

Released under RTI - DTMR

Speed Limit Review | Western Arterial Road (U18B)

Ch 0.0km-4.6km

April 2020



Creative Commons information

© State of Queensland (Department of Transport and Main Roads) 2015



<http://creativecommons.org/licenses/by/4.0/>

This work is licensed under a Creative Commons Attribution 4.0 Licence. You are free to copy, communicate and adapt the work, as long as you attribute the authors.

The Queensland Government supports and encourages the dissemination and exchange of information. However, copyright protects this publication. The State of Queensland has no objection to this material being reproduced, made available online or electronically but only if its recognised as the owner of the copyright and this material remains unaltered.



The Queensland Government is committed to providing accessible services to Queenslanders of all cultural and linguistic backgrounds. If you have difficulty understanding this publication and need a translator, please call the Translating and Interpreting Service (TIS National) on 13 14 50 and ask them to telephone the Queensland Department of Transport and Main Roads on 13 74 68.

Disclaimer: While every care has been taken in preparing this publication, the State of Queensland accepts no responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained within. To the best of our knowledge, the content was correct at the time of publishing.

Released under R18/01/2015

Document control options

Departmental approvals

Refer to the appropriate Risk Assessment Tool for relevant reviewer and approver

Date	Name	Position	Action required (Review/endorse/approve)	Signature / Date
21/05/2020	NR	Principal Engineer	Review and recommended	NR
21 May 2020		Principal Engineer	Endorsed	NR
10/07/2020	NR	Manager	Endorsed	NR
13 July 2020	NR	Deputy Regional Director	Approved	NR

Risk level

- GACC major
 GACC minor
 High risk (but not GACC)
 Medium risk

Prepared by	
Title	
District & Region	
Branch & Division	
Project location	
Status	
DMS ref. no.	

Contents

1.	Introduction	1
1.1	Background	1
1.2	Scope of Works	1
2.	Existing Conditions	2
2.1	Road Information	2
2.2	Background Traffic Data	2
2.3	Crash History	3
2.4	Site Inspection	4
3.	Speed Limit Review	5
3.1	Speed Zoning	5
3.2	Criteria Based Speed Limit	5
3.3	Risk Assessed Speed Limits	7
3.3.1	Road Classification	7
3.3.2	Crash Risk Rating	7
3.3.3	Infrastructure Risk Rating	8
3.3.4	Risk Assessed Speed Limit	9
3.4	Speed Data Speed Limit	9
3.5	Option Selection	10
3.6	Engineer Recommendation	10
3.6.1	Segment 1	10
3.6.2	Segment 2	10
3.6.3	Segment 3	10
3.6.4	Segment 4	11
3.6.5	Segment 5	11
4.	Recommendation	12
5.	Certification	13
1	Attachment A- Traffic and Speed Survey Data	14
2	Attachment B- Crash Maps	15
3	Attachment C- Speed Limit Review Tools	16
4	Attachment D- Signage Plan	17

Table of Figures

Figure 1.1: Subject Corridor	1
Figure 2.1: Traffic Survey Locations	2
Figure 3.1: Corridor Segments	5
Figure 4.1: Recommended Speed Limits	12

Table of Tables

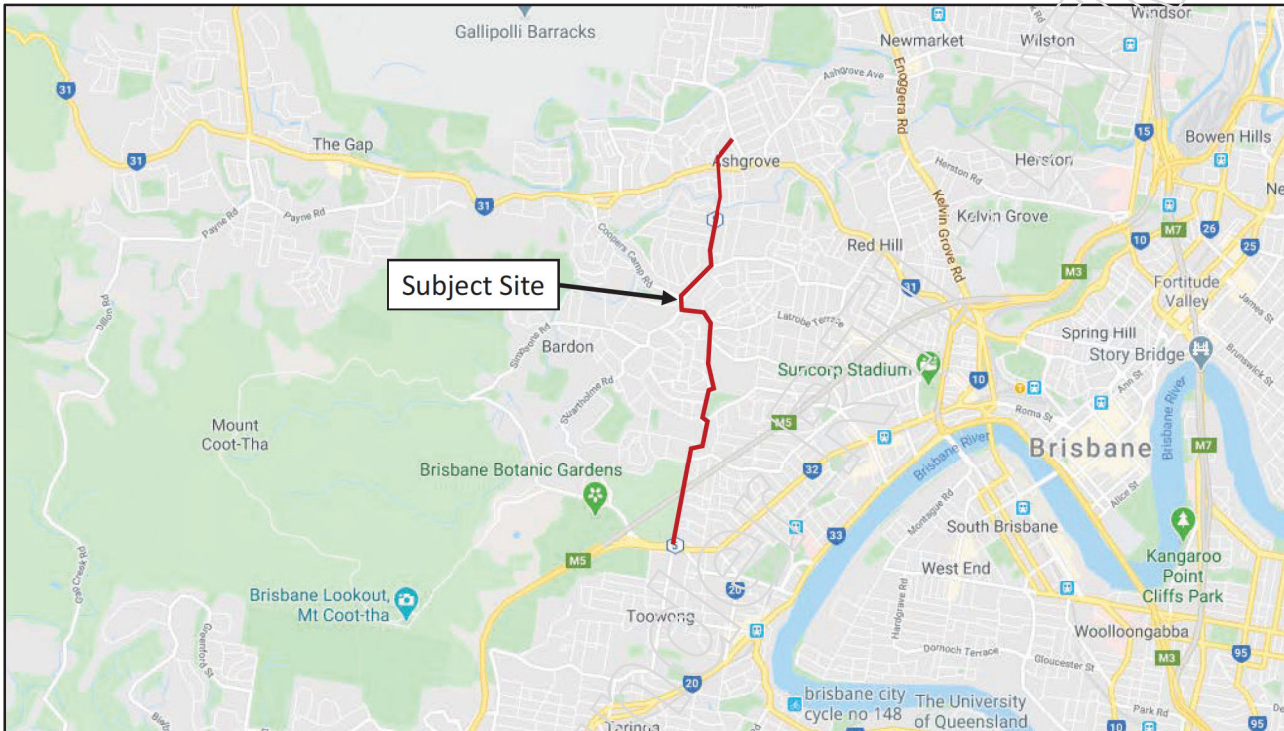
Table 2.1: Survey Locations	3
Table 2.2: Traffic & Speed Data (Greater than 4 Seconds Headway)	3
Table 3.1: Corridor Segments	5
Table 3.2: Pedestrian / Cyclist Peak Hour Volumes	6
Table 3.3: Road Classification	7
Table 3.4: Crash Data Summary	7
Table 3.5: Crash Risk Rating	8
Table 3.6: Infrastructure Risks	8
Table 3.7: Infrastructure Risk Rating	9
Table 3.8: Road Risk Metric / Risk Assessed Speed Limit Summary	9
Table 3.9: Speed Data Speed Limit	9
Table 3.10: Option Selection Summary	10
Table 4.1: SLR Outcome Summary	12

1. Introduction

1.1 Background

Bitzios Consulting has been commissioned by the Department of Transport and Main Roads (TMR) to undertake a Speed Limit Review (SLR) along The Western Arterial Road (U18B) between Stewart Road and Milton Road (subject corridor).

Figure 1.1 illustrates the location of subject corridor.



Source: Google Maps

Figure 1.1: Subject Corridor

The SLR has been undertaken in accordance with the requirements and guidance of the Manual of Uniform Traffic Control Devices Part 4: Speed Controls (MUTCD Part 4) published November 2019.

1.2 Scope of Works

The following scope of works has been completed:

- Undertake a 'drive through' and site visit of each identified segment within the subject corridor to observe existing conditions
- Review and summarise traffic and speed data provided by TMR
- Review and summarise historical crash data provided by TMR
- Insert observations and relevant data into the 'speed limit review technical tool' provided by the TMR for each identified segment along the study corridor
- Review the outputs from the 'speed limit review technical tool' and confirm if appropriate
- Summarise key findings and recommendations, including any engineering judgements.

2. Existing Conditions

2.1 Road Information

Key characteristics of the subject corridor are noted below:

- **Road Authority:** TMR
- **Road Hierarchy:** Arterial Road
- **Speed Limit:** 60km/h
- **Length:** approximately 4.3km
- **Cross Section:** Predominately 2-3 lane undivided
- **Adjacent Land Uses:** Residential and community facilities
- **Other Considerations:** There are bus stops, pedestrian crossing facilities, closely spaced roundabouts, and tight horizontal alignments along the corridor and large changes in elevation (added JJR 20200713).

The corridor includes a combination of median divided and undivided cross sections along the entire length. In accordance with MUTCD Part 4, where the carriageway is divided (i.e. Segment 3), each direction of travel has been considered. It is noted that northbound (NB) is the gazetted direction and southbound (SB) is the against gazetted direction.

2.2 Background Traffic Data

Traffic volume and speed surveys were undertaken as follows:

- **Segment 1, 3, 4, 5:** Monday 2nd March 2020 to Friday 6th March 2020 by Traffic Data & Control
- **Segment 2:** Tuesday 3rd September 2019 to Thursday 5th September 2019 provided by TMR.

It should be noted the data provided by TMR was recorded over a three (3) day period. This is considered acceptable as it is recorded from Tuesday to Thursday, which is sufficient to provide a detailed understanding of traffic volumes / speeds. Furthermore, due to the current COVID-19 situation, it was not feasible to undertake further surveys.

Figure 2.1 illustrates the locations where traffic volume and speed surveys were undertaken.



Source: Google Maps

Figure 2.1: Traffic Survey Locations

Table 2.1 identifies the agreed survey locations along each corridor.

Table 2.1: Survey Locations

Road	Segment	Survey Location		
		Chainage	Latitude	Longitude
Western Arterial Road	1	3.72km	-27.451265	152.988907
	2	2.75km	-27.458136	152.967464
	3	2.15km	-27.462430	152.988202
	4	1.35km	-27.469262	152.987897
	5	0.85km	-27.472885	152.985966

Table 2.2 provides a summary of the relevant traffic and speed data statistics.

Table 2.2: Traffic & Speed Data (Greater than 4 Seconds Headway)

Parameter	Segment					
	#1	#2	#3		#4	#5
Direction	Both	Both	NB	SB	Both	Both
Posted Speed Limit (km/h)	60	60	60		60	60
Traffic Volumes (vpd) (Note: Average of weekday data)	23,583	19,863	23,908		29,753	31,169
			11,095	12,813		
Average Speed (km/h)	49.7	36.2	38.4	57.7	45.9	54.5
15km/h Pace Speed (km/h)	46-61	32-47	48-63	54-69	41-56	48-63
Percentage Within Pace (%)	67.42	59.00	41.79	75.71	79.63	83.95

Vpd = vehicles per day NB = Northbound. SB = Southbound

The raw traffic volume and speed survey data is included at **Appendix A**.

2.3 Crash History

Crash data was sourced from TMR to assess the crash risk rating (CRR) of the subject corridor. The most recent five (5) years of data (at the time of request) was used.

The following crash severity groups and respective data periods were reviewed:

- **Fatal:** 1st March 2014 to 1st March 2019
- **Hospitalisation:** 1st March 2014 to 1st March 2019
- **Medical Treatment:** 1st March 2014 to 1st March 2019
- **Minor Injury:** 1st March 2014 to 1st March 2019.

The crash data indicates that 77 crashes were recorded along the subject corridor during the past five (5) years. Detailed crash maps are included at **Appendix B**.

2.4 Site Inspection

A site inspection was undertaken on Thursday 23rd of January 2020 at approximately 12:00pm to observe the existing conditions along the subject corridor.

Key observations from the site inspection are summarised below:

- Low pedestrian volumes were observed along the subject corridor
- Low cyclists were observed along the subject corridor
- A minor increase in pedestrian volumes occurred through the shopping strip in Segment 2. However, this was generally observed to be internal (i.e. within off-street car parking areas) and there was low on-street parking demand (including at the signalised crossing)
- Moderate congestion through signalised intersections was observed
- Hazards were observed within the verge in each direction including lighting poles and trees. These were generally observed within 5m of the carriageway at approximately 50m spacing
- Travel lanes were observed to be 3.0m and 3.5m wide.

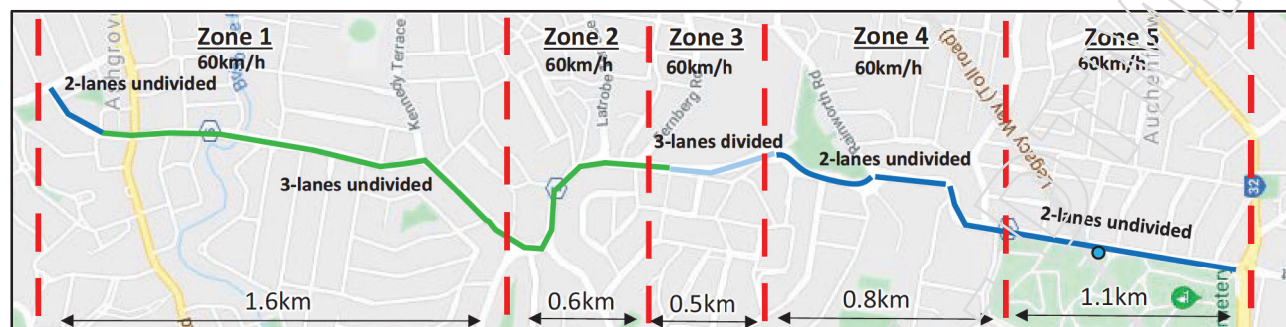
Released under RTI-DTPR

3. Speed Limit Review

3.1 Speed Zoning

The subject corridor includes several changes to cross section, traffic volumes and crash rates. As a result, the subject corridor was divided into five (5) homogenous segments for the SLR.

Figure 3.1 illustrates the adopted corridor segments.



Source: Google Maps

Figure 3.1: Corridor Segments

Table 3.1 provides a summary of the corridor segments that have been assessed.

Table 3.1: Corridor Segments

ID	Start Chainage	End Chainage	Speed Limit	Length
1	4.6km	3.0km	60km/h	1.6km
2	3.0km	2.4km	60km/h	0.6km
3	2.4km	1.9km	60km/h	0.5km
4	1.9km	1.1km	60km/h	0.8km
5	1.1km	0.0km	60km/h	1.1km

It should be noted that for the purpose of this assessment, the crashes from the “start” intersection of each segment have been included in the corresponding segment to avoid overlapping.

3.2 Criteria Based Speed Limit

A key consideration for the SLR is to determine if the subject corridor functions as a High Active Transport User Zone (HATUA). A detailed investigation was undertaken in Segment 2 of the corridor.

Austrroads ‘Guide to Traffic Management Part 4: Network Managements’ Movement and Place Framework acknowledges that roads serve two (2) primary roles for the users, as noted below:

- Movement: to facilitate the movement of people and goods
- Place: to act as a place for people.

The above Movement and Place Framework considered that roads serve a certain level of each of these roles. Typically, a HATUA zone includes increased emphasis on the “Place” function of the road and is considered to have significant value to the community as a place for people to gather. Furthermore, HATUA zones typically include land uses or development which attract levels of pedestrian and/or cyclists that are considered higher than typical.

Pedestrian and cyclist survey data was collected within Segment 3 on Wednesday 4th September 2019 from 7:30 to 10:00am and 2:30 to 5:00pm. This data has been provided by TMR and is reproduced below. The key focus is on “Zone 1” which includes a strip shopping centre section between Simpsons Road and Rockbourne Terrace.

Table 3.2 provides a summary of the pedestrian / cyclist peak hour volumes within “Zone 1”.

Table 3.2: Pedestrian / Cyclist Peak Hour Volumes

Direction	Crossing				South Side				North Side				Total
	SB		NB		SB		NB		SB		NB		
Time	Ped	Cyc	Ped	Cyc	Ped	Cyc	Ped	Cyc	Ped	Cyc	Ped	Cyc	
7:30-8:30	15	0	29	0	19	1	22	0	103	1	99	0	289
15:15-16:15	22	0	68	1	59	1	86	1	75	0	42	1	356
5 Hour Total	79	0	198	1	134	6	195	4	330	2	279	3	1,231
Peak Hour Average	18.5	0	48.5	0.5	39	1	54	0.5	89	0.5	70.5	0.5	-
	67.5				94.5				163.5				-

SB = Southbound. NB = Northbound. Ped = Pedestrian Demand. Cyc = Cyclist Demand.

The following key points from the data are noted:

- It is noted that when totalling / averaging movements, crossing movements would be counted 2-3 times, as they are also recorded travelling along each side of the corridor. Therefore, the above totals / averages may be overestimated.
- Peak hour road crossing volumes were low with an average of 68 per hour (or one every minute). Furthermore, during the site inspection non compliances were not observed and pedestrians / cyclists were observed to use the signalised pedestrian crossing
- Volumes travelling along the corridor are moderate and average 255 per hour (or approximately four (4) per minute. This may be the result of nearby public transport facilities (five (5) nearby bus stops)
- Generally, the peak periods account for >50% of volumes, which demonstrates that pedestrian demands are focussed at peaks and reduce significantly during other periods
- Over a 5hr period, a total of 1,231 pedestrian and cyclist movements were recorded. Conservatively applying a 200% factor to estimate daily volumes, this would represent in the order of 2,450 within the Zone. This is equivalent to 12% of passing vehicular traffic
- Cyclist volumes travelling along the corridor were very low, with only 16 recorded in total.

The above data shows that there is an increased concentration of pedestrian (not cyclist) movements within this zone; however, these are generally travelling along the corridor.

Based on the above review, it was found that whilst the road does provide a “place” function, it still primarily operates with a “movement” function (daily pedestrian and cyclist volumes are 12% of daily road volumes). Furthermore, crossing movements were recorded to be relatively low and were observed to generally occur at the signalised crossing location. Based on this, Segment 2 is not compliant with HATUA zone criteria.

The review of the corridor segments indicates that no segment met the requirements of criteria-based speed limits. As such, all segments have been assessed using Risk Assessed Speed Limits and Speed Data Speed Limits.

3.3 Risk Assessed Speed Limits

The Risk Assessed Speed Limit is a speed limit that is determined through consideration of a combination of crash risk, infrastructure risk, environmental context class and road functional class.

3.3.1 Road Classification

Table 3.3 summarises the road classification identified along the corridor for each segment.

Table 3.3: Road Classification

Input	Segment				
	1	2	3	4	5
Road Environmental Context Class	Urban	Urban	Urban	Urban	Urban
Road Functional Classification	Arterial	Arterial	Arterial	Arterial	Arterial

3.3.2 Crash Risk Rating

Table 3.4 summarises the crash data recorded along the subject corridor for each segment.

Table 3.4: Crash Data Summary

DCA Group	DCA Description	Number of Crashes per Segment					
		#1	#2	#3		#4	#5
		Both	Both	NB	SB	Both	Both
1	Intersection, from adjacent approaches	5	6			1	1
2	Head-on	1					1
3	Opposing vehicles, turning	6	1				
4	Rear-end	17	6	2		7	4
5	Lane change	3					
6	Parallel Lanes, turning	1	2				
7	U-Turn						
8	Entering roadway						
9	Overtaking, Same Direction						
10	Hit Parked Vehicle	1					
11	Hit Train						
12	Pedestrian	1	1				
13	Permanent Obstruction on Carriageway						
14	Hit Animal						
15	Off carriageway, on straight						
16	Off carriageway, on straight, hit object	2				1	
17	Out of control, on straight	1					
18	Off carriageway, on curve						
19	Off carriageway, on curve, hit object		1			1	
20	Out of control, on curve	2			1	1	
21	Other						
Total		40	17	2	1	11	6

NB = Northbound. SB = Southbound

Detailed crash maps are included at **Appendix B**.

Table 3.5 Illustrates the Crash Risk Ratings (CRR) for each segment based on the above data.

Table 3.5: Crash Risk Rating

Segment	Direction	Crash Risk Rating
1	Both	Medium
2	Both	Medium
3	Northbound	Low
	Southbound	Low
4	Both	Low
5	Both	Low

3.3.3 Infrastructure Risk Rating

Table 3.6 summarises the infrastructure risks identified along the corridor for each segment.

Table 3.6: Infrastructure Risks

Description	Input							
	Segment 1	Segment 2	Segment 3		Segment 4		Segment 5	
	Both	Both	NB	SB	NB	SB	NB	SB
Road Stereotype	Two Lanes Undivided	Two Lanes Undivided	Divided Non-traversable		Two Lanes Undivided		Two Lanes Undivided	
Alignment	Curved	Winding	Straight or gentle		Straight or gentle		Straight or gentle	
Sealed Shoulder Width	Very narrow	Very narrow	Wide	Wide	Wide		Wide	
Lane Width	Wide	Medium	Medium	Medium	Wide		Medium	
Roadside Hazard Risk – Left Side	Severe	Severe	Moderate	Moderate	High		Severe	
Roadside Hazard Risk – Right Side	Moderate	Moderate	Minor	Minor	High		High	
Land Use	Urban Residential	Commercial Strip Shopping	Urban Residential		Urban Residential		Urban Residential	
At-grade Intersection Density per km	10+	10+	1 to <2	1 to <2	3 to <5		5 to <10	
Access Density per km	20+	20+	<1	<1	20+		20+	

NB = Northbound. SB = Southbound

The adopted criteria is based on categories that are considered to be representative of the largest proportion within the homogeneous zone. Where average value falls halfway between two categories, then the higher risk category has been adopted.

Table 3.7 Illustrates the Infrastructure Risk Ratings (IRR) for each segment based on the identified infrastructure risks.

Table 3.7: Infrastructure Risk Rating

Segment	Direction	Infrastructure Risk Rating
1	Both	High
2	Both	High
3	Northbound	Low
	Southbound	Low
4	Both	Low Medium
5	Both	Medium

3.3.4 Risk Assessed Speed Limit

Results from the CRR and IRR are used to determine the Risk Assessed Speed Limit.

The corresponding risk assessed speed limits are shown in Table 3.8.

Table 3.8: Road Risk Metric / Risk Assessed Speed Limit Summary

Segment	Direction	Crash Risk Rating	Infrastructure Risk Rating	Road Risk Metric	Risk Assessed Speed Limit
1	Both	Medium	High	High	60km/h
2	Both	Medium	High	High	60km/h
3	Northbound	Low	Low	Low	80km/h
	Southbound	Low	Low	Low	80km/h
4	Both	Low	Low Medium	Low	70km/h
5	Both	Low	Medium	Medium	60km/h

A copy of each SLR tool output is included at **Appendix C**.

3.4 Speed Data Speed Limit

As detailed above, speed surveys have been undertaken within each of the identified segments to determine the Speed Data Speed Limits. Table 3.9 summarises the key findings.

Table 3.9: Speed Data Speed Limit

Segment	Direction	Traffic Volumes (vpd)	Average Speed	15km/h Pace Speed	Percentage Within Pace	Speed Data Speed Limit
1	Both	23,583	49.7	46-61	67.42	60km/h
2	Both	19,863	36.2	32-47	59	50km/h
3	Northbound	11,095	38.4	48-63	41.79	60km/h
	Southbound	12,813	57.7	54-69	75.71	60km/h
4	Both	29,753	45.9	41-56	79.63	50km/h
5	Both	31,169	54.5	48-63	83.95	60km/h

A copy of each SLR tool output is included at **Appendix C**.

3.5 Option Selection

Table 3.10 summarises the key findings of the option selection process.

Table 3.10: Option Selection Summary

Segment	Direction	Risk Assessed Speed Limit	Speed Data Speed Limit	Adopt RASL or SDSL	Recommended Speed Limit
1	Both	60km/h	60km/h	Correlate	60km/h
2	Both	60km/h	50km/h	Adopt SDSL	50km/h
3	Northbound	80km/h	60km/h	Adopt SDSL	60km/h
	Southbound	80km/h	60km/h	Adopt SDSL	60km/h
4	Both	70km/h	50km/h	Adopt SDSL	50km/h
5	Both	60km/h	60km/h	Correlate	60km/h

A copy of each SLR tool output is included at **Appendix C**.

3.6 Engineer Recommendation

The above SLR results in five (5) changes of speed limit across the corridor. In accordance with MUTCD Part 4, this should be avoided where possible, as increased changes result in higher non-compliance and confusion / frustration for motorists. As such, each of the segment results have been further reviewed to see if any changes the number of speed limit changes can be reduced.

3.6.1 Segment 1

The RASL and SDSL results for Segment 1 correlate and as such, there is a strong relationship between the current infrastructure and crash history and the observed speed along the Segment. As such, no further changes are recommended.

3.6.2 Segment 2

The SDSL for Segment 2 results in a reduced speed limit to 50km/h. Furthermore, Segment 2 includes a short strip shopping centre section, which contains higher pedestrian volumes. Therefore, in accordance with Section 7.2.3 of MUTCD Part 4, a 50km/h speed limit is considered suitable due to the changed road environment. As such, no further changes are recommended.

3.6.3 Segment 3

For Segment 3 the RASL in both direction is 80km/h and the SDSL in both direction is 60km/h. Based on this outcome, reducing the speed limit (to create a continuous 50km/h zones with Segment 2 and 4) is not considered practical as the RASL and SDSL results indicate that vehicles speeds can be much higher in this area, and reduced speed limits may result in higher non-compliance and increased safety risks for road users. As such, no further changes are recommended.

3.6.4 Segment 4

The outcome of the SLR is to reduce Segment 4 from 60km/h to 50km/h. This is based on an SDSL of 50km/h. It is important to note that the recorded RASL is 70km/h for Segment 4. Further review of the recommended speed limit has been undertaken to review adequacy of reducing the speed limit to 50km/h. The review has considered the applicable test ranges of the recorded results based on Table 5.2.2 of MUTCD Part 4.

Key points are noted below:

- The average speed meets 50km/h only
- The average upper limit pace speed meets 50km/h and 60km/h
- The percentage within pace is <60%.

Based on the above, the speed data is close to the limit between the 50km/h and 60km/h range as shown by being included in both ranges for the upper limit of pace speed. Lower recorded speed limits may be due to several factors including the closely spaces roundabout within this section, or the vertical and horizontal alignment. These factors are conducive to lower speeds through this section, regardless of the posted speed limit.

Furthermore, Segment 4 currently has a posted speed limit of 60km/h and resulted in a "Low" Road Risk Metric based on historic crash data and road infrastructure. This suggests that there are no inherent safety risks currently as a result of the 60km/h posted speed limit.

In summary, while not in accordance with the SDSL, a 60km/h speed limit within Segment 4 is considered the most appropriate. This reduces the number of changes in speed limit along the corridor to two (2), at the start and end of Segment 2.

3.6.5 Segment 5

The RASL and SDSL results for Segment 5 correlate and as such, there is a strong relationship between the current infrastructure and crash history and the observed speed along the Segment. As such, no further changes are recommended.

4. Recommendation

Based on the outcome of this SLR, it is recommended that:

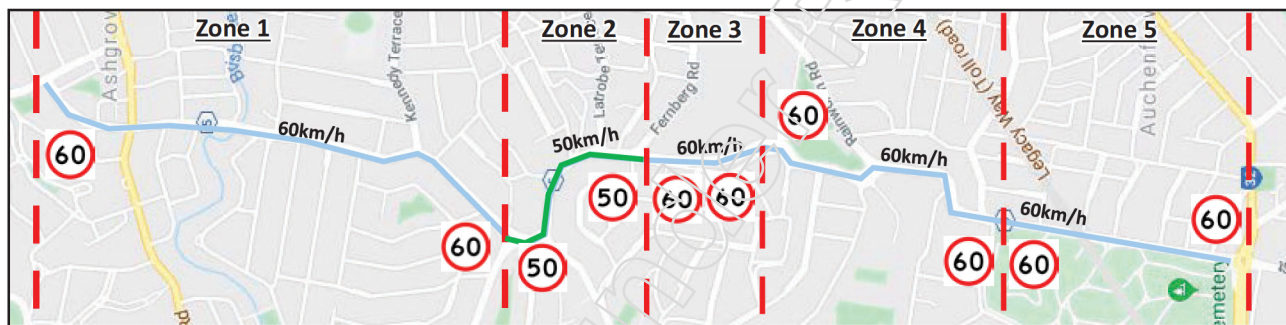
- The speed limit in Segment 1, 3, 4 and 5 is retained as 60km/h
- The speed limit in Segment 2 is reduced to 50km/h.

Table 4.1 summarises the outcome of this SLR.

Table 4.1: SLR Outcome Summary

Segment	Direction	Existing Posted Speed Limit	Recommended Speed Limit
1	Both	60km/h	60km/h
2	Both	60km/h	50km/h
3	Northbound	60km/h	60km/h
	Southbound	60km/h	60km/h
4	Both	60km/h	60km/h
5	Both	60km/h	60km/h

Figure 4.1 indicatively illustrates the above recommendations.



Source: Google Maps

Figure 4.1: Recommended Speed Limits

A copy of the detailed signage plan is included at **Appendix D**.

5. Certification

This SLR has been prepared in accordance with the MUTCD Part 4 (2019) and been reviewed and certified by a suitably qualified Registered Professional Engineer of Queensland (RPEQ).

NR



NR



Senior Traffic Engineer / Transport Planner
BITZIOS CONSULTING

NR



NR



Manager – Brisbane
Principal Traffic Engineer / Transport Planner
RPEQ 15031
BITZIOS CONSULTING

Released under RTI - DTMR

1 Attachment A- Traffic and Speed Survey Data

Released under RTI - DTMR

Site Name - #8A Western Arterial Rd
 Description - Chainage 3.72 km
 Direction - Both

Time [--]	AADT 24hr	Total 6:00-18:00	>4 Seconds Headway												Mean	nPace 15	Pace% 15
			Cls 1	Cls 2	Cls 3	Cls 4	Cls 5	Cls 6	Cls 7	Cls 8	Cls 9	Cls 10	Cls 11	Cls 12			
Mon	22545	4355	3522	62	601	72	22	21	10	7	30	8	0	0	49.9	2917	66.98
Tue	23372	4377	3546	66	601	51	29	16	20	8	27	12	1	0	48.1	2894	66.12
Wed	23602	4234	3416	56	599	62	23	19	18	12	25	4	0	0	50.6	2948	69.63
Thu	24054	4094	3277	67	562	77	22	23	19	8	33	6	0	0	49.7	2795	68.27
Fri	24344	4134	3295	67	618	40	37	19	19	8	20	11	0	0	50.1	2776	67.15
Total	117917	21194	17056	318	2981	302	133	98	86	43	135	41	1	0	248.4	14330	338.15
Average	23583.4	4238.8	3411.2	63.6	596.2	60.4	26.6	19.6	17.2	8.6	27	8.2	0.2	0	49.68	2866	67.63

Vehicles = 21194

Posted speed limit = 0 km/h, Exceeding = 21194 (100.0%), Mean Exceeding = 49.68 km/h

Maximum = 104.4 km/h, Minimum = 0.9 km/h, Mean = 49.7 km/h

85% Speed = 59.04 km/h, 95% Speed = 62.82 km/h, Median = 52.20 km/h

15 km/h Pace = 46 - 61, Number in Pace = 14289 (67.42%)

Variance = 139.58, Standard Deviation = 11.81 km/h

Released under RTI - DTMR

MetroCount Traffic Executive Speed Statistics by Hour

SpeedStatHour-59 -- English (ENA)

Datasets:

Site: [Q2473 ATC 2 NB] !Macgregor Tcer east of bustop
Attribute: Q2473
Direction: 1 - North bound, A trigger first. **Lane:** 4
Survey Duration: 22:10 Tuesday, 3 September 2019 => 22:16 Thursday, 5 September 2019,
Zone:
File: Q2473 ATC 1 NB 0 2019-09-05 2216.EC4 (Plus)
Identifier: NE538VEB MC5900-X11 (c)MetroCount 15Aug16
Algorithm: Factory default axle (v5.02)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 22:11 Tuesday, 3 September 2019 => 22:16 Thursday, 5 September 2019
(2.00351) (With Exclusions)
Exclusion:

Vehicles are excluded at the following times:

Monday: 00:00-06:00, 18:00-00:00,
Tuesday: 00:00-06:00, 18:00-00:00,
Wednesday: 00:00-06:00, 18:00-00:00,
Thursday: 00:00-06:00, 18:00-00:00,
Friday: 00:00-06:00, 18:00-00:00,
Saturday: 00:00-00:00,
Sunday: 00:00-00:00,

The following entire days are excluded:
None

Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Speed range: 10 - 160 km/h.
Direction: North, East, South, West (bound), P = North, Lane = 0-16
Separation: Headway > 4 sec, Span 0 - 100 metre
Name: Default Profile
Scheme: Vehicle classification (AustRoads94)
Units: Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile: Vehicles = 5981 / 29218 (20.47%)

Speed Statistics by Hour

SpeedStatHour-59

Site: Q2473 ATC 2 NB.4.0N
Description: I Macgregor Tcer east of bustop
Filter time: 22:11 Tuesday, 3 September 2019 => 22:16 Thursday, 5 September 2019
(With Exclusions)
Scheme: Vehicle classification (AustRoads94)
Filter: Cls(1-12) Dir(NESW) Sp(10,160) Headway(>4) Span(0 - 100) Lane(0-16)

Vehicles = 5981
Posted speed limit = 60 km/h, Exceeding = 15 (0.251%), Mean Exceeding = 64.25 km/h
Maximum = 77.5 km/h, Minimum = 10.1 km/h, Mean = 36.5 km/h
85% Speed = 46.53 km/h, 95% Speed = 50.85 km/h, Median = 38.25 km/h
15 km/h Pace = 32 - 47, Number in Pace = 3433 (57.40%)
Variance = 107.37, Standard Deviation = 10.36 km/h

Hour Bins (Partial days)

Time	Bin	Min	Max	Mean	Median	85%	95%	>PSL 60 km/h
0000	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
0100	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
0200	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
0300	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
0400	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
0500	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
0600	486 8.126%	10.7	67.5	39.4	41.0	48.8	53.0	3 0.617%
0700	502 8.393%	10.1	65.4	36.9	38.4	46.5	51.1	2 0.398%
0800	498 8.326%	10.2	66.6	35.8	37.3	46.3	50.3	1 0.201%
0900	525 8.778%	11.9	77.5	37.4	38.6	46.1	49.4	2 0.381%
1000	513 8.577%	10.8	63.7	37.7	39.2	46.7	50.1	1 0.195%
1100	517 8.644%	10.7	61.7	37.4	38.9	47.1	50.9	1 0.193%
1200	543 9.079%	11.4	60.8	38.8	40.3	48.1	52.1	2 0.368%
1300	514 8.594%	11.6	63.4	38.8	40.7	47.7	52.2	1 0.195%
1400	503 8.410%	10.1	68.8	37.0	38.7	46.7	50.6	2 0.398%
1500	505 8.443%	10.4	59.9	32.8	34.4	44.6	49.4	0 0.000%
1600	481 8.042%	10.1	58.8	32.9	34.4	44.0	48.3	0 0.000%
1700	394 6.588%	10.2	59.7	31.2	31.8	41.6	47.6	0 0.000%
1800	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
1900	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
2000	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
2100	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
2200	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
2300	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
----	5981 100.0%	10.1	77.5	36.5	38.3	46.5	50.9	15 0.251%

MetroCount Traffic Executive Speed Statistics by Hour

SpeedStatHour-58 -- English (ENA)

Datasets:

Site: [Q2473 ATC 2 SB] !Macgregor Tce east of bustop
Attribute: Q2473
Direction: 3 - South bound, A trigger first. Lane: 4
Survey Duration: 22:10 Tuesday, 3 September 2019 => 22:15 Thursday, 5 September 2019,
Zone:
File: Q2473 ATC 1 SB 0 2019-09-05 2215.EC4 (Plus)
Identifier: PD28RPYJ MC5900-X13 (c)MetroCount 09Nov16
Algorithm: Factory default axle (v5.02)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 22:11 Tuesday, 3 September 2019 => 22:15 Thursday, 5 September 2019
(2.00323) (With Exclusions)
Exclusion:

Vehicles are excluded at the following times:

Monday: 00:00-06:00, 18:00-00:00,
Tuesday: 00:00-06:00, 18:00-00:00,
Wednesday: 00:00-06:00, 18:00-00:00,
Thursday: 00:00-06:00, 18:00-00:00,
Friday: 00:00-06:00, 18:00-00:00,
Saturday: 00:00-00:00,
Sunday: 00:00-00:00,

The following entire days are excluded:
None

Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Speed range: 10 - 160 km/h.
Direction: North, East, South, West (bound), P = South, Lane = 0-16
Separation: Headway > 4 sec, Span 0 - 100 metre
Name: Default Profile
Scheme: Vehicle classification (AustRoads94)
Units: Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile: Vehicles = 3662 / 30370 (12.06%)

Speed Statistics by Hour

SpeedStatHour-58

Site: Q2473 ATC 2 SB.4.0S
Description: !Macgregor Tce east of bustop
Filter time: 22:11 Tuesday, 3 September 2019 => 22:15 Thursday, 5 September 2019
(With Exclusions)
Scheme: Vehicle classification (AustRoads94)
Filter: Cls(1-12) Dir(NESW) Sp(10,160) Headway(>4) Span(0 - 100) Lane(0-16)

Vehicles = 3662
Posted speed limit = 60 km/h, Exceeding = 4 (0.109%), Mean Exceeding = 61.90 km/h
Maximum = 63.9 km/h, Minimum = 10.1 km/h, Mean = 35.8 km/h
85% Speed = 44.64 km/h, 95% Speed = 48.42 km/h, Median = 37.39 km/h
15 km/h Pace = 32 - 47, Number in Pace = 2250 (61.44%)
Variance = 83.92, Standard Deviation = 9.16 km/h

Hour Bins (Partial days)

Time	Bin	Min	Max	Mean	Median	85%	95%	>PSL 60 km/h
0000	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
0100	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
0200	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
0300	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
0400	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
0500	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
0600	311 8.493%	10.1	56.2	38.5	40.3	46.5	50.1	0 0.000%
0700	263 7.182%	10.1	63.9	30.5	30.7	41.7	44.7	1 0.380%
0800	290 7.919%	10.3	52.2	27.9	28.4	37.7	42.7	0 0.000%
0900	300 8.192%	11.3	57.3	35.0	35.8	43.3	47.0	0 0.000%
1000	340 9.285%	12.3	56.3	36.7	38.1	43.8	47.3	0 0.000%
1100	313 8.547%	12.5	55.1	37.2	38.4	44.9	49.2	0 0.000%
1200	326 8.902%	13.3	55.9	38.0	39.2	45.6	48.4	0 0.000%
1300	331 9.039%	12.4	54.2	38.5	40.1	46.3	49.9	0 0.000%
1400	323 8.820%	12.4	60.3	39.5	39.3	46.4	49.3	1 0.310%
1500	284 7.755%	10.5	56.9	34.7	35.8	44.2	48.5	0 0.000%
1600	301 8.220%	13.0	61.4	36.8	37.7	45.5	50.3	1 0.332%
1700	280 7.646%	10.6	62.0	34.8	36.1	43.5	47.9	1 0.357%
1800	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
1900	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
2000	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
2100	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
2200	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
2300	0 0.000%	0.0	0.0	0.0	216.0	216.0	216.0	0 -%
----	3662 100.0%	10.1	63.9	35.8	37.4	44.6	48.4	4 0.109%

Site Name - #8C Western Arterial Rd
 Description - Chainage 2.15 km
 Direction - Northbound

Time [--]	AADT 24hr	>4 Seconds Headway													Mean	nPace 15	Pace% 15
		Total 6:00-18:00	Cls 1	Cls 2	Cls 3	Cls 4	Cls 5	Cls 6	Cls 7	Cls 8	Cls 9	Cls 10	Cls 11	Cls 12			
Mon	10693	3271	2750	53	331	59	17	11	9	7	19	14	1	0	40	1516	46.35
Tue	11036	3184	2682	57	312	60	14	6	16	7	24	6	0	0	40.6	1450	45.54
Wed	11012	3266	2766	43	325	55	24	8	6	8	20	11	0	0	38.2	1383	42.35
Thu	11169	3241	2702	35	352	52	34	9	8	4	25	20	0	0	38.7	1319	40.7
Fri	11567	3359	2817	44	348	51	26	15	7	3	22	25	1	0	34.7	1324	39.42
Total	55477	16321	13717	232	1668	277	115	49	46	29	110	76	2	0	192.2	6992	214.36
Average	11095.4	3264.2	2743.4	46.4	333.6	55.4	23	9.8	9.2	5.8	22	15.2	0.4	0	38.44	1398.4	42.872

Vehicles = 16321

Posted speed limit = 0 km/h, Exceeding = 16321 (100.0%), Mean Exceeding = 38.41 km/h

Maximum = 110.9 km/h, Minimum = 0.6 km/h, Mean = 38.4 km/h

85% Speed = 59.22 km/h, 95% Speed = 64.80 km/h, Median = 47.34 km/h

15 km/h Pace = 48 - 63, Number in Pace = 6821 (41.79%)

Variance = 451.44, Standard Deviation = 21.25 km/h

Site Name - #8C Western Arterial Rd
 Description - Chainage 2.15 km
 Direction - Southbound

Time [--]	AADT 24hr	>4 Seconds Headway													Mean	nPace 15	Pace% 15
		Total 6:00-18:00	Cls 1	Cls 2	Cls 3	Cls 4	Cls 5	Cls 6	Cls 7	Cls 8	Cls 9	Cls 10	Cls 11	Cls 12			
Mon	12434	3261	2650	68	345	31	26	19	9	8	30	25	0	0	57.7	2503	76.76
Tue	12659	3291	2707	58	367	54	28	9	16	8	35	9	0	0	56.5	2421	73.56
Wed	12637	3266	2707	51	342	54	28	11	13	7	24	28	1	0	56.2	2430	74.4
Thu	13135	3345	2769	61	314	63	33	11	22	5	31	35	1	0	59.2	2602	77.79
Fri	13200	3346	2725	62	317	55	32	18	16	11	36	74	0	0	58.7	2557	76.42
Total	64065	16509	13558	300	1685	307	147	68	76	39	156	171	2	0	288.3	12513	378.93
Average	12813	3301.8	2711.6	60	337	61.4	29.4	13.6	15.2	7.8	31.2	34.2	0.4	0	57.66	2502.6	75.786

Vehicles = 16509

Posted speed limit = 0 km/h, Exceeding = 16509 (100.0%), Mean Exceeding = 57.68 km/h

Maximum = 105.9 km/h, Minimum = 0.3 km/h, Mean = 57.7 km/h

85% Speed = 66.42 km/h, 95% Speed = 70.02 km/h, Median = 60.48 km/h

15 km/h Pace = 54 - 69, Number in Pace = 12499 (75.71%)

Variance = 176.07, Standard Deviation = 13.27 km/h

Site Name - #8D Western Arterial Rd
 Description - Chainage 1.35 km
 Direction - Northbound

Time [--]	AADT 24hr	Total 6:00-18:00	>4 Seconds Headway												Mean	nPace 15	Pace% 15
			Cls 1	Cls 2	Cls 3	Cls 4	Cls 5	Cls 6	Cls 7	Cls 8	Cls 9	Cls 10	Cls 11	Cls 12			
Mon	28529	5789	4682	124	621	158	41	28	25	16	63	31	0	0	46.7	4715	81.45
Tue	29513	5722	4605	115	671	128	44	23	35	19	61	21	0	0	46.3	4636	81.02
Wed	29719	5703	4542	120	673	126	61	33	29	14	54	50	0	1	46.2	4636	81.29
Thu	30228	5743	4604	123	618	146	62	24	31	12	66	54	3	0	45.5	4514	78.6
Fri	30778	5622	4542	109	554	133	61	25	23	19	54	97	4	1	44.7	4278	76.09
Total	148767	28579	22975	591	3137	691	269	133	143	80	298	253	7	2	229.4	22779	398.45
Average	29753.4	5715.8	4595	118.2	627.4	138.2	53.8	26.6	28.6	16	59.6	50.6	1.4	0.4	45.88	4555.8	79.69

Vehicles = 28579

Posted speed limit = 0 km/h, Exceeding = 28579 (100.0%), Mean Exceeding = 45.88 km/h

Maximum = 137.7 km/h, Minimum = 0.8 km/h, Mean = 45.9 km/h

85% Speed = 52.56 km/h, 95% Speed = 55.62 km/h, Median = 47.52 km/h

15 km/h Pace = 41 - 56, Number in Pace = 22758 (79.63%)

Variance = 78.82, Standard Deviation = 8.88 km/h

Released under RTI - DTMR

Site Name - #8E Western Arterial Rd
 Description - Chainage 0.85 km
 Direction - Northbound

Time [--]	AADT 24hr	Total 6:00-18:00	>4 Seconds Headway												Mean	nPace 15	Pace% 15
			Cls 1	Cls 2	Cls 3	Cls 4	Cls 5	Cls 6	Cls 7	Cls 8	Cls 9	Cls 10	Cls 11	Cls 12			
Mon	30015	5678	4579	121	626	142	38	30	28	14	67	33	0	0	54.6	4783	84.24
Tue	30915	5647	4567	101	668	111	43	23	35	14	67	17	1	0	54.8	4765	84.38
Wed	31208	5474	4406	105	625	96	61	30	29	15	60	47	0	0	54.4	4637	84.71
Thu	31618	5509	4391	105	633	118	58	27	34	9	74	59	1	0	54.7	4637	84.17
Fri	32088	5399	4330	111	570	101	57	18	29	15	56	109	3	0	53.8	4479	82.96
Total	155844	27707	22273	543	3122	568	257	128	155	67	324	265	5	0	272.3	23301	420.46
Average	31168.8	5541.4	4454.6	108.6	624.4	113.6	51.4	25.6	31	13.4	64.8	53	1	0	54.46	4660.2	84.092

Vehicles = 27707

Posted speed limit = 0 km/h, Exceeding = 27707 (100.0%), Mean Exceeding = 54.46 km/h

Maximum = 85.2 km/h, Minimum = 1.0 km/h, Mean = 54.5 km/h

85% Speed = 60.12 km/h, 95% Speed = 63.18 km/h, Median = 55.08 km/h

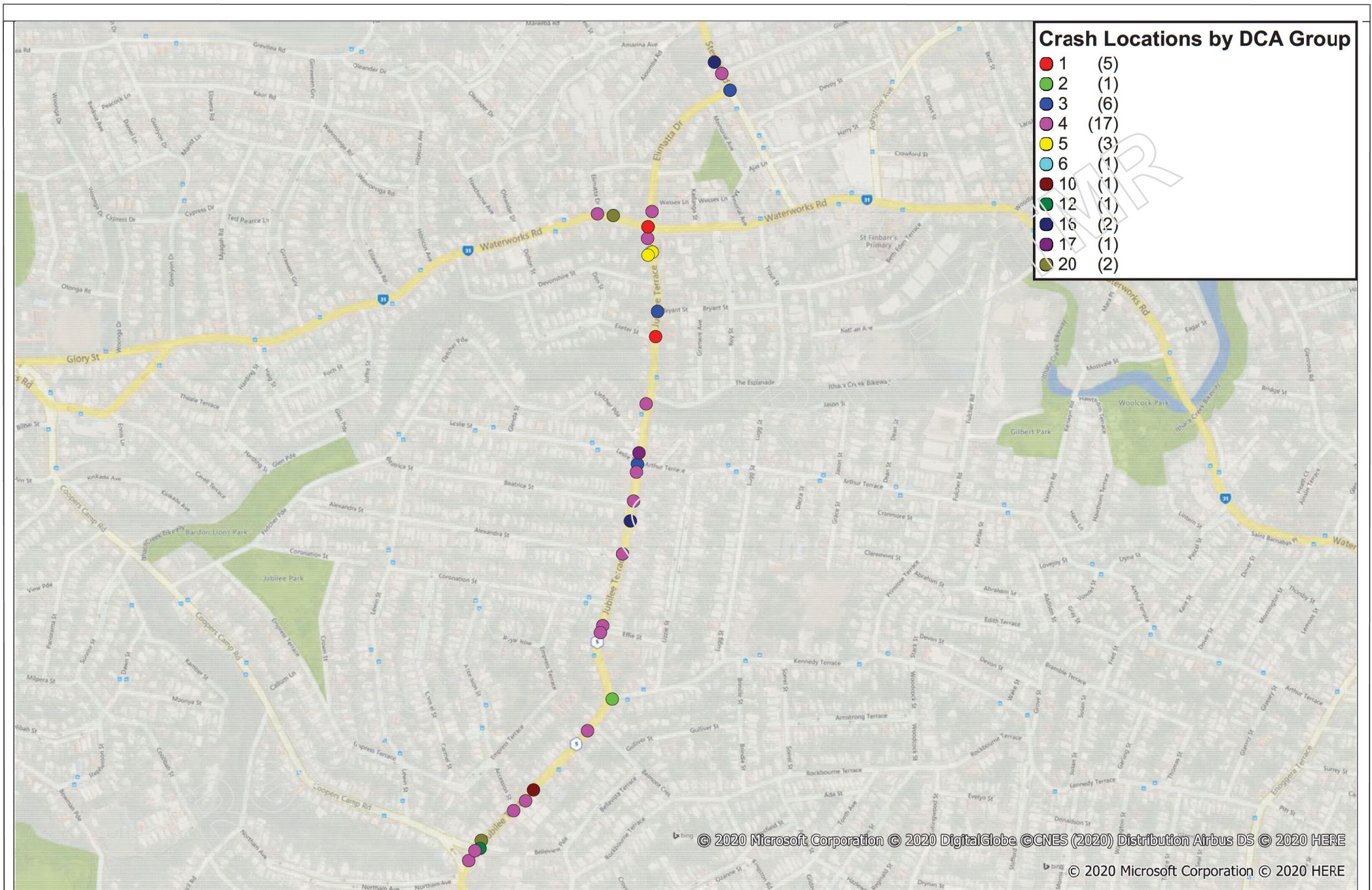
15 km/h Pace = 48 - 63, Number in Pace = 23260 (83.95%)


Variance = 43.94, Standard Deviation = 6.63 km/h

Released under RTI - DTMR

2 Attachment B- Crash Maps

Released under RTI - DTMR



Date: 30/03/2020	Project No: P4420	Project Name: TMR Annual Speed Limit Review Program	Figure Name: Corridor 8: Western Arterial Road (Zone 1)	Figure No: 1	
---------------------	----------------------	--	--	-----------------	---



Date:
30/03/2020

Project No:
P4420

Project Name:
TMR Annual Speed Limit Review Program

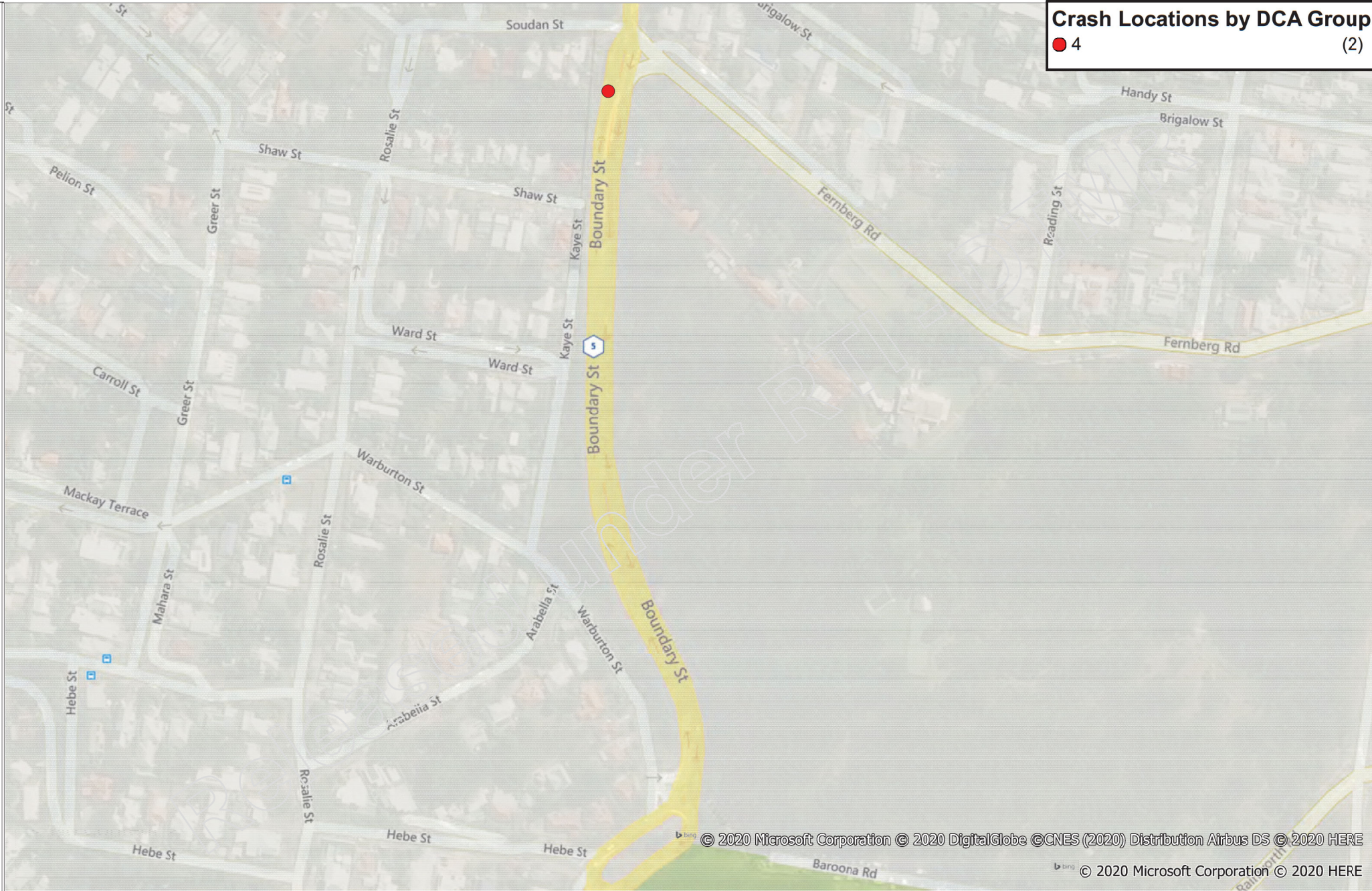
Figure Name:
Corridor 8: Western Arterial Road (Zone 2)

Figure No:
2



Crash Locations by DCA Group

● 4 (2)



© 2020 Microsoft Corporation © 2020 DigitalGlobe © CNES (2020) Distribution Airbus DS © 2020 HERE

bing © 2020 Microsoft Corporation © 2020 HERE

Date:
30/03/2020

Project No:
P4420


Project Name:
TMR Annual Speed Limit Review Program

Figure Name:
Corridor 8: Western Arterial Road (Zone 3) - Northbound

Figure No:
3





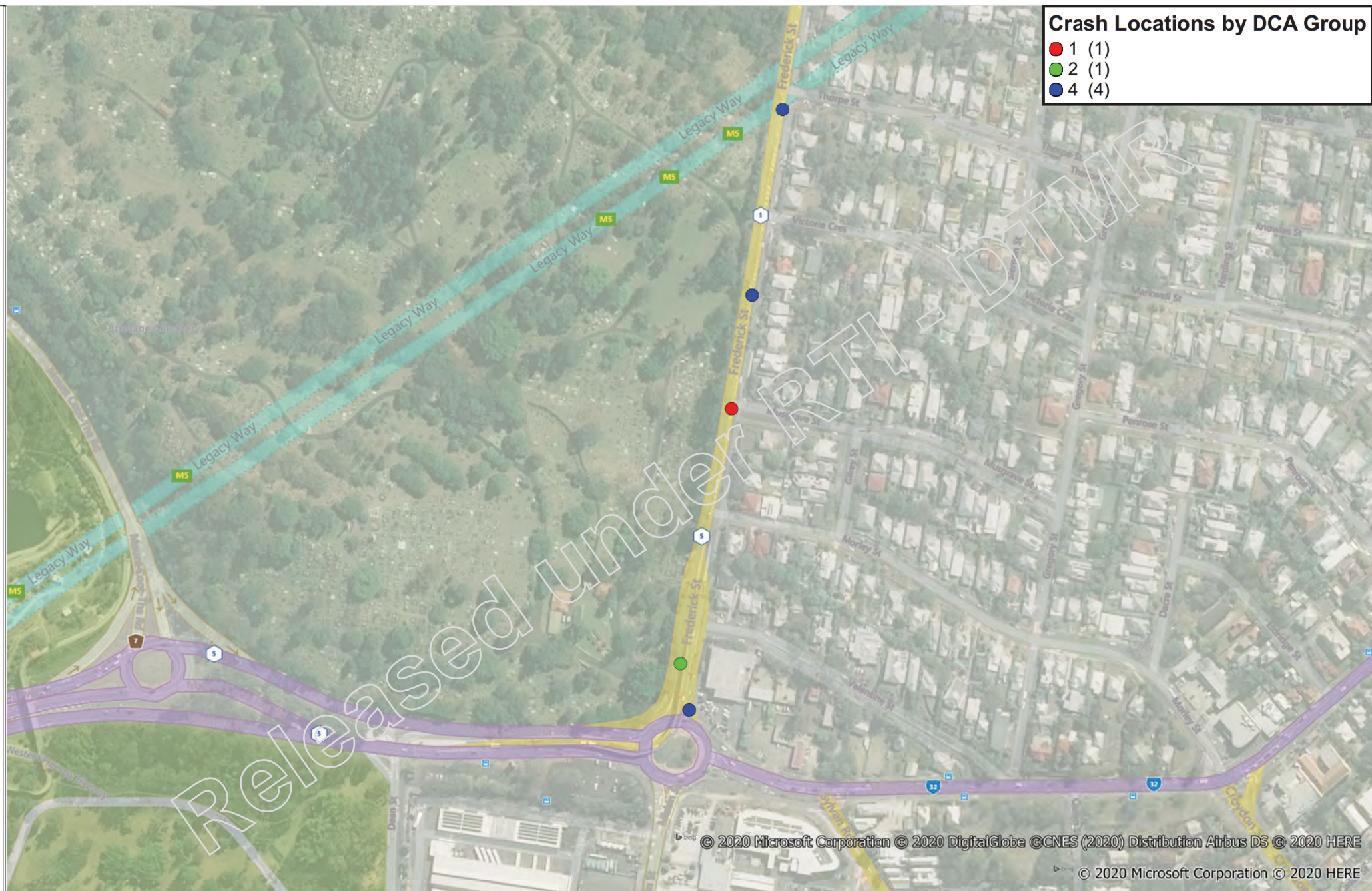
Date: 30/03/2020	Project No: P4420	Project Name: TMR Annual Speed Limit Review Program	Figure Name: Corridor 8: Western Arterial Road (Zone 3) - Southbound	Figure No: 4	
---------------------	----------------------	--	---	-----------------	---




Date: 30/03/2020	Project No: P4420	Project Name: TMR Annual Speed Limit Review Program	Figure Name: Corridor 8: Western Arterial Road (Zone 4)	Figure No: 5	BITZIOS consulting
---------------------	----------------------	--	--	-----------------	------------------------------

Crash Locations by DCA Group

- 1 (1)
- 2 (1)
- 4 (4)



© 2020 Microsoft Corporation © 2020 DigitalGlobe © CNES (2020) Distribution Airbus DS © 2020 HERE
 © 2020 Microsoft Corporation © 2020 HERE

Date: 30/03/2020	Project No: P4420	Project Name: TMR Annual Speed Limit Review Program	Figure Name: Corridor 8: Western Arterial Road (Zone 5)	Figure No: 6	
---------------------	----------------------	--	--	-----------------	---

3 Attachment C- Speed Limit Review Tools

Released under RTI - DTMR

Clear All

SITE INPUTS

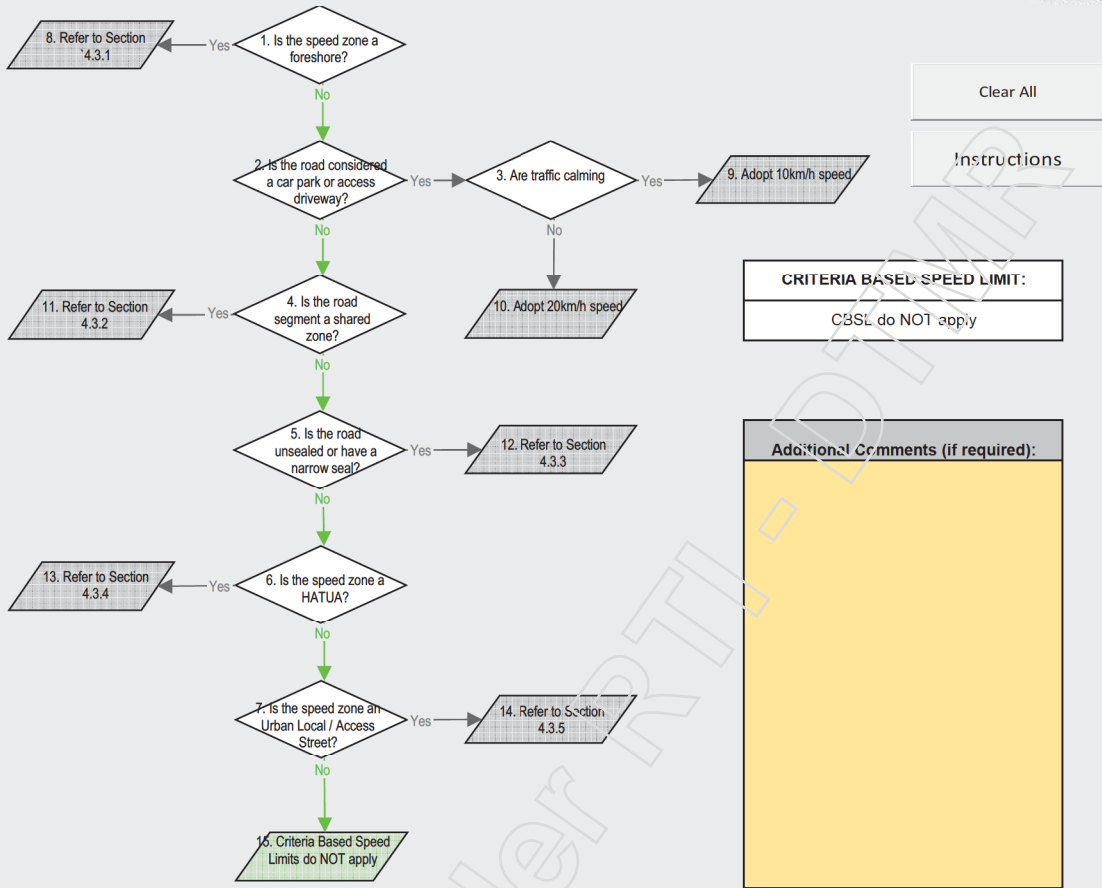


ROAD AUTHORITY:	State government
ROAD SECTION ID: <small>(if applicable)</small>	Zone 1
ROAD NAME:	Western Arterial Road
SUBURB: <small>(where multiple suburbs, separate each with a ",")</small>	Ashgrove
LOCAL GOVERNMENT: <small>(where multiple, separate each with a ",")</small>	Brisbane City Council
TMR DISTRICT:	Metropolitan Region
DIRECTION: <small>(Both, Gazzetal or Anti-gazzetal)</small>	Both
EXISTING SPEED LIMIT: <small>(km/h)</small>	60
DAILY TRAFFIC VOLUME:	25583
SEGMENT LENGTH: <small>(km)</small>	1.6

	TDIST <small>(if applicable)</small>	LATITUDE	LONGITUDE
SEGMENT START:		-27.443465	152.990885
SEGMENT END:		-27.457433	152.98565

ADDITIONAL COMMENTS: <small>(if required)</small>

CRITERIA BASED SPEED LIMITS



Released under RTI

IDENTIFY ROAD CLASSIFICATION

	Input	Class
More...	ROAD ENVIRONMENTAL CONTEXT CLASS	Urban
More...	ROAD FUNCTIONAL CLASSIFICATION	Arterial

CRASH RISK RATING (CRR)

	DCA Group	Description	No. of Casualty Crashes	Risk Score
More...	1	INTERSECTION, FROM ADJACENT APPROACHES	5	2.3
More...	2	HEAD-ON	1	0.85
More...	3	OPPOSING VEHICLES, TURNING	6	3.18
More...	4	REAR-END	17	4.25
More...	5	LANE CHANGE	3	1.02
More...	6	PARALLEL LANES, TURNING	1	0.36
More...	7	U-TURN		0
More...	8	ENTERING ROADWAY		0
More...	9	OVERTAKING, SAME DIRECTION		0
More...	10	HIT PARKED VEHICLE	1	0.43
More...	11	HIT TRAIN		0
More...	12	PEDESTRIAN	1	0.6
More...	13	PERMANENT OBSTRUCTION ON CARRIAGEWAY		0
More...	14	HIT ANIMAL		0
More...	15	OFF CARRIAGEWAY, ON STRAIGHT		0
More...	16	OFF CARRIAGEWAY, ON STRAIGHT, HIT OBJECT	2	1.2
More...	17	OFF CARRIAGEWAY, ON STRAIGHT	1	0.55
More...	18	OFF CARRIAGEWAY, ON CURVE		0
More...	19	OFF CARRIAGEWAY, ON CURVE, HIT OBJECT		0
More...	20	OUT OF CONTROL, ON CURVE	2	1.34
More...	21	OTHER		0
More...	TOTAL		40	16.08

RISK ASSESSED SPEED LIMIT

INFRASTRUCTURE RISK RATING (IRR)				
	Item	Description	Input	Risk Score
More...	1	ROAD STEREOTYPE	Two lane undivided	3.7
More...	2	ALIGNMENT	Curved	1.5
More...	3A	SEALED SHOULDER WIDTH	Very narrow shoulder	1.79
More...	3B	LANE WIDTH	Medium	
More...	4a	ROADSIDE HAZARD RISK - LEFT SIDE	Severe	2.8
More...	4b	ROADSIDE HAZARD RISK - RIGHT SIDE	Moderate	1.43
More...	5	LAND USE	Urban residential	3
More...	6	AT-GRADE INTERSECTION DENSITY	10+ intersections/km	5
More...	7	ACCESS DENSITY	20+ accesses/km	1.3
More...	8	TRAFFIC VOLUME	Not required for specified Land Use	N/A

Clear All

Estimate Risk Assessed Speed Limit

Instructions

Released under RMA

ROAD RISK METRIC (RRM)

Input	Risk Levels	Risk Score
Crash Risk Rating (Step 2)	Medium	21.52542436
Infrastructure Risk Rating (Step 3)	High	2.612490997

ROAD RISK METRIC:	High
--------------------------	------

RISK ASSESSED SPEED LIMIT (RASL)

Input	Result
Road Environmental Context Class	Urban
Road Functional Classification	Arterial
Road Risk Metric	High

RISK ASSESSED SPEED LIMIT:	60km/h
-----------------------------------	--------

ADDITIONAL COMMENTS

Additional Comments (if required):
Dates of crash history?

Released Under RTI Act

SPEED DATA SPEED LIMIT



SPEED DATA INPUTS		
	Item	Input
More...	MEAN SPEED (km/h)	49.7
More...	UPPER LIMIT OF 15km/h PACE SPEED	61
More...	PERCENTAGE WITHIN PACE SPEED	67.42

Clear All Estimate Speed Data Speed Limit Instructions

SPEED DATA SPEED LIMIT	
Input	Result
Speed Data Conforms with Speed Limit?	Y
Speed Limit Suggested by Speed Data	N/A

SPEED DATA SPEED LIMIT:	60km/h
--------------------------------	--------

ADDITIONAL COMMENTS
Additional Comments (if required):
<div style="background-color: yellow; height: 150px;"></div>

Released under DTMR

OPTION SELECTION



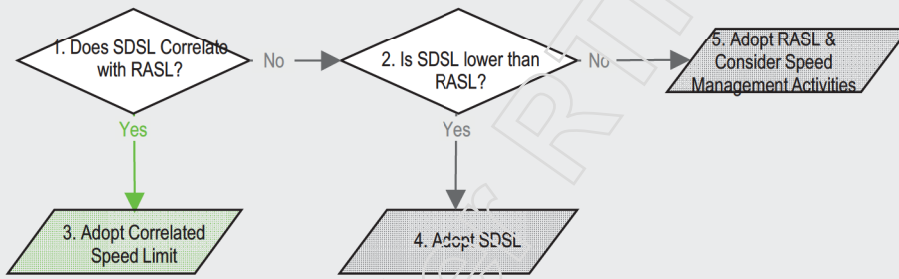
Clear All

Undertake Option Selection

Instructions

OPTION SELECTION INPUTS

Inputs	Result
Risk Assessed Speed Limit	60km/h
Speed Data Speed Limit	60km/h



Released under RTI/IMR

ENGINEER'S RECOMMENDATION



Clear All

Summarise Findings of
SLR Technical
Assessments

Instructions

SUMMARY OF TECHNICAL ASSESSMENTS

The Criteria Based Speed Limit assessment determined that no Criteria Based Speed Limits apply.

Accordingly, Risk Assessed Speed Limit and Speed Data Speed Limit assessments were undertaken. The Risk Assessed Speed Limit and Speed Data Speed Limits both indicated a speed limit of 60km/h was appropriate for the speed zone.

Additionally, the Road Risk Metric for the speed zone was assessed to be High. Therefore, works should be programmed to reduce the risk along the speed zone, although this is not part of the speed limit review process.

INTERPRETATION OF ASSESSMENT

Based on the information input into the Speed Limit Review tool the Speed Limit Review found that the speed limit along Western Arterial Road should be 60 km/h.

The 60 km/h speed limit is considered appropriate given the function (Urban, Arterial) of Western Arterial Road & level of assessed risk (high).

The high risk along Western Arterial Road is as a result of the risks that the road and roadside infrastructure pose on the road users. The following road and roadside infrastructure elements contribute to the high risks:

- Western Arterial Road is a two-lane two-way road. Two-lane two-way roads offer limited protection between opposing traffic flows and have higher risks of crashes when compared against roads with separated carriageways.
- Western Arterial Road has very narrow shoulders which may result in reduced ability for a driver to regain control of an errant vehicle. As a result, roads with very narrow shoulders typically have higher crash rates than roads with wider shoulders.
- the roadside hazard risk on the driver side of Western Arterial Road was categorised as being very high risk. A roadside risk of severe indicates minimal separation between the traffic lane and a potentially hazardous roadside object. Additionally, if a crash were to occur between an errant vehicle and roadside object, it is likely the crash would result in a fatal or serious injury outcome.
- Western Arterial Road was classified as being commercial located within an urban residential land use. The road safety risks typically associated with roads and streets within urban residential areas are associated with the pedestrians / cyclists travelling along the road corridors assessing the abutting properties and the presence of access driveways and their associated movements to / from the road corridor.
- Western Arterial Road has a high density of intersections per km. Intersections typically introduce conflicting movements of vehicles at angles where vehicle occupants are less protected. Roads with higher density of intersections typically result in a higher number of crashes. As Western Arterial Road has a very high density of intersections, it is considered that there is a high level of risk to road users along Western Arterial Road.

Additionally, analysis of the vehicle speeds along Western Arterial Road indicated that drivers were generally driving at speeds commensurate to a speed limit of 60 km/h.

If passing this information on to others, consider describing the function (Urban, Arterial) of Western Arterial Road and the existing safety deficiencies that contributed to the high road risk metric.

The above has been provided as a suggestion only to help with communicating the outcome of the speed limit review to interested stakeholders. Communication material needs to be tailored to the specific situation under review. The responsibility for communicating the outcome of the speed limit review remains with the Responsible Officer.

Released Under RTI - DTMR

ENGINEER'S RECOMMENDATION



ENGINEER'S RECOMMENDATIONS		
Name	RPEQ Number	Date
NR	15031	7/05/2020

Accept Recommendations of Technical Process?

Alternate Recommendations (if Applicable) or Other Circumstances (Section 7.2) to be Provided:

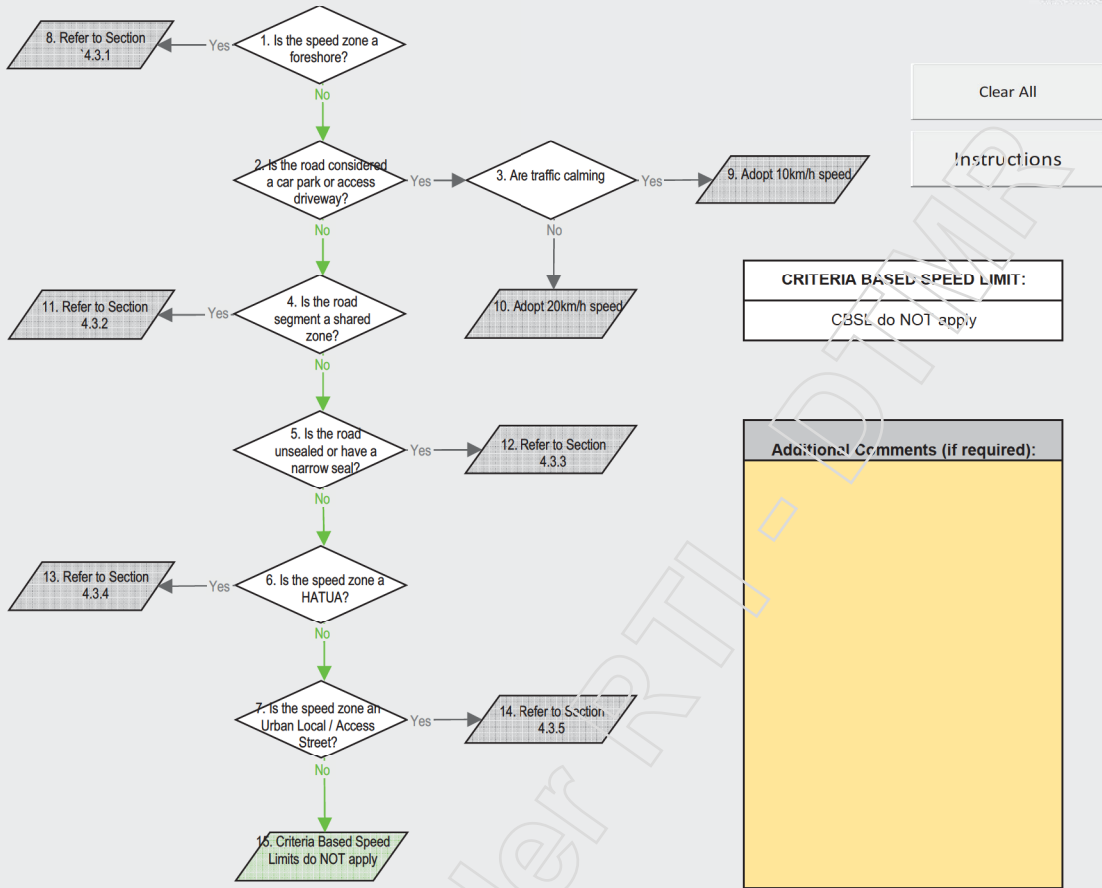
Additional Comments / Justification for Alternate Recommendations:

RESPONSIBLE OFFICER'S ACCEPTANCE		
Name	Position	Date

Do you (the Responsible Officer) Accept the Engineers Recommendations?

Released under RTI - DTMR

CRITERIA BASED SPEED LIMITS



Clear All

Instructions

CRITERIA BASED SPEED LIMIT:

CBSL do NOT apply

Additional Comments (if required):

Released under RTI

IDENTIFY ROAD CLASSIFICATION

	Input	Class
More...	ROAD ENVIRONMENTAL CONTEXT CLASS	Urban
More...	ROAD FUNCTIONAL CLASSIFICATION	Arterial

CRASH RISK RATING (CRR)

	DCA Group	Description	No. of Casualty Crashes	Risk Score
More...	1	INTERSECTION, FROM ADJACENT APPROACHES	6	2.76
More...	2	HEAD-ON		0
More...	3	OPPOSING VEHICLES, TURNING	1	0.53
More...	4	REAR-END	6	1.5
More...	5	LANE CHANGE		0
More...	6	PARALLEL LANES, TURNING	2	0.72
More...	7	U-TURN		0
More...	8	ENTERING ROADWAY		0
More...	9	OVERTAKING, SAME DIRECTION		0
More...	10	HIT PARKED VEHICLE		0
More...	11	HIT TRAIN		0
More...	12	PEDESTRIAN	1	0.6
More...	13	PERMANENT OBSTRUCTION ON CARRIAGEWAY		0
More...	14	HIT ANIMAL		0
More...	15	OFF CARRIAGEWAY, ON STRAIGHT		0
More...	16	OFF CARRIAGEWAY, ON STRAIGHT, HIT OBJECT		0
More...	17	OFF CARRIAGEWAY, ON STRAIGHT		0
More...	18	OFF CARRIAGEWAY, ON CURVE		0
More...	19	OFF CARRIAGEWAY, ON CURVE, HIT OBJECT	1	0.65
More...	20	OUT OF CONTROL, ON CURVE		0
More...	21	OTHER		0
More...	TOTAL		17	6.76

RISK ASSESSED SPEED LIMIT

INFRASTRUCTURE RISK RATING (IRR)				
	Item	Description	Input	Risk Score
More...	1	ROAD STEREOTYPE	Multi-lane undivided	3.4
More...	2	ALIGNMENT	Winding	3.5
More...	3A	SEALED SHOULDER WIDTH	Very narrow shoulder	1.79
More...	3B	LANE WIDTH	Medium	
More...	4a	ROADSIDE HAZARD RISK - LEFT SIDE	Severe	2.8
More...	4b	ROADSIDE HAZARD RISK - RIGHT SIDE	Moderate	1.43
More...	5	LAND USE	Commercial strip shopping	5
More...	6	AT-GRADE INTERSECTION DENSITY	10+ intersections/km	5
More...	7	ACCESS DENSITY	20+ accesses/km	1.3
More...	8	TRAFFIC VOLUME	Not required for specified Land Use	N/A

Clear All

Estimate Risk Assessed Speed Limit

Instructions

Released under RDMR

ROAD RISK METRIC (RRM)

Input	Risk Levels	Risk Score
Crash Risk Rating (Step 2)	Medium	31.0804812
Infrastructure Risk Rating (Step 3)	High	3.165593725

ROAD RISK METRIC:	High
--------------------------	------

RISK ASSESSED SPEED LIMIT (RASL)

Input	Result
Road Environmental Context Class	Urban
Road Functional Classification	Arterial
Road Risk Metric	High

RISK ASSESSED SPEED LIMIT:	60km/h
-----------------------------------	--------

ADDITIONAL COMMENTS

Additional Comments (if required):
Dates of crash history?

Released Under RTI Act

SPEED DATA SPEED LIMIT



SPEED DATA INPUTS		
	Item	Input
More...	MEAN SPEED (km/h)	36.2
More...	UPPER LIMIT OF 15km/h PACE SPEED	47
More...	PERCENTAGE WITHIN PACE SPEED	59

Clear All Estimate Speed Data Speed Limit Instructions

SPEED DATA SPEED LIMIT	
Input	Result
Speed Data Conforms with Speed Limit?	N
Speed Limit Suggested by Speed Data	50km/h
SPEED DATA SPEED LIMIT:	50km/h

ADDITIONAL COMMENTS
Additional Comments (if required):
<div style="background-color: yellow; height: 150px;"></div>

Released under DMIR

OPTION SELECTION



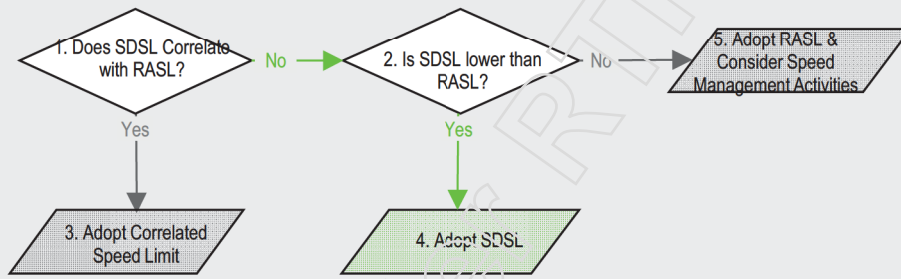
Clear All

Undertake Option Selection

Instructions

OPTION SELECTION INPUTS

Inputs	Result
Risk Assessed Speed Limit	60km/h
Speed Data Speed Limit	50km/h



Released under RTI/IMR

ENGINEER'S RECOMMENDATION



Clear All

Summarise Findings of
SLR Technical
Assessments

Instructions

SUMMARY OF TECHNICAL ASSESSMENTS

The Criteria Based Speed Limit assessment determined that no Criteria Based Speed Limits apply.

Accordingly, Risk Assessed Speed Limit and Speed Data Speed Limit assessments were undertaken.

The Risk Assessed Speed Limit assessment indicated a speed limit of 60km/h was appropriate for the speed zone.

The Speed Data Speed Limit assessment indicated a speed limit of 50km/h is appropriate for the speed zone.

As the Speed Data Speed Limit is less than the Risk Assessed Speed Limit the results of the technical assessment indicate that the speed limit of 50km/h be adopted along the road corridor.

Additionally, the Road Risk Metric for the Urban Arterial was assessed as being High. Therefore, works should be programmed to reduce the risk along the speed zone, however, this is not part of the speed limit review process.

INTERPRETATION OF ASSESSMENT

Based on the information input into the Speed Limit Review tool the Speed Limit Review found that the speed limit along Western Arterial Road should be reduced to 50 km/h.

The assessment found that there was a high level of risk to road users along Western Arterial Road.

The high risk along Western Arterial Road is as a result of the risks that the road and roadside infrastructure pose on the road users. The following road and roadside infrastructure elements contribute to the high risks:

- Western Arterial Road is a multi-lane undivided road. The traffic volumes along multi-lane undivided roads and the lack of separation between opposing traffic flows results in higher risks on multi-lane undivided roads when compared against roads with separated carriageways.
- the horizontal alignment of Western Arterial Road is considered winding. The limited straight segments separating consecutive curves increase the likelihood of vehicles lane departure and therefore increase the crash risk especially run off road or head on crashes. Additionally, typically a tortuous horizontal alignment is associated with reduced visibility which reduces the ability for drivers to undertake evasive actions should it be necessary.
- Western Arterial Road has very narrow shoulders which may result in reduced ability for a driver to regain control of an errant vehicle. As a result, roads with very narrow shoulders typically have higher crash rates than roads with wider shoulders.
- the roadside hazard risk on the driver side of Western Arterial Road was categorised as being very high risk. A roadside risk of severe indicates minimal separation between the traffic lane and a potentially hazardous roadside object. Additionally, if a crash were to occur between an errant vehicle and roadside object, it is likely the crash would result in a fatal or serious injury outcome.
- the land use surrounding Western Arterial Road was classified as being commercial strip shopping. Roads within this type of land use are typically associated with increased pedestrian and cyclists activity, increased usage of on-street parking and greater number of movements into / out of driveways along the corridor. As a result of this activity there is a higher likelihood of a crash occurring on roads within commercial strip shopping land uses.
- Western Arterial Road has a high density of intersections per km. Intersections typically introduce conflicting movements of vehicles at angles where vehicle occupants are less protected. Roads with higher density of intersections typically result in a higher number of crashes. As Western Arterial Road has a very high density of intersections, it is considered that there is a high level of risk to road users along Western Arterial Road.

However, analysis of the vehicle speeds along Western Arterial Road indicated that drivers were generally driving at speeds commensurate of the 50 km/h. As such, the recommendation from the technical component of the speed limit review process is that the speed limit along Western Arterial Road should be 50 km/h.

If passing this information on to others, consider describing the function (Urban Arterial) of Western Arterial Road, the existing safety deficiencies that contributed to the high road risk metric and the speeds at which drivers are currently travelling.

The above has been provided as a suggestion only to help with communicating the outcome of the speed limit review to interested stakeholders. Communication material needs to be tailored to the specific situation under review. The responsibility for communicating the outcome of the speed limit review remains with the Responsible Officer.

Under RTI - DTMR

ENGINEER'S RECOMMENDATION



ENGINEER'S RECOMMENDATIONS		
Name	RPEQ Number	Date
NR	15031	7/05/2020

Accept Recommendations of Technical Process? Yes

Alternate Recommendations (if Applicable) or Other Circumstances (Section 7.2) to be Provided:

Additional Comments / Justification for Alternate Recommendations:

RESPONSIBLE OFFICER'S ACCEPTANCE		
Name	Position	Date

Do you (the Responsible Officer) Accept the Engineers Recommendations?

Released under RTI - DTMR

Clear All

SITE INPUTS

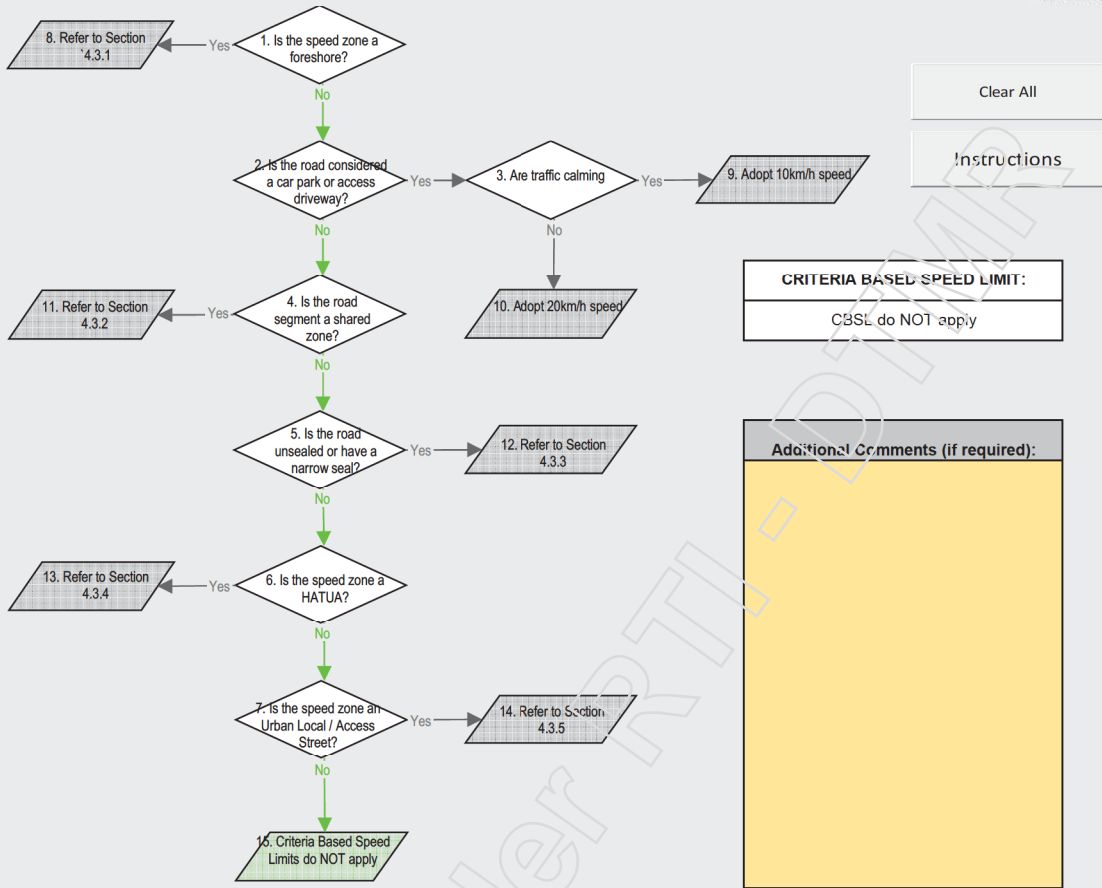


ROAD AUTHORITY:	State government
ROAD SECTION ID: <small>(if applicable)</small>	Zone 3_NB
ROAD NAME:	Western Arterial Road
SUBURB: <small>(where multiple suburbs, separate each with a ",")</small>	Ashgrove
LOCAL GOVERNMENT: <small>(where multiple, separate each with a ",")</small>	Brisbane City Council
TMR DISTRICT:	Metropolitan Region
DIRECTION: <small>(Both, Gazzetal or Anti-gazzetal)</small>	Gazzetal
EXISTING SPEED LIMIT: <small>(km/h)</small>	60
DAILY TRAFFIC VOLUME:	11095
SEGMENT LENGTH: <small>(km)</small>	0.5

	TDIST <small>(if applicable)</small>	LATITUDE	LONGITUDE
SEGMENT START:		-27.46462	152.988744
SEGMENT END:		-27.460654	152.988428

<p>ADDITIONAL COMMENTS: <small>(if required)</small></p>

CRITERIA BASED SPEED LIMITS



Clear All

Instructions

CRITERIA BASED SPEED LIMIT:
CBSL do NOT apply

Additional Comments (if required):

Released under RTI

IDENTIFY ROAD CLASSIFICATION

	Input	Class
More...	ROAD ENVIRONMENTAL CONTEXT CLASS	Urban
More...	ROAD FUNCTIONAL CLASSIFICATION	Arterial

CRASH RISK RATING (CRR)

	DCA Group	Description	No. of Casualty Crashes	Risk Score
More...	1	INTERSECTION, FROM ADJACENT APPROACHES		0
More...	2	HEAD-ON		0
More...	3	OPPOSING VEHICLES, TURNING		0
More...	4	REAR-END	2	0.5
More...	5	LANE CHANGE		0
More...	6	PARALLEL LANES, TURNING		0
More...	7	U-TURN		0
More...	8	ENTERING ROADWAY		0
More...	9	OVERTAKING, SAME DIRECTION		0
More...	10	HIT PARKED VEHICLE		0
More...	11	HIT TRAIN		0
More...	12	PEDESTRIAN		0
More...	13	PERMANENT OBSTRUCTION ON CARRIAGEWAY		0
More...	14	HIT ANIMAL		0
More...	15	OFF CARRIAGEWAY, ON STRAIGHT		0
More...	16	OFF CARRIAGEWAY, ON STRAIGHT, HIT OBJECT		0
More...	17	OFF CARRIAGEWAY, ON STRAIGHT		0
More...	18	OFF CARRIAGEWAY, ON CURVE		0
More...	19	OFF CARRIAGEWAY, ON CURVE, HIT OBJECT		0
More...	20	OUT OF CONTROL, ON CURVE		0
More...	21	OTHER		0
More...	TOTAL		2	0.5

RISK ASSESSED SPEED LIMIT

INFRASTRUCTURE RISK RATING (IRR)				
	Item	Description	Input	Risk Score
More...	1	ROAD STEREOTYPE	Divided - non traversable	1
More...	2	ALIGNMENT	Straight or gentle	1
More...	3A	SEALED SHOULDER WIDTH	Wide shoulder	1
More...	3B	LANE WIDTH	Medium	
More...	4a	ROADSIDE HAZARD RISK - LEFT SIDE	Moderate	1.43
More...	4b	ROADSIDE HAZARD RISK - RIGHT SIDE	Minor	0.67
More...	5	LAND USE	Urban residential	3
More...	6	AT-GRADE INTERSECTION DENSITY	<1 intersection/km	1
More...	7	ACCESS DENSITY	1 to <2 accesses/km not required for specified Land Use	1.01
More...	8	TRAFFIC VOLUME		N/A

Clear All

Estimate Risk Assessed
Speed Limit

Instructions

Released under RDR

ROAD RISK METRIC (RRM)

Input	Risk Levels	Risk Score
Crash Risk Rating (Step 2)	Low	4.938667918
Infrastructure Risk Rating (Step 3)	Low	0.502631928

ROAD RISK METRIC:	Low
--------------------------	-----

RISK ASSESSED SPEED LIMIT (RASL)

Input	Result
Road Environmental Context Class	Urban
Road Functional Classification	Arterial
Road Risk Metric	Low

RISK ASSESSED SPEED LIMIT:	80km/h
-----------------------------------	--------

ADDITIONAL COMMENTS

Additional Comments (if required):
Dates of crash history?

Released Under RTI
DTMR

SPEED DATA SPEED LIMIT



SPEED DATA INPUTS		
	Item	Input
More...	MEAN SPEED (km/h)	38.4
More...	UPPER LIMIT OF 15km/h PACE SPEED	63
More...	PERCENTAGE WITHIN PACE SPEED	41.79

Clear All Estimate Speed Data Speed Limit Instructions

SPEED DATA SPEED LIMIT	
Input	Result
Speed Data Conforms with Speed Limit?	N
Speed Limit Suggested by Speed Data	60km/h
SPEED DATA SPEED LIMIT:	60km/h

ADDITIONAL COMMENTS
Additional Comments (if required):
<div style="background-color: yellow; height: 150px;"></div>

Released under DMTR

OPTION SELECTION



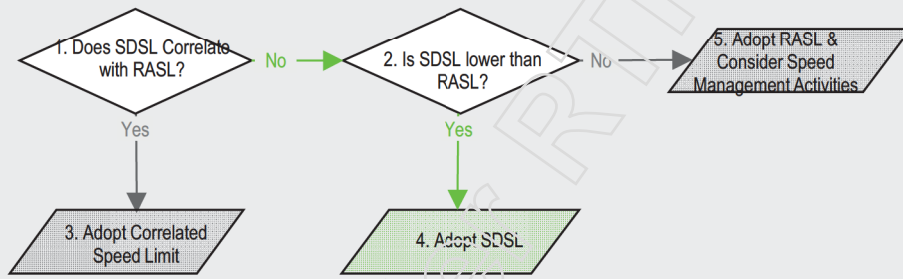
Clear All

Undertake Option Selection

Instructions

OPTION SELECTION INPUTS

Inputs	Result
Risk Assessed Speed Limit	80km/h
Speed Data Speed Limit	60km/h



Released under RTI/ATIA

ENGINEER'S RECOMMENDATION



Clear All

Summarise Findings of
SLR Technical
Assessments

Instructions

SUMMARY OF TECHNICAL ASSESSMENTS

The Criteria Based Speed Limit assessment determined that no Criteria Based Speed Limits apply.

Accordingly, Risk Assessed Speed Limit and Speed Data Speed Limit assessments were undertaken.

The Risk Assessed Speed Limit assessment indicated a speed limit of 80km/h was appropriate for the speed zone.

The Speed Data Speed Limit assessment indicated a speed limit of 60km/h is appropriate for the speed zone.

As the Speed Data Speed Limit is less than the Risk Assessed Speed Limit the results of the technical assessment indicate that the speed limit of 60km/h be adopted along the road corridor.

INTERPRETATION OF ASSESSMENT

Based on the information input into the Speed Limit Review tool the Speed Limit Review found that the speed limit along Western Arterial Road should be 60km/h.

Analysis of the vehicle speeds along Western Arterial Road indicated that drivers were generally driving at speeds commensurate of the 60 km/h. Additionally, the speed limit of 60 km/h is appropriate given the function of the road (Urban, Arterial) and the level of assessed risk.

If passing this information on to others, consider describing the attributes and function (Urban, Arterial), including the variety of movements, types of road users which are typical of Western Arterial Road and the speed at which drivers are currently travelling.

The above has been provided as a suggestion only to help with communicating the outcome of the speed limit review to interested stakeholders. Communication material needs to be tailored to the specific situation under review. The responsibility for communicating the outcome of the speed limit review remains with the Responsible Officer.

Released under RTI - DTMR

ENGINEER'S RECOMMENDATION



ENGINEER'S RECOMMENDATIONS		
Name	RPEQ Number	Date
NR	15031	7/05/2020

Accept Recommendations of Technical Process? Yes

Alternate Recommendations (if Applicable) or Other Circumstances (Section 7.2) to be Provided:

Additional Comments / Justification for Alternate Recommendations:

RESPONSIBLE OFFICER'S ACCEPTANCE		
Name	Position	Date

Do you (the Responsible Officer) Accept the Engineers Recommendations?

Released under RTI - DTMR

Clear All

SITE INPUTS

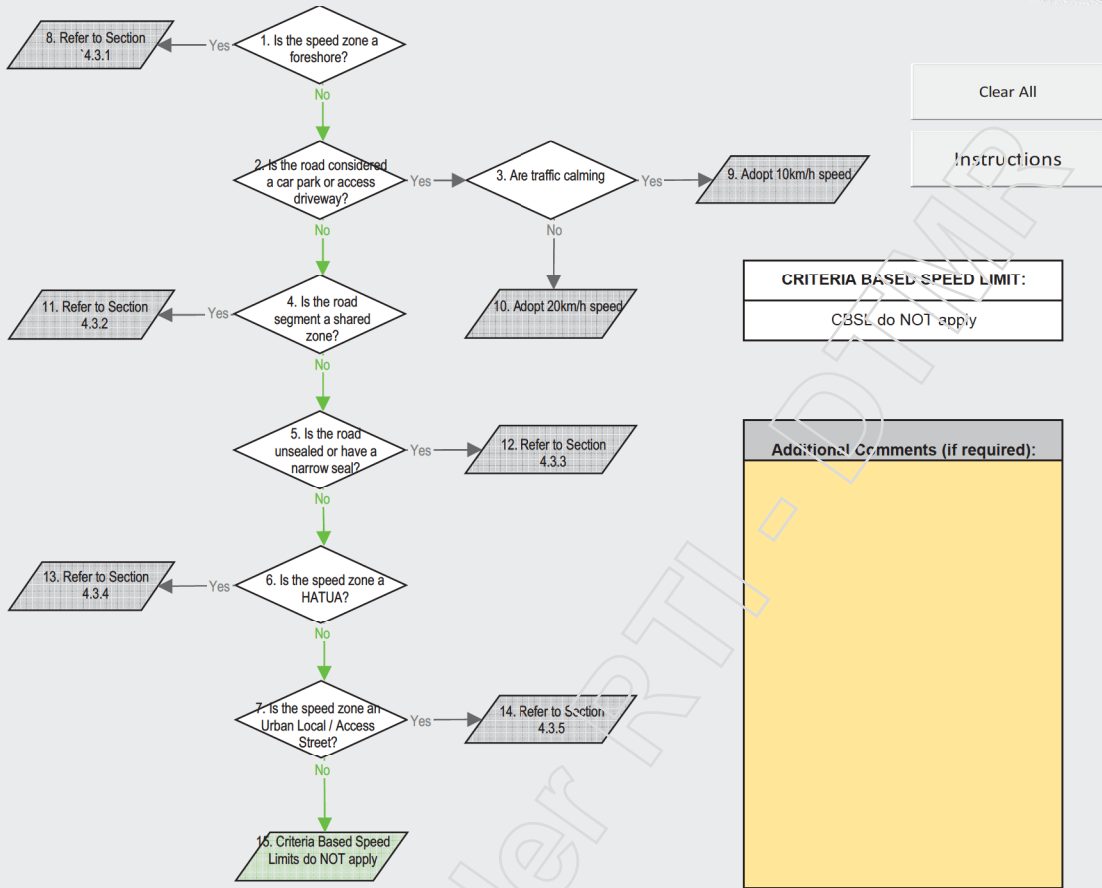


ROAD AUTHORITY:	State government
ROAD SECTION ID: <small>(if applicable)</small>	Zone 3_SB
ROAD NAME:	Western Arterial Road
SUBURB: <small>(where multiple suburbs, separate each with a ",")</small>	Ashgrove
LOCAL GOVERNMENT: <small>(where multiple, separate each with a ",")</small>	Brisbane City Council
TMR DISTRICT:	Metropolitan Region
DIRECTION: <small>(Both, Gazetted or Anti-gazetted)</small>	Anti-gazetted
EXISTING SPEED LIMIT: <small>(km/h)</small>	60
DAILY TRAFFIC VOLUME:	12813
SEGMENT LENGTH: <small>(km)</small>	0.5

	TDIST <small>(if applicable)</small>	LATITUDE	LONGITUDE
SEGMENT START:		-27.460654	152.988428
SEGMENT END:		-27.46462	152.988744

ADDITIONAL COMMENTS: <small>(if required)</small>

CRITERIA BASED SPEED LIMITS



Clear All

Instructions

CRITERIA BASED SPEED LIMIT:

CBSL do NOT apply

Additional Comments (if required):

Released under RTI

IDENTIFY ROAD CLASSIFICATION

	Input	Class
More...	ROAD ENVIRONMENTAL CONTEXT CLASS	Urban
More...	ROAD FUNCTIONAL CLASSIFICATION	Arterial

CRASH RISK RATING (CRR)

	DCA Group	Description	No. of Casualty Crashes	Risk Score
More...	1	INTERSECTION, FROM ADJACENT APPROACHES		0
More...	2	HEAD-ON		0
More...	3	OPPOSING VEHICLES, TURNING		0
More...	4	REAR-END		0
More...	5	LANE CHANGE		0
More...	6	PARALLEL LANES, TURNING		0
More...	7	U-TURN		0
More...	8	ENTERING ROADWAY		0
More...	9	OVERTAKING, SAME DIRECTION		0
More...	10	HIT PARKED VEHICLE		0
More...	11	HIT TRAIN		0
More...	12	PEDESTRIAN		0
More...	13	PERMANENT OBSTRUCTION ON CARRIAGEWAY		0
More...	14	HIT ANIMAL		0
More...	15	OFF CARRIAGEWAY, ON STRAIGHT		0
More...	16	OFF CARRIAGEWAY, ON STRAIGHT, HIT OBJECT		0
More...	17	OFF CARRIAGEWAY, ON STRAIGHT		0
More...	18	OFF CARRIAGEWAY, ON CURVE		0
More...	19	OFF CARRIAGEWAY, ON CURVE, HIT OBJECT		0
More...	20	OUT OF CONTROL, ON CURVE	1	0.67
More...	21	OTHER		0
More...	TOTAL		1	0.67

RISK ASSESSED SPEED LIMIT

INFRASTRUCTURE RISK RATING (IRR)				
	Item	Description	Input	Risk Score
More...	1	ROAD STEREOTYPE	Divided - non traversable	1
More...	2	ALIGNMENT	Straight or gentle	1
More...	3A	SEALED SHOULDER WIDTH	Wide shoulder	1
More...	3B	LANE WIDTH	Medium	
More...	4a	ROADSIDE HAZARD RISK - LEFT SIDE	Moderate	1.43
More...	4b	ROADSIDE HAZARD RISK - RIGHT SIDE	Minor	0.67
More...	5	LAND USE	Urban residential	3
More...	6	AT-GRADE INTERSECTION DENSITY	<1 intersection/km	1
More...	7	ACCESS DENSITY	1 to <2 accesses/km not required for specified Land Use	1.01
More...	8	TRAFFIC VOLUME		N/A

Clear All

Estimate Risk Assessed Speed Limit

Instructions

Released under RDR

ROAD RISK METRIC (RRM)

Input	Risk Levels	Risk Score
Crash Risk Rating (Step 2)	Low	5.73048135
Infrastructure Risk Rating (Step 3)	Low	0.502631928

ROAD RISK METRIC:	Low
--------------------------	-----

RISK ASSESSED SPEED LIMIT (RASL)

Input	Result
Road Environmental Context Class	Urban
Road Functional Classification	Arterial
Road Risk Metric	Low

RISK ASSESSED SPEED LIMIT:	80km/h
-----------------------------------	--------

ADDITIONAL COMMENTS

Additional Comments (if required): <i>Dates of crash history?</i>

SPEED DATA SPEED LIMIT



SPEED DATA INPUTS		
	Item	Input
More...	MEAN SPEED (km/h)	57.7
More...	UPPER LIMIT OF 15km/h PACE SPEED	69
More...	PERCENTAGE WITHIN PACE SPEED	75.71

Clear All Estimate Speed Data Speed Limit Instructions

SPEED DATA SPEED LIMIT	
Input	Result
Speed Data Conforms with Speed Limit?	Y
Speed Limit Suggested by Speed Data	N/A

SPEED DATA SPEED LIMIT:	60km/h
--------------------------------	--------

ADDITIONAL COMMENTS
Additional Comments (if required):
<div style="background-color: yellow; height: 150px;"></div>

Released under DMTR

OPTION SELECTION



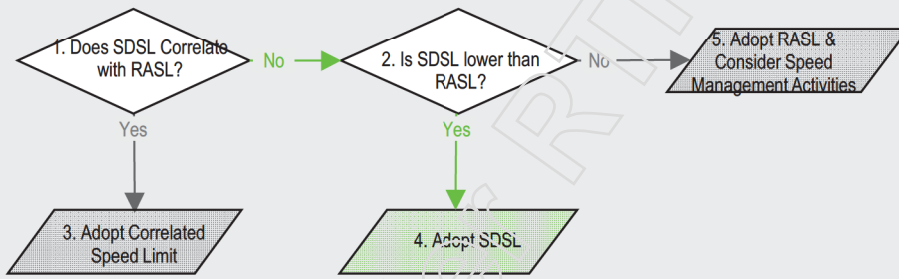
Clear All

Undertake Option Selection

Instructions

OPTION SELECTION INPUTS

Inputs	Result
Risk Assessed Speed Limit	80km/h
Speed Data Speed Limit	60km/h



Released under RTI/IMR

ENGINEER'S RECOMMENDATION



Clear All

Summarise Findings of SLR Technical Assessments

Instructions

SUMMARY OF TECHNICAL ASSESSMENTS

The Criteria Based Speed Limit assessment determined that no Criteria Based Speed Limits apply.

Accordingly, Risk Assessed Speed Limit and Speed Data Speed Limit assessments were undertaken.

The Risk Assessed Speed Limit assessment indicated a speed limit of 80km/h was appropriate for the speed zone.

The Speed Data Speed Limit assessment indicated a speed limit of 60km/h is appropriate for the speed zone.

As the Speed Data Speed Limit is less than the Risk Assessed Speed Limit the results of the technical assessment indicate that the speed limit of 60km/h be adopted along the road corridor.

INTERPRETATION OF ASSESSMENT

Based on the information input into the Speed Limit Review tool the Speed Limit Review found that the speed limit along Western Arterial Road should be 60km/h.

Analysis of the vehicle speeds along Western Arterial Road indicated that drivers were generally driving at speeds commensurate of the 60 km/h. Additionally, the speed limit of 60 km/h is appropriate given the function of the road (Urban, Arterial) and the level of assessed risk.

If passing this information on to others, consider describing the attributes and function (Urban, Arterial), including the variety of movements, types of road users which are typical of Western Arterial Road and the speed at which drivers are currently travelling.

The above has been provided as a suggestion only to help with communicating the outcome of the speed limit review to interested stakeholders. Communication material needs to be tailored to the specific situation under review. The responsibility for communicating the outcome of the speed limit review remains with the Responsible Officer.

Released under RTI - DTMR

ENGINEER'S RECOMMENDATION



ENGINEER'S RECOMMENDATIONS		
Name	RPEQ Number	Date
NR	15031	7/05/2020

Accept Recommendations of Technical Process? Yes

Alternate Recommendations (if Applicable) or Other Circumstances (Section 7.2) to be Provided:

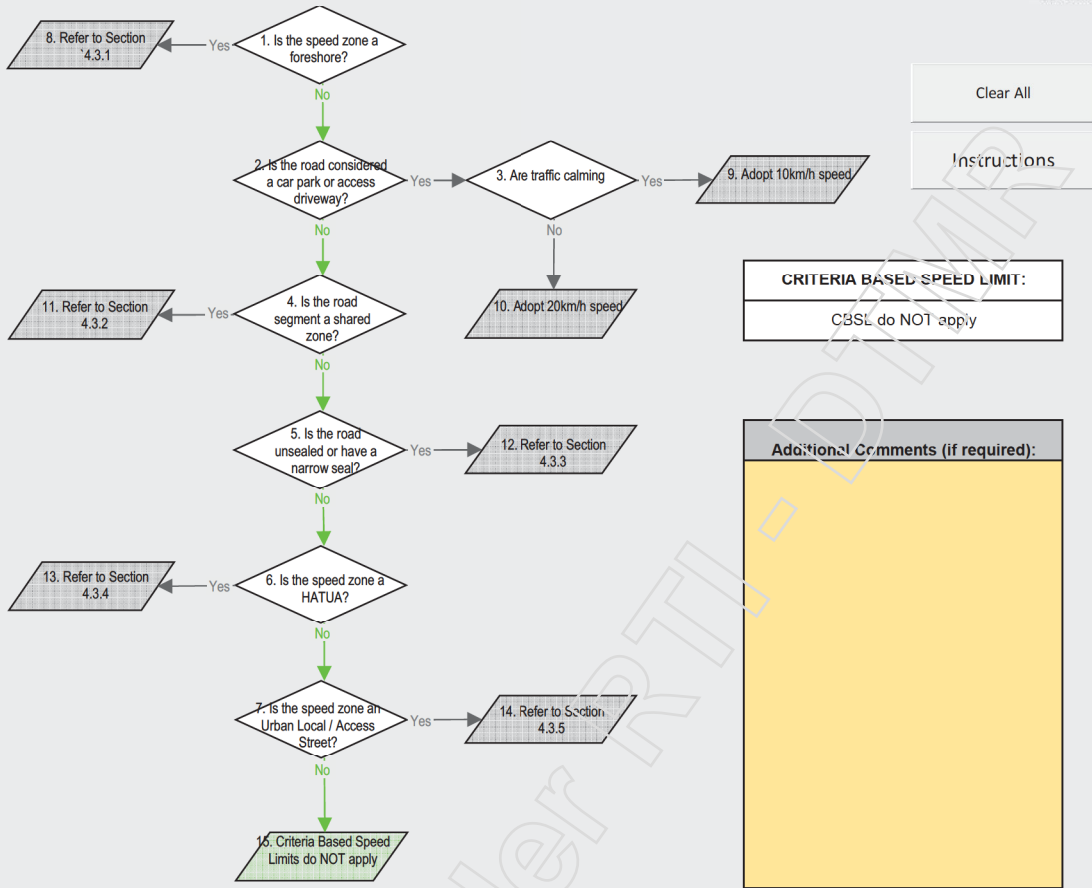
Additional Comments / Justification for Alternate Recommendations:

RESPONSIBLE OFFICER'S ACCEPTANCE		
Name	Position	Date

Do you (the Responsible Officer) Accept the Engineers Recommendations?

Released under RTI - DTMR

CRITERIA BASED SPEED LIMITS



Clear All

Instructions

CRITERIA BASED SPEED LIMIT:

CBSL do NOT apply

Additional Comments (if required):

Released under RTI

IDENTIFY ROAD CLASSIFICATION

	Input	Class
More...	ROAD ENVIRONMENTAL CONTEXT CLASS	Urban
More...	ROAD FUNCTIONAL CLASSIFICATION	Arterial

CRASH RISK RATING (CRR)

	DCA Group	Description	No. of Casualty Crashes	Risk Score
More...	1	INTERSECTION, FROM ADJACENT APPROACHES	1	0.46
More...	2	HEAD-ON		0
More...	3	OPPOSING VEHICLES, TURNING		0
More...	4	REAR-END	5	1.25
More...	5	LANE CHANGE		0
More...	6	PARALLEL LANES, TURNING		0
More...	7	U-TURN		0
More...	8	ENTERING ROADWAY		0
More...	9	OVERTAKING, SAME DIRECTION		0
More...	10	HIT PARKED VEHICLE		0
More...	11	HIT TRAIN		0
More...	12	PEDESTRIAN		0
More...	13	PERMANENT OBSTRUCTION ON CARRIAGEWAY		0
More...	14	HIT ANIMAL		0
More...	15	OFF CARRIAGEWAY, ON STRAIGHT		0
More...	16	OFF CARRIAGEWAY, ON STRAIGHT, HIT OBJECT	1	0.6
More...	17	OFF CARRIAGEWAY, ON STRAIGHT		0
More...	18	OFF CARRIAGEWAY, ON CURVE		0
More...	19	OFF CARRIAGEWAY, ON CURVE, HIT OBJECT		0
More...	20	OUT OF CONTROL, ON CURVE		0
More...	21	OTHER		0
More...	TOTAL		7	2.31

RISK ASSESSED SPEED LIMIT

INFRASTRUCTURE RISK RATING (IRR)				
	Item	Description	Input	Risk Score
More...	1	ROAD STEREOTYPE	Two lane undivided	3.7
More...	2	ALIGNMENT	Straight or gentle	1
More...	3A	SEALED SHOULDER WIDTH	Wide shoulder	0.85
More...	3B	LANE WIDTH	Wide	
More...	4a	ROADSIDE HAZARD RISK - LEFT SIDE	High	2.28
More...	4b	ROADSIDE HAZARD RISK - RIGHT SIDE	High	2.28
More...	5	LAND USE	Urban residential	3
More...	6	AT-GRADE INTERSECTION DENSITY	3 to <5 intersections/km	1.5
More...	7	ACCESS DENSITY	20+ accesses/km	1.3
More...	8	TRAFFIC VOLUME	Not required for specified Land Use	N/A

Clear All

Estimate Risk Assessed Speed Limit

Instructions

Released under RDMR

ROAD RISK METRIC (RRM)

Input	Risk Levels	Risk Score
Crash Risk Rating (Step 2)	Low	5.317755456
Infrastructure Risk Rating (Step 3)	Low Medium	1.622711363

ROAD RISK METRIC:	Low
--------------------------	-----

RISK ASSESSED SPEED LIMIT (RASL)

Input	Result
Road Environmental Context Class	Urban
Road Functional Classification	Arterial
Road Risk Metric	Low

RISK ASSESSED SPEED LIMIT:	70km/h
-----------------------------------	--------

ADDITIONAL COMMENTS

Additional Comments (if required): <i>Dates of crash history?</i>

SPEED DATA SPEED LIMIT



SPEED DATA INPUTS		
	Item	Input
More...	MEAN SPEED (km/h)	45.9
More...	UPPER LIMIT OF 15km/h PACE SPEED	56
More...	PERCENTAGE WITHIN PACE SPEED	79.63

Clear All Estimate Speed Data Speed Limit Instructions

SPEED DATA SPEED LIMIT	
Input	Result
Speed Data Conforms with Speed Limit?	N
Speed Limit Suggested by Speed Data	50km/h
SPEED DATA SPEED LIMIT: 50km/h	

ADDITIONAL COMMENTS
Additional Comments (if required):
<div style="background-color: yellow; height: 150px;"></div>

Released under DMTR

OPTION SELECTION



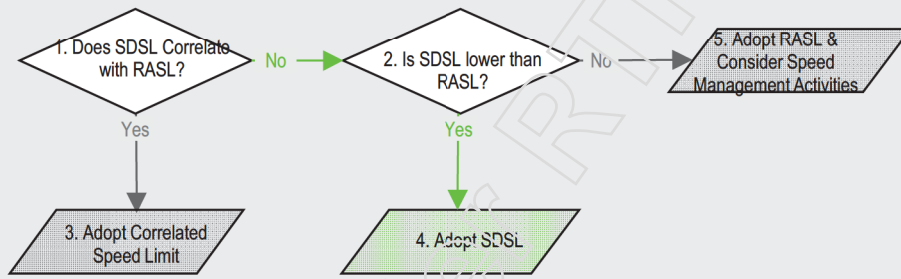
Clear All

Undertake Option Selection

Instructions

OPTION SELECTION INPUTS

Inputs	Result
Risk Assessed Speed Limit	70km/h
Speed Data Speed Limit	50km/h



Released under RTI/IMR

ENGINEER'S RECOMMENDATION



Clear All Summarise Findings of SLR Technical Assessments Instructions

SUMMARY OF TECHNICAL ASSESSMENTS

The Criteria Based Speed Limit assessment determined that no Criteria Based Speed Limits apply.

Accordingly, Risk Assessed Speed Limit and Speed Data Speed Limit assessments were undertaken.

The Risk Assessed Speed Limit assessment indicated a speed limit of 70km/h was appropriate for the speed zone.

The Speed Data Speed Limit assessment indicated a speed limit of 50km/h is appropriate for the speed zone.

As the Speed Data Speed Limit is less than the Risk Assessed Speed Limit the results of the technical assessment indicate that the speed limit of 50km/h be adopted along the road corridor.

INTERPRETATION OF ASSESSMENT

Based on the information input into the Speed Limit Review tool the Speed Limit Review found that the speed limit along Western Arterial Road should be reduced to 50 km/h.

Analysis of the vehicle speeds along Western Arterial Road indicated that drivers were generally driving at speeds commensurate to a speed limit of 50 km/h. To achieve greater uniformity of vehicle speeds along Western Arterial Road the speed limit review process recommends that the speed limit be reduced to 50 km/h.

If passing this information on to others, consider describing the attributes and function (Urban, Arterial), including the variety of movements, types of road users which are typical of Western Arterial Road and the speed at which drivers are currently travelling.

The above has been provided as a suggestion only to help with communicating the outcome of the speed limit review to interested stakeholders. Communication material needs to be tailored to the specific situation under review. The responsibility for communicating the outcome of the speed limit review remains with the Responsible Officer.

Released under RTI - DTMR

ENGINEER'S RECOMMENDATION



ENGINEER'S RECOMMENDATIONS		
Name	RPEQ Number	Date
NR	15031	7/05/2020

Accept Recommendations of Technical Process? No

Alternate Recommendations (if Applicable) or Other Circumstances (Section 7.2) to be Provided:
Refer to SLR report for further details

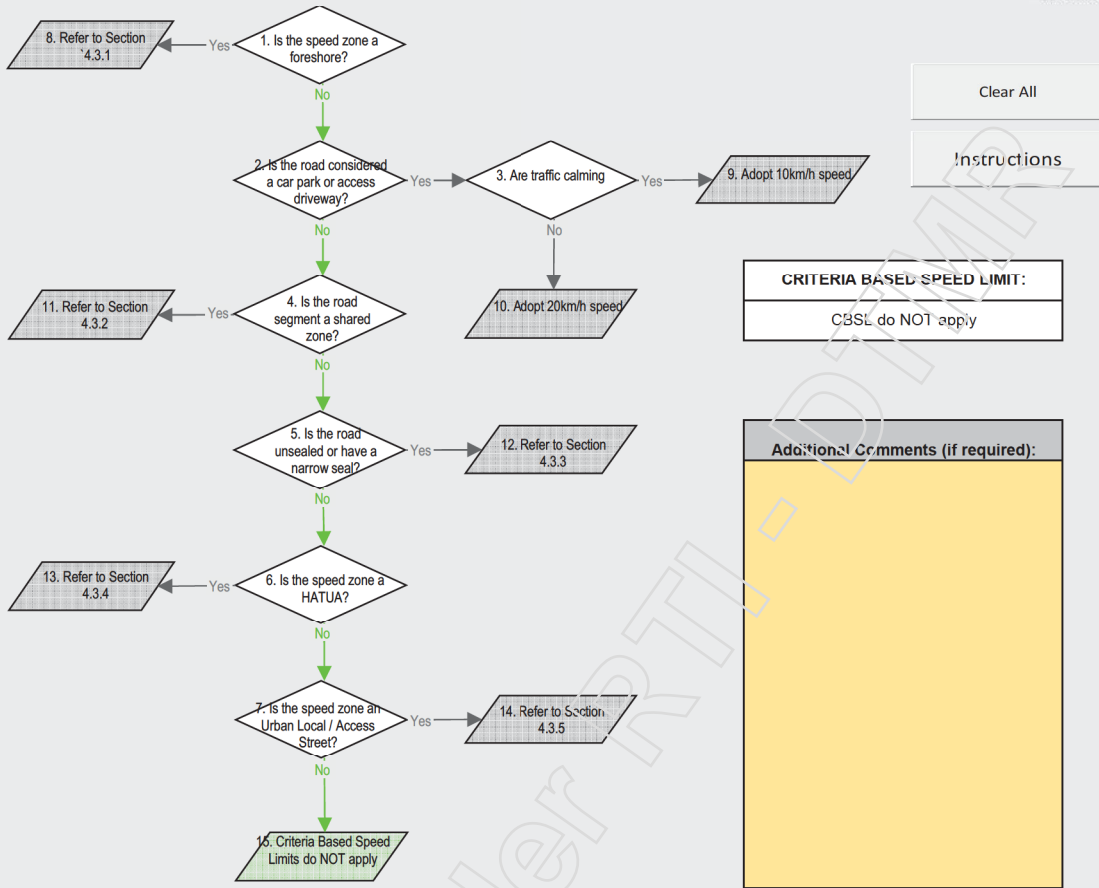
Additional Comments / Justification for Alternate Recommendations:

RESPONSIBLE OFFICER'S ACCEPTANCE		
Name	Position	Date

Do you (the Responsible Officer) Accept the Engineers Recommendations?

Released under RTI - DTMR

CRITERIA BASED SPEED LIMITS



Clear All

Instructions

CRITERIA BASED SPEED LIMIT:
CBSL do NOT apply

Additional Comments (if required):

Released under RTI

IDENTIFY ROAD CLASSIFICATION

	Input	Class
More...	ROAD ENVIRONMENTAL CONTEXT CLASS	Urban
More...	ROAD FUNCTIONAL CLASSIFICATION	Arterial

CRASH RISK RATING (CRR)

	DCA Group	Description	No. of Casualty Crashes	Risk Score
More...	1	INTERSECTION, FROM ADJACENT APPROACHES	1	0.46
More...	2	HEAD-ON	1	0.85
More...	3	OPPOSING VEHICLES, TURNING		0
More...	4	REAR-END	4	1
More...	5	LANE CHANGE		0
More...	6	PARALLEL LANES, TURNING		0
More...	7	U-TURN		0
More...	8	ENTERING ROADWAY		0
More...	9	OVERTAKING, SAME DIRECTION		0
More...	10	HIT PARKED VEHICLE		0
More...	11	HIT TRAIN		0
More...	12	PEDESTRIAN		0
More...	13	PERMANENT OBSTRUCTION ON CARRIAGEWAY		0
More...	14	HIT ANIMAL		0
More...	15	OFF CARRIAGEWAY, ON STRAIGHT		0
More...	16	OFF CARRIAGEWAY, ON STRAIGHT, HIT OBJECT		0
More...	17	OFF CARRIAGEWAY, ON STRAIGHT		0
More...	18	OFF CARRIAGEWAY, ON CURVE		0
More...	19	OFF CARRIAGEWAY, ON CURVE, HIT OBJECT		0
More...	20	OUT OF CONTROL, ON CURVE		0
More...	21	OTHER		0
More...	TOTAL		6	2.31

RISK ASSESSED SPEED LIMIT

INFRASTRUCTURE RISK RATING (IRR)				
	Item	Description	Input	Risk Score
More...	1	ROAD STEREOTYPE	Two lane undivided	3.7
More...	2	ALIGNMENT	Straight or gentle	1
More...	3A	SEALED SHOULDER WIDTH	Wide shoulder	1
More...	3B	LANE WIDTH	Medium	
More...	4a	ROADSIDE HAZARD RISK - LEFT SIDE	Severe	2.8
More...	4b	ROADSIDE HAZARD RISK - RIGHT SIDE	High	2.28
More...	5	LAND USE	Urban residential	3
More...	6	AT-GRADE INTERSECTION DENSITY	5 to <10 intersections/km	2.6
More...	7	ACCESS DENSITY	20+ accesses/km	1.3
More...	8	TRAFFIC VOLUME	Not required for specified Land Use	N/A

Clear All

Estimate Risk Assessed Speed Limit

Instructions

Released under RMA

ROAD RISK METRIC (RRM)

Input	Risk Levels	Risk Score
Crash Risk Rating (Step 2)	Low	3.691760825
Infrastructure Risk Rating (Step 3)	Medium	1.979073396

ROAD RISK METRIC:	Medium
--------------------------	--------

RISK ASSESSED SPEED LIMIT (RASL)

Input	Result
Road Environmental Context Class	Urban
Road Functional Classification	Arterial
Road Risk Metric	Medium

RISK ASSESSED SPEED LIMIT:	60km/h
-----------------------------------	--------

ADDITIONAL COMMENTS

Additional Comments (if required): <i>Dates of crash history?</i>

SPEED DATA SPEED LIMIT



SPEED DATA INPUTS		
	Item	Input
More...	MEAN SPEED (km/h)	54.5
More...	UPPER LIMIT OF 15km/h PACE SPEED	63
More...	PERCENTAGE WITHIN PACE SPEED	83.95

Clear All Estimate Speed Data Speed Limit Instructions

SPEED DATA SPEED LIMIT	
Input	Result
Speed Data Conforms with Speed Limit?	Y
Speed Limit Suggested by Speed Data	N/A

SPEED DATA SPEED LIMIT:	60km/h
--------------------------------	--------

ADDITIONAL COMMENTS
Additional Comments (if required):
<div style="background-color: yellow; height: 150px;"></div>

Released under DMTR

OPTION SELECTION



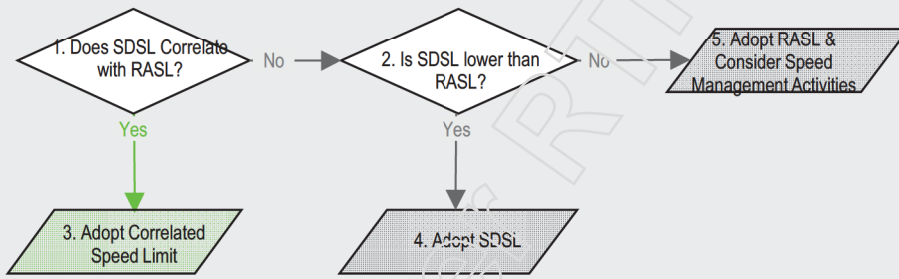
Clear All

Undertake Option Selection

Instructions

OPTION SELECTION INPUTS

Inputs	Result
Risk Assessed Speed Limit	60km/h
Speed Data Speed Limit	60km/h



Released under RTI/IMR

ENGINEER'S RECOMMENDATION



Clear All

Summarise Findings of SLR Technical Assessments

Instructions

SUMMARY OF TECHNICAL ASSESSMENTS

The Criteria Based Speed Limit assessment determined that no Criteria Based Speed Limits apply.

Accordingly, Risk Assessed Speed Limit and Speed Data Speed Limit assessments were undertaken. The Risk Assessed Speed Limit and Speed Data Speed Limits both indicated a speed limit of 60km/h was appropriate for the speed zone.

INTERPRETATION OF ASSESSMENT

Based on the information input into the Speed Limit Review tool the Speed Limit Review found that the speed limit along Western Arterial Road should be 60 km/h.

The findings of the speed limit review found that the 60 km/h speed limit was appropriate given the function (Urban, Arterial) of Western Arterial Road and the level of assessed risk (Medium). Additionally, analysis of the vehicle speeds along Western Arterial Road indicated that drivers were generally driving at speeds commensurate to a speed limit of 60 km/h.

If passing this information on to others, consider describing the attributes and function (Urban, Arterial), including the variety of movements and types of road users which are typical of Western Arterial Road.

The above has been provided as a suggestion only to help with communicating the outcome of the speed limit review to interested stakeholders. Communication material needs to be tailored to the specific situation under review. The responsibility for communicating the outcome of the speed limit review remains with the Responsible Officer.

Released under RTI - DTMR

ENGINEER'S RECOMMENDATION



ENGINEER'S RECOMMENDATIONS		
Name	RPEQ Number	Date
NR	15031	7/05/2020

Accept Recommendations of Technical Process? Yes

Alternate Recommendations (if Applicable) or Other Circumstances (Section 7.2) to be Provided:

Additional Comments / Justification for Alternate Recommendations:

RESPONSIBLE OFFICER'S ACCEPTANCE		
Name	Position	Date

Do you (the Responsible Officer) Accept the Engineers Recommendations?

Released under RTI - DTMR


4 Attachment D- Signage Plan

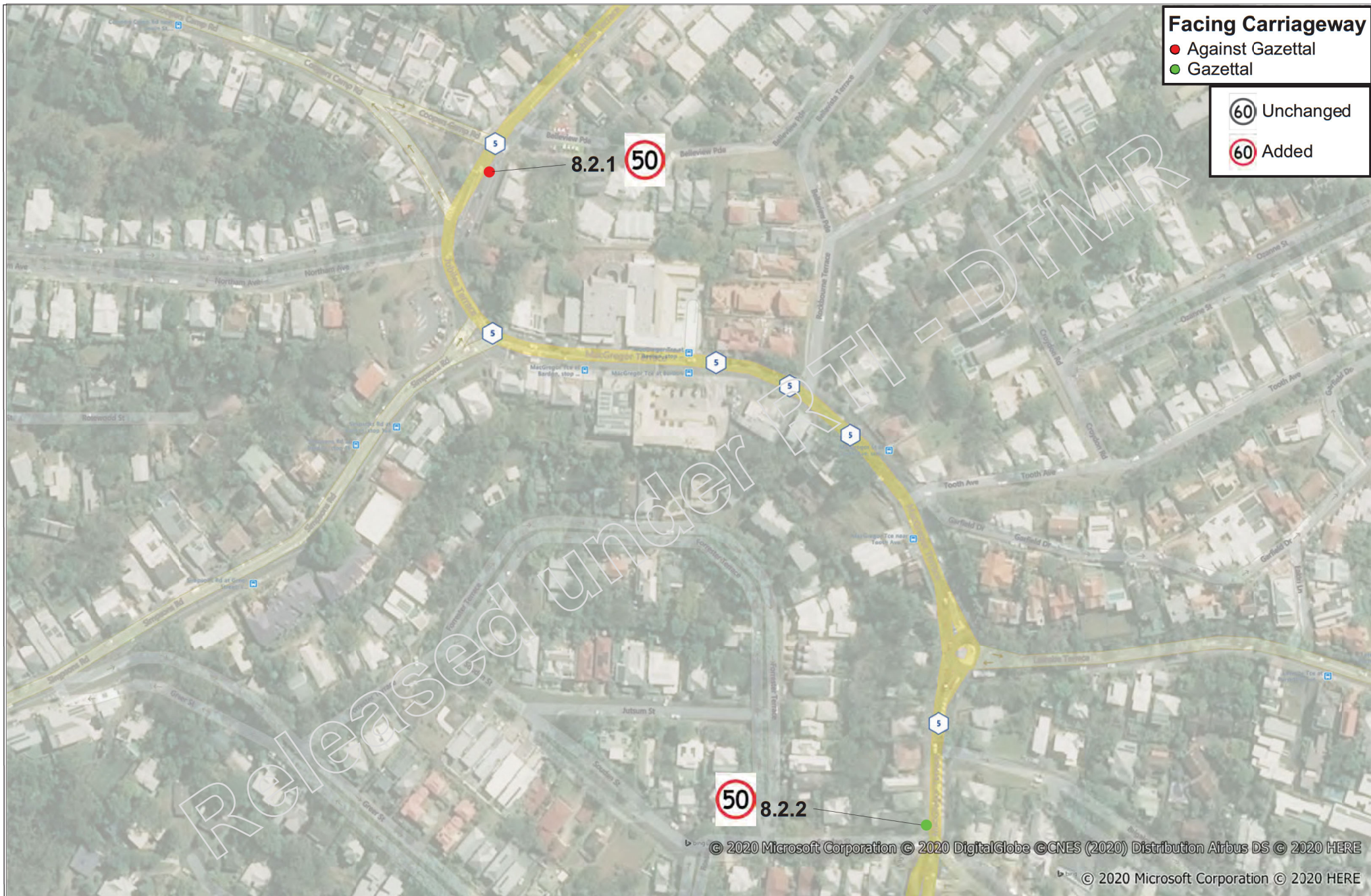
Released under RTI - DTMR


ID	Corridor	Zone	Chainage	Lat	Long	Facing Carriageway	Location	Sign Type	Current Speed	Condition	Outcome of SLR	Sign Status	Revised Speed (if applicable)
8.1.1	8	1	4.55	-27.443852	152.990247	Against Gazettal		R4-1	60km/h	Good	Retain Current Speed Limit	Retain	
8.1.2	8	1	4.17	-27.447186	152.989574	Against Gazettal		R4-1	60km/h	Good	Retain Current Speed Limit	Retain	
8.1.3	8	1	3.64	-27.451956	152.988844	Against Gazettal		R4-1	60km/h	Good	Retain Current Speed Limit	Retain	
8.1.4	8	1	3.50	-27.45319	152.988405	Against Gazettal		W1-4	40km/h	Good	Retain Current Speed Limit	Retain	
8.1.5	8	1	3.41	-27.453905	152.988534	Against Gazettal		W2-9	40km/h	Good	Retain Current Speed Limit	Retain	
8.1.6	8	1	3.08	-27.456121	152.986694	Gazettal		R4-1	60km/h	Good	Retain Current Speed Limit	Retain	
8.1.7	8	1	3.29	-27.454797	152.988119	Gazettal		W2-9	40km/h	Good	Retain Current Speed Limit	Retain	
8.1.8	8	1	3.95	-27.449156	152.989185	Gazettal		R4-1	60km/h	Good	Retain Current Speed Limit	Retain	
8.1.9	8	1	4.45	-27.444357	152.989603	Gazettal		R4-1	60km/h	Good	Retain Current Speed Limit	Retain	
8.2.1	8	2				Against Gazettal		R4-1	50km/h	Add			
8.2.2	8	2				Gazettal		R4-1	50km/h	Add			
8.3.1	8	3	2.33	-27.460943	152.9884	Against Gazettal		R4-1	60km/h	Good	Retain Current Speed Limit	Retain	
8.3.2	8	3	2.33	-27.460928	152.988339	Against Gazettal	Median	R4-1	60km/h	Good	Retain Current Speed Limit	Retain	
8.3.3	8	3	1.98	-27.464103	152.988562	Gazettal		R4-1	60km/h	Good	Retain Current Speed Limit	Retain	
8.4.1	8	4	1.37	-27.469016	152.987944	Against Gazettal		W1-4	40km/h	Good	Retain Current Speed Limit	Retain	
8.4.2	8	4	1.14	-27.470312	152.986368	Gazettal		W1-4	30km/h				
8.5.1	8	5	1.03	-27.471229	152.986326	Against Gazettal		R4-1	60km/h	Good	Retain Current Speed Limit	Retain	
8.5.2	8	5	0.36	-27.47689	152.985113	Gazettal		R4-1	60km/h	Good	Retain Current Speed Limit	Retain	
8.5.3	8	5	0.75	-27.47358	152.98577	Gazettal		R4-1	60km/h	Good	Retain Current Speed Limit	Retain	

Released under RMA 2002



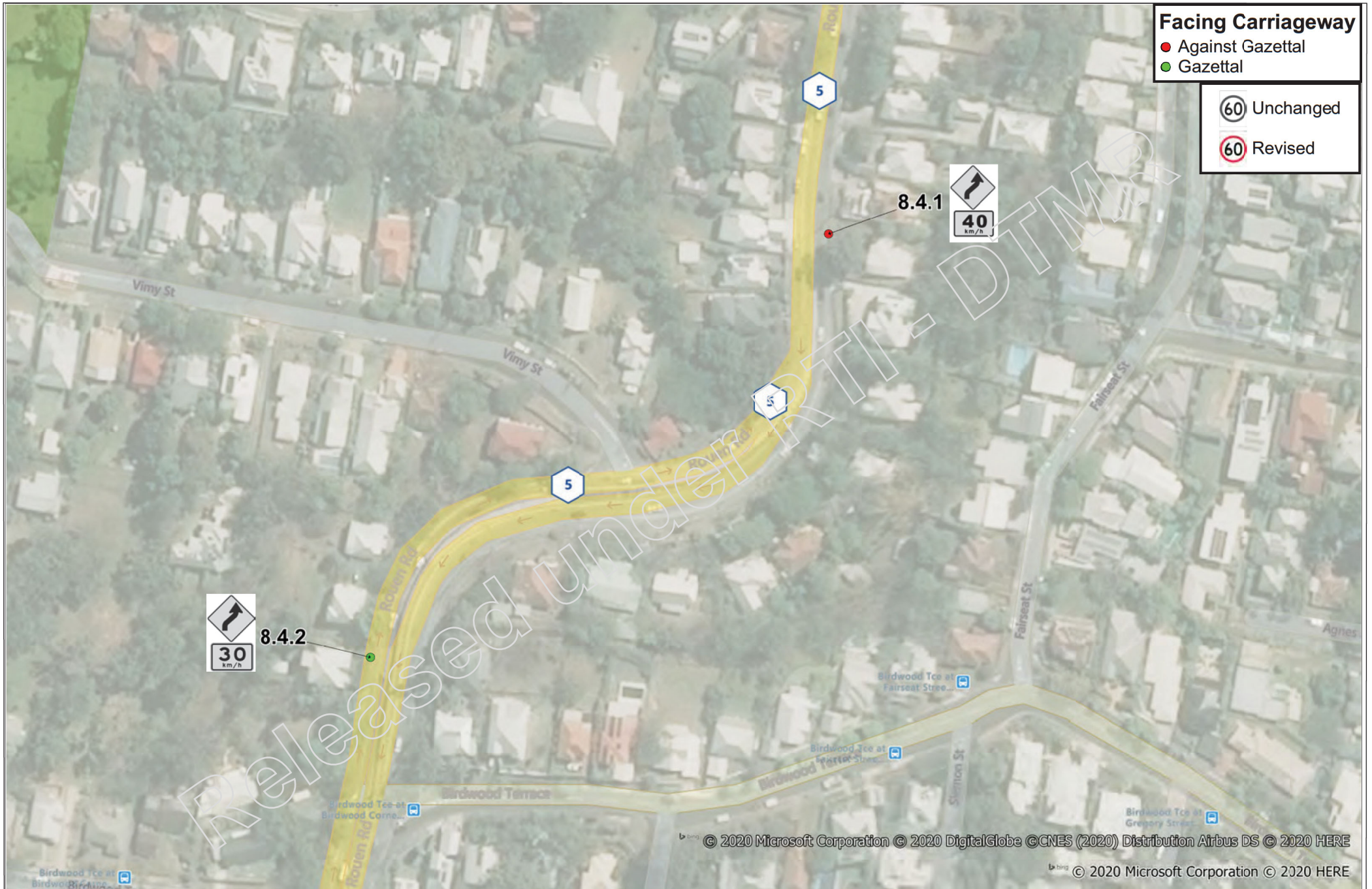
Date: 28/04/2020	Project No: P4420	Project Name: TMR Annual Speed Limit Review Program	Figure Name: Signage Plan - Corridor 8: Western Arterial Road (Zone 1)	Figure No: 1	
---------------------	----------------------	--	---	-----------------	---




Date: 28/04/2020	Project No: P4420	Project Name: TMR Annual Speed Limit Review Program	Figure Name: Signage Plan - Corridor 8: Western Arterial Road (Zone 2)	Figure No: 2	
---------------------	----------------------	--	---	-----------------	---




Date: 28/04/2020	Project No: P4420	Project Name: TMR Annual Speed Limit Review Program	Figure Name: Signage Plan - Corridor 8: Western Arterial Road (Zone 3)	Figure No: 3	BITZIOS consulting
---------------------	----------------------	--	---	-----------------	------------------------------



Date: 28/04/2020	Project No: P4420	Project Name: TMR Annual Speed Limit Review Program	Figure Name: Signage Plan - Corridor 8: Western Arterial Road (Zone 4)	Figure No: 4	
---------------------	----------------------	--	---	-----------------	---



Date: 28/04/2020	Project No: P4420	Project Name: TMR Annual Speed Limit Review Program	Figure Name: Signage Plan - Corridor 8: Western Arterial Road (Zone 5)	Figure No: 5	
---------------------	----------------------	--	---	-----------------	---