terms of:

- road network coverage of the data;
- consistency of the speed results;
- the insights that can be obtained; and
- any limitations with the speed probe data.

We set out the results of this comparison in greater detail below.

Comparison of road network coverage and the underlying datasets

A key difference between the two speed survey methodologies arises from differences in the network coverage of the underlying speed data.

The previous methodology relied on data collected from TMR's pneumatic tube sites, which are sampled to provide coverage of road networks to be representative of speeds across the entirety of the road network. The number of survey sites are limited across the network, and particularly in remote areas. This results in some statistical analysis being not feasible in those areas due to low sample sizes. Even when sites are available, not all sites are included into the analysis because of equipment failure or changes in road configuration that impact the site selection criteria. By necessity, the data is collected to be a representative snapshot for the year, in May and June. Changes in sites between years have the potential to affect the observed trends in speed over time.

In contrast, the HERE probe data is based on traffic observations across the entire year and across every road across the entire road network. It follows that the HERE probe data provides significantly greater road network coverage compared to the current speed survey data, and also reflects speeds across the entirety of the speed survey year.

By way of a comparison, the 2016 speed survey was performed using data collected from 189 sites, which collected 189 thousand observations. In 2017, the HERE speed data had 805 million speed observations across the entire road network.

It follows that the HERE probe data:

- provides extensive coverage of the Queensland road network, and so is more likely to be representative of actual speed trends in contrast to the current speed survey data;
- does not suffer from possible trend problems resulting from changes in the survey sites; and
- allows the speed survey to provide more granular geospatial insights on speed across the Queensland road network than is possible from the current survey methodology due to data limitations.

Comparability of the probe speed data with current speed data

In 2017, HoustonKemp was engaged by TMR to analyse and interpret speed probe data against previous speed tube surveys, along with analysing potential uses of the speed probe data to assist in maximising road safety outcomes in Queensland. The approach was to replicate the results of the TMR survey data using HERE data, which involved matching the two datasets.

One of our main findings was that the observed HERE data speeds were statistically lower than TMR survey data speeds. This difference was explained due to the differences in measurement of speed, namely:

- HERE data measures traffic average speed across the length of a link, which includes the deceleration, acceleration and a stop, start nature associated with any road characteristics such as intersections, merging traffic lanes and pedestrian crossings; while
- tube surveys measure speed at a single point and, since tubes are placed mid-way between intersections, pick up cars when they are free flowing.

This results in HERE data speeds being lower than the comparable tube survey data.

That said, we were able to demonstrate that the HERE data speed trends were consistent with those observed from the tube survey sites, and the HERE data was able to demonstrate changes in speed arising from road incidents, or other road disruptions.

The following sections describe the analytical work performed to support this conclusion.

Summary of matching survey data and HERE data

The HERE data and survey data at a given site were matched on the basis of travel direction and the hour of the day. There are 189,531 observations in the survey data, across 189 sites. Of these, 51,082 observations (approximately 27 per cent of total observations) across 176 sites could be matched to HERE data. The proportion of survey observations that could be matched to HERE data by site are set out in Table A1.1.

Table A1.1 Proportion of survey observations that can be matched to HERE data, by site

Proportion of survey observations without HERE matches (%)	Number of sites (percentage of total observations)
0	13 (6.9%)
0 to 10	71 (37.6%)
10 to 20	23 (12.2%)
20 to 30	19 (10.1%)
30 to 40	22 (11.6%)
40 to 50	10 (5.3%)
50 to 60	12 (6.4%)
60 to 70	11 (5.8%)
70 to 80	6 (3.2%)
80 to 90	1 (0.5%)
90 to 100	1 (0.5%)

Comparison of speed distributions of the two datasets

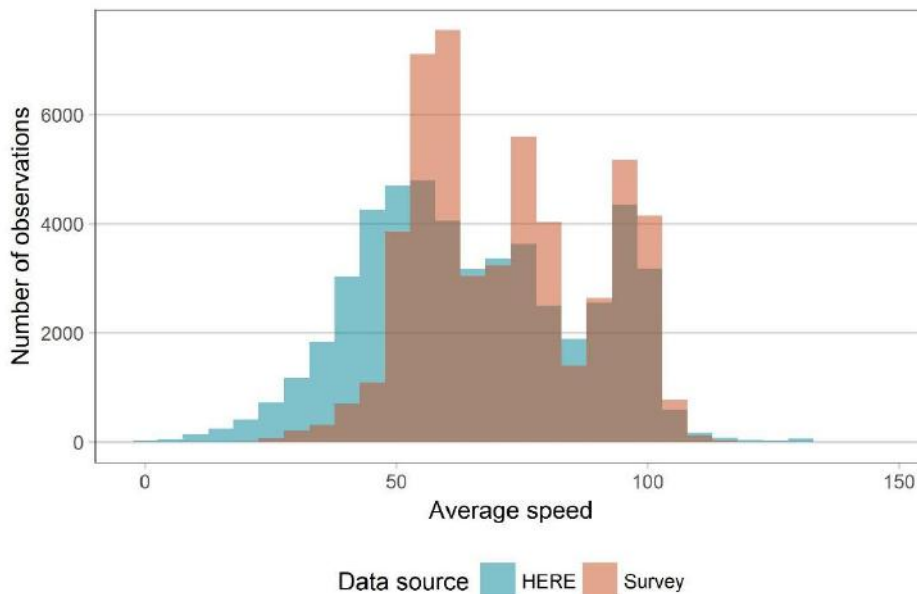
A matched observation contained two speeds for a given location, direction and hour, averaged across vehicles recorded within the hour; one computed from HERE data and one computed from TMR survey data. To compare the two datasets, we took the difference of the HERE and survey speeds for each observation. These differences were not normally distributed, therefore a nonparametric test – the Wilcoxon signed ranks test – was required to test the differences between the HERE and survey speeds. This test finds whether the median difference of the populations is statistically significant.

The Wilcoxon signed ranks test was undertaken by ranking the absolute value of the differences of the HERE and survey speeds. The test statistic was computed by summing the ranks for all positive differences and comparing this to a critical value drawn from the Z distribution.

The Wilcoxon signed ranks tests the differences of paired observations, as opposed to the differences between two independent populations. As a result of this, it is possible overall distributions may appear to be similar, while the results of the test indicate the median difference is different from zero.

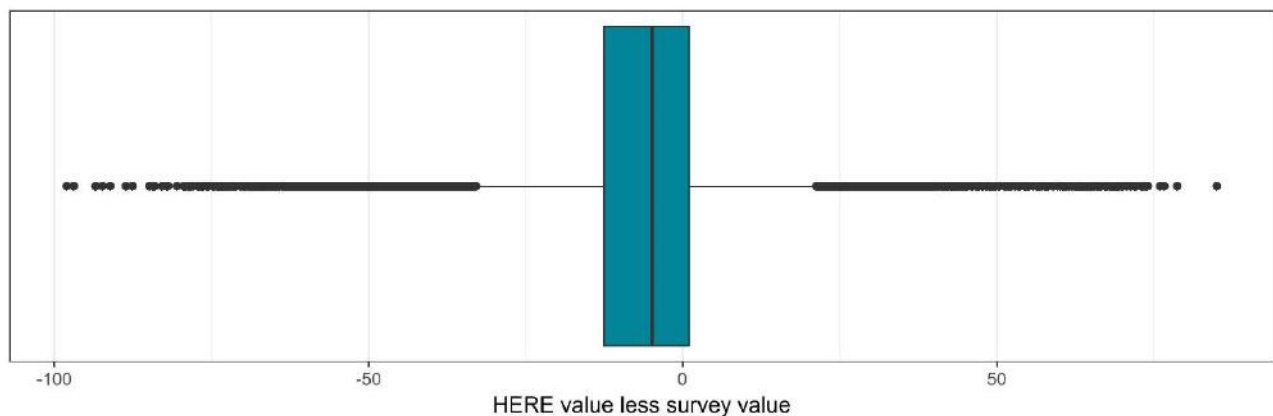
Figure A1.2 shows the distributions of speeds for every matched observation in the sample. There are 51,082 observations for both HERE and survey data. Both HERE and survey data have a trimodal distribution, with modes occurring close to speed limits. The figure shows that HERE data has more observations at lower speeds, relative to the survey data.

Figure A1.2: Distribution of average speeds from HERE and survey data



The differences between matched observations are shown in Figure A1.3. This boxplot shows the distribution of differences between an observation’s HERE speed and survey speed. The median value, represented by the black vertical line in the middle of the box, is less than zero, which suggests that HERE speeds are less than survey speeds for a given site. The plot also shows the 25th and 75th percentile differences, which are represented by the left and right sides of the blue box, respectively, and outliers are represented as a solid dot. Figure A1.3 suggests that the differences between HERE and survey are widely dispersed.

Figure A1.3: Distribution of differences between average speed of HERE and survey data



The results of the Wilcoxon signed ranks test on all matched observations appear in Table A1.2. The null hypothesis was rejected at a 5 per cent level of significance in both the double tailed test and a single tailed test. We concluded that the median difference between HERE and survey data is negative ie, the HERE speeds are lower than survey speeds.

Table A1.2: Results of Wilcoxon signed ranks test

Null	p-value	Reject null hypothesis in favour of alternative at 1% level of significance?	Interpretation
Median difference is zero	0.000	Yes	The median difference between HERE and survey data is not zero
Median difference is greater than, or equal to zero	0.000	Yes	The median difference between HERE and survey data is less than zero (HERE speeds are less than survey speeds)

Comparison of speed distributions by speed limit

But since the speed survey is conducted across multiple speed limits, we needed to check if the observed difference in speed is present in all speed zones. Results of the analysis are set out in Figure A1.4 and Figure A1.5, and are consistent with the analysis on the full matched dataset. The highest difference in average speeds can be found in lower speed zones, which is to be expected because a large proportion of the link is used up by accelerating and decelerating.

Figure A1.4: Distribution of average speeds from HERE and survey data, by TMR survey site speed limit

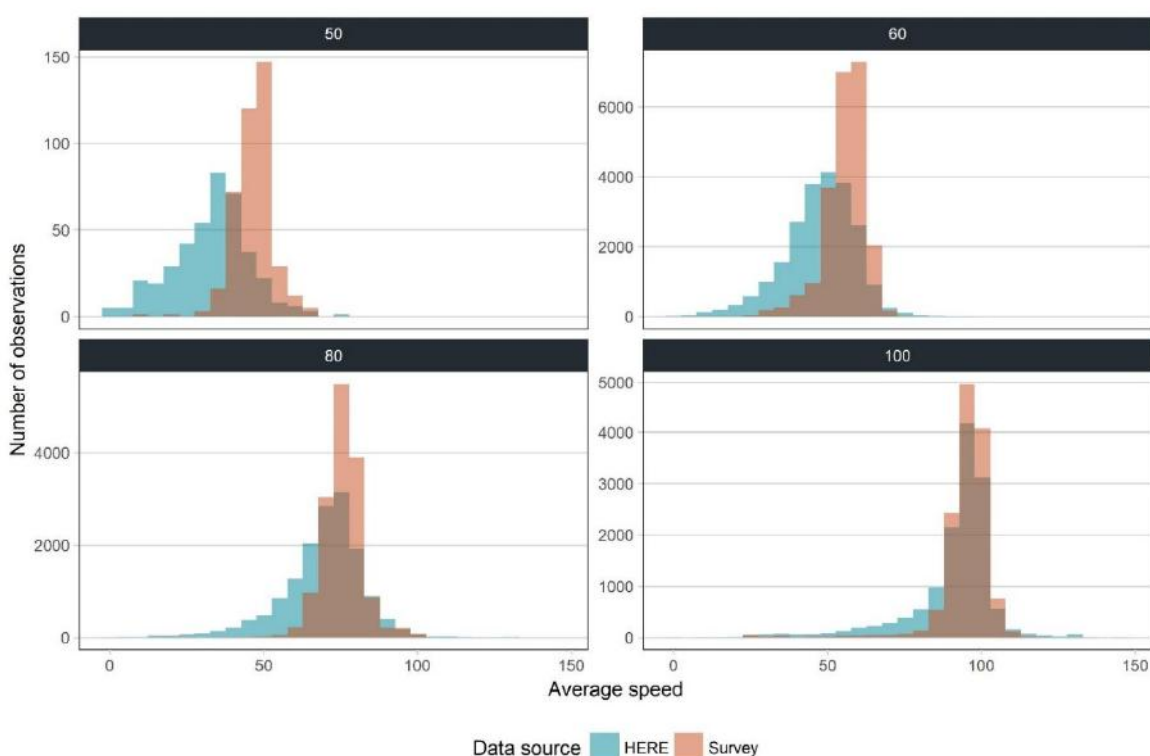
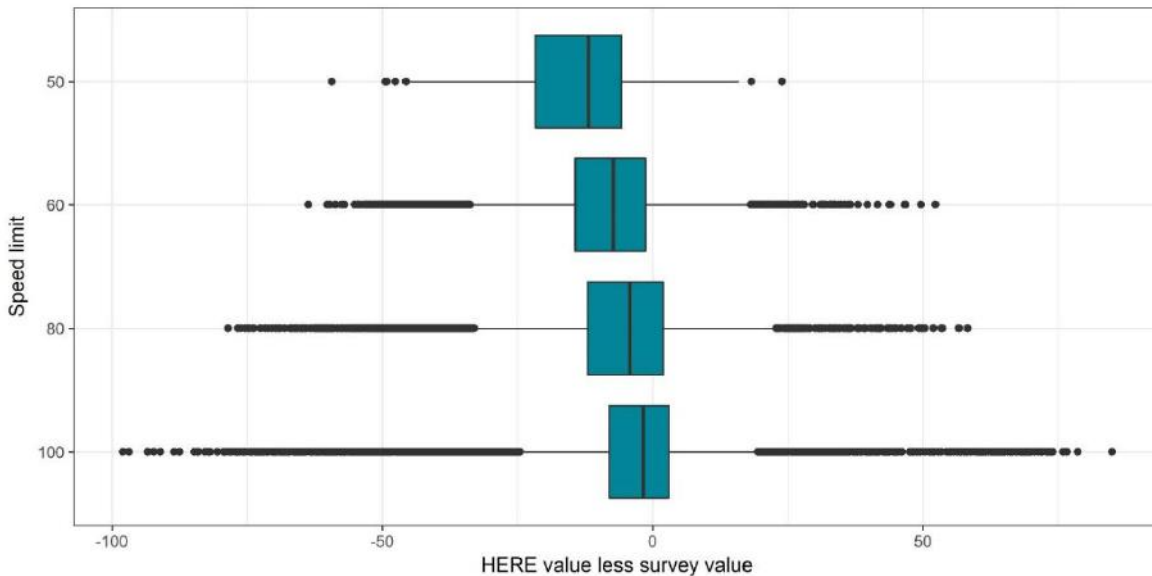


Figure A1.5: Distribution of differences between average speeds of HERE and survey data, by TMR survey site speed limit



The Wilcoxon signed ranks test was performed on each subset of data, and confirmed that, at all speed limits, HERE speeds are statistically lower than survey speeds.

We also performed an analysis of speed distributions across urban and rural roads, by speed limit, only to arrive at the similar conclusion to the previous analysis.

Summary of findings of comparison analysis

Our comparative analysis of the HERE and tube speed data showed that there are some statistically significant differences between the data. Most notable is the difference in average speed, where HERE data is consistently lower than survey data, and that difference persists across all site types and speed limits.

There could be number of factors that could cause the difference in speeds, one being incorrect matching of links or a low proportion of matches during the survey period. After performing analysis on a series of refined samples to add robustness to the analysis, we arrived at the same conclusion, thereby allowing us to reject this as the cause of the observed speed difference.

We believe that the observed differences in speed are a consequence of the way speed data is collected between the two sources. Tube surveys measure speed at a single point, generally away from intersections to capture the speed when traffic is free flowing. In contrast, HERE data captures vehicle’s average speed across the length of the road link, which include characteristics that cause motorists to decelerate or accelerate, such as intersections, roundabouts or pedestrian crossings.

Since HERE data captures those characteristics, while showing lower average speeds, it more accurately represents the conditions encountered by motorists on the road network, and therefore is suitable to be used for the purposes of conducting speed surveys.

Comparison of potential insights from the alternative data sources

The coverage limitations of the existing data speed survey data sources compared with the HERE probe data limits the potential insights that can be obtained from the speed survey. These limitations relate principally to:

- the scope to undertake robust speed trend analysis for specific locations; and

- an inability to undertake advanced analysis of traffic speed by geospatial location and over time.

Scope to analyse speed time trends by location

The data used for the previous speed survey limits the scope to analyse historical speed trends at any location across the road network. Rather, the time trend analysis is limited to the existing survey sites, where those sites have a sufficiently long historical period of data to perform the trend analysis.

Should any new sites be identified for investigation by TMR then data could only be collected going forward and would take years before a historical trend would be available. This limits the immediacy with which speed trend results can be obtained.

In contrast, the HERE probe data provides historical data for any road link across the Queensland road network. This means that a historical trend analysis of speed can be undertaken at any location within the network, allowing the trend results back to 2013 to be available practically immediately. This allows TMR to undertake location specific and focused analysis as part of the annual speed survey, as decided each year and in response to emerging issues.

Analysis of speed by geospatial location and over time

The previous speed survey methodology times the collection of speed data from survey sites to ensure that it provides a good snapshot approximation of traffic speeds across the entire Queensland road network. However, the speed data collection period is only for three weeks with the aim of obtaining one continuous week of clean speed data.

In contrast, the HERE speed probe data is collected continuously across the whole year and is available to download with minimal delay. This allows an in-depth analysis of within year trends, including any seasonality in speed trends, peak and off-peak periods, holidays and long weekends, and major incidents.

Most importantly, having data collected continuously enables analysis that is, in the current methodology, either very costly and requires pre-planning, or simply not possible (as is the case with analysing vehicle accidents). Examples of use cases would be analysing the impacts of:

- infrastructure developments on the road networks, such as addition of traffic lights or roundabouts, or other road traffic calming measures;
- temporary road closures;
- adding point-to-point speed cameras;
- introduction of school zones or changes in speed limits on existing roads; and
- vehicles accidents or breakdowns.

For each of these use cases, HERE data can be used to establish historical trends, analyse the immediate impact at that location and surrounding roads, as well as perform comparative analysis with similar locations on the road network.

Limitations of probe data for the speed survey

While the HERE speed probe data has many data coverage advantages which likely makes it ideal for providing speed survey insights, there are several limitations that should be noted, namely:

- delays with updating of HERE map versions for traffic speed data; and
- the robustness of the HERE speed limit data, in some instances.

HERE speed probe data is provided at the link level which represents a section of road that has a unique road geometry attached to it. As is expected through road developments and changes, these links change

over time to update and reflect any changes in the road network, and the corresponding road geometry of links that have been changed.

When HoustonKemp undertook its first comparison of HERE and speed survey data for TMR in June 2017, we used the 2016Q2 HERE map version. For this report, the version of maps is 2018Q3. This creates a possible problem whereby new roads that may have been commissioned since the map update would not have had data recorded against them under the previous map version. That said, we believe this is unlikely to significantly affect the speed survey results at the level of aggregation that the data is proposed to be reported.

All links identified in the HERE data, under one map version, are observed to have one speed limit for the entire historical period (2013 to 2018). This means that any variable speed limits such as school zones are not captured, and history of speed limit changes to the road network are also not reflected in the data. Having said that, the average speeds recorded are reflective of variable speed limits, and since TMR would probably have a more accurate record of speed zones, we do not believe this to be a concern for the use of the probe data for the speed survey. In addition, there is scope for future surveys to match speed links to TMR data on road speed limits, to provide a more consistent representation of speed limits by road link.



A2. Appendix – Speed survey methodology

In this section, we set out our methodology for using speed probe data to undertake TMR's annual road speed survey. We commence by outlining the objectives for TMR's speed survey, before describing the HERE probe data, our proposed geospatial and time dimensions for the analysis, and the road network speed metrics.

A2.1 Speed survey objectives

We understand that the objective of the annual speed survey is to provide internal and external stakeholders with insights on traffic speed across the road network for a given year and in comparison, to previous years. This information is intended to provide insights on:

- trends in speed performance over time across the entire Queensland road network, and within specific area locations;
- the overall effectiveness of programmes or investments that might have affected traffic speed performance outcomes; and
- locations for possible organisational focus for future programmes or investments to improve future speed performance.

Our speed survey methodology using probe data has been designed to meet these objectives.

A2.2 Description of the HERE speed probe data

HERE Technologies is a leading global navigation system mapping company, developing open location platform technologies that enable people, enterprises, and cities to harness the power of locational information and create innovative solutions.

Originally founded as NAVTEQ more than 30 years ago, the company transforms information from devices, vehicles, infrastructure and other sources into real-time location information. Currently majority owned by a consortium of German automotive companies, the company provides mapping and location services to some of the largest automotive companies in the world (such as BMW, Mercedes, Hyundai, Volkswagen and Toyota).

HERE traffic speed data is built on a database of over one trillion GPS data points, and is available across all roads in 57 countries, including the entirety of Australia. TMR has a licence to use HERE's traffic speed data for the Queensland road network for the period 2014 to the present.

The HERE speed data is provided at a road link level across the entire road network, ie inclusive of highways, arterial roads, and local roads. A road link is defined as the length of road between any two intersections, and so the link length depends on the specific topography of the road network.

For each road link, speed data is available on five, 15 and 60-minute intervals, and for each direction of traffic flow, as appropriate. The specific data fields contained within the HERE traffic speed dataset include:

- average speed;
- confidence indicator;
- minimum and maximum speeds;
- standard deviation of speeds;
- length of the link;
- speed limit;

- sample count; and
- speed percentiles, in five per cent bands.

HERE data currently has more than one million road links defined across the Queensland road network. Road links are categorised into functional classes ranging from Class 1 (high volume, maximum speed traffic) to Class 5 (very low volume of traffic). Full descriptions are available in Figure A2.1 below.

Figure A2.1: Definition of all road functional classes

FUNCTIONAL ROAD CLASS	FUNCTIONAL CLASS DESCRIPTION
1	These roads are meant for high volume, maximum speed traffic between and through major metropolitan areas. There are very few, if any, speed changes. Access to this road is usually controlled.
2	These roads are used to channel traffic to Main Roads (FRC1) for travel between and through cities in the shortest amount of time. There are very few, if any speed changes.
3	These roads interconnect First Class Roads (FRC2) and provide a high volume of traffic movement at a lower level of mobility than First Class Roads (FRC2).
4	These roads provide for a high volume of traffic movement at moderate speeds between neighbourhoods. These roads connect with higher Functional Class roads to collect and distribute traffic between neighbourhoods.
5	These roads' volume and traffic movements are below the level of any other road.

Source: HERE

We have defined links that are categorised as functional class 1, 2 or 3 and have a speed limit greater than 50 km/h as 'arterial roads', and all other links as 'local roads'. Figure A2.2 below shows the map of Queensland with roads in functional class 1 and 2 highlighted in red, and class 3 highlighted in orange.

Figure A2.2: Map of proposed arterial road definition in Queensland



A2.3 Geospatial and time dimensions for the speed survey

The availability of traffic speed data at a road link and five-minute time period, gives us flexibility to choose the geospatial and time aggregation dimensions for reporting within the speed survey. Given the objectives for the survey and its current format, we aggregate the data for:

- Greater Brisbane;
- urban and regional areas;
- local government areas (LGA);
- roads with the same speed limits; and
- calendar year.

In our opinion, this approach strikes the best balance of reporting detail to provide wide coverage of traffic speed trends across the Queensland network. That said, the speed survey results provide insights to inform subsequent, more detailed investigations of speed on point-to-point routes or other geospatial areas, as required.

HERE speed data is available for five-minute, 15-minute and 60-minute periods. We have used the 60-minute aggregated data provided by HERE to generate the proposed yearly metrics for the speed survey. This approach decreases the volume of data that needs to be managed, while also minimising the amount of missing observations on less busy roads. In our opinion, 60-minute intervals are more than appropriate for the purposes of the annual speed survey.

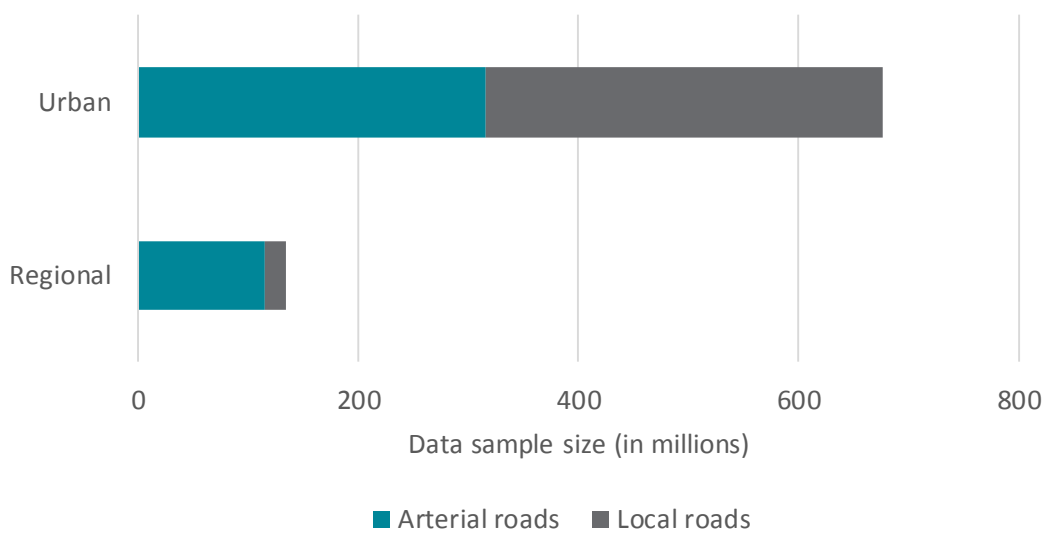
For the purposes of classifying geographical areas as urban or regional, we use Significant Urban Area (SUA) structure of the Australian Statistical Geography Standard (ASGS).⁵ Significant Urban Areas are defined as significant towns and cities of 10,000 people or more. They are based on the Urban Centres and Localities (UCL) but are defined by the larger Statistical Areas Level 2 (SA2s). A single SUA can represent either a single Urban Centre or a cluster of related Urban Centres.

Based on this definition, urban areas include Brisbane, Bundaberg, Cairns, Emerald, Gladstone – Tannum Sands, Gold Coast – Tweed Heads, Gympie, Hervey Bay, Highfields, Mackay, Maryborough, Mount Isa, Rockhampton, Sunshine Coast, Toowoomba, Townsville, Warwick and Yeppoon.

Over the analysis period, on average, urban areas represent 83 per cent of the total dataset. Figure A2.3 illustrates the average size of the dataset for each road classification within the geographical area groupings and road type (arterial or local).

⁵ See ABS, *Australian statistical geography standard (ASGS) volume 4*, cat. no. 1270.0.55.004, available at <http://www.abs.gov.au/ausstats/abs@.nsf/mf/1270.0.55.004>.

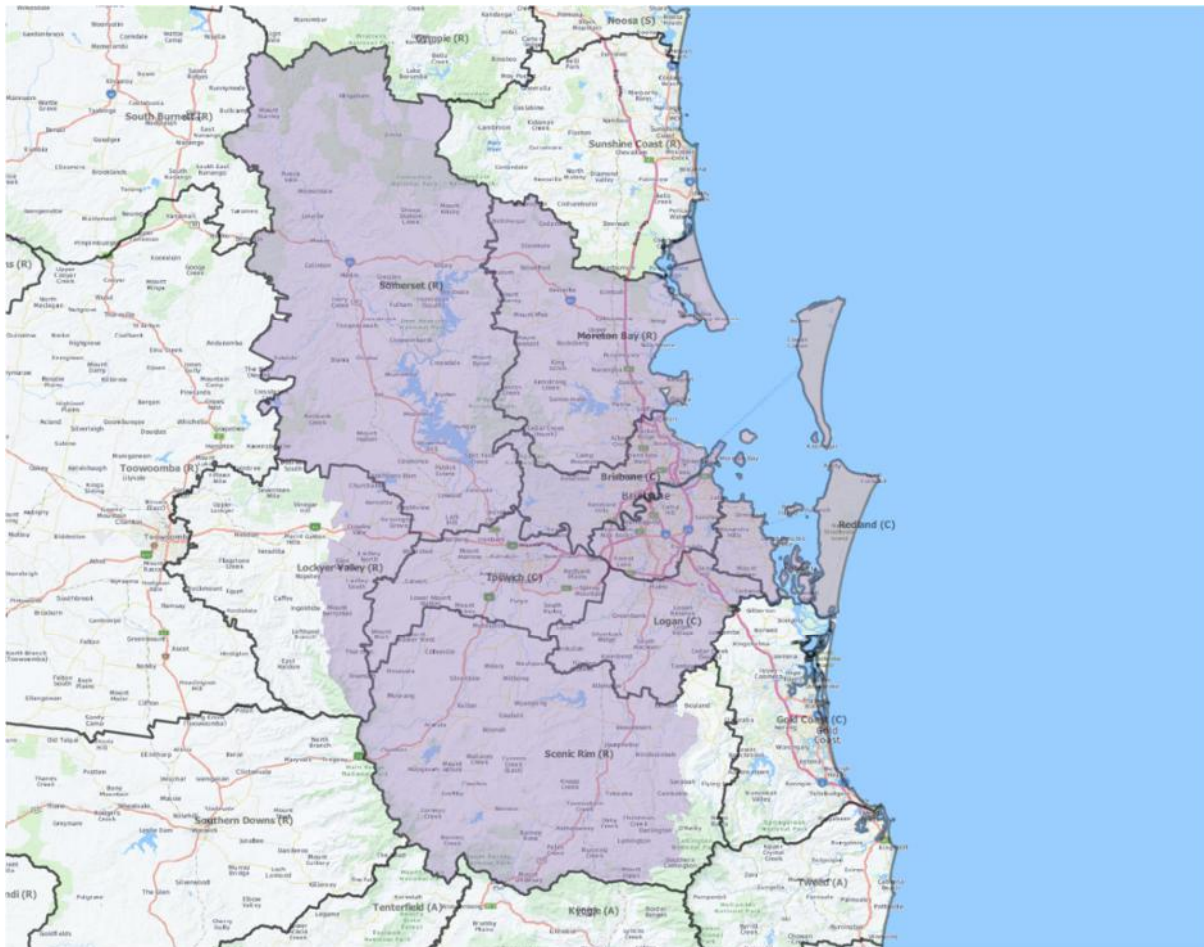
Figure A2.3: Data sample sizes across urban and regional areas, 2017



In addition to the aggregations described above, for the completeness of the report, we have provided summarised metrics for Brisbane using the Australian Statistical Geography Standard (ASGS). Specifically, the Greater Capital City Statistical Area (GCCSA) that captures a much wider area than the LGA definition and provides a more accurate picture of the road network for the capital city.⁶ We have used the GCCSA definition for Brisbane as it is consistent with how other agencies are reporting speed performance results for capital cities.

⁶ See ABS, *Australian statistical geography standard (ASGS) volume 1*, cat. no. 1270.0.55.001, available at <http://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/1270.0.55.001>.

Figure A2.4: Greater Brisbane compared to local government area definitions



A2.4 Proposed traffic speed survey metrics

We report four key speed metrics for the survey, namely:

- average speed;
- percentage of speed limit;
- compliance with speed limit; and
- average speed when speeding

We explain these metrics in greater detail below.

Average speed

HERE data provides, for each road link, an average speed of all vehicles driving on that link during that hour, as well as the length of that link. Since speed is defined as distance travelled per unit of time, we also calculate average travel time for that link.

To calculate an average speed for more than one link (whether that is a route, an LGA, or for the entire road network), we simply **divide the total distance travelled by the total travel time**.

Equation 1 sets out the formula to estimate average speed for a given geospatial area or set of road links.

Equation 1: Average speed for a given area

$$(1) \quad \text{Average speed}_{\text{time period}(t)}^{\text{area}(\text{link})} = \frac{\sum_{t=1}^m \sum_{\text{link}=1}^n \text{length}_{\text{link}}}{\sum_{t=1}^m \sum_{\text{link}=1}^n \text{travel time}_{\text{link}}}$$

Where:

- *length* is the length of a road link in kilometres;
- *travel time* is average implied travel time calculated from average speed and length of the link
- *area* is a defined set of road links within a geospatial area (eg, an LGA). The set of road links may be further grouped into those with the same speed limit;
- *time period* is the period over which average speed is being aggregated, (eg, 2017);
- *t* is an hour within the *time period*;
- *m* is the number of hours within the defined *time period*.
- *link* is a road link within the defined *area*; and
- *n* is the total number of road links within the defined geospatial area.

Percentage of speed limit

Comparisons of average speed between areas provide relatively little insight on road performance because observed differences are likely to reflect both differences in the combination of speed limits within the road network of the area, as well as road congestion and configuration.

This problem can be addressed in two ways, namely by reporting:

- average speed of road links grouped by speed limit, thereby allowing roads with the same underlying speed limit to be compared between areas; and
- the percentage of speed limit (POSL), which normalises the observed speed by the speed limit of the road link thereby allowing aggregation and comparisons to be made between areas.

Our methodology for estimating and then aggregating POSL is set out below in equations (2) and (3) respectively.

$$(2) \quad \text{POSL}_{\text{link}}^t = \frac{\text{average speed}_{\text{link}}^t}{\text{speed limit}_{\text{link}}}$$

$$(3) \quad \text{POSL}_{\text{time period}(t)}^{\text{area}(\text{link})} = \frac{\sum_{t=1}^m \sum_{\text{link}=1}^n \text{POSL}_{\text{link}}^t \times \text{time travelled}_{\text{link}}}{\sum_{t=1}^m \sum_{\text{link}=1}^n \text{travel time}_{\text{link}}}$$

where each variable has the same meaning as in equation (1). POSL allows for speed comparisons to be made between different areas or road links within the Queensland road network, taking into account differences in the speed limits of roads and lengths of links within the area.

Compliance with speed limits

The HERE probe data provides data on the speed distribution for each road link, for the given time period, ie, hour. From this data, we can estimate the proportion of hours where part of the distribution exceeds the speed limit. This would be a measure of the frequency of time periods whereby a portion of traffic is speeding.

We are proposing to calculate an incidence of speeding by using the 85th percentile of speed distribution compared against the speed limit for each link within a defined area, as using the length of those links,

calculate the proportion of speeding roads. Our methodology for estimating the proportion of speeding roads is set out below.

We then calculate the proportion of speeding roads as set out in equation (4).

$$(4) \quad \text{Proportion of speeding roads}_{\text{time period}(t)}^{\text{area}(\text{link})} = \sum_{\text{link}=1}^n \frac{C(\text{hours}) \times \text{length}_{\text{link}}}{m \times \sum_{\text{link}=1}^n \text{length}_{\text{link}}}$$

Where:

- $C(\text{hours})$ is the number of hours t across the *time period* where the *average speed(85th percentile)* for a *link* is greater than the speed limit for that *link*;
- m is the total number of hours within the *time period*; and
- length is the length of each *link* within the *area*.

Compliance with speed limits is the proportion of roads, by length, where there were no incidences of speeding. Compliance with speed limits is simply calculated as set out in equation (5).

$$(5) \quad \text{Compliance with speed limits}_{\text{time period}(t)}^{\text{area}(\text{link})} = 1 - \text{Proportion of speeding roads}_{\text{time period}(t)}^{\text{area}(\text{link})}$$

Compliance with speeding limit allows comparisons to be made between areas taking into account the relative length of roads between the areas.

Finally, we are also proposing to decompose this metric into proportions based on the observed number of hours where the 85th percentile speed is:

- up to ten per cent over the link speed limit;
- ten to 20 per cent over the link speed limit; and
- more than 20 per cent over the link speed limit.

Average speed when speeding

The final proposed metric represents the implied average speed of ‘average speeder’ during speeding hours. Often it is expressed as a percentage, representing the margin by which the speed limits have been exceeded when speeding.

It is calculated using the mean of the 85th percentile and maximum speeds for those hours when the 85th percentile speed exceeds the speed limit. This allows insights on the magnitude of speeds in excess of the speed limit, and how those speeds are changing over time.

Calculation for average speed when speeding is set out in equation (6).

$$(6) \quad \text{area}(\text{link})_{\text{time period}(t)} = \frac{\sum_{t=1}^m \sum_{\text{link}=1}^n \frac{\text{length}_{\text{link}}}{\text{length}}}{\sum_{t=1}^m \sum_{\text{link}=1}^n \frac{\text{length}}{1.05 * (\text{speed}(85\text{th}) + \text{max speed})}}$$

Where:

- max speed is the maximum speed on the link;
- $\text{speed}(85^{\text{th}})$ is the average speed of the 85th percentile;
- length is the length of each *link* within the *area where 85th percentile exceeds the speed limit*;
- t is an hour within the *time period*; and
- m is the total number of hours within the *time period*.

This metric will provide insights on changes in the average speed in those periods where speeding occurs, both over time and between areas.

A2.5 Confidence rating for local government areas

Despite HERE data having hundreds of millions of observations across the road network, there are areas, particularly in regional Queensland, where coverage might not be adequate to provide a true representation of the traffic conditions on the roads. The consequence of low coverage could be an incorrect interpretation of trends in road performance.

The confidence rating is calculated on a local government area basis, and focuses on determining whether there is:

- adequate coverage of road network; and
- sufficient data for calculated metrics to be representative of traffic conditions.

Coverage of road network

One way to measure coverage of road network is to determine the proportion of the road network, expressed in terms of length of the road, where we have data observations. Boulia had the lowest coverage in 2018 with 382 km out of 7,689 km represented (around five per cent), while Yarrabah had over 99 per cent of the network represented in 2018. We call the part of the road network with data observed the observed network.

Table A2.1 below shows the proportion of road covered for the highest and lowest five local government areas for each year in the analysis period, on arterial and all roads.⁷

Table A2.1: Proportion of road lengths covered by data for Local Government Areas, Queensland, 2015 to 2018

LGA	Arterial roads				All roads			
	2015	2016	2017	2018	2015	2016	2017	2018
Yarrabah					94%	94%	97%	100%
Cherbourg					58%	73%	76%	98%
Wujal Wujal					62%	72%	72%	89%
Moreton Bay	93%	93%	93%	91%	87%	91%	91%	88%
Logan	90%	90%	90%	93%	88%	90%	90%	88%
...
Carpentaria	50%	47%	52%	26%	16%	16%	18%	9%
Winton	99%	71%	81%	52%	13%	14%	14%	9%
Diamantina	29%	56%	73%	35%	6%	12%	13%	8%
Croydon	100%	100%	100%	96%	13%	11%	11%	7%
Boulia	55%	52%	51%	25%	13%	11%	10%	5%

Note: Blank entries for arterial roads mean that the LGA only contains roads with functional class 4 or 5. Highest and lowest five LGAs ranked by 2018 all roads coverage shown. See appendix A3.3 for the full table.

⁷ For simplicity, all roads with a functional class 1, 2 or 3 have been considered as arterial roads and roads with functional class 4 or 5 are considered local roads. This differs slightly from the definition of arterial set out in section 5.8. However, over 90 per cent of links with functional class 3 have a speed limit above 50km/h and therefore differences are likely to be small in practice.

Sufficiency of data ratio

It is more difficult to determine whether there is sufficient data to meaningfully calculate metrics.

As a method for assessing the sufficiency of data for each local government area, we calculated the total length travelled, as indicated by HERE data, divided by the length of the network within the local government area, for each year in the analysis period. This metric gives an estimate of the number of times the road network for the local government area was travelled during the year. The sufficiency of data ratio on all roads in 2018 ranges from over 9,600 for Brisbane to less than two in Pormpuraaw.

Table A2.2 below shows the sufficiency of data ratio for the highest and lowest five local government areas for each year in the analysis period, on arterial and all roads.

Table A2.2: Sufficiency of data ratio for Local Government Area, Queensland, 2015 to 2018

LGA	Arterial roads				All roads			
	2015	2016	2017	2018	2015	2016	2017	2018
Brisbane	35,849	46,829	47,972	73,164	4,607	5,976	6,143	9,628
Gold Coast	25,641	37,708	42,165	60,134	3,354	4,946	5,600	7,370
Logan	26,791	38,162	43,442	57,027	3,243	4,555	5,213	7,102
Sunshine Coast	19,471	23,255	24,639	31,805	3,351	3,913	4,161	5,955
Moreton Bay	17,029	22,913	24,882	36,032	2,218	3,066	3,393	4,735
...
Bulloo	37	11	22	34	16	7	10	9
Mapoon					1	13	46	8
Lockhart River					3	3	11	6
Palm Island					17	15	11	5
Pormpuraaw					5	5	10	2

Note: Blank entries for arterial roads mean that the LGA only contains roads with functional class 4 or 5. Highest and lowest five LGAs ranked by 2018 all roads times covered shown. See appendix A3.3 for the full table.

A3. Appendix – Summary speed tables

This section sets out summary tables for road performance in Queensland.

A3.1 Queensland summary speed tables

Table A3.1: Average speed, urban, regional and all areas, local, arterial and all roads, Queensland, 2015 to 2018

Speed limit	Area	Road type	2015	2016	2017	2018
All	All	all	46.3	42.2	43.5	46.6
All	All	local	28.7	25.8	27.3	31.3
All	All	arterial	68.9	67.8	68.4	69.9
All	Urban	all	37.2	34.2	34.8	37.8
All	Urban	local	27.3	25.1	26.5	30.4
All	Urban	arterial	56.4	56.0	55.6	56.6
All	Regional	all	75.9	74.2	74.8	76.7
All	Regional	local	41.2	34.7	36.8	41.7
All	Regional	arterial	87.3	86.1	85.5	86.6
50 km/h	All	all	19.8	17.5	18.9	23.0
50 km/h	All	local	19.8	17.5	18.9	23.0
50 km/h	All	arterial				
50 km/h	Urban	all	19.2	17.3	18.7	22.8
50 km/h	Urban	local	19.2	17.3	18.7	22.8
50 km/h	Urban	arterial				
50 km/h	Regional	all	26.5	20.2	21.3	25.5
50 km/h	Regional	local	26.5	20.2	21.3	25.5
50 km/h	Regional	arterial				
60 km/h	All	all	39.8	39.4	39.8	41.6
60 km/h	All	local	38.4	37.8	38.6	40.7
60 km/h	All	arterial	41.5	41.6	41.4	42.9
60 km/h	Urban	all	39.4	39.2	39.6	41.3
60 km/h	Urban	local	38.2	37.8	38.6	40.6
60 km/h	Urban	arterial	41.0	41.1	40.9	42.3
60 km/h	Regional	all	44.5	42.9	43.2	45.1
60 km/h	Regional	local	41.3	38.3	38.8	42.3
60 km/h	Regional	arterial	47.1	46.1	46.1	47.0
80 km/h	All	all	65.5	64.9	65.0	66.1
80 km/h	All	local	59.4	59.2	60.0	61.3
80 km/h	All	arterial	67.6	66.9	66.9	68.2
80 km/h	Urban	all	64.8	64.2	64.4	65.7
80 km/h	Urban	local	61.1	60.4	61.0	62.2
80 km/h	Urban	arterial	66.1	65.7	65.9	67.4
80 km/h	Regional	all	67.6	67.0	66.7	67.3

Speed limit	Area	Road type	2015	2016	2017	2018
80 km/h	Regional	local	53.8	53.0	55.2	57.9
80 km/h	Regional	arterial	71.4	70.1	69.4	69.9
100 km/h	All	all	88.9	87.8	87.2	88.1
100 km/h	All	local	63.3	56.3	58.9	63.6
100 km/h	All	arterial	91.8	91.0	90.2	90.9
100 km/h	Urban	all	87.4	84.9	83.8	84.8
100 km/h	Urban	local	58.2	52.0	52.0	63.3
100 km/h	Urban	arterial	90.0	88.9	88.2	87.5
100 km/h	Regional	all	89.4	88.7	88.2	89.0
100 km/h	Regional	local	64.5	58.0	61.7	63.7
100 km/h	Regional	arterial	92.4	91.7	90.8	91.8
110 km/h	All	all	96.3	95.7	93.5	95.7
110 km/h	All	local	63.4	61.8	59.4	63.1
110 km/h	All	arterial	96.4	95.8	93.6	95.8
110 km/h	Urban	all	96.0	95.7	97.6	98.4
110 km/h	Urban	local	65.3	61.4	62.3	64.1
110 km/h	Urban	arterial	96.1	95.9	97.8	98.7
110 km/h	Regional	all	96.5	95.7	92.4	95.0
110 km/h	Regional	local	59.7	62.7	54.3	61.0
110 km/h	Regional	arterial	96.5	95.8	92.4	95.0

Table A3.2: Percentage of speed limit, urban, regional and all areas, local, arterial and all roads, Queensland, 2015 to 2018

Speed limit	Area	Road type	2015	2016	2017	2018
All	All	All	64.6%	60.2%	61.9%	66.8%
All	All	Local	51.5%	47.1%	49.6%	56.6%
All	All	Arterial	81.4%	80.8%	80.7%	82.3%
All	Urban	All	58.8%	55.1%	56.6%	62.0%
All	Urban	Local	50.3%	46.6%	49.2%	56.1%
All	Urban	Arterial	75.4%	75.2%	74.9%	76.5%
All	Regional	All	83.4%	80.9%	81.0%	83.3%
All	Regional	Local	62.3%	52.7%	54.6%	61.2%
All	Regional	Arterial	90.3%	89.5%	88.3%	89.6%

Table A3.3: Compliance with speed limits, urban, regional and all areas, local, arterial and all roads, Queensland, 2015 to 2018

Speed limit	Area	Road type	Type	2015	2016	2017	2018
All	All	all	Compliance	72.7%	72.3%	74.4%	73.1%
All	All	local	Compliance	82.3%	82.8%	82.9%	81.0%
All	All	arterial	Compliance	67.6%	66.0%	69.2%	67.8%
All	Urban	all	Compliance	75.7%	75.9%	77.4%	76.1%
All	Urban	local	Compliance	83.6%	83.4%	83.4%	81.3%
All	Urban	arterial	Compliance	68.3%	68.0%	70.3%	69.1%
All	Regional	all	Compliance	67.9%	65.5%	69.4%	68.1%
All	Regional	local	Compliance	75.1%	77.4%	79.0%	78.5%
All	Regional	arterial	Compliance	66.8%	64.0%	68.3%	66.7%
50 km/h	All	all	Compliance	85.3%	87.8%	87.6%	85.2%
50 km/h	All	local	Compliance	85.3%	87.8%	87.6%	85.2%
50 km/h	All	arterial	Compliance				
50 km/h	Urban	all	Compliance	88.5%	88.8%	88.4%	85.9%
50 km/h	Urban	local	Compliance	88.5%	88.8%	88.4%	85.9%
50 km/h	Urban	arterial	Compliance				
50 km/h	Regional	all	Compliance	59.9%	75.0%	76.4%	76.2%
50 km/h	Regional	local	Compliance	59.9%	75.0%	76.4%	76.2%
50 km/h	Regional	arterial	Compliance				
60 km/h	All	all	Compliance	78.5%	77.7%	78.3%	76.3%
60 km/h	All	local	Compliance	82.2%	81.2%	81.2%	78.9%
60 km/h	All	arterial	Compliance	74.3%	73.5%	74.7%	72.6%
60 km/h	Urban	all	Compliance	79.1%	78.4%	79.1%	76.9%
60 km/h	Urban	local	Compliance	82.7%	81.8%	81.8%	79.5%
60 km/h	Urban	arterial	Compliance	75.0%	74.2%	75.3%	72.9%
60 km/h	Regional	all	Compliance	71.7%	68.4%	69.8%	69.4%
60 km/h	Regional	local	Compliance	76.0%	69.8%	69.8%	67.8%
60 km/h	Regional	arterial	Compliance	68.6%	67.7%	69.8%	70.4%
80 km/h	All	all	Compliance	63.3%	63.5%	64.9%	64.0%
80 km/h	All	local	Compliance	73.8%	73.8%	75.1%	73.8%
80 km/h	All	arterial	Compliance	60.2%	60.2%	61.4%	60.2%
80 km/h	Urban	all	Compliance	65.5%	65.4%	66.9%	65.6%
80 km/h	Urban	local	Compliance	73.2%	73.6%	75.4%	74.0%
80 km/h	Urban	arterial	Compliance	63.0%	62.2%	63.3%	61.8%
80 km/h	Regional	all	Compliance	57.5%	58.1%	59.5%	59.7%
80 km/h	Regional	local	Compliance	75.9%	74.5%	73.5%	72.9%
80 km/h	Regional	arterial	Compliance	53.8%	55.3%	56.8%	56.6%
100 km/h	All	all	Compliance	64.4%	62.2%	66.2%	65.4%
100 km/h	All	local	Compliance	85.7%	86.0%	89.2%	88.5%
100 km/h	All	arterial	Compliance	62.7%	60.7%	64.6%	63.5%
100 km/h	Urban	all	Compliance	58.3%	59.3%	64.4%	65.7%
100 km/h	Urban	local	Compliance	85.1%	88.4%	93.6%	92.5%

Speed limit	Area	Road type	Type	2015	2016	2017	2018
100 km/h	Urban	arterial	Compliance	56.8%	57.2%	62.0%	63.2%
100 km/h	Regional	all	Compliance	66.2%	63.2%	66.6%	65.3%
100 km/h	Regional	local	Compliance	85.8%	85.1%	87.7%	87.4%
100 km/h	Regional	arterial	Compliance	64.6%	61.8%	65.2%	63.6%
110 km/h	All	all	Compliance	80.3%	75.6%	83.0%	81.8%
110 km/h	All	local	Compliance	96.0%	95.5%	96.9%	96.8%
110 km/h	All	arterial	Compliance	80.3%	75.6%	82.9%	81.8%
110 km/h	Urban	all	Compliance	68.9%	64.7%	68.4%	67.9%
110 km/h	Urban	local	Compliance	98.8%	99.1%	99.2%	99.3%
110 km/h	Urban	arterial	Compliance	68.8%	64.6%	68.3%	67.7%
110 km/h	Regional	all	Compliance	84.7%	80.2%	87.3%	85.6%
110 km/h	Regional	local	Compliance	90.3%	87.6%	92.3%	91.5%
110 km/h	Regional	arterial	Compliance	84.7%	80.2%	87.3%	85.6%
All	All	all	<10% above speed limit	18.0%	17.8%	18.0%	19.3%
All	All	local	<10% above speed limit	8.3%	8.3%	8.7%	9.8%
All	All	arterial	<10% above speed limit	23.2%	23.4%	23.7%	25.8%
All	Urban	all	<10% above speed limit	15.2%	14.6%	14.5%	15.3%
All	Urban	local	<10% above speed limit	8.0%	8.1%	8.5%	9.7%
All	Urban	arterial	<10% above speed limit	21.9%	21.5%	21.6%	22.9%
All	Regional	all	<10% above speed limit	22.5%	23.6%	23.8%	26.0%
All	Regional	local	<10% above speed limit	9.9%	10.0%	10.0%	10.6%
All	Regional	arterial	<10% above speed limit	24.5%	25.3%	25.5%	28.1%
50 km/h	All	all	<10% above speed limit	5.1%	4.7%	5.0%	6.1%
50 km/h	All	local	<10% above speed limit	5.1%	4.7%	5.0%	6.1%
50 km/h	All	arterial	<10% above speed limit				
50 km/h	Urban	all	<10% above speed limit	4.7%	4.6%	5.0%	6.1%
50 km/h	Urban	local	<10% above speed limit	4.7%	4.6%	5.0%	6.1%
50 km/h	Urban	arterial	<10% above speed limit				
50 km/h	Regional	all	<10% above speed limit	8.2%	6.6%	6.2%	6.2%
50 km/h	Regional	local	<10% above speed limit	8.2%	6.6%	6.2%	6.2%
50 km/h	Regional	arterial	<10% above speed limit				
60 km/h	All	all	<10% above speed limit	11.5%	11.8%	12.1%	13.4%
60 km/h	All	local	<10% above speed limit	9.6%	10.0%	10.5%	12.0%
60 km/h	All	arterial	<10% above speed limit	13.5%	13.8%	14.1%	15.4%
60 km/h	Urban	all	<10% above speed limit	11.3%	11.5%	11.9%	13.3%
60 km/h	Urban	local	<10% above speed limit	9.5%	9.9%	10.4%	11.8%
60 km/h	Urban	arterial	<10% above speed limit	13.4%	13.6%	13.9%	15.4%
60 km/h	Regional	all	<10% above speed limit	13.3%	14.7%	14.7%	15.0%
60 km/h	Regional	local	<10% above speed limit	11.1%	13.6%	13.6%	14.6%
60 km/h	Regional	arterial	<10% above speed limit	14.9%	15.3%	15.4%	15.3%
80 km/h	All	all	<10% above speed limit	21.2%	21.6%	22.8%	24.2%
80 km/h	All	local	<10% above speed limit	14.7%	16.0%	16.7%	17.7%
80 km/h	All	arterial	<10% above speed limit	23.2%	23.4%	24.9%	26.7%
80 km/h	Urban	all	<10% above speed limit	20.8%	21.6%	22.9%	24.4%

Speed limit	Area	Road type	Type	2015	2016	2017	2018
80 km/h	Urban	local	<10% above speed limit	14.9%	16.3%	17.2%	18.4%
80 km/h	Urban	arterial	<10% above speed limit	22.8%	23.6%	25.2%	27.1%
80 km/h	Regional	all	<10% above speed limit	22.3%	21.7%	22.5%	23.7%
80 km/h	Regional	local	<10% above speed limit	14.0%	14.2%	14.2%	14.8%
80 km/h	Regional	arterial	<10% above speed limit	24.0%	22.9%	24.1%	25.8%
100 km/h	All	all	<10% above speed limit	28.2%	28.5%	29.0%	30.9%
100 km/h	All	local	<10% above speed limit	9.7%	8.7%	8.4%	9.4%
100 km/h	All	arterial	<10% above speed limit	29.7%	29.7%	30.4%	32.6%
100 km/h	Urban	all	<10% above speed limit	35.1%	32.8%	31.9%	32.1%
100 km/h	Urban	local	<10% above speed limit	9.1%	7.0%	4.9%	6.6%
100 km/h	Urban	arterial	<10% above speed limit	36.6%	34.6%	34.1%	34.5%
100 km/h	Regional	all	<10% above speed limit	26.2%	27.1%	28.2%	30.6%
100 km/h	Regional	local	<10% above speed limit	9.8%	9.3%	9.6%	10.3%
100 km/h	Regional	arterial	<10% above speed limit	27.6%	28.2%	29.4%	32.2%
110 km/h	All	all	<10% above speed limit	15.5%	18.4%	14.3%	16.4%
110 km/h	All	local	<10% above speed limit	3.0%	3.4%	2.4%	2.7%
110 km/h	All	arterial	<10% above speed limit	15.5%	18.4%	14.4%	16.4%
110 km/h	Urban	all	<10% above speed limit	26.8%	28.9%	28.4%	30.3%
110 km/h	Urban	local	<10% above speed limit	1.1%	0.8%	0.7%	0.6%
110 km/h	Urban	arterial	<10% above speed limit	26.9%	29.0%	28.6%	30.4%
110 km/h	Regional	all	<10% above speed limit	11.1%	14.0%	10.1%	12.6%
110 km/h	Regional	local	<10% above speed limit	6.9%	9.3%	5.9%	7.3%
110 km/h	Regional	arterial	<10% above speed limit	11.1%	14.0%	10.1%	12.6%
All	All	all	10-20% above speed limit	4.8%	5.1%	4.5%	4.9%
All	All	local	10-20% above speed limit	4.3%	4.3%	4.4%	5.1%
All	All	arterial	10-20% above speed limit	5.1%	5.6%	4.5%	4.7%
All	Urban	all	10-20% above speed limit	5.1%	5.1%	4.8%	5.4%
All	Urban	local	10-20% above speed limit	4.2%	4.3%	4.4%	5.1%
All	Urban	arterial	10-20% above speed limit	5.9%	6.1%	5.3%	5.7%
All	Regional	all	10-20% above speed limit	4.4%	5.0%	3.9%	4.0%
All	Regional	local	10-20% above speed limit	4.4%	4.7%	4.5%	4.8%
All	Regional	arterial	10-20% above speed limit	4.4%	5.1%	3.8%	3.9%
50 km/h	All	all	10-20% above speed limit	3.6%	3.4%	3.5%	4.3%
50 km/h	All	local	10-20% above speed limit	3.6%	3.4%	3.5%	4.3%
50 km/h	All	arterial	10-20% above speed limit				
50 km/h	Urban	all	10-20% above speed limit	3.2%	3.2%	3.4%	4.3%
50 km/h	Urban	local	10-20% above speed limit	3.2%	3.2%	3.4%	4.3%
50 km/h	Urban	arterial	10-20% above speed limit				
50 km/h	Regional	all	10-20% above speed limit	6.5%	5.6%	5.2%	5.2%
50 km/h	Regional	local	10-20% above speed limit	6.5%	5.6%	5.2%	5.2%
50 km/h	Regional	arterial	10-20% above speed limit				
60 km/h	All	all	10-20% above speed limit	5.6%	5.8%	5.7%	6.5%
60 km/h	All	local	10-20% above speed limit	4.7%	4.9%	5.0%	5.9%
60 km/h	All	arterial	10-20% above speed limit	6.6%	6.8%	6.7%	7.5%

Speed limit	Area	Road type	Type	2015	2016	2017	2018
60 km/h	Urban	all	10-20% above speed limit	5.4%	5.6%	5.6%	6.4%
60 km/h	Urban	local	10-20% above speed limit	4.6%	4.7%	4.9%	5.7%
60 km/h	Urban	arterial	10-20% above speed limit	6.4%	6.6%	6.4%	7.4%
60 km/h	Regional	all	10-20% above speed limit	7.4%	8.1%	8.0%	8.3%
60 km/h	Regional	local	10-20% above speed limit	6.0%	7.2%	7.4%	8.3%
60 km/h	Regional	arterial	10-20% above speed limit	8.5%	8.7%	8.3%	8.3%
80 km/h	All	all	10-20% above speed limit	9.2%	8.8%	8.3%	8.7%
80 km/h	All	local	10-20% above speed limit	6.5%	6.3%	5.8%	6.3%
80 km/h	All	arterial	10-20% above speed limit	9.9%	9.6%	9.2%	9.7%
80 km/h	Urban	all	10-20% above speed limit	8.5%	8.2%	7.6%	7.9%
80 km/h	Urban	local	10-20% above speed limit	6.6%	6.1%	5.4%	6.0%
80 km/h	Urban	arterial	10-20% above speed limit	9.1%	9.0%	8.5%	8.8%
80 km/h	Regional	all	10-20% above speed limit	10.8%	10.4%	10.4%	10.9%
80 km/h	Regional	local	10-20% above speed limit	6.2%	6.9%	7.7%	7.8%
80 km/h	Regional	arterial	10-20% above speed limit	11.8%	10.9%	10.9%	11.6%
100 km/h	All	all	10-20% above speed limit	3.4%	3.9%	2.9%	3.0%
100 km/h	All	local	10-20% above speed limit	1.9%	2.0%	1.3%	1.6%
100 km/h	All	arterial	10-20% above speed limit	3.5%	4.0%	3.0%	3.1%
100 km/h	Urban	all	10-20% above speed limit	3.5%	3.7%	2.2%	1.8%
100 km/h	Urban	local	10-20% above speed limit	2.6%	1.9%	0.7%	0.7%
100 km/h	Urban	arterial	10-20% above speed limit	3.6%	3.8%	2.4%	1.9%
100 km/h	Regional	all	10-20% above speed limit	3.4%	4.0%	3.1%	3.3%
100 km/h	Regional	local	10-20% above speed limit	1.7%	2.0%	1.5%	1.8%
100 km/h	Regional	arterial	10-20% above speed limit	3.5%	4.1%	3.2%	3.4%
110 km/h	All	all	10-20% above speed limit	4.1%	5.9%	2.6%	1.6%
110 km/h	All	local	10-20% above speed limit	1.0%	1.0%	0.7%	0.5%
110 km/h	All	arterial	10-20% above speed limit	4.1%	5.9%	2.6%	1.6%
110 km/h	Urban	all	10-20% above speed limit	4.2%	6.3%	3.1%	1.8%
110 km/h	Urban	local	10-20% above speed limit	0.1%	0.1%	0.1%	0.2%
110 km/h	Urban	arterial	10-20% above speed limit	4.2%	6.3%	3.1%	1.8%
110 km/h	Regional	all	10-20% above speed limit	4.1%	5.7%	2.4%	1.6%
110 km/h	Regional	local	10-20% above speed limit	2.8%	3.1%	1.7%	1.2%
110 km/h	Regional	arterial	10-20% above speed limit	4.1%	5.7%	2.4%	1.6%
All	All	all	>20% above speed limit	4.5%	4.9%	3.1%	2.7%
All	All	local	>20% above speed limit	5.2%	4.7%	4.0%	4.1%
All	All	arterial	>20% above speed limit	4.1%	5.0%	2.6%	1.7%
All	Urban	all	>20% above speed limit	4.0%	4.4%	3.2%	3.2%
All	Urban	local	>20% above speed limit	4.2%	4.3%	3.7%	3.9%
All	Urban	arterial	>20% above speed limit	3.9%	4.4%	2.8%	2.3%
All	Regional	all	>20% above speed limit	5.1%	5.8%	2.9%	1.9%
All	Regional	local	>20% above speed limit	10.6%	7.9%	6.5%	6.2%
All	Regional	arterial	>20% above speed limit	4.3%	5.6%	2.4%	1.3%
50 km/h	All	all	>20% above speed limit	6.0%	4.1%	3.9%	4.4%
50 km/h	All	local	>20% above speed limit	6.0%	4.1%	3.9%	4.4%

Speed limit	Area	Road type	Type	2015	2016	2017	2018
50 km/h	All	arterial	>20% above speed limit				
50 km/h	Urban	all	>20% above speed limit	3.5%	3.5%	3.2%	3.8%
50 km/h	Urban	local	>20% above speed limit	3.5%	3.5%	3.2%	3.8%
50 km/h	Urban	arterial	>20% above speed limit				
50 km/h	Regional	all	>20% above speed limit	25.3%	12.7%	12.2%	12.5%
50 km/h	Regional	local	>20% above speed limit	25.3%	12.7%	12.2%	12.5%
50 km/h	Regional	arterial	>20% above speed limit				
60 km/h	All	all	>20% above speed limit	4.4%	4.8%	3.8%	3.8%
60 km/h	All	local	>20% above speed limit	3.5%	3.9%	3.2%	3.3%
60 km/h	All	arterial	>20% above speed limit	5.5%	5.9%	4.6%	4.5%
60 km/h	Urban	all	>20% above speed limit	4.2%	4.5%	3.5%	3.5%
60 km/h	Urban	local	>20% above speed limit	3.2%	3.6%	2.9%	3.0%
60 km/h	Urban	arterial	>20% above speed limit	5.3%	5.6%	4.4%	4.3%
60 km/h	Regional	all	>20% above speed limit	7.5%	8.8%	7.4%	7.2%
60 km/h	Regional	local	>20% above speed limit	6.9%	9.4%	9.2%	9.2%
60 km/h	Regional	arterial	>20% above speed limit	8.0%	8.4%	6.5%	6.0%
80 km/h	All	all	>20% above speed limit	6.3%	6.1%	4.0%	3.0%
80 km/h	All	local	>20% above speed limit	5.1%	4.0%	2.4%	2.2%
80 km/h	All	arterial	>20% above speed limit	6.7%	6.8%	4.5%	3.3%
80 km/h	Urban	all	>20% above speed limit	5.2%	4.8%	2.7%	2.0%
80 km/h	Urban	local	>20% above speed limit	5.3%	3.9%	1.9%	1.7%
80 km/h	Urban	arterial	>20% above speed limit	5.1%	5.2%	3.0%	2.2%
80 km/h	Regional	all	>20% above speed limit	9.3%	9.9%	7.6%	5.7%
80 km/h	Regional	local	>20% above speed limit	4.0%	4.4%	4.5%	4.4%
80 km/h	Regional	arterial	>20% above speed limit	10.4%	10.8%	8.2%	6.0%
100 km/h	All	all	>20% above speed limit	3.9%	5.4%	2.0%	0.7%
100 km/h	All	local	>20% above speed limit	2.8%	3.3%	1.1%	0.5%
100 km/h	All	arterial	>20% above speed limit	4.0%	5.5%	2.0%	0.7%
100 km/h	Urban	all	>20% above speed limit	3.1%	4.2%	1.4%	0.4%
100 km/h	Urban	local	>20% above speed limit	3.2%	2.7%	0.7%	0.2%
100 km/h	Urban	arterial	>20% above speed limit	3.0%	4.3%	1.5%	0.4%
100 km/h	Regional	all	>20% above speed limit	4.2%	5.8%	2.1%	0.8%
100 km/h	Regional	local	>20% above speed limit	2.7%	3.6%	1.2%	0.5%
100 km/h	Regional	arterial	>20% above speed limit	4.3%	5.9%	2.2%	0.8%
110 km/h	All	all	>20% above speed limit	0.1%	0.1%	0.1%	0.1%
110 km/h	All	local	>20% above speed limit	0.0%	0.0%	0.0%	0.0%
110 km/h	All	arterial	>20% above speed limit	0.1%	0.1%	0.1%	0.1%
110 km/h	Urban	all	>20% above speed limit	0.0%	0.1%	0.0%	0.1%
110 km/h	Urban	local	>20% above speed limit	0.0%	0.0%	0.0%	0.0%
110 km/h	Urban	arterial	>20% above speed limit	0.0%	0.1%	0.0%	0.1%
110 km/h	Regional	all	>20% above speed limit	0.1%	0.1%	0.1%	0.2%
110 km/h	Regional	local	>20% above speed limit	0.1%	0.1%	0.0%	0.1%
110 km/h	Regional	arterial	>20% above speed limit	0.1%	0.1%	0.1%	0.2%

Table A3.4: Average speed when speeding, urban, regional and all areas, local, arterial and all roads, Queensland, 2015 to 2018

Speed limit	Area	Road type	Type	2015	2016	2017	2018
50 km/h	All	All	All speeding	59.3	58.0	57.5	57.3
50 km/h	All	Local	All speeding	59.3	58.0	57.5	57.3
50 km/h	All	Arterial	All speeding				
50 km/h	Urban	All	All speeding	57.5	57.5	57.0	56.9
50 km/h	Urban	Local	All speeding	57.5	57.5	57.0	56.9
50 km/h	Urban	Arterial	All speeding				
50 km/h	Regional	All	All speeding	63.9	61.5	61.5	61.5
50 km/h	Regional	Local	All speeding	63.9	61.5	61.5	61.5
50 km/h	Regional	Arterial	All speeding				
60 km/h	All	All	All speeding	67.1	67.3	66.6	66.4
60 km/h	All	Local	All speeding	66.9	67.1	66.5	66.3
60 km/h	All	Arterial	All speeding	67.2	67.4	66.7	66.6
60 km/h	Urban	All	All speeding	67.0	67.1	66.5	66.3
60 km/h	Urban	Local	All speeding	66.7	66.9	66.2	66.1
60 km/h	Urban	Arterial	All speeding	67.1	67.3	66.7	66.5
60 km/h	Regional	All	All speeding	68.1	68.3	67.8	67.6
60 km/h	Regional	Local	All speeding	68.5	69.0	69.0	68.7
60 km/h	Regional	Arterial	All speeding	67.8	67.9	67.1	66.9
80 km/h	All	All	All speeding	88.5	88.6	87.2	86.7
80 km/h	All	Local	All speeding	88.6	87.9	86.6	86.5
80 km/h	All	Arterial	All speeding	88.5	88.7	87.4	86.7
80 km/h	Urban	All	All speeding	88.2	88.2	86.7	86.3
80 km/h	Urban	Local	All speeding	88.7	87.8	86.3	86.1
80 km/h	Urban	Arterial	All speeding	88.1	88.2	86.9	86.4
80 km/h	Regional	All	All speeding	89.3	89.6	88.4	87.6
80 km/h	Regional	Local	All speeding	88.2	88.4	88.3	88.1
80 km/h	Regional	Arterial	All speeding	89.4	89.7	88.5	87.5
100 km/h	All	All	All speeding	107.0	108.1	105.5	104.6
100 km/h	All	Local	All speeding	108.9	110.1	106.5	105.5
100 km/h	All	Arterial	All speeding	107.0	108.0	105.5	104.6
100 km/h	Urban	All	All speeding	107.7	109.2	106.2	105.1
100 km/h	Urban	Local	All speeding	109.8	110.2	106.7	104.9
100 km/h	Urban	Arterial	All speeding	107.6	109.1	106.2	105.1
100 km/h	Regional	All	All speeding	106.8	107.7	105.3	104.5
100 km/h	Regional	Local	All speeding	108.7	110.1	106.5	105.6
100 km/h	Regional	Arterial	All speeding	106.7	107.6	105.3	104.5
110 km/h	All	All	All speeding	117.6	118.3	116.5	115.3
110 km/h	All	Local	All speeding	116.9	117.0	116.7	115.7
110 km/h	All	Arterial	All speeding	117.6	118.3	116.5	115.3
110 km/h	Urban	All	All speeding	117.4	118.3	116.3	115.3
110 km/h	Urban	Local	All speeding	114.4	115.5	115.7	117.0

Speed limit	Area	Road type	Type	2015	2016	2017	2018
110 km/h	Urban	Arterial	All speeding	117.4	118.3	116.3	115.3
110 km/h	Regional	All	All speeding	117.7	118.2	116.6	115.4
110 km/h	Regional	Local	All speeding	117.6	117.2	116.9	115.5
110 km/h	Regional	Arterial	All speeding	117.7	118.2	116.6	115.4
50 km/h	All	All	<10% above speed limit	52.8	52.8	52.8	52.8
50 km/h	All	Local	<10% above speed limit	52.8	52.8	52.8	52.8
50 km/h	All	Arterial	<10% above speed limit				
50 km/h	Urban	All	<10% above speed limit	52.8	52.8	52.8	52.8
50 km/h	Urban	Local	<10% above speed limit	52.8	52.8	52.8	52.8
50 km/h	Urban	Arterial	<10% above speed limit				
50 km/h	Regional	All	<10% above speed limit	53.0	52.8	52.8	52.8
50 km/h	Regional	Local	<10% above speed limit	53.0	52.8	52.8	52.8
50 km/h	Regional	Arterial	<10% above speed limit				
60 km/h	All	All	<10% above speed limit	63.1	63.2	63.2	63.3
60 km/h	All	Local	<10% above speed limit	63.1	63.1	63.1	63.2
60 km/h	All	Arterial	<10% above speed limit	63.1	63.2	63.2	63.4
60 km/h	Urban	All	<10% above speed limit	63.1	63.2	63.2	63.3
60 km/h	Urban	Local	<10% above speed limit	63.1	63.1	63.1	63.2
60 km/h	Urban	Arterial	<10% above speed limit	63.1	63.2	63.3	63.4
60 km/h	Regional	All	<10% above speed limit	63.1	63.1	63.1	63.1
60 km/h	Regional	Local	<10% above speed limit	63.1	63.1	63.1	63.2
60 km/h	Regional	Arterial	<10% above speed limit	63.1	63.1	63.1	63.1
80 km/h	All	All	<10% above speed limit	84.1	84.2	84.1	84.1
80 km/h	All	Local	<10% above speed limit	83.8	83.9	83.8	83.9
80 km/h	All	Arterial	<10% above speed limit	84.1	84.2	84.1	84.2
80 km/h	Urban	All	<10% above speed limit	84.1	84.2	84.1	84.2
80 km/h	Urban	Local	<10% above speed limit	83.8	83.9	83.8	83.9
80 km/h	Urban	Arterial	<10% above speed limit	84.1	84.3	84.2	84.3
80 km/h	Regional	All	<10% above speed limit	84.0	84.0	84.0	84.0
80 km/h	Regional	Local	<10% above speed limit	83.8	83.9	84.0	83.9
80 km/h	Regional	Arterial	<10% above speed limit	84.0	84.0	84.0	84.0
100 km/h	All	All	<10% above speed limit	104.0	104.3	103.7	103.6
100 km/h	All	Local	<10% above speed limit	103.8	103.9	103.6	103.7
100 km/h	All	Arterial	<10% above speed limit	104.0	104.3	103.7	103.6
100 km/h	Urban	All	<10% above speed limit	105.6	106.6	104.9	104.5
100 km/h	Urban	Local	<10% above speed limit	104.0	104.1	103.6	103.6
100 km/h	Urban	Arterial	<10% above speed limit	105.7	106.6	105.0	104.6
100 km/h	Regional	All	<10% above speed limit	103.4	103.5	103.3	103.4
100 km/h	Regional	Local	<10% above speed limit	103.8	103.9	103.5	103.8
100 km/h	Regional	Arterial	<10% above speed limit	103.4	103.5	103.3	103.4
110 km/h	All	All	<10% above speed limit	115.2	115.6	114.8	114.4
110 km/h	All	Local	<10% above speed limit	114.0	114.1	114.0	114.0
110 km/h	All	Arterial	<10% above speed limit	115.2	115.6	114.8	114.4
110 km/h	Urban	All	<10% above speed limit	116.1	116.6	115.3	114.8

Speed limit	Area	Road type	Type	2015	2016	2017	2018
110 km/h	Urban	Local	<10% above speed limit	113.7	113.7	113.4	114.2
110 km/h	Urban	Arterial	<10% above speed limit	116.1	116.6	115.3	114.8
110 km/h	Regional	All	<10% above speed limit	114.4	114.7	114.3	114.2
110 km/h	Regional	Local	<10% above speed limit	114.1	114.2	114.2	113.9
110 km/h	Regional	Arterial	<10% above speed limit	114.4	114.7	114.3	114.2
50 km/h	All	All	10-20% above speed limit	57.7	57.7	57.7	57.8
50 km/h	All	Local	10-20% above speed limit	57.7	57.7	57.7	57.8
50 km/h	All	Arterial	10-20% above speed limit				
50 km/h	Urban	All	10-20% above speed limit	57.7	57.7	57.7	57.8
50 km/h	Urban	Local	10-20% above speed limit	57.7	57.7	57.7	57.8
50 km/h	Urban	Arterial	10-20% above speed limit				
50 km/h	Regional	All	10-20% above speed limit	57.8	57.8	57.8	57.9
50 km/h	Regional	Local	10-20% above speed limit	57.8	57.8	57.8	57.9
50 km/h	Regional	Arterial	10-20% above speed limit				
60 km/h	All	All	10-20% above speed limit	69.1	69.2	69.1	69.2
60 km/h	All	Local	10-20% above speed limit	69.0	69.1	69.0	69.1
60 km/h	All	Arterial	10-20% above speed limit	69.2	69.3	69.2	69.3
60 km/h	Urban	All	10-20% above speed limit	69.1	69.2	69.1	69.2
60 km/h	Urban	Local	10-20% above speed limit	69.0	69.1	69.0	69.1
60 km/h	Urban	Arterial	10-20% above speed limit	69.2	69.3	69.2	69.3
60 km/h	Regional	All	10-20% above speed limit	69.1	69.1	69.1	69.1
60 km/h	Regional	Local	10-20% above speed limit	69.1	69.1	69.1	69.1
60 km/h	Regional	Arterial	10-20% above speed limit	69.1	69.1	69.1	69.0
80 km/h	All	All	10-20% above speed limit	92.2	92.4	92.1	91.9
80 km/h	All	Local	10-20% above speed limit	92.0	91.9	91.7	91.7
80 km/h	All	Arterial	10-20% above speed limit	92.3	92.5	92.1	92.0
80 km/h	Urban	All	10-20% above speed limit	92.4	92.6	92.1	92.0
80 km/h	Urban	Local	10-20% above speed limit	92.0	92.0	91.7	91.6
80 km/h	Urban	Arterial	10-20% above speed limit	92.4	92.7	92.2	92.1
80 km/h	Regional	All	10-20% above speed limit	92.0	92.0	91.9	91.8
80 km/h	Regional	Local	10-20% above speed limit	91.9	91.9	92.0	91.9
80 km/h	Regional	Arterial	10-20% above speed limit	92.0	92.0	91.9	91.8
100 km/h	All	All	10-20% above speed limit	115.1	115.4	114.6	114.1
100 km/h	All	Local	10-20% above speed limit	115.0	115.4	114.5	114.2
100 km/h	All	Arterial	10-20% above speed limit	115.1	115.4	114.6	114.1
100 km/h	Urban	All	10-20% above speed limit	116.6	117.2	115.8	114.4
100 km/h	Urban	Local	10-20% above speed limit	115.6	115.7	115.0	114.3
100 km/h	Urban	Arterial	10-20% above speed limit	116.6	117.3	115.8	114.4
100 km/h	Regional	All	10-20% above speed limit	114.7	114.9	114.4	114.1
100 km/h	Regional	Local	10-20% above speed limit	114.7	115.3	114.5	114.2
100 km/h	Regional	Arterial	10-20% above speed limit	114.7	114.8	114.4	114.1
110 km/h	All	All	10-20% above speed limit	128.2	128.3	127.6	125.8
110 km/h	All	Local	10-20% above speed limit	127.7	128.0	127.7	126.4
110 km/h	All	Arterial	10-20% above speed limit	128.2	128.3	127.6	125.8

Speed limit	Area	Road type	Type	2015	2016	2017	2018
110 km/h	Urban	All	10-20% above speed limit	127.7	128.2	127.4	126.1
110 km/h	Urban	Local	10-20% above speed limit	124.9	126.7	127.1	126.5
110 km/h	Urban	Arterial	10-20% above speed limit	127.7	128.2	127.4	126.1
110 km/h	Regional	All	10-20% above speed limit	128.4	128.4	127.7	125.7
110 km/h	Regional	Local	10-20% above speed limit	127.9	128.1	127.8	126.4
110 km/h	Regional	Arterial	10-20% above speed limit	128.4	128.4	127.7	125.7
50 km/h	All	All	>20% above speed limit	69.7	68.6	68.2	68.1
50 km/h	All	Local	>20% above speed limit	69.7	68.6	68.2	68.1
50 km/h	All	Arterial	>20% above speed limit				
50 km/h	Urban	All	>20% above speed limit	67.9	67.9	67.4	67.4
50 km/h	Urban	Local	>20% above speed limit	67.9	67.9	67.4	67.4
50 km/h	Urban	Arterial	>20% above speed limit				
50 km/h	Regional	All	>20% above speed limit	71.7	71.1	70.9	70.7
50 km/h	Regional	Local	>20% above speed limit	71.7	71.1	70.9	70.7
50 km/h	Regional	Arterial	>20% above speed limit				
60 km/h	All	All	>20% above speed limit	80.7	80.7	79.9	79.2
60 km/h	All	Local	>20% above speed limit	80.8	81.0	80.0	79.2
60 km/h	All	Arterial	>20% above speed limit	80.6	80.5	79.8	79.2
60 km/h	Urban	All	>20% above speed limit	80.6	80.6	79.7	78.9
60 km/h	Urban	Local	>20% above speed limit	80.7	80.7	79.5	78.7
60 km/h	Urban	Arterial	>20% above speed limit	80.5	80.5	79.8	79.1
60 km/h	Regional	All	>20% above speed limit	81.1	81.6	81.1	80.9
60 km/h	Regional	Local	>20% above speed limit	81.9	82.8	83.1	82.4
60 km/h	Regional	Arterial	>20% above speed limit	80.7	80.8	79.6	79.6
80 km/h	All	All	>20% above speed limit	105.3	105.9	103.8	102.0
80 km/h	All	Local	>20% above speed limit	104.7	105.2	103.8	102.3
80 km/h	All	Arterial	>20% above speed limit	105.4	106.0	103.8	101.9
80 km/h	Urban	All	>20% above speed limit	105.8	106.5	104.7	102.3
80 km/h	Urban	Local	>20% above speed limit	104.7	105.3	104.3	102.4
80 km/h	Urban	Arterial	>20% above speed limit	106.2	106.8	104.9	102.3
80 km/h	Regional	All	>20% above speed limit	104.7	105.1	103.0	101.7
80 km/h	Regional	Local	>20% above speed limit	104.9	104.4	102.9	102.1
80 km/h	Regional	Arterial	>20% above speed limit	104.7	105.1	103.0	101.6
100 km/h	All	All	>20% above speed limit	128.4	128.5	128.1	126.3
100 km/h	All	Local	>20% above speed limit	128.3	128.4	128.0	126.8
100 km/h	All	Arterial	>20% above speed limit	128.5	128.5	128.1	126.3
100 km/h	Urban	All	>20% above speed limit	128.1	128.3	128.0	126.6
100 km/h	Urban	Local	>20% above speed limit	127.1	127.3	127.3	127.6
100 km/h	Urban	Arterial	>20% above speed limit	128.2	128.3	128.0	126.6
100 km/h	Regional	All	>20% above speed limit	128.5	128.6	128.1	126.3
100 km/h	Regional	Local	>20% above speed limit	128.6	128.7	128.2	126.7
100 km/h	Regional	Arterial	>20% above speed limit	128.5	128.6	128.1	126.3
110 km/h	All	All	>20% above speed limit	139.4	138.9	139.1	139.9
110 km/h	All	Local	>20% above speed limit	145.3	138.1	149.5	142.6

Speed limit	Area	Road type	Type	2015	2016	2017	2018
110 km/h	All	Arterial	>20% above speed limit	139.4	138.9	139.1	139.9
110 km/h	Urban	All	>20% above speed limit	139.0	139.5	139.4	142.0
110 km/h	Urban	Local	>20% above speed limit	139.5	135.6	167.0	143.1
110 km/h	Urban	Arterial	>20% above speed limit	139.0	139.5	139.3	142.0
110 km/h	Regional	All	>20% above speed limit	139.5	138.8	139.1	139.7
110 km/h	Regional	Local	>20% above speed limit	147.6	139.5	140.5	142.2
110 km/h	Regional	Arterial	>20% above speed limit	139.5	138.8	139.1	139.7

A3.2 Brisbane summary speed tables

Table A3.5: Average speed, urban, regional and all areas, local, arterial and all roads, Brisbane, 2015 to 2018

Speed limit	Area	Road type	2015	2016	2017	2018
All	All	All	38.8	35.6	36.1	38.6
All	All	Local	27.6	25.1	26.4	29.8
All	All	Arterial	57.9	57.5	57.1	58.2
All	Urban	All	37.2	34.1	34.6	37.0
All	Urban	Local	27.4	25.0	26.2	29.6
All	Urban	Arterial	55.5	55.1	54.5	55.4
All	Regional	All	69.8	64.6	65.0	66.4
All	Regional	Local	38.5	32.4	37.4	39.2
All	Regional	Arterial	79.7	78.3	77.0	78.6
50 km/h	All	All	19.4	17.2	18.5	22.3
50 km/h	All	Local	19.4	17.2	18.5	22.3
50 km/h	All	Arterial				
50 km/h	Urban	All	19.3	17.2	18.4	22.2
50 km/h	Urban	Local	19.3	17.2	18.4	22.2
50 km/h	Urban	Arterial				
50 km/h	Regional	All	26.7	21.1	22.9	24.7
50 km/h	Regional	Local	26.7	21.1	22.9	24.7
50 km/h	Regional	Arterial				
60 km/h	All	All	39.2	38.9	39.0	40.6
60 km/h	All	Local	37.8	37.4	38.0	39.7
60 km/h	All	Arterial	40.8	40.9	40.4	41.9
60 km/h	Urban	All	39.0	38.8	38.9	40.5
60 km/h	Urban	Local	37.8	37.4	37.9	39.7
60 km/h	Urban	Arterial	40.6	40.7	40.3	41.7
60 km/h	Regional	All	47.2	44.8	44.2	45.9
60 km/h	Regional	Local	45.2	40.8	40.2	41.9
60 km/h	Regional	Arterial	47.8	46.4	45.9	47.7
80 km/h	All	All	65.1	63.8	64.0	65.0
80 km/h	All	Local	61.7	60.1	59.9	60.2
80 km/h	All	Arterial	66.3	65.3	65.7	67.3
80 km/h	Urban	All	64.7	63.6	63.8	64.8
80 km/h	Urban	Local	62.0	60.6	60.3	60.6
80 km/h	Urban	Arterial	65.6	64.8	65.4	67.0
80 km/h	Regional	All	69.7	66.3	65.7	66.2
80 km/h	Regional	Local	56.1	50.0	52.6	53.9
80 km/h	Regional	Arterial	71.6	69.4	68.4	68.9
100 km/h	All	All	88.6	86.8	85.3	85.0
100 km/h	All	Local	64.5	57.3	59.0	58.1
100 km/h	All	Arterial	90.2	89.2	87.9	87.8

Speed limit	Area	Road type	2015	2016	2017	2018
100 km/h	Urban	All	89.7	88.6	87.5	86.6
100 km/h	Urban	Local	71.1	69.3	62.7	63.6
100 km/h	Urban	Arterial	90.5	89.6	88.6	87.7
100 km/h	Regional	All	86.4	83.5	82.0	82.6
100 km/h	Regional	Local	58.3	48.6	57.3	56.0
100 km/h	Regional	Arterial	89.4	88.6	86.6	88.0
110 km/h	All	All	95.6	98.6	98.8	98.9
110 km/h	All	Local	107.8			7.7
110 km/h	All	Arterial	95.6	98.6	98.8	98.9
110 km/h	Urban	All	95.6	98.6	98.8	98.9
110 km/h	Urban	Local	107.8			7.7
110 km/h	Urban	Arterial	95.6	98.6	98.8	98.9
110 km/h	Regional	All				
110 km/h	Regional	Local				
110 km/h	Regional	Arterial				

Table A3.6: Percentage of speed limit, urban, regional and all areas, local, arterial and all roads, Brisbane, 2015 to 2018

Speed limit	Area	Road type	2015	2016	2017	2018
All	All	All	59.9%	55.9%	57.1%	61.6%
All	All	Local	50.5%	46.4%	48.7%	54.8%
All	All	Arterial	76.1%	75.8%	75.2%	76.8%
All	Urban	All	58.9%	54.9%	56.1%	60.7%
All	Urban	Local	50.3%	46.4%	48.5%	54.8%
All	Urban	Arterial	74.8%	74.6%	74.0%	75.6%
All	Regional	All	80.6%	75.2%	75.6%	77.3%
All	Regional	Local	59.6%	50.0%	55.0%	57.4%
All	Regional	Arterial	87.3%	86.0%	84.5%	86.2%

Table A3.7: Compliance with speed limits, urban, regional and all areas, local, arterial and all roads, Brisbane, 2015 to 2018

Speed limit	Area	Road type	Type	2015	2016	2017	2018
All	All	All	Compliance	73.8%	74.2%	76.1%	75.1%
All	All	Local	Compliance	82.2%	82.3%	82.8%	81.0%
All	All	Arterial	Compliance	66.9%	66.7%	69.4%	68.4%
All	Urban	All	Compliance	70.2%	68.8%	71.8%	71.0%
All	Urban	Local	Compliance	70.4%	72.8%	75.7%	75.2%
All	Urban	Arterial	Compliance	70.1%	68.1%	71.0%	70.1%
All	Regional	All	Compliance	74.1%	74.7%	76.5%	75.6%
All	Regional	Local	Compliance	82.5%	82.5%	83.0%	81.2%
All	Regional	Arterial	Compliance	66.4%	66.5%	69.1%	68.1%
50 km/h	All	All	Compliance	87.1%	87.5%	87.6%	85.6%
50 km/h	All	Local	Compliance	87.1%	87.5%	87.6%	85.6%
50 km/h	All	Arterial	Compliance				
50 km/h	Urban	All	Compliance	59.5%	63.1%	62.9%	61.2%
50 km/h	Urban	Local	Compliance	59.5%	63.1%	62.9%	61.2%
50 km/h	Urban	Arterial	Compliance				
50 km/h	Regional	All	Compliance	87.8%	88.1%	88.2%	86.2%
50 km/h	Regional	Local	Compliance	87.8%	88.1%	88.2%	86.2%
50 km/h	Regional	Arterial	Compliance				
60 km/h	All	All	Compliance	78.0%	77.4%	78.4%	76.3%
60 km/h	All	Local	Compliance	81.6%	80.8%	81.3%	79.1%
60 km/h	All	Arterial	Compliance	73.8%	73.3%	74.7%	72.3%
60 km/h	Urban	All	Compliance	60.1%	60.7%	63.3%	62.2%
60 km/h	Urban	Local	Compliance	49.1%	48.8%	51.0%	51.4%
60 km/h	Urban	Arterial	Compliance	63.5%	64.8%	67.8%	66.3%
60 km/h	Regional	All	Compliance	78.3%	77.8%	78.8%	76.6%
60 km/h	Regional	Local	Compliance	81.9%	81.1%	81.7%	79.4%
60 km/h	Regional	Arterial	Compliance	74.2%	73.7%	75.0%	72.6%
80 km/h	All	All	Compliance	60.9%	61.8%	63.7%	63.5%
80 km/h	All	Local	Compliance	69.2%	71.1%	74.0%	73.5%
80 km/h	All	Arterial	Compliance	58.4%	58.4%	59.7%	59.4%
80 km/h	Urban	All	Compliance	52.2%	56.1%	58.3%	58.7%
80 km/h	Urban	Local	Compliance	68.5%	73.1%	74.2%	72.9%
80 km/h	Urban	Arterial	Compliance	50.5%	53.7%	55.8%	56.3%
80 km/h	Regional	All	Compliance	61.9%	62.4%	64.4%	64.1%
80 km/h	Regional	Local	Compliance	69.3%	71.0%	74.0%	73.5%
80 km/h	Regional	Arterial	Compliance	59.4%	59.0%	60.3%	59.8%
100 km/h	All	All	Compliance	60.9%	61.0%	66.2%	66.9%
100 km/h	All	Local	Compliance	84.0%	88.4%	93.0%	93.3%
100 km/h	All	Arterial	Compliance	59.8%	59.5%	64.5%	65.0%
100 km/h	Urban	All	Compliance	75.0%	72.3%	75.9%	75.2%
100 km/h	Urban	Local	Compliance	90.8%	93.9%	93.3%	93.5%

Speed limit	Area	Road type	Type	2015	2016	2017	2018
100 km/h	Urban	Arterial	Compliance	73.8%	70.5%	73.8%	72.9%
100 km/h	Regional	All	Compliance	54.4%	55.3%	60.4%	61.4%
100 km/h	Regional	Local	Compliance	77.9%	83.2%	92.5%	92.8%
100 km/h	Regional	Arterial	Compliance	53.6%	54.2%	59.3%	60.2%
110 km/h	All	All	Compliance	66.6%	55.8%	62.5%	60.6%
110 km/h	All	Local	Compliance	57.1%			100.0%
110 km/h	All	Arterial	Compliance	66.6%	55.8%	62.5%	60.6%
110 km/h	Urban	All	Compliance				
110 km/h	Urban	Local	Compliance				
110 km/h	Urban	Arterial	Compliance				
110 km/h	Regional	All	Compliance	66.6%	55.8%	62.5%	60.6%
110 km/h	Regional	Local	Compliance	57.1%			100.0%
110 km/h	Regional	Arterial	Compliance	66.6%	55.8%	62.5%	60.6%
All	All	All	<10% above speed limit	16.4%	15.7%	15.6%	16.3%
All	All	Local	<10% above speed limit	8.3%	8.3%	8.7%	9.7%
All	All	Arterial	<10% above speed limit	23.0%	22.5%	22.5%	23.8%
All	Urban	All	<10% above speed limit	18.3%	19.2%	19.6%	20.7%
All	Urban	Local	<10% above speed limit	9.0%	7.5%	7.5%	7.5%
All	Urban	Arterial	<10% above speed limit	19.7%	21.3%	22.2%	23.7%
All	Regional	All	<10% above speed limit	16.3%	15.4%	15.2%	15.8%
All	Regional	Local	<10% above speed limit	8.3%	8.3%	8.7%	9.8%
All	Regional	Arterial	<10% above speed limit	23.5%	22.7%	22.5%	23.8%
50 km/h	All	All	<10% above speed limit	4.9%	4.6%	5.0%	6.0%
50 km/h	All	Local	<10% above speed limit	4.9%	4.6%	5.0%	6.0%
50 km/h	All	Arterial	<10% above speed limit				
50 km/h	Urban	All	<10% above speed limit	8.4%	7.5%	7.6%	7.2%
50 km/h	Urban	Local	<10% above speed limit	8.4%	7.5%	7.6%	7.2%
50 km/h	Urban	Arterial	<10% above speed limit				
50 km/h	Regional	All	<10% above speed limit	4.8%	4.6%	4.9%	5.9%
50 km/h	Regional	Local	<10% above speed limit	4.8%	4.6%	4.9%	5.9%
50 km/h	Regional	Arterial	<10% above speed limit				
60 km/h	All	All	<10% above speed limit	11.8%	11.9%	12.0%	13.4%
60 km/h	All	Local	<10% above speed limit	10.0%	10.1%	10.5%	11.9%
60 km/h	All	Arterial	<10% above speed limit	13.9%	14.0%	14.0%	15.5%
60 km/h	Urban	All	<10% above speed limit	14.9%	14.5%	13.8%	14.1%
60 km/h	Urban	Local	<10% above speed limit	11.5%	9.4%	8.7%	9.0%
60 km/h	Urban	Arterial	<10% above speed limit	15.9%	16.3%	15.7%	16.0%
60 km/h	Regional	All	<10% above speed limit	11.8%	11.8%	12.0%	13.4%
60 km/h	Regional	Local	<10% above speed limit	10.0%	10.1%	10.5%	12.0%
60 km/h	Regional	Arterial	<10% above speed limit	13.8%	13.9%	13.9%	15.5%
80 km/h	All	All	<10% above speed limit	22.4%	22.8%	24.2%	25.2%
80 km/h	All	Local	<10% above speed limit	15.5%	17.2%	18.0%	18.5%
80 km/h	All	Arterial	<10% above speed limit	24.5%	24.9%	26.5%	28.0%
80 km/h	Urban	All	<10% above speed limit	23.3%	23.5%	24.5%	24.3%

Speed limit	Area	Road type	Type	2015	2016	2017	2018
80 km/h	Urban	Local	<10% above speed limit	16.2%	13.2%	12.6%	13.5%
80 km/h	Urban	Arterial	<10% above speed limit	24.1%	24.9%	26.4%	26.2%
80 km/h	Regional	All	<10% above speed limit	22.3%	22.8%	24.1%	25.3%
80 km/h	Regional	Local	<10% above speed limit	15.5%	17.4%	18.3%	18.8%
80 km/h	Regional	Arterial	<10% above speed limit	24.6%	24.9%	26.6%	28.2%
100 km/h	All	All	<10% above speed limit	32.8%	31.4%	30.3%	30.8%
100 km/h	All	Local	<10% above speed limit	9.2%	6.8%	5.6%	5.9%
100 km/h	All	Arterial	<10% above speed limit	33.9%	32.7%	31.9%	32.6%
100 km/h	Urban	All	<10% above speed limit	18.7%	20.3%	20.7%	22.2%
100 km/h	Urban	Local	<10% above speed limit	6.9%	4.7%	5.7%	5.5%
100 km/h	Urban	Arterial	<10% above speed limit	19.5%	21.5%	22.5%	24.3%
100 km/h	Regional	All	<10% above speed limit	39.3%	36.9%	36.1%	36.6%
100 km/h	Regional	Local	<10% above speed limit	11.2%	8.8%	5.4%	6.6%
100 km/h	Regional	Arterial	<10% above speed limit	40.3%	38.0%	37.1%	37.6%
110 km/h	All	All	<10% above speed limit	28.0%	36.0%	33.0%	36.7%
110 km/h	All	Local	<10% above speed limit	42.9%			0.0%
110 km/h	All	Arterial	<10% above speed limit	28.0%	36.0%	33.0%	36.7%
110 km/h	Urban	All	<10% above speed limit				
110 km/h	Urban	Local	<10% above speed limit				
110 km/h	Urban	Arterial	<10% above speed limit				
110 km/h	Regional	All	<10% above speed limit	28.0%	36.0%	33.0%	36.7%
110 km/h	Regional	Local	<10% above speed limit	42.9%			0.0%
110 km/h	Regional	Arterial	<10% above speed limit	28.0%	36.0%	33.0%	36.7%
All	All	All	10-20% above speed limit	5.4%	5.4%	4.9%	5.3%
All	All	Local	10-20% above speed limit	4.6%	4.5%	4.5%	5.1%
All	All	Arterial	10-20% above speed limit	6.1%	6.2%	5.3%	5.6%
All	Urban	All	10-20% above speed limit	5.4%	5.4%	4.4%	4.6%
All	Urban	Local	10-20% above speed limit	6.3%	5.5%	4.7%	4.8%
All	Urban	Arterial	10-20% above speed limit	5.3%	5.3%	4.4%	4.6%
All	Regional	All	10-20% above speed limit	5.4%	5.4%	5.0%	5.4%
All	Regional	Local	10-20% above speed limit	4.5%	4.5%	4.5%	5.1%
All	Regional	Arterial	10-20% above speed limit	6.3%	6.3%	5.5%	5.8%
50 km/h	All	All	10-20% above speed limit	3.5%	3.4%	3.5%	4.1%
50 km/h	All	Local	10-20% above speed limit	3.5%	3.4%	3.5%	4.1%
50 km/h	All	Arterial	10-20% above speed limit				
50 km/h	Urban	All	10-20% above speed limit	8.8%	8.0%	8.1%	8.0%
50 km/h	Urban	Local	10-20% above speed limit	8.8%	8.0%	8.1%	8.0%
50 km/h	Urban	Arterial	10-20% above speed limit				
50 km/h	Regional	All	10-20% above speed limit	3.4%	3.3%	3.4%	4.1%
50 km/h	Regional	Local	10-20% above speed limit	3.4%	3.3%	3.4%	4.1%
50 km/h	Regional	Arterial	10-20% above speed limit				
60 km/h	All	All	10-20% above speed limit	5.8%	5.8%	5.7%	6.5%
60 km/h	All	Local	10-20% above speed limit	4.9%	5.0%	5.0%	5.8%
60 km/h	All	Arterial	10-20% above speed limit	6.8%	6.8%	6.6%	7.5%

Speed limit	Area	Road type	Type	2015	2016	2017	2018
60 km/h	Urban	All	10-20% above speed limit	10.7%	9.8%	9.0%	9.4%
60 km/h	Urban	Local	10-20% above speed limit	10.3%	8.2%	7.5%	8.0%
60 km/h	Urban	Arterial	10-20% above speed limit	10.8%	10.4%	9.5%	10.0%
60 km/h	Regional	All	10-20% above speed limit	5.7%	5.7%	5.6%	6.4%
60 km/h	Regional	Local	10-20% above speed limit	4.9%	5.0%	5.0%	5.7%
60 km/h	Regional	Arterial	10-20% above speed limit	6.6%	6.7%	6.5%	7.4%
80 km/h	All	All	10-20% above speed limit	10.6%	10.0%	9.2%	9.1%
80 km/h	All	Local	10-20% above speed limit	8.2%	7.3%	5.9%	6.2%
80 km/h	All	Arterial	10-20% above speed limit	11.3%	11.0%	10.5%	10.3%
80 km/h	Urban	All	10-20% above speed limit	15.0%	12.8%	12.5%	12.7%
80 km/h	Urban	Local	10-20% above speed limit	8.9%	8.2%	8.0%	8.0%
80 km/h	Urban	Arterial	10-20% above speed limit	15.6%	13.4%	13.2%	13.5%
80 km/h	Regional	All	10-20% above speed limit	10.1%	9.7%	8.8%	8.7%
80 km/h	Regional	Local	10-20% above speed limit	8.1%	7.3%	5.8%	6.1%
80 km/h	Regional	Arterial	10-20% above speed limit	10.7%	10.7%	10.1%	9.8%
100 km/h	All	All	10-20% above speed limit	3.4%	3.7%	2.2%	1.9%
100 km/h	All	Local	10-20% above speed limit	3.4%	2.2%	0.8%	0.7%
100 km/h	All	Arterial	10-20% above speed limit	3.4%	3.7%	2.3%	2.0%
100 km/h	Urban	All	10-20% above speed limit	2.9%	3.2%	2.1%	2.1%
100 km/h	Urban	Local	10-20% above speed limit	1.6%	1.0%	0.8%	0.8%
100 km/h	Urban	Arterial	10-20% above speed limit	3.0%	3.4%	2.2%	2.3%
100 km/h	Regional	All	10-20% above speed limit	3.6%	3.9%	2.3%	1.7%
100 km/h	Regional	Local	10-20% above speed limit	4.9%	3.3%	1.0%	0.5%
100 km/h	Regional	Arterial	10-20% above speed limit	3.6%	3.9%	2.3%	1.8%
110 km/h	All	All	10-20% above speed limit	5.3%	8.1%	4.5%	2.7%
110 km/h	All	Local	10-20% above speed limit	0.0%			0.0%
110 km/h	All	Arterial	10-20% above speed limit	5.3%	8.1%	4.5%	2.7%
110 km/h	Urban	All	10-20% above speed limit				
110 km/h	Urban	Local	10-20% above speed limit				
110 km/h	Urban	Arterial	10-20% above speed limit				
110 km/h	Regional	All	10-20% above speed limit	5.3%	8.1%	4.5%	2.7%
110 km/h	Regional	Local	10-20% above speed limit	0.0%			0.0%
110 km/h	Regional	Arterial	10-20% above speed limit	5.3%	8.1%	4.5%	2.7%
All	All	All	>20% above speed limit	4.4%	4.8%	3.4%	3.3%
All	All	Local	>20% above speed limit	4.9%	4.9%	4.1%	4.1%
All	All	Arterial	>20% above speed limit	4.0%	4.6%	2.7%	2.3%
All	Urban	All	>20% above speed limit	6.2%	6.6%	4.1%	3.6%
All	Urban	Local	>20% above speed limit	14.2%	14.2%	12.2%	12.5%
All	Urban	Arterial	>20% above speed limit	4.9%	5.3%	2.4%	1.7%
All	Regional	All	>20% above speed limit	4.2%	4.6%	3.3%	3.2%
All	Regional	Local	>20% above speed limit	4.6%	4.7%	3.8%	3.9%
All	Regional	Arterial	>20% above speed limit	3.8%	4.5%	2.8%	2.4%
50 km/h	All	All	>20% above speed limit	4.5%	4.5%	4.0%	4.3%
50 km/h	All	Local	>20% above speed limit	4.5%	4.5%	4.0%	4.3%

Speed limit	Area	Road type	Type	2015	2016	2017	2018
50 km/h	All	Arterial	>20% above speed limit				
50 km/h	Urban	All	>20% above speed limit	23.3%	21.3%	21.4%	23.6%
50 km/h	Urban	Local	>20% above speed limit	23.3%	21.3%	21.4%	23.6%
50 km/h	Urban	Arterial	>20% above speed limit				
50 km/h	Regional	All	>20% above speed limit	4.1%	4.0%	3.5%	3.8%
50 km/h	Regional	Local	>20% above speed limit	4.1%	4.0%	3.5%	3.8%
50 km/h	Regional	Arterial	>20% above speed limit				
60 km/h	All	All	>20% above speed limit	4.4%	4.9%	3.9%	3.8%
60 km/h	All	Local	>20% above speed limit	3.5%	4.1%	3.2%	3.2%
60 km/h	All	Arterial	>20% above speed limit	5.5%	5.8%	4.7%	4.7%
60 km/h	Urban	All	>20% above speed limit	14.3%	15.0%	13.9%	14.3%
60 km/h	Urban	Local	>20% above speed limit	29.1%	33.5%	32.8%	31.6%
60 km/h	Urban	Arterial	>20% above speed limit	9.8%	8.5%	7.0%	7.7%
60 km/h	Regional	All	>20% above speed limit	4.2%	4.6%	3.6%	3.6%
60 km/h	Regional	Local	>20% above speed limit	3.3%	3.8%	2.9%	2.9%
60 km/h	Regional	Arterial	>20% above speed limit	5.4%	5.7%	4.6%	4.6%
80 km/h	All	All	>20% above speed limit	6.1%	5.4%	2.9%	2.2%
80 km/h	All	Local	>20% above speed limit	7.1%	4.4%	2.0%	1.8%
80 km/h	All	Arterial	>20% above speed limit	5.8%	5.8%	3.3%	2.4%
80 km/h	Urban	All	>20% above speed limit	9.5%	7.7%	4.8%	4.2%
80 km/h	Urban	Local	>20% above speed limit	6.4%	5.5%	5.1%	5.5%
80 km/h	Urban	Arterial	>20% above speed limit	9.8%	8.0%	4.7%	4.0%
80 km/h	Regional	All	>20% above speed limit	5.7%	5.1%	2.7%	2.0%
80 km/h	Regional	Local	>20% above speed limit	7.1%	4.3%	1.8%	1.6%
80 km/h	Regional	Arterial	>20% above speed limit	5.2%	5.5%	3.1%	2.1%
100 km/h	All	All	>20% above speed limit	2.9%	4.0%	1.3%	0.4%
100 km/h	All	Local	>20% above speed limit	3.5%	2.6%	0.6%	0.2%
100 km/h	All	Arterial	>20% above speed limit	2.9%	4.1%	1.3%	0.4%
100 km/h	Urban	All	>20% above speed limit	3.5%	4.2%	1.3%	0.5%
100 km/h	Urban	Local	>20% above speed limit	0.6%	0.5%	0.3%	0.2%
100 km/h	Urban	Arterial	>20% above speed limit	3.7%	4.5%	1.5%	0.5%
100 km/h	Regional	All	>20% above speed limit	2.7%	3.9%	1.3%	0.3%
100 km/h	Regional	Local	>20% above speed limit	6.0%	4.7%	1.2%	0.1%
100 km/h	Regional	Arterial	>20% above speed limit	2.6%	3.9%	1.3%	0.3%
110 km/h	All	All	>20% above speed limit	0.0%	0.0%	0.0%	0.0%
110 km/h	All	Local	>20% above speed limit	0.0%			0.0%
110 km/h	All	Arterial	>20% above speed limit	0.0%	0.0%	0.0%	0.0%
110 km/h	Urban	All	>20% above speed limit				
110 km/h	Urban	Local	>20% above speed limit				
110 km/h	Urban	Arterial	>20% above speed limit				
110 km/h	Regional	All	>20% above speed limit	0.0%	0.0%	0.0%	0.0%
110 km/h	Regional	Local	>20% above speed limit	0.0%			0.0%
110 km/h	Regional	Arterial	>20% above speed limit	0.0%	0.0%	0.0%	0.0%

Table A3.8: Average speed when speeding, urban, regional and all areas, local, arterial and all roads, Brisbane, 2015 to 2018

Speed limit	Area	Road type	Type	2015	2016	2017	2018
50 km/h	All	All	All speeding	59.3	58.0	57.5	57.3
50 km/h	All	Local	All speeding	59.3	58.0	57.5	57.3
50 km/h	All	Arterial	All speeding				
50 km/h	Urban	All	All speeding	57.5	57.5	57.0	56.9
50 km/h	Urban	Local	All speeding	57.5	57.5	57.0	56.9
50 km/h	Urban	Arterial	All speeding				
50 km/h	Regional	All	All speeding	63.9	61.5	61.5	61.5
50 km/h	Regional	Local	All speeding	63.9	61.5	61.5	61.5
50 km/h	Regional	Arterial	All speeding				
60 km/h	All	All	All speeding	67.1	67.3	66.6	66.4
60 km/h	All	Local	All speeding	66.9	67.1	66.5	66.3
60 km/h	All	Arterial	All speeding	67.2	67.4	66.7	66.6
60 km/h	Urban	All	All speeding	67.0	67.1	66.5	66.3
60 km/h	Urban	Local	All speeding	66.7	66.9	66.2	66.1
60 km/h	Urban	Arterial	All speeding	67.1	67.3	66.7	66.5
60 km/h	Regional	All	All speeding	68.1	68.3	67.8	67.6
60 km/h	Regional	Local	All speeding	68.5	69.0	69.0	68.7
60 km/h	Regional	Arterial	All speeding	67.8	67.9	67.1	66.9
80 km/h	All	All	All speeding	88.5	88.6	87.2	86.7
80 km/h	All	Local	All speeding	88.6	87.9	86.6	86.5
80 km/h	All	Arterial	All speeding	88.5	88.7	87.4	86.7
80 km/h	Urban	All	All speeding	88.2	88.2	86.7	86.3
80 km/h	Urban	Local	All speeding	88.7	87.8	86.3	86.1
80 km/h	Urban	Arterial	All speeding	88.1	88.2	86.9	86.4
80 km/h	Regional	All	All speeding	89.3	89.6	88.4	87.6
80 km/h	Regional	Local	All speeding	88.2	88.4	88.3	88.1
80 km/h	Regional	Arterial	All speeding	89.4	89.7	88.5	87.5
100 km/h	All	All	All speeding	107.0	108.1	105.5	104.6
100 km/h	All	Local	All speeding	108.9	110.1	106.5	105.5
100 km/h	All	Arterial	All speeding	107.0	108.0	105.5	104.6
100 km/h	Urban	All	All speeding	107.7	109.2	106.2	105.1
100 km/h	Urban	Local	All speeding	109.8	110.2	106.7	104.9
100 km/h	Urban	Arterial	All speeding	107.6	109.1	106.2	105.1
100 km/h	Regional	All	All speeding	106.8	107.7	105.3	104.5
100 km/h	Regional	Local	All speeding	108.7	110.1	106.5	105.6
100 km/h	Regional	Arterial	All speeding	106.7	107.6	105.3	104.5
110 km/h	All	All	All speeding	117.6	118.3	116.5	115.3
110 km/h	All	Local	All speeding	116.9	117.0	116.7	115.7
110 km/h	All	Arterial	All speeding	117.6	118.3	116.5	115.3
110 km/h	Urban	All	All speeding	117.4	118.3	116.3	115.3
110 km/h	Urban	Local	All speeding	114.4	115.5	115.7	117.0

Speed limit	Area	Road type	Type	2015	2016	2017	2018
110 km/h	Urban	Arterial	All speeding	117.4	118.3	116.3	115.3
110 km/h	Regional	All	All speeding	117.7	118.2	116.6	115.4
110 km/h	Regional	Local	All speeding	117.6	117.2	116.9	115.5
110 km/h	Regional	Arterial	All speeding	117.7	118.2	116.6	115.4
50 km/h	All	All	<10% above speed limit	52.8	52.8	52.8	52.8
50 km/h	All	Local	<10% above speed limit	52.8	52.8	52.8	52.8
50 km/h	All	Arterial	<10% above speed limit				
50 km/h	Urban	All	<10% above speed limit	52.8	52.8	52.8	52.8
50 km/h	Urban	Local	<10% above speed limit	52.8	52.8	52.8	52.8
50 km/h	Urban	Arterial	<10% above speed limit				
50 km/h	Regional	All	<10% above speed limit	53.0	52.8	52.8	52.8
50 km/h	Regional	Local	<10% above speed limit	53.0	52.8	52.8	52.8
50 km/h	Regional	Arterial	<10% above speed limit				
60 km/h	All	All	<10% above speed limit	63.1	63.2	63.2	63.3
60 km/h	All	Local	<10% above speed limit	63.1	63.1	63.1	63.2
60 km/h	All	Arterial	<10% above speed limit	63.1	63.2	63.2	63.4
60 km/h	Urban	All	<10% above speed limit	63.1	63.2	63.2	63.3
60 km/h	Urban	Local	<10% above speed limit	63.1	63.1	63.1	63.2
60 km/h	Urban	Arterial	<10% above speed limit	63.1	63.2	63.3	63.4
60 km/h	Regional	All	<10% above speed limit	63.1	63.1	63.1	63.1
60 km/h	Regional	Local	<10% above speed limit	63.1	63.1	63.1	63.2
60 km/h	Regional	Arterial	<10% above speed limit	63.1	63.1	63.1	63.1
80 km/h	All	All	<10% above speed limit	84.1	84.2	84.1	84.1
80 km/h	All	Local	<10% above speed limit	83.8	83.9	83.8	83.9
80 km/h	All	Arterial	<10% above speed limit	84.1	84.2	84.1	84.2
80 km/h	Urban	All	<10% above speed limit	84.1	84.2	84.1	84.2
80 km/h	Urban	Local	<10% above speed limit	83.8	83.9	83.8	83.9
80 km/h	Urban	Arterial	<10% above speed limit	84.1	84.3	84.2	84.3
80 km/h	Regional	All	<10% above speed limit	84.0	84.0	84.0	84.0
80 km/h	Regional	Local	<10% above speed limit	83.8	83.9	84.0	83.9
80 km/h	Regional	Arterial	<10% above speed limit	84.0	84.0	84.0	84.0
100 km/h	All	All	<10% above speed limit	104.0	104.3	103.7	103.6
100 km/h	All	Local	<10% above speed limit	103.8	103.9	103.6	103.7
100 km/h	All	Arterial	<10% above speed limit	104.0	104.3	103.7	103.6
100 km/h	Urban	All	<10% above speed limit	105.6	106.6	104.9	104.5
100 km/h	Urban	Local	<10% above speed limit	104.0	104.1	103.6	103.6
100 km/h	Urban	Arterial	<10% above speed limit	105.7	106.6	105.0	104.6
100 km/h	Regional	All	<10% above speed limit	103.4	103.5	103.3	103.4
100 km/h	Regional	Local	<10% above speed limit	103.8	103.9	103.5	103.8
100 km/h	Regional	Arterial	<10% above speed limit	103.4	103.5	103.3	103.4
110 km/h	All	All	<10% above speed limit	115.2	115.6	114.8	114.4
110 km/h	All	Local	<10% above speed limit	114.0	114.1	114.0	114.0
110 km/h	All	Arterial	<10% above speed limit	115.2	115.6	114.8	114.4
110 km/h	Urban	All	<10% above speed limit	116.1	116.6	115.3	114.8

Speed limit	Area	Road type	Type	2015	2016	2017	2018
110 km/h	Urban	Local	<10% above speed limit	113.7	113.7	113.4	114.2
110 km/h	Urban	Arterial	<10% above speed limit	116.1	116.6	115.3	114.8
110 km/h	Regional	All	<10% above speed limit	114.4	114.7	114.3	114.2
110 km/h	Regional	Local	<10% above speed limit	114.1	114.2	114.2	113.9
110 km/h	Regional	Arterial	<10% above speed limit	114.4	114.7	114.3	114.2
50 km/h	All	All	10-20% above speed limit	57.7	57.7	57.7	57.8
50 km/h	All	Local	10-20% above speed limit	57.7	57.7	57.7	57.8
50 km/h	All	Arterial	10-20% above speed limit				
50 km/h	Urban	All	10-20% above speed limit	57.7	57.7	57.7	57.8
50 km/h	Urban	Local	10-20% above speed limit	57.7	57.7	57.7	57.8
50 km/h	Urban	Arterial	10-20% above speed limit				
50 km/h	Regional	All	10-20% above speed limit	57.8	57.8	57.8	57.9
50 km/h	Regional	Local	10-20% above speed limit	57.8	57.8	57.8	57.9
50 km/h	Regional	Arterial	10-20% above speed limit				
60 km/h	All	All	10-20% above speed limit	69.1	69.2	69.1	69.2
60 km/h	All	Local	10-20% above speed limit	69.0	69.1	69.0	69.1
60 km/h	All	Arterial	10-20% above speed limit	69.2	69.3	69.2	69.3
60 km/h	Urban	All	10-20% above speed limit	69.1	69.2	69.1	69.2
60 km/h	Urban	Local	10-20% above speed limit	69.0	69.1	69.0	69.1
60 km/h	Urban	Arterial	10-20% above speed limit	69.2	69.3	69.2	69.3
60 km/h	Regional	All	10-20% above speed limit	69.1	69.1	69.1	69.1
60 km/h	Regional	Local	10-20% above speed limit	69.1	69.1	69.1	69.1
60 km/h	Regional	Arterial	10-20% above speed limit	69.1	69.1	69.1	69.0
80 km/h	All	All	10-20% above speed limit	92.2	92.4	92.1	91.9
80 km/h	All	Local	10-20% above speed limit	92.0	91.9	91.7	91.7
80 km/h	All	Arterial	10-20% above speed limit	92.3	92.5	92.1	92.0
80 km/h	Urban	All	10-20% above speed limit	92.4	92.6	92.1	92.0
80 km/h	Urban	Local	10-20% above speed limit	92.0	92.0	91.7	91.6
80 km/h	Urban	Arterial	10-20% above speed limit	92.4	92.7	92.2	92.1
80 km/h	Regional	All	10-20% above speed limit	92.0	92.0	91.9	91.8
80 km/h	Regional	Local	10-20% above speed limit	91.9	91.9	92.0	91.9
80 km/h	Regional	Arterial	10-20% above speed limit	92.0	92.0	91.9	91.8
100 km/h	All	All	10-20% above speed limit	115.1	115.4	114.6	114.1
100 km/h	All	Local	10-20% above speed limit	115.0	115.4	114.5	114.2
100 km/h	All	Arterial	10-20% above speed limit	115.1	115.4	114.6	114.1
100 km/h	Urban	All	10-20% above speed limit	116.6	117.2	115.8	114.4
100 km/h	Urban	Local	10-20% above speed limit	115.6	115.7	115.0	114.3
100 km/h	Urban	Arterial	10-20% above speed limit	116.6	117.3	115.8	114.4
100 km/h	Regional	All	10-20% above speed limit	114.7	114.9	114.4	114.1
100 km/h	Regional	Local	10-20% above speed limit	114.7	115.3	114.5	114.2
100 km/h	Regional	Arterial	10-20% above speed limit	114.7	114.8	114.4	114.1
110 km/h	All	All	10-20% above speed limit	128.2	128.3	127.6	125.8
110 km/h	All	Local	10-20% above speed limit	127.7	128.0	127.7	126.4
110 km/h	All	Arterial	10-20% above speed limit	128.2	128.3	127.6	125.8

Speed limit	Area	Road type	Type	2015	2016	2017	2018
110 km/h	Urban	All	10-20% above speed limit	127.7	128.2	127.4	126.1
110 km/h	Urban	Local	10-20% above speed limit	124.9	126.7	127.1	126.5
110 km/h	Urban	Arterial	10-20% above speed limit	127.7	128.2	127.4	126.1
110 km/h	Regional	All	10-20% above speed limit	128.4	128.4	127.7	125.7
110 km/h	Regional	Local	10-20% above speed limit	127.9	128.1	127.8	126.4
110 km/h	Regional	Arterial	10-20% above speed limit	128.4	128.4	127.7	125.7
50 km/h	All	All	>20% above speed limit	69.7	68.6	68.2	68.1
50 km/h	All	Local	>20% above speed limit	69.7	68.6	68.2	68.1
50 km/h	All	Arterial	>20% above speed limit				
50 km/h	Urban	All	>20% above speed limit	67.9	67.9	67.4	67.4
50 km/h	Urban	Local	>20% above speed limit	67.9	67.9	67.4	67.4
50 km/h	Urban	Arterial	>20% above speed limit				
50 km/h	Regional	All	>20% above speed limit	71.7	71.1	70.9	70.7
50 km/h	Regional	Local	>20% above speed limit	71.7	71.1	70.9	70.7
50 km/h	Regional	Arterial	>20% above speed limit				
60 km/h	All	All	>20% above speed limit	80.7	80.7	79.9	79.2
60 km/h	All	Local	>20% above speed limit	80.8	81.0	80.0	79.2
60 km/h	All	Arterial	>20% above speed limit	80.6	80.5	79.8	79.2
60 km/h	Urban	All	>20% above speed limit	80.6	80.6	79.7	78.9
60 km/h	Urban	Local	>20% above speed limit	80.7	80.7	79.5	78.7
60 km/h	Urban	Arterial	>20% above speed limit	80.5	80.5	79.8	79.1
60 km/h	Regional	All	>20% above speed limit	81.1	81.6	81.1	80.9
60 km/h	Regional	Local	>20% above speed limit	81.9	82.8	83.1	82.4
60 km/h	Regional	Arterial	>20% above speed limit	80.7	80.8	79.6	79.6
80 km/h	All	All	>20% above speed limit	105.3	105.9	103.8	102.0
80 km/h	All	Local	>20% above speed limit	104.7	105.2	103.8	102.3
80 km/h	All	Arterial	>20% above speed limit	105.4	106.0	103.8	101.9
80 km/h	Urban	All	>20% above speed limit	105.8	106.5	104.7	102.3
80 km/h	Urban	Local	>20% above speed limit	104.7	105.3	104.3	102.4
80 km/h	Urban	Arterial	>20% above speed limit	106.2	106.8	104.9	102.3
80 km/h	Regional	All	>20% above speed limit	104.7	105.1	103.0	101.7
80 km/h	Regional	Local	>20% above speed limit	104.9	104.4	102.9	102.1
80 km/h	Regional	Arterial	>20% above speed limit	104.7	105.1	103.0	101.6
100 km/h	All	All	>20% above speed limit	128.4	128.5	128.1	126.3
100 km/h	All	Local	>20% above speed limit	128.3	128.4	128.0	126.8
100 km/h	All	Arterial	>20% above speed limit	128.5	128.5	128.1	126.3
100 km/h	Urban	All	>20% above speed limit	128.1	128.3	128.0	126.6
100 km/h	Urban	Local	>20% above speed limit	127.1	127.3	127.3	127.6
100 km/h	Urban	Arterial	>20% above speed limit	128.2	128.3	128.0	126.6
100 km/h	Regional	All	>20% above speed limit	128.5	128.6	128.1	126.3
100 km/h	Regional	Local	>20% above speed limit	128.6	128.7	128.2	126.7
100 km/h	Regional	Arterial	>20% above speed limit	128.5	128.6	128.1	126.3
110 km/h	All	All	>20% above speed limit	139.4	138.9	139.1	139.9
110 km/h	All	Local	>20% above speed limit	145.3	138.1	149.5	142.6

Speed limit	Area	Road type	Type	2015	2016	2017	2018
110 km/h	All	Arterial	>20% above speed limit	139.4	138.9	139.1	139.9
110 km/h	Urban	All	>20% above speed limit	139.0	139.5	139.4	142.0
110 km/h	Urban	Local	>20% above speed limit	139.5	135.6	167.0	143.1
110 km/h	Urban	Arterial	>20% above speed limit	139.0	139.5	139.3	142.0
110 km/h	Regional	All	>20% above speed limit	139.5	138.8	139.1	139.7
110 km/h	Regional	Local	>20% above speed limit	147.6	139.5	140.5	142.2
110 km/h	Regional	Arterial	>20% above speed limit	139.5	138.8	139.1	139.7



A3.3 Confidence ratings for LGAs

Table A3.9: Proportion of road lengths covered by data, local government areas in Queensland, 2015 to 2018

LGA	Arterial roads				All roads			
	2015	2016	2017	2018	2015	2016	2017	2018
Aurukun					1%	50%	46%	49%
Balonne	99%	99%	99%	96%	24%	32%	35%	41%
Banana	99%	100%	100%	84%	58%	61%	61%	56%
Barcaldine	94%	91%	91%	70%	18%	19%	24%	20%
Barcoo	52%	61%	100%	95%	8%	11%	17%	12%
Blackall-Tambo	72%	87%	74%	70%	16%	21%	20%	18%
Boulia	55%	52%	51%	25%	13%	11%	10%	5%
Brisbane	95%	95%	95%	92%	86%	87%	87%	83%
Bulloo	64%	60%	57%	19%	25%	24%	24%	13%
Bundaberg	92%	93%	91%	61%	60%	65%	68%	64%
Burdekin	97%	97%	97%	71%	62%	64%	71%	76%
Burke	11%	32%	80%	36%	14%	13%	25%	15%
Cairns	100%	100%	100%	66%	86%	89%	89%	84%
Carpentaria	50%	47%	52%	26%	16%	16%	18%	9%
Cassowary Coast	100%	100%	100%	58%	63%	70%	69%	63%
Central Highlands	92%	91%	91%	76%	56%	53%	59%	53%
Charters Towers	99%	98%	100%	94%	28%	30%	32%	30%
Cherbourg					58%	73%	76%	98%
Cloncurry	82%	79%	75%	52%	27%	28%	30%	21%
Cook	98%	97%	100%	33%	16%	23%	22%	14%
Croydon	100%	100%	100%	96%	13%	11%	11%	7%
Diamantina	29%	56%	73%	35%	6%	12%	13%	8%
Doomadgee					39%	40%	57%	41%
Douglas	100%	100%	100%	74%	60%	61%	63%	67%
Etheridge	96%	91%	99%	56%	33%	29%	29%	19%
Flinders	69%	86%	84%	40%	18%	18%	18%	11%
Fraser Coast	86%	87%	87%	65%	48%	50%	58%	54%
Gladstone	95%	96%	96%	65%	60%	64%	68%	66%
Gold Coast	100%	100%	100%	85%	85%	87%	87%	83%
Goondiwindi	99%	99%	99%	82%	34%	43%	47%	46%
Gympie	99%	99%	99%	63%	55%	59%	58%	55%
Hinchinbrook	92%	92%	92%	66%	45%	54%	57%	75%
Hope Vale					25%	29%	33%	35%
Ipswich	95%	95%	95%	93%	86%	89%	87%	85%
Isaac	100%	100%	98%	56%	54%	54%	56%	47%
Kowanyama					11%	14%	25%	17%
Livingstone	99%	100%	100%	66%	47%	51%	52%	47%
Lockhart River					5%	25%	13%	9%

LGA	Arterial roads				All roads			
	2015	2016	2017	2018	2015	2016	2017	2018
Lockyer Valley	97%	97%	97%	92%	67%	72%	70%	71%
Logan	90%	90%	90%	93%	88%	90%	90%	88%
Longreach	97%	97%	97%	77%	19%	21%	22%	15%
Mackay	100%	100%	100%	55%	65%	69%	70%	65%
Mapoon					11%	61%	64%	43%
Maranoa	99%	99%	99%	69%	39%	40%	40%	38%
Mareeba	85%	85%	94%	28%	47%	47%	49%	37%
McKinlay	85%	73%	79%	65%	24%	18%	23%	18%
Moreton Bay	93%	93%	93%	91%	87%	91%	91%	88%
Mornington					11%	3%	5%	20%
Mount Isa	80%	80%	69%	75%	29%	31%	32%	31%
Murweh	79%	81%	80%	84%	16%	26%	21%	23%
Napranum	100%	100%	100%	100%	9%	23%	13%	25%
Noosa	89%	89%	89%	86%	78%	82%	82%	69%
North Burnett	97%	97%	97%	58%	28%	30%	30%	27%
Northern Peninsula Area					33%	61%	80%	74%
Palm Island					22%	28%	27%	14%
Paroo	84%	83%	81%	65%	13%	12%	12%	11%
Pormpuraaw					17%	18%	33%	19%
Quilpie	69%	82%	86%	75%	14%	15%	18%	17%
Redland	96%	96%	96%	97%	81%	82%	82%	81%
Richmond	100%	100%	100%	100%	13%	11%	11%	9%
Rockhampton	100%	100%	100%	75%	51%	51%	56%	52%
Scenic Rim	99%	99%	99%	93%	67%	75%	73%	75%
Somerset	100%	100%	100%	92%	55%	63%	60%	59%
South Burnett	97%	94%	99%	68%	47%	51%	57%	51%
Southern Downs	100%	100%	100%	89%	56%	60%	67%	64%
Sunshine Coast	93%	93%	93%	89%	79%	82%	82%	71%
Tablelands	89%	89%	89%	87%	55%	56%	59%	62%
Toowoomba	98%	99%	99%	90%	64%	68%	73%	74%
Torres					20%	54%	61%	13%
Torres Strait Island					5%	29%	21%	17%
Townsville	100%	100%	100%	77%	84%	85%	84%	78%
Weipa	94%	100%	100%	26%	63%	96%	98%	84%
Western Downs	99%	99%	100%	65%	52%	48%	53%	55%
Whitsunday	99%	98%	99%	45%	44%	48%	57%	49%
Winton	99%	71%	81%	52%	13%	14%	14%	9%
Woorabinda	100%	100%	100%	37%	59%	72%	66%	60%
Wujal Wujal					62%	72%	72%	89%
Yarrabah					94%	94%	97%	100%

Table A3.10: Data sufficiency ratio, local government areas in Queensland, 2015 to 2018

LGA	Arterial roads				All roads			
	2015	2016	2017	2018	2015	2016	2017	2018
Aurukun					2	19	4	12
Balonne	211	267	383	526	117	117	146	168
Banana	1,163	1,007	1,239	1,631	424	274	328	388
Barcardine	146	184	207	432	91	103	95	175
Barcoo	11	8	41	22	5	6	24	15
Blackall-Tambo	265	301	355	412	160	175	178	222
Boulia	38	45	47	10	29	38	42	9
Brisbane	35,849	46,829	47,972	73,164	4,607	5,976	6,143	9,628
Bulloo	37	11	22	34	16	7	10	9
Bundaberg	2,980	4,205	4,989	6,378	573	776	855	862
Burdekin	4,961	5,562	6,290	6,227	654	740	897	856
Burke	1	3	36	67	8	9	25	27
Cairns	6,753	12,372	15,503	19,259	1,083	2,049	2,573	2,632
Carpentaria	30	102	89	57	25	73	66	71
Cassowary Coast	5,191	5,483	5,509	6,904	1,371	1,259	1,256	1,047
Central Highlands	1,046	1,215	1,811	2,222	349	428	550	621
Charters Towers	572	796	1,840	1,622	242	318	693	605
Cherbourg					31	49	41	103
Cloncurry	213	302	845	745	154	197	514	478
Cook	127	226	401	370	107	141	240	209
Croydon	51	52	57	56	29	34	35	51
Diamantina	7	8	15	17	7	8	12	10
Doomadgee					8	11	14	42
Douglas	8,831	12,494	11,915	16,019	1,580	2,170	2,093	2,377
Etheridge	35	48	39	98	22	31	28	61
Flinders	200	204	1,335	2,022	115	140	861	961
Fraser Coast	4,769	5,278	6,436	7,408	699	754	823	814
Gladstone	5,733	7,598	8,300	9,644	1,251	1,607	1,589	1,429
Gold Coast	25,641	37,708	42,165	60,134	3,354	4,946	5,600	7,370
Goondiwindi	1,424	2,002	2,542	2,483	603	679	794	671
Gympie	2,780	2,757	3,365	3,831	651	621	761	640
Hinchinbrook	4,838	6,096	7,671	9,826	560	593	746	815
Hope Vale					94	96	78	82
Ipswich	15,768	19,689	21,976	28,712	2,615	3,060	3,388	4,351
Isaac	1,936	2,346	3,715	5,314	1,036	1,072	1,569	1,446
Kowanyama					4	5	25	51
Livingstone	3,105	5,374	5,781	4,663	705	1,077	1,082	672
Lockhart River					3	3	11	6
Lockyer Valley	8,682	9,894	12,879	14,121	1,420	1,512	2,046	1,949
Logan	26,791	38,162	43,442	57,027	3,243	4,555	5,213	7,102

LGA	Arterial roads				All roads			
	2015	2016	2017	2018	2015	2016	2017	2018
Longreach	341	366	377	498	166	166	160	239
Mackay	2,714	3,694	5,344	8,297	584	803	1,145	1,199
Mapoon					1	13	46	8
Maranoa	1,717	1,097	1,254	1,660	947	375	384	374
Mareeba	521	767	1,098	2,926	214	325	496	613
McKinlay	227	324	1,848	1,520	134	218	1,040	971
Moreton Bay	17,029	22,913	24,882	36,032	2,218	3,066	3,393	4,735
Mornington					3	2	3	46
Mount Isa	578	619	1,002	701	318	322	448	366
Murweh	325	333	379	420	217	153	196	205
Napranum	17	60	74	58	14	21	56	27
Noosa	5,339	6,713	7,742	10,503	1,090	1,348	1,537	2,569
North Burnett	292	307	396	692	99	106	132	160
Northern Peninsula Area					8	11	62	146
Palm Island					17	15	11	5
Paroo	130	95	117	181	83	68	78	105
Pormpuraaw					5	5	10	2
Quilpie	80	61	68	132	58	55	45	76
Redland	9,213	12,822	13,369	22,182	1,158	1,626	1,647	2,653
Richmond	448	565	4,219	3,763	172	257	1,821	1,928
Rockhampton	3,971	4,588	5,762	6,513	724	867	969	1,024
Scenic Rim	2,240	3,390	3,981	4,814	612	833	1,023	1,157
Somerset	2,747	3,081	3,943	4,525	798	780	1,079	1,172
South Burnett	630	618	797	1,186	167	158	199	240
Southern Downs	1,775	2,285	2,818	2,857	410	495	558	539
Sunshine Coast	19,471	23,255	24,639	31,805	3,351	3,913	4,161	5,955
Tablelands	978	957	1,397	1,762	238	226	319	400
Toowoomba	2,699	3,002	3,586	4,166	667	695	781	905
Torres					6	10	42	86
Torres Strait Island					3	92	137	100
Townsville	6,938	8,883	10,712	11,594	1,300	1,644	2,097	1,966
Weipa	84	15,461	18,986	4,938	31	3,244	4,005	1,530
Western Downs	4,282	1,649	1,925	2,608	1,255	457	490	455
Whitsunday	2,313	3,136	4,206	6,514	674	941	1,075	977
Winton	142	271	283	504	109	142	168	304
Woorabinda	142	139	213	579	59	50	110	275
Wujal Wujal					151	144	258	206
Yarrabah					169	220	378	1,623

Table A3.11: Top 100 worst roads or road segments in Queensland, based on speeding metrics for 2018

Street name	SA2 Area	Start		End	
		Long	Lat	Long	Lat
Peak Downs Highway	Broadsound - Nebo	148.18349	-21.99285	148.94276	-21.38641
Teviot Rd	Greenbank	152.98404	-27.80067	152.98643	-27.72174
Mount Cotton Rd	Sheldon - Mount Cotton	153.24053	-27.63838	153.2226	-27.58334
Beaudesert Nerang Rd	Tamborine - Canungra	153.20826	-28.01739	153.15519	-28.00906
Tamborine Mountain Rd	Tamborine - Canungra	153.18407	-27.90945	153.1672	-27.90118
Maudsland Rd	Oxenford - Maudsland	153.2742	-27.96017	153.29126	-27.90681
Cunningham Hwy	Boonah	152.61657	-27.82847	152.61683	-27.82055
Cunningham Hwy	Boonah	152.39911	-28.05432	152.40348	-28.05871
Cunningham Hwy	Boonah	152.41249	-28.06086	152.44571	-28.04513
Bruce Highway	Gympie - North	152.69674	-26.2297	152.69296	-26.22542
Bruce Highway	Gympie - North	152.68788	-26.22245	152.68702	-26.22046
Bruce Highway	Gympie - North	152.6797	-26.21344	152.66842	-26.20149
Beenleigh Redland Bay Rd	Cornubia - Carbrook	153.19583	-27.6709	153.20817	-27.67213
Beenleigh Redland Bay Rd	Cornubia - Carbrook	153.24309	-27.67848	153.28261	-27.68703
Bruce Highway	Gympie Region	152.70732	-26.25639	152.6991	-26.2367
Bruce Highway	Gympie Region	152.64443	-26.17388	152.57337	-26.11753
Bruce Highway	Gympie Region	152.58171	-25.97614	152.59817	-25.95927
Mount Lindesay Hwy	Jimboomba	152.97803	-27.90736	152.97647	-27.88762
Mount Lindesay Hwy	Jimboomba	153.01695	-27.84978	153.02652	-27.83648
Mount Lindesay Hwy	Jimboomba	153.02968	-27.82032	153.02865	-27.81115
Bruce Highway	Babinda	145.92282	-17.34832	145.92785	-17.33329
Bruce Highway	Babinda	145.91727	-17.22473	145.88394	-17.17818
Bruce Highway	Babinda	145.79815	-17.1052	145.78678	-17.10071
Mount Cotton Rd	Sheldon - Mount Cotton	153.23885	-27.64512	153.23604	-27.61575
Mount Cotton Rd	Sheldon - Mount Cotton	153.23409	-27.60511	153.2013	-27.56318
Park Ridge Rd	Boronia Heights - Park Ridge	153.0302	-27.72536	153.03182	-27.68722
Tamborine Oxenford Rd	Upper Coomera - Willow Vale	153.20551	-27.8989	153.22896	-27.87571
Tamborine Oxenford Rd	Upper Coomera - Willow Vale	153.23818	-27.88154	153.248	-27.89921
Bruce Highway	Northern Beaches	146.55434	-19.17738	146.49321	-19.12477
Bruce Highway	Northern Beaches	146.39884	-19.05452	146.38904	-19.04545
Mount Samson Rd	Samford Valley	152.90417	-27.38986	152.89827	-27.38183
Mount Samson Rd	Samford Valley	152.88742	-27.36898	152.88221	-27.35542

Street name	SA2 Area	Start		End	
		Long	Lat	Long	Lat
Mount Samson Rd	Samford Valley	152.8686	-27.33175	152.86109	-27.32121
David Low Way	Peregian Beach - Marcus Beach	153.0932	-26.49331	153.10203	-26.44892
Warrego Highway	Rosewood	152.57745	-27.56317	152.69685	-27.57615
Warrego Highway	Lockyer Valley - West	152.29419	-27.54065	152.14514	-27.5516
Warrego Highway	Lockyer Valley - West	152.03843	-27.54875	152.01274	-27.55705
Port Curtis Way	Callemondah	151.17913	-23.83534	151.22487	-23.84971
Yandina Coolum Rd	Eumundi - Yandina	152.9709	-26.5603	152.99403	-26.56366
Yandina Coolum Rd	Eumundi - Yandina	153.022	-26.57065	153.04534	-26.53746
Mount Crosby Rd	Karana Downs	152.80547	-27.55634	152.80366	-27.53134
Mount Crosby Rd	Karana Downs	152.80974	-27.52855	152.8471	-27.53123
Warrego Highway	Jondaryan	151.58905	-27.36627	151.5987	-27.37234
Warrego Highway	Jondaryan	151.7204	-27.45729	151.73095	-27.46276
New England Highway	Stanthorpe Region	151.85458	-28.8284	151.84933	-28.82486
New England Highway	Stanthorpe Region	151.84309	-28.80388	151.85419	-28.77323
New England Highway	Stanthorpe Region	151.86367	-28.75819	151.86854	-28.75289
Bruce Highway	Bundaberg Region - South	152.0367	-25.21384	152.04338	-25.21626
Bruce Highway	Bundaberg Region - South	152.22849	-25.2111	152.23503	-25.21566
Middle Rd	Boronia Heights - Park Ridge	153.01112	-27.69892	153.01998	-27.68003
Middle Rd	Boronia Heights - Park Ridge	152.98895	-27.71863	152.99181	-27.71695
Bruce Highway	Deception Bay	152.98229	-27.17242	152.97815	-27.15147
Bruce Highway	Deeragun	146.63831	-19.22834	146.69423	-19.2562
Linkfield Rd	Bald Hills	152.99902	-27.33055	153.01898	-27.33198
Murphys Creek Rd	Lockyer Valley - West	151.96623	-27.4923	151.9738	-27.47296
Murphys Creek Rd	Lockyer Valley - West	152.04418	-27.46398	152.06322	-27.46942
Murphys Creek Rd	Lockyer Valley - West	152.04828	-27.54212	152.057	-27.53596
Chambers Flat Rd	Chambers Flat - Logan Reserve	153.05545	-27.75001	153.0887	-27.74482
Chambers Flat Rd	Chambers Flat - Logan Reserve	153.10245	-27.69525	153.10251	-27.6926
North Shore Connection Rd	Marcoola - Mudjimba	153.07454	-26.61156	153.08575	-26.61075
David Low Way	Marcoola - Mudjimba	153.06303	-26.62472	153.06558	-26.62278
David Low Way	Marcoola - Mudjimba	153.09269	-26.57956	153.09173	-26.57429
Old Cleveland Rd	Belmont - Gumdale	153.12872	-27.50429	153.18651	-27.51944
German Church Rd	Redland Bay	153.26345	-27.63196	153.29551	-27.6221
Moreton Bay Rd	Capalaba	153.18482	-27.52474	153.19915	-27.52319
Beaudesert Nerang Rd	Nerang - Mount Nathan	153.30207	-27.99911	153.33007	-27.99345

Street name	SA2 Area	Start		End	
		Long	Lat	Long	Lat
Bruce Highway	Burrum - Fraser	152.41586	-25.29064	152.54504	-25.32308
Southern Cross Way	Brisbane Airport	153.08189	-27.43089	153.09084	-27.39361
Bruce Highway	Maryborough (Qld)	152.66618	-25.523	152.67045	-25.51081
Centenary Hwy	Forest Lake - Doolandella	152.94484	-27.60122	152.94166	-27.62686
Gatton Esk Rd	Lockyer Valley - East	152.33673	-27.49468	152.32104	-27.5433
Gold Coast Hwy	Palm Beach	153.48122	-28.13171	153.47452	-28.12404
Waterford Tamborine Rd	Bethania - Waterford	153.14196	-27.69401	153.13262	-27.7085
Moggill Rd	Pinjarra Hills - Pullenvale	152.89082	-27.54257	152.9035	-27.53371
Warrego Highway	Toowoomba - East	151.97804	-27.56491	151.99841	-27.56541
David Low Way	Sunshine Beach	153.10203	-26.44892	153.10662	-26.40939
Steve Irwin Way	Glass House Mountains	152.96029	-26.96235	152.95745	-26.92319
Dayboro Rd	Dayboro	152.82703	-27.19575	152.84184	-27.1971
Park Ridge Rd	Boronia Heights - Park Ridge	153.04017	-27.69841	153.09118	-27.70841
M3	Brisbane City	153.01914	-27.46902	153.02649	-27.4771
D'Aguilar Hwy	Woodford - D'Aguilar	152.75644	-26.93073	152.77647	-26.9505
Anzac Avenue	Rothwell - Kippa-Ring	153.04733	-27.21271	153.06181	-27.2171
Elizabeth Avenue/Snook st	Rothwell - Kippa-Ring	153.08592	-27.22948	153.08539	-27.23469
Smith Street Way	Southport - North	153.37637	-27.96469	153.40756	-27.96287
Samford Rd	The Hills District	152.90443	-27.39035	152.93464	-27.3997
Old Bruce Highway	Noosa Hinterland	152.80732	-26.38864	152.86647	-26.39158
Bruce Highway	Gladstone Hinterland	151.30894	-23.99621	151.34485	-24.01361
Stapylton Jacobs Well Rd	Ormeau - Yatala	153.22972	-27.73462	153.25759	-27.7193
Old Cleveland Rd	Capalaba	153.18965	-27.52035	153.20138	-27.52029
Main St	Kangaroo Point	153.03571	-27.4631	153.03588	-27.48428
Inner City BYP	Kelvin Grove - Herston	153.01356	-27.45761	153.02804	-27.45086
Bracken Ridge Rd	Bracken Ridge	153.02524	-27.31067	153.04365	-27.31261
Narangba Rd	Dayboro	152.97605	-27.25046	152.97001	-27.22246
Brisbane Rd	Ipswich - East	152.77121	-27.61503	152.78419	-27.61371
New England Highway	North Toowoomba - Harlaxton	151.95534	-27.53436	151.95639	-27.50682
Worongary Rd	Worongary - Tallai	153.31053	-28.04164	153.35203	-28.061
Bermuda Street	Broadbeach Waters	153.40921	-28.03303	153.41103	-28.01584
Sunshine Mtwy	Maroochydore - Kuluin	153.06697	-26.6631	153.06753	-26.64199
Laidley Plainland Rd	Lockyer Valley - East	152.40247	-27.58937	152.42193	-27.56812
Gympie Rd	Kedron - Gordon Park	153.03492	-27.41359	153.03094	-27.39419



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