SAFE SPEED PROGRAMME TECHNICAL ASSESSMENT FORM

Purpose of this form is to document the technical assessment of a state highway network section to determine the safe and appropriate travel speed.

1. SH1 Spring Creek to Seddon and SH6 Blenheim Urban (extended to Picton)			
Date	23/12/2021	**Revision**	2

2. Safe Speed Programme Manager Details			
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Name	s 9(2)(a)		
Title	Senior Transportation Engineer	**Title**	Principal - Transportation
Organisation	Beca	**Organisation**	Beca
Date	23/12/2021	**Date**	23/12/2021
Notes	Assisted by: • s 9(2)(a) (Beca)	**Notes**	Assisted by: • s 9(2)(a) (Abley)

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Technical Assessment Summary

Background

- The scope of the speed assessment was SH1 Spring Creek to Seddon from 01S-0018-B/4.290 to 01S-0043-B/9.606 and SH6 Blenheim Urban from 006-0000-B/0.000 to 006-0000-B/3.060, with a length of 31.5km and 3.06km respectively. The total length of corridors assessed is approximately 34.6km.
- Fourteen homogeneous sections on SH1 from Spring Creek to Seddon and three homogeneous sections on SH6 have been assessed in contrast to the fifteen segments on SH1and four segments on SH6 in MegaMaps.
- SH1 between Spring Creek and the Picton urban areas between 01S-0018-B/4.290 and 01S-0000-B/0.000 was included at the request of Waka Kotahi. Blue text is used throughout this report to distinguish the assessment of Spring Creek to Picton urban areas from the original SH1 Spring Creek to Seddon and SH6 Blenheim assessment.
- Nine homogeneous sections on SH1 from Spring Creek to Picton have been assessed in contrast to the thirteen segments on SH1 in MegaMaps.
- The new Ōpaoa River Bridge constructed on SH1 north of Blenheim has recently opened to traffic. Therefore, this technical assessment assesses the Safe and Appropriate Assessed Speed (SaAS) based on a desktop assessment of available information[1] and recommended speed of the new bridge instead of the old bridge that is proposed to be used as a shared cycleway and footpath. The outcomes of this assessment could be further refined with a site visit of the now completed bridge or review of the as-built design plans.
- Excluding the new Ōpaoa River Bridge, the road environment has been assessed on the existing environment. Currently, no projects have been proposed along the corridor.
- **Marlborough District Council Speed Limit Amendment Bylaw 2021**
  Speed limits of some local roads in Marlborough have been changed on 1 April 2021. The corridors were based on those identified as the top 10% that would benefit from speed management.
  The following corridors along and near SH1 have been changed from Marlborough 2021 speed management:

Road Name	Old Speed Limit (km/h)	Current Speed Limit (km/h)	Location
London Quay	50	30	Full length. In Picton.
High Street	50	30	Between London Quay and Waikawa Road, Picton
Wellington Street	50	30	Between London Quay and Waikawa Road, Picton
Hunter Road	80	60	500m east of SH1. In Tuamarina.
Alaba Road	70/80	60	Between SH1 and 520m east of Redwood Street. In Riverlands.

Summary

- New speed limits on the SH1 Blenheim to Nelson route have been introduced in 2020. SH1 Picton to Seddon and SH6 Blenheim urban speed limit review is being carried out in this assessment. It is noted that SH62 has not been included for a speed limit review but for network consistency in this area, a speed limit review for this route is also recommended.
- **State Highway 1 Picton to Spring Creek**
  - Sections N1, N2 and N3 are within the urban area of Picton.
  - Section N1 through a commercial big box area of Picton has a SaAS of 40km/h, which is considered appropriate given the current road environment and a moderate level of pedestrian activities.
  - Section N2 is mostly an intersection and a bridge with limited accesses, and has an assessed SaAS of 40km/h. However, given that the historical crash does not show any outstanding safety issues and the level of pedestrian

[1] https://nzta.govt.nz/projects/new-opaoa-river-bridge/

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activity along this section of the road is expected to be relatively low, retaining the current speed limit of 50km/h is considered more appropriate.

- Section N3 through an urban residential area of Picton and has a SaAS of 60km/h. However, the existing speed limit of 50km/h should be retained, given the land use and access density.
- Sections N4 to N7 through a rural residential area between Picton and Tuamarina have a SaAS of 80km/h, which is considered appropriate for the undivided road environment and straight / curved alignment.
- N8 is a rural town area of Tuamarina and has a SaAS of 50km/h due to the medium safety matrix risk and medium IRR band. However, a speed limit of 50km/h may not have good compliance without significant changes to the current road environment. A speed limit of 60km/h is considered more appropriate given that only one side of the road has developments along the frontage of the road, and there are relatively low-level pedestrian activities on SH1. Some improvements are also proposed alongside the speed limit change to make this section safer.
- N8A is a subsection of N8 for Tua Marina School (Year 1-8) on Hunter Road. There is an existing school zone with active LED school warning signs, implemented on SH1 from 01S-0018-B/1.068 to 01S-0018-B/1.310. The speed limit along this section is proposed to be dropped from 80km/h to 60km/h due to the proposed speed limit of 60km/h for Section N8. No speed limit variable zone is proposed for this section because the school is on the side road. It is expected that the major activities around the school will be vehicle movements accessing Hunter Road for picking up and dropping off the students.
- N9 through a rural residential area between Tuamarina and Spring Creek has a SaAS of 100km/h, which is considered appropriate for a relatively straight and flat alignment with wide shoulders and overall moderate roadside hazards.

- **State Highway 1 Spring Creek to Seddon**
  - Section 1 through a rural town area of Spring Creek has a SaAS of 80km/h, however as this is expected to be an area with some vulnerable road users (cyclists and pedestrians) and the existing speed limit is 70km/h, so 60km/h is considered more appropriate.
  - Section 2 through a rural residential area between Spring Creek and Grovetown has a SaAS of 80km/h which is considered appropriate for the rural residential environment.
  - Section 3 through a rural residential area between Grovetown and Blenheim has a SaAS of 80km/h, which is appropriate given this is not expected to be an area with high numbers of vulnerable road users.
  - Section 4 through the new Ōpaoa River Bridge has a SaAS of 60km/h. Given there is not much information of the new bridge from available sources, the assessment uses assumed features to assess SaAS of this section. The section extents and SaAS may change when more information of the section features is available. A speed limit of 40km/h is recommended as the bridge is considered an ideal speed change threshold location and it will lower travel speeds prior to Section 5 which has the recommended speed limit of 40km/h. While this could be also be posted as a 60km/h or 50km/h, a single consistent speed limit of 40km/h is recommended to prevent multiple changes in speed limits and reduce overall speeds at the southern end of the bridge approaching Blenheim.
  - Section 5 has a SaAS of 40km/h which is appropriate for the commercial big box environment with a high number of vulnerable road users and on street parking expected. Remarking the wide lanes to a narrow width, horizontal and vertical deflection and urban road furniture should be considered to make the proposed speed more understandable.
  - Section 6 through an urban residential area of Blenheim has a SaAS of 50km/h, which is considered appropriate in an area without a high number of vulnerable road users.
  - Section 7 through a rural residential area between Blenheim and Riverlands has a SaAS of 60km/h which is appropriate in an area with some private dwellings, a footpath and potentially some cycling and pedestrian crossing movements.
  - Section 8 SaAS through Riverlands has been assessed as 60km/h, which is considered appropriate for the rural town environment in an area with frequent residential accessways, narrow road reserve, a major intersection and a school (Riverlands School) in the vicinity.
  - Section 9 through a short rural residential area and adjacent to Riverlands has a SaAS of 80km/h. A speed limit of 60km/h is recommended instead. The short section includes a few houses, the existing speed limit is 70km/h and there is insufficient space to place threshold signs near the intersection due to the constraints of the railway

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and fences on both sides of the road. The eastern section boundary is close to a major intersection with Alabama Road and the section can be used as a buffer for drivers in the decreasing direction to slow down before reaching out to the intersection.

- Section 10 SaAS has been assessed as 80km/h which is appropriate for the rural residential environment with curved alignment.
- Section 11 SaAS has been assessed as 60km/h which is appropriate for the open rural residential environment with winding, inclined and narrow alignment and high-risk roadside hazards.
- Section 12 SaAS has been assessed as 100km/h which is appropriate for the open rural residential environment with a relatively straight and flat alignment with wide shoulders and moderate roadside hazards.
- Section 13 SaAS has been assessed as 60km/h. It goes through a rural town area of Seddon. The assessed speed is appropriate in an area without a high number of vulnerable road users, no commercial activity and wide shoulders.
- Section 14 SaAS has been assessed as 60km/h. It goes through a rural town area of Seddon with a mixture of residential development and some shops facing to the road. A speed limit of 50km/h is recommended given it is an area with some pedestrian crossing movements expected and a school (Seddon School) nearby. Seddon School (Year 1-8) has a road frontage onto SH1 but the access of the school is not on the State Highway and far enough to not set a school speed zone on SH1.

- **SH6 Blenheim Urban**
  - Section 15 SaAS has been assessed as 40km/h which is considered appropriate in an area with commercial big box land use in the CBD based on the Speed Management Guide, Table 2.1.
  - Section 16 SaAS has been assessed as 60km/h. A speed limit of 50km/h is recommended instead because on street parking, uncontrolled pedestrian crossings and pedestrian movements are expected given there is a school nearby (Marlborough Girls' College) and housing on both sides of the highway. Also, the existing speed limit is 50km/h.
  - Section 16A is a subsection of Section 16, where Marlborough Girl's College (Year 9-13) has a 40km/h school speed zone variable speed limit (VSL) implemented on SH6 Blenheim Urban (006-0000-B/1.000 to 006-0000-B/1.420).
  - Section 17 SaAS has been assessed as 50km/h which is appropriate for an urban residential area with some commercial activity.
- **School Zones**
  - There are several schools identified along the corridor or in the vicinity but none of them require new variable speed limit school zones on the State Highway.
- **Proposed Infrastructure Improvements**
  - Proposed infrastructure improvements for section N8:
    - The curve at the intersection of Bush Road and SH1 should be delineated by WYC1 chevron curve indicator signs to help southbound drivers identify the curve.
    - The WYT3 chevron board should be installed at the intersection of Bush Road and SH1 to help drivers to recognise the intersection ahead.
  - Audio-tactile pavement (ATP) centrelines along the rural section with a proposed speed limit of 80km/h and above are recommended to reduce the head-on crash risk for Section N4-N7, Section N9, Section 2 and Section 10. ATP edgelines are also recommended for the sections where shoulder width is sufficient to reduce the run-off road risk but more detailed assessment will be required.
  - Traffic calming is recommended for Blenheim commercial big box area to support 40km/h environment.
  - Speed limit repeater signs are recommended to raise drivers' awareness for Section N6, Section 3 and Section 8. Given Section 8 goes through a rural town area, residential zone signs are recommended for this section as well.

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4. Technical Assessment Summary

Network Section No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Physical Description	Posted Speed Limit	Safe and Appropriate Speed (MegaMaps Edition III)	Assessed Safe and Appropriate Speed Limit	Recommended Speed Limit
		Start	End							
N1	01S	01S-0000-B/0	01S-0000-B/0.430	0.430	01S_67582	Urban state highway with a straight alignment, a commercial big box of Picton	50	30	40	40
N2	01S	01S-0000-B/0.430	01S-0000-B/0.666	0.236	01S_67582, 01S_67600	Urban state highway with a curved alignment, Picton	50	30	40	50
N3	01S	01S-0000-B/0.666	01S-0000-B/2.008	1.533	01S_67600, 01S_67821, 01S_67601	Urban state highway with a straight alignment, Picton	50	50	60	50
N4	01S	01S-0000-B/2.008	01S-0000-B/5.290	3.282	01S_67601, 01S_67406	Rural state highway with a curved alignment between Picton and Koromiko	100	80	80	80
N5	01S	01S-0000-B/5.290	01S-0000-B/6.682	1.392	01S_2916	Rural state highway with a straight and gentle alignment between Picton and Koromiko	100	80	80	80
N6	01S	01S-0000-B/6.682	01S-0000-B/7.830	1.148	01S_2916	Rural state highway with a straight and gentle alignment through Koromiko which is a rural residential area with relatively more accesses than other rural residential sections	100	80	80	80

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Network Section No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Physical Description	Posted Speed Limit	Safe and Appropriate Speed (MegaMaps Edition III)	Assessed Safe and Appropriate Speed Limit	Recommended Speed Limit
		Start	End							
N7	01S	01S-0000-B/7.830	01S-0018-B/0.699	10.517	01S_2916, 01S_67816	Rural state highway with a curved alignment between Koromiko and Tuamarina	100	80	80	80
N8	01S	01S-0018-B/0.699	01S-0018-B/1.407	0.708	01S_67546, 01S_67553	Rural state highway with a curved alignment through Tuamarina which is a rural town	80	50	50	60
N8A	*01S*	*01S-0018-B/1.068*	*01S-0018-B/1.310*	*0.242*	*01S_67553*	*Existing Tua Marina School Zone with active LED school warning signs* *Subsection of section N8*	*80*	*N/A*	*N/A*	*60*
N9	01S	01S-0018-B/1.407	01S-0018-B/4.290	2.883	01S_67555, 01S_67307, 01S_67513	Rural state highway with a straight alignment between Tuamarina and Spring Creek	100	100	100	100
1	01S	01S-0018-B/4.290	01S-0018-B/4.894	0.60	01S_67654	Rural state highway with a straight alignment, Spring Creek	70	80	80	60
2	01S	01S-0018-B/4.894	01S-0018-B/6.800	1.91	01S_67565	Rural state highway with a straight alignment, from Spring Creek to Grovetown	100	80	80	80
3	01S	01S-0018-B/6.800	01S-0018-B/8.825	2.03	01S_67565, 01S_67407	Rural state highway with a straight alignment, from Grovetown to Blenheim	100	80	80	80
4	01S	01S-0018-B/8.825	01S-0018-B/9.300	0.48	01S_67407, 01S_67340	Urban state highway with a curved alignment, new Ōpaoa River Bridge	50	50	60	40

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Network Section No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Physical Description	Posted Speed Limit	Safe and Appropriate Speed (MegaMaps Edition III)	Assessed Safe and Appropriate Speed Limit	Recommended Speed Limit
		Start	End							
5	01S	01S-0018-B/9.300	01S-0028-B/1.220	1.91	01S_67336, 01S_67649	Urban state highway with a straight alignment, a commercial big box area of Blenheim	50	30/50	40	40
6	01S	01S-0028-B/1.220	01S-0028-B/1.637	0.42	01S_67346	Urban state highway with a curved alignment, an urban residential area of Blenheim	50	50	50	50
7	01S	01S-0028-B/1.637	01S-0028-B/2.520	0.88	01S_67379	Rural state highway with a curved alignment, between Blenheim and Riverlands	70	80	60	60
8	01S	01S-0028-B/2.520	01S-0028-B/3.080	0.56	01S_67379	Rural state highway with a curved alignment, Riverlands	70	80	60	60
9	01S	01S-0028-B/3.080	01S-0028-B/3.658	0.58	01S_67295	Rural state highway with a straight alignment, from Riverlands to Seddon	70	80	80	60
10	01S	01S-0028-B/3.658	01S-0028-B/12.105	8.45	01S_2924	Rural state highway with a curved alignment, from Riverlands to Seddon	100	80	80	80
11	01S	01S-0028-B/12.105	01S-0043-B/0	3.65	01S_2924	Rural state highway with a winding alignment, from Riverlands to Seddon	100	80	60	60
12	01S	01S-0043-B/0	01S-0043-B/8.180	8.18	01S_2924, 01S_2925, 01S_67556	Rural state highway with a straight alignment, from Riverlands to Seddon	100	80/100	100	100
13	01S	01S-0043-B/8.180	01S-0043-B/8.875	0.70	01S_67526	Rural state highway with a curved alignment, a rural town area of Seddon with residential developments	60	50	60	60

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Network Section No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Physical Description	Posted Speed Limit	Safe and Appropriate Speed (MegaMaps Edition III)	Assessed Safe and Appropriate Speed Limit	Recommended Speed Limit
		Start	End							
14	01S	01S-0043-B/8.875	01S-0043-B/9.606	0.73	01S_67523	Rural state highway with a curved alignment, a rural town area of Seddon with shops and school nearby	50	50	60	50
15	006	006-0000-B/0	006-0000-B/0.400	0.40	006_77123	Urban state highway with a straight alignment, a commercial big box area of Blenheim	50	50	40	40
16	006	006-0000-B/0.400	006-0000-B/1.572	1.18	006_76344	Urban state highway with a straight alignment, an urban residential area of Blenheim	50	50	60	50
16A	*006*	*006-0000-B/0.989*	*006-0000-B/1.422*	*0.433*	*006_76344*	*Existing Marlborough Girls' College School Zone VSL* *Subsection of section 16*	*40/50*	*N/A*	*40 School Zone VSL*	*N/A*
17	006	006-0000-B/1.572	006-0000-B/3.060	1.49	006_77121, 006_77126	Urban state highway with a straight alignment, an urban residential area of Blenheim with some commercial developments	50	50	50	50

Note:

- The corridor IDs in MegaMaps Edition II and MegaMaps Edition III are different. The corridor IDs for this technical assessment are obtained from MegaMaps Edition III.
- Some tools within MegaMaps Edition III including the IRR calculator and Corridor Editor have not yet been updated with the Edition III data when conducting this assessment. For example, the SaAS under Speed Management Framework 2020 has been updated while the SaAS in corridor editor and IRR calculator still shows the old calculated SaAS and provides recalculated SaAS with Edition II data.
- This assessment uses corridor editor to obtain the assessed SaAS.
- The distance from the left and right side of the road to roadside hazards is measured respectively from the left and right edge line.
- The SaAS under Speed Management Framework 2020 in MegaMaps Edition III is used to compare with the assessed SaAS in this assessment.

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NZTA Review
Assigned NZTA representative to review technical assessment and provide feedback on the findings and confirmation or otherwise of the above assessment.
NZTA Summary and Recommendation
Assigned NZTA representative to provide recommendation of the assessment.

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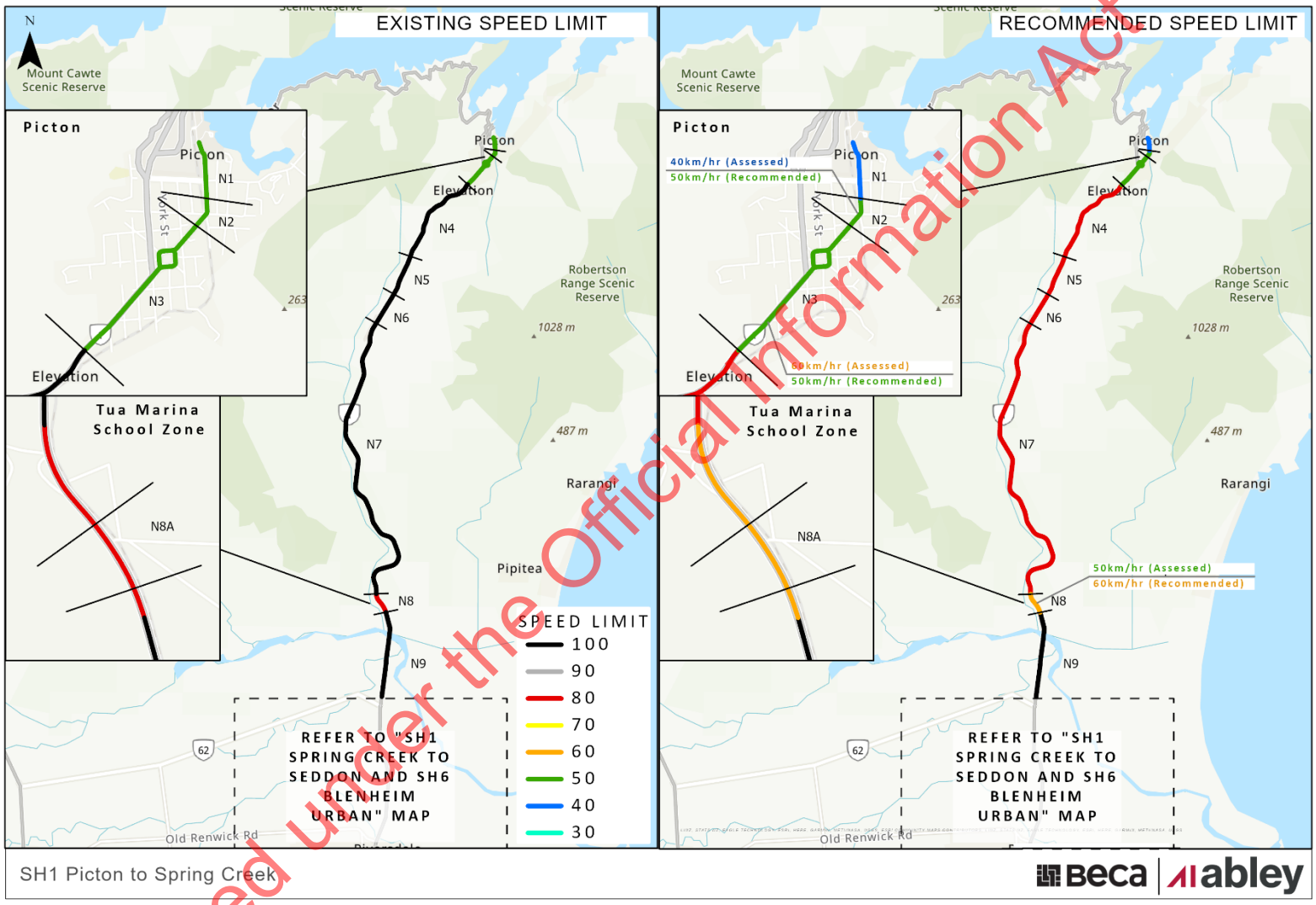
5. Map of State Highway Safe Speed Technical Assessment



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Date exported: 16/12/2021 11:14 am Path: J:\BECA Ltd (BECAL)\BECAL-J005-18 SH1 Spring Creek to Seddon and SH6 Blenheim

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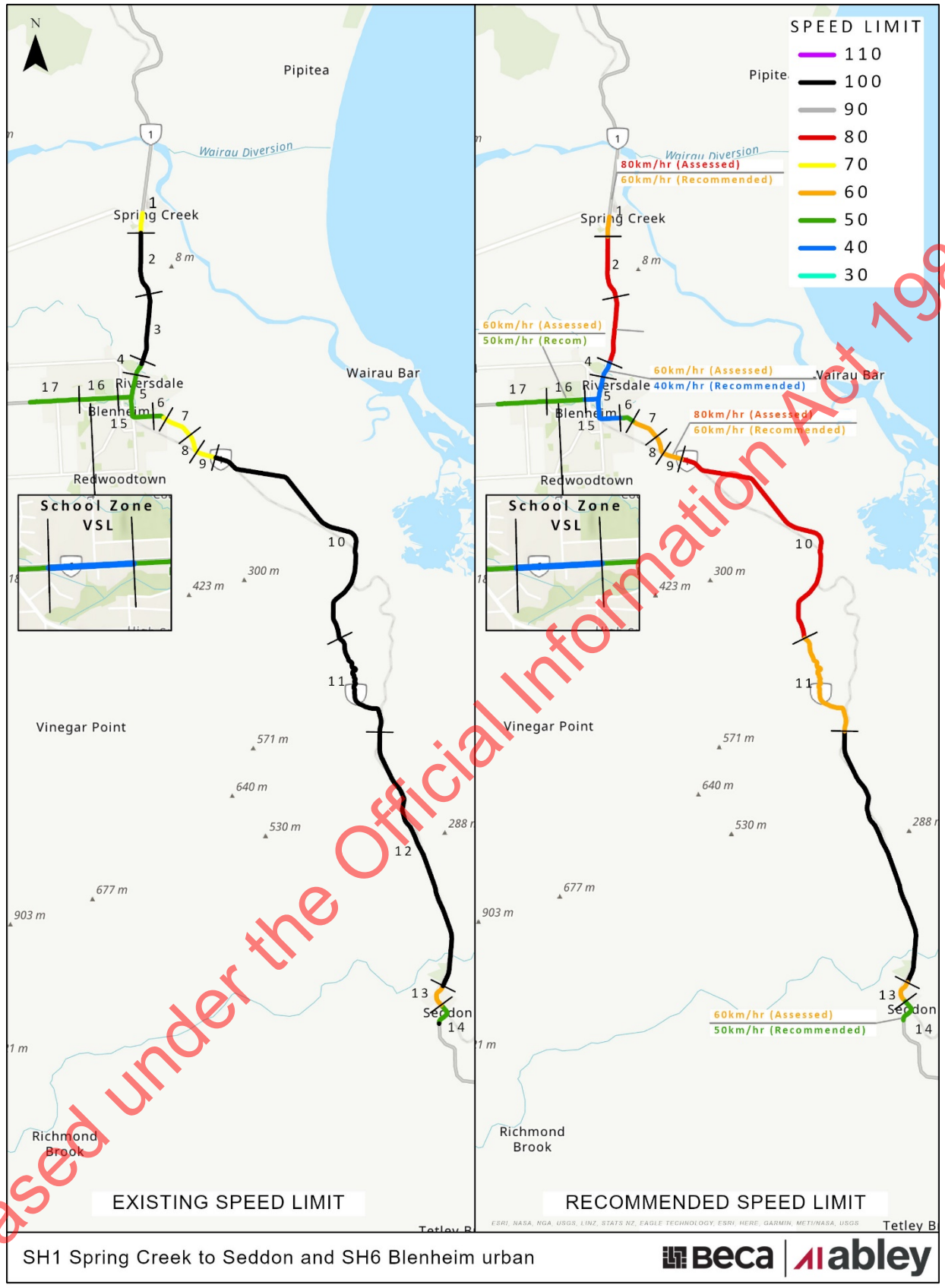

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Date exported: 9/09/2020 1:49 PM Path: J:\BECA Ltd (BECAL)\BECAL-J005-18 SH1 Spring Creek to Seddon and SH6 Blenheim urban\GIS\ArcPro_SH1_Spring_Creek_to_Seddon_20200908\ArcPro_SH1_Spring_Creek_to_Seddon_20200908.aprx

6. Homogeneous Network Segment Review Summary

6.1 Homogeneous sections – State Highway 1 Spring Creek to Seddon

Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				
Start Point	01S	N/A	01S-0000-B/0	N/A	N/A	Yes	It is the start of the State Highway 1 in South Island. It connects to the ferry terminal which has the speed limit of 20km/h in the terminal car park. Below is the view looking south at the start point.  Below is the view looking north at the start point. 

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Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				
N1	01S	01S-0000-B/0	01S-0000-B/0.430	0.430	01S_67582	No	Two-lane undivided road with straight alignment through an urban area of Picton. There are commercial activities on both sides of the road, with both on-street and on-site parking provided. A typical cross section is shown below.  The current MegaMaps end point of Corridor 01S_67582 is 01S-0000-B/0.539, which is the intersection of SH1 and Broadway. The MegaMaps end point should be moved to 01S-0000-B/0.430 as it is the location where the land use changes from commercial big box to a section with no accesses.
N2	01S	01S-0000-B/0.430	01S-0000-B/0.666	0.236	01S_67582, 01S_67600	No	Two-lane undivided road with a curved alignment. It is considered as a separate section because there are no accesses along this section but there is an important and complicated intersection as well as a railway crossing. A cross section is shown below.

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Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				 The end point at 01S-0000-B/0.666 is considered appropriate because the bridge is a natural threshold, and there are developments and accesses on both sides from this location.
N3	01S	01S-0000-B/0.666	01S-0000-B/2.008	1.533	01S_67600, 01S_67821, 01S_67601	No	Two-lane undivided road with a straight alignment going through an urban residential area in Picton. There is a large roundabout (segment 01S_67821) in the middle of the segment. The large roundabout is a one-way system with one or two wide traffic lanes and angled parking. It is not considered as a separate segment because the overall land use is still urban residential despite a few retail activities. A short section from 01S-0000-B/1.750 to the existing 100/50 speed threshold has a slightly different road environment as the footpath on the western side of the road stops from the intersection of Angle Street to the south. It is because that there is no development on the western side of the road along this section. However, the land use is still urban residential according to Marlborough District Council District Plan. Besides, it is still within Stats NZ Urban/Rural boundaries. In summary, MegaMaps segment 01S_67600, 01S_67821 and 01S_67601 should be combined to reflect the urban residential environment. A typical cross section is shown below.

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Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				 The current MegaMaps end point of Corridor 01S_67601 is 01S-0000-B/2.067. The end point should be moved to 01S-0000-B/2.008 which is the existing speed limit threshold as it reflects the land use change from urban residential area to rural residential area.
N4	01S	01S-0000-B/2.008	01S-0000-B/5.290	3.282	01S_67601, 01S_67406	No	Two-lane undivided road with a curved alignment going through a rural residential area. The partial MegaMaps segment 01S_67601 and segment 01S_67406 should be combined to reflect the rural residential environment. A typical cross section is shown below. 

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Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				
							The current MegaMaps end point of Corridor 01S_67406 is considered appropriate to reflect the alignment change from a curved alignment to a straight alignment.
N5	01S	01S-0000-B/5.290	01S-0000-B/6.682	1.392	01S_2916	No	Two-lane undivided road with a straight alignment going through a rural residential area with limited number of accesses along the corridor. A typical cross section is shown below.  The current MegaMaps end point of Corridor 01S_2916 is 01S-0000-B/16.560. It is recommended that the Corridor 01S_2916 is divided into three segments to reflect the change of alignment and the change of access density. The first segment end point at 01S-0000-B/6.682 is recommended because it is where the place name sign “Koromiko” is located, and the drivers would be able to see the road environment change from this point.
N6	01S	01S-0000-B/6.682	01S-0000-B/7.830	1.148	01S_2916	No	Two-lane undivided road with a straight alignment going through a rural residential area of Koromiko with a relatively moderate density of accesses along the corridor. A typical cross section is shown below.

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Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				 It is the second segment of MegaMaps Corridor 01S_2916. The end point at 01S-0000-B/7.830 is recommended for this segment because this location reflects the change of access density (from moderate density to low density) and the alignment (from straight to curved).
N7	01S	01S-0000-B/7.830	01S-0018-B/0.699	10.517	01S_2916, 01S_67816	No	Two-lane undivided road with a curved alignment going through a rural residential area with a low density of accesses along the corridor. A typical cross section is shown below. 

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Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				
							It combines the partial segment of MegaMaps Corridor 01S_2916 and the Corridor 01S_67816. The end point of Corridor 01S_67816 is 01S-0018-B/0.699, where the existing 80/100 speed threshold is. The end point of Corridor 01S_67816 is considered appropriate given the land use changes from rural residential to rural town.
N8	01S	01S-0018-B/0.699	01S-0018-B/1.407	0.708	01S_67546, 01S_67553	No	Two-lane undivided road with a curved alignment going through a rural town area of Tuamarina. There is a school zone with active school warning signs at the intersection of SH1S and Hunter Road for Tua Marina School on Hunter Road. This is a primary school, with approximately 130 students in 2021. It is expected that the intersection is busy during school travel periods as there will be many vehicle turning movements to pick up/drop off students at the school. A photo below shows the highest level of roadside development along this section.  MegaMaps Corridor 01S_67546 and 01S_67553 should be combined to reflect the rural town land use. The end point of Corridor 01S_67553 is 01S-0018-B/1.407 which is very close to the existing 80/100 speed limit threshold at 01S-0018-B/1.414. The current speed limit threshold location is considered appropriate and should be retained.

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Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				
							The end point of Corridor 01S_67553 should be retained given it is a negligible difference between it and the speed limit threshold location and it still reflects the change of land use from rural town to rural residential area.
N9	01S	01S-0018-B/1.407	01S-0018-B/4.290	2.883	01S_67555, 01S_67307, 01S_67513	No	Two-lane undivided road with a straight alignment going through a rural residential area. A typical cross section is shown below.  MegaMaps Corridor 01S_67555, 01S_67307 and 01S_67513 should be combined to reflect the land use of rural residential. The end point of Corridor 01S_67513 is 01S-0018-B/4.240. The current 70/100 threshold for Spring Creek is at 01S-0018-B/4.290. The current threshold location reflects the change of land use from rural residential to rural town. Therefore, it is recommended that the MegaMaps end point should be moved to 01S-0018-B/4.290 for this assessment.
1	01S	01S-0018-B/4.290	01S-0018-B/4.894	0.60	01S_67654	Yes	Two-lane undivided road with straight alignment. Rural town of Springs Creek. Marked cycle lanes are provided on both sides of the road, pedestrian crossing refuges are provided at roundabout legs. Train stations on the east of the Ferry Road / SH1 / Rapaura Road roundabout intersection and some businesses on the west of the roundabout, suggesting that pedestrian crossing activity in this area is likely.

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Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				
							Spring Creek School can be accessed from its intersection with Ferry Road. The school has a 40km/h school zone with a length of approximately 400m from Ferry Road /0.370 to Ferry Road /0.780 Springs Creek is identified as a rural settlement by Stats NZ. Note the start point, and end point of the homogeneous section do not align with the settlement boundary. The end point of this homogeneous section at 01S-18-B/4.890 is considered appropriate, given the land use change from rural town to rural residential. A typical cross section is shown below. 
2	01S	01S-0018-B/4.894	01S-0018-B/6.800	1.91	01S_67565	No	Two-lane undivided road with relatively straight alignment. Rural residential area between Spring Creek and Grovetown. The end point of MegaMaps segment 01S_67565 is approximately 01S-0018-B/8.10. It is more appropriate to have the end point at 01S-0018-B/6.800, given it is coming into Grovetown and travelling through the edge of Grovetown. A typical cross section is shown below.

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Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				
							
3	01S	01S-0018-B/6.800	01S-0018-B/8.825	2.03	01S_67565, 01S_67407	No	Two-lane undivided road with relatively straight alignment. Rural residential area between Grovetown and Blenheim with more accessways and intersections than the previous section. Grovetown is identified as a rural settlement together with Springs Creek by Stats NZ. Note the start point, and end point of the MegaMaps segment do not align with the settlement boundary. Grovetown school can be accessed from the intersection with Fell Street. It is considered unnecessary to set the Variable Speed Limit School Zone for this school on SH1 given it is far enough from SH1. Besides, the school itself has a 40km/h school zone on Fell Street and Vickerman Street. The end point of MegaMaps is 01S-0018-B/9.0 on the start of the old Opawa River Bridge. The proposed end point is 01S-0018-B/8.825 which was the original 100/50 speed threshold. The proposed end point is considered more appropriate given the new realignment for the new Opawa River Bridge would start approximately at 01S-0018-B/8.880 and the proposed end point would be able to provide proper sight distance for the upcoming bridge. The typical cross section is shown below.

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Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				
							
4	01S	01S-0018-B/8.825	01S-0018-B/9.300	0.48	01S_67407, 01S_67340	No	Two-lane undivided road with relatively straight alignment. No accessways or intersections. Note this section now includes the existing Ōpaoa River Bridge on the northern edge of Blenheim between 01S-0018-B/9.015 - 01S-0018-B/9.190. The existing bridge will be replaced by the new bridge soon and is planned to be converted to shared pedestrian and cycle path. Due to the construction of the new bridge, the existing bridge has a temporary speed limit of 30km/h. This section covers parts of two MegaMaps segments: 01S_67407 and 01S_67340. The proposed end point is at 01S-0018-B/9.300 which is on the north of Dodson Street / SH1 intersection. It is close to the end point of MegaMaps segment 01S_67340. The proposed end point is considered appropriate, given the land use changes from rural zone to industrial and commercial combined zone. Even if the existing bridge is not in use anymore after the construction of the new bridge, it is still considered appropriate to have the end point at the proposed location due to the apparent land use changes. A typical cross section is shown below.

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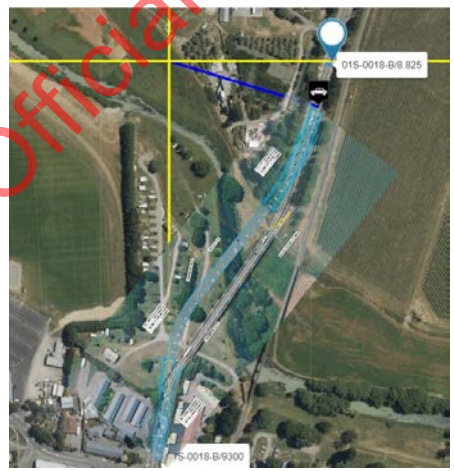
Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				 The alignment of the New Ōpaoa River Bridge (in blue colour) is shown below. 
5	01S	01S-0018-B/9.300	01S-0028-B/1.220	1.91	01S_67336, 01S_67649	No	Two-lane divided traversable with relatively straight alignment from 01S-0018-B/9.300 to. 01S-0028-B/0.250 and undivided from 01S-0028-B/0.250 to 01S-0028-B/1.220. Commercial big box area of Blenheim with many shops facing to the road and on-site car parking. Parallel on-street car parking is

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Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				
							intermittently provided along this section. Pedestrian crossing facilities are provided, and frequent pedestrian crossing activity is expected. The MegaMaps end point of the section is 01S-0028-B/1.110, which is the middle of Stuart Rd / SH1 intersection and considered not appropriate to place the speed limit sign. In addition, it is more apparent that the land use changes from Dunbeath Street; therefore, the end point at 01S-0028-B/1.220 is proposed. Blenheim is classified as a medium urban area by Stats NZ while the start point of MegaMaps segment does not align with the location of the urban / rural area boundary identified by Stats NZ. The typical cross section is shown below. 
6	01S	01S-0028-B/1.220	01S-0028-B/1.637	0.42	01S_67346	No	Two-lane undivided road with straight alignment. Urban area of Blenheim with residential development. Parallel on-street parking allowed along the section. The pedestrian crossing activity is expected to be less than the previous section. The MegaMaps segment's end point of the section is approximately 01S-0028-B/1.550, which is the middle of Lybster Street / SH1 intersection, while the existing 50/70 speed limit threshold is at 01S-0028-B/1.637. The location of the existing speed limit threshold is considered more appropriate as the end point, given the land use changes from urban residential to rural. In addition, the position of the threshold aligns with the Stats NZ Urban/Rural boundary. The typical cross section is shown below.

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Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				
7	01S	01S-0028-B/1.637	01S-0028-B/2.520	0.88	01S_67379	No	Two lane undivided road with relatively straight alignment. Rural residential area between urban area of Blenheim and Riverlands. A few pedestrian crossing activities are present along the section, given footpaths are provided on both sides for a short section from 0028-B/0.199 to 0028-B/0.211, and there is a crosswalk sign in increasing direction. It is a subsection of MegaMaps segment 01S_67379. The end point of MegaMaps segment is approximately at 01S-0028-B/3.100 while it is considered more appropriate to have the end point at 01S-0028-B/2.520, given there is apparent land use change from rural residential (farms) to rural town (residential dwellings, more development). The typical cross section is shown below.

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Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				
8	01S	01S-0028-B/2.520	01S-0028-B/3.080	0.56	01S_67379	No	Two-lane undivided with curved alignment. Rural town area of Riverlands. Riverlands School can be accessed from the SH1 / Alabama Road intersection. There is an existing school zone on Alabama Road with speed limit of 40km/h when children present. It is not necessary to have the school zone on SH1 given the school cannot be accessed directly from SH1. Residential developments are located both sides along the section from the start point to the intersection with Alabama Road. It is a subsection of MegaMaps segment 01S_67379. The end point of MegaMaps end point is at 01S-0028-B/3.080 which is just on the north of its intersection with Alabama Road. The end point is considered appropriate given the road environment changes and fewer accessways present beyond the end point. The typical cross section is shown below.

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Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				
9	01S	01S-0028-B/3.080	01S-0028-B/3.658	0.58	01S_67295	Yes	Two-lane undivided with relatively straight alignment. Rural residential area of Riverlands. From the intersection, the right side of the section in increasing direction is controlled access due to the railways adjacent to the road, while the left side of the section in increasing direction has the land use of rural residential with some accessways to the private dwellings. The end point of the MegaMaps segment 01S_67295 is at approximately 01S-0028-B/3.670 is very closed to the existing 70/100 threshold at 01S-0028-B/3.658. The existing location of the threshold is considered appropriate to be the end point of the homogeneous section. The typical cross section is shown below.

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Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				
10	01S	01S-0028-B/3.658	01S-0028-B/12.105	8.45	01S_2924	No	Two-lane undivided with curved alignment. Rural residential area between Riverlands and Seddon. This is a subsection of the MegaMaps segment 01S_2924. The end point at 01S-0028-B/12.105 is considered appropriate, given the alignment changes from curved to much more winding from this end point. The typical cross section is shown below. 

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Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				
11	01S	01S-0028-B/12.105	01S-0043-B/0	3.65	01S_2924	No	Two-lane undivided with winding alignment. Rural residential area between Riverlands and Seddon. This is a subsection of the MegaMaps segment 01S_2924. The end point at 01S-0043-B/0 is considered appropriate, given the alignment changes from winding to relatively straight. The typical cross section is shown below. 
12	01S	01S-0043-B/0	01S-0043-B/8.180	8.18	01S_2924, 01S_2925, 01S_67556	No	Two-lane undivided with relatively straight alignment. Rural residential area between Riverlands and Seddon. This section contains three MegaMaps segments: 01S_2924, 01S_2925, 01S_67556. The segment end point is approximately at 01S-0043-B/8.45 while the existing 60/100 threshold is at 01S-0043-B/8.180. It is considered more appropriate to move the end point to 01S-0043-B/8.180 in order to align with the existing threshold given the existing speed threshold meets the changes in land uses. The typical cross section is shown below.

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Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				
13	01S	01S-0043-B/8.180	01S-0043-B/8.875	0.70	01S_67526	No	Two-lane undivided with curved alignment. Rural town area of Seddon. No development on the west of the section. Residential area on the east of the section can be accessed from intersections while few accessways facing to the road. The MegaMaps segment end point is approximately at 01S-0043-B/8.875 which is consistent with the existing 60/50 speed limit threshold. The typical cross section is shown below. 

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Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				
14	01S	01S-0043-B/8.875	01S-0043-B/9.606	0.73	01S_67523	Yes	Two-lane undivided with curved alignment. Rural town area of Seddon. Travel through the town centre. Seddon School on Redwood Street can be accessed from the intersection with Newcome Street and intersection with Marama Road. Seddon School Variable Speed Limit School Zone shall be set up in the vicinity (Redwood Street and Foster Street) but it is considered not necessary to set up a VSL school zone on SH1 given the school access is far enough from SH1. The existing speed threshold is at 01S-0043-B/9.606 which is considered appropriate as the section end point, given the drivers from both directions have enough sight distance to observe the speed change and land use changes from rural town to rural residential at this position. Besides, it is consistent with the existing 50/100 speed limit threshold. The typical cross section is shown below. 
End Point	01S	01S-0043-B/9.606	NA	NA	NA	Yes	Two-lane undivided with curved alignment. Rural residential area on south of Seddon. The typical cross section is shown below.

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Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition III)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition III section
		Start	End				
							

6.2 Homogeneous sections – State Highway 6 Blenheim Urban

Network Segment No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition II)	Match? Yes/No	State reasons why assessed section does not match MegaMaps Edition II section
Start Point	006	NA	006-0000-B/0	NA	NA	Yes	Roundabout intersection of SH1 and SH6. The cross section facing the roundabout from SH6 is shown below. 

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15	006	006-0000-B/0	006-0000-B/0.400	0.40	006_77123	Yes	Two-lane undivided with a flush median and straight alignment. Commercial big box area of Blenheim. Car parking on sites are usually provided with parallel on-street car parking allowed. Frequent pedestrian crossing activity is expected. Pedestrian refuges are available on legs of roundabouts. The end point of the MegaMaps segment is approximately at 006-0000-B/0.4000 which is considered appropriate given there is apparent land use change from commercial big box / industrial to urban residential; in addition, the road stereotype changes from divided to undivided. The typical cross section is shown below: 
16	006	006-0000-B/0.400	006-0000-B/1.572	1.18	006_76344	Yes	Two-lane undivided with straight alignment. Urban residential area of Blenheim. Frequent pedestrian crossing is expected. Pedestrian crossing facilities are provided along the section. There is an existing Marlborough Girl's College Variable Speed Limit zone from 006-0000-B/1.000 to 006-0000-B/1.420. The end point of the MegaMaps segment 006_9434 is approximately at 006-0000-B/1.575 which is considered appropriate as the end point given there is an apparent land use change from urban residential to commercial big box / industrial. The typical cross section is shown below.

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17	006	006-0000-B/1.572	006-0000-B/3.060	1.49	006_77121, 006_77126	No	Two-lane undivided with a flush median. Urban residential area of Blenheim with some commercial activity. Frequent pedestrian crossing activity is expected; in addition, pedestrian refuge and pedestrian crossing facilities are provided on this section. Springlands School can be accessed from its intersection with Murphys Road. The school has a 40km/h school zone on Murphys Road. The end point of the MegaMaps segment is approximately at 006-0000-B/2.85. It is considered more appropriate to move the end point to 006-0000-B/3.060, given there is apparent land use change from urban residential to rural residential. The typical cross section is shown below. 
End Point	006	006-0000-B/3.060	NA	NA	NA	No	Two-lane undivided with straight alignment. Rural residential area on the west of Blenheim with vineyards on both sides. The typical cross section is shown below.

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7. Safe and Appropriate Speed Classification Assessment

Network Section No.	Classification Method (Urban or Rural)	Network Function / Feature	Road Safety Metric	Infrastructure Risk Rating	Assessed Safe and Appropriate Speed	Comment
N1	Urban	National strategic – Urban state highway	low Collective Risk and low medium Personal Risk	1.87 (low medium)	40km/h	Note that the SaAS is assessed using Speed Management Guide 2016 Table 2.2. The assessed IRR is not consistent with the MegaMaps IRR or SaAS. The section is undivided through a commercial big box area of Picton with a straight alignment and severe roadside hazards. Shoulders on both sides of the road are used for on-street parking. The commercial strip shopping corridor in Picton is High Street, which is on the next block and parallel to SH1. The historical crash data does not show any outstanding safety issues on this section of the road. A moderate level of pedestrian activities are expected along this section. Therefore, it is considered that 40km/h is appropriate given the current road environment and the moderate level of pedestrian activities.
N2	Urban	National strategic – Urban state highway	low Collective Risk and low Personal Risk	1.53 (low)	40km/h assessed, 50km/h recommended	Note that the SaAS is assessed using Speed Management Guide 2016 Table 2.2. The assessed IRR is not consistent with the MegaMaps IRR or the SaAS. The section is mostly an intersection (and a level crossing) and a bridge with limited accesses. The level of the pedestrian activities along this section of the road is expected to be low to moderate, given there is no access to the development on both sides of the road. The current speed limit along this section is 50km/h. Although the section has a complicated intersection with rail crossing, the historical crash data does not show any outstanding safety issues along this section under the current speed limit. Given the above, 50km/h is considered more appropriate than 40km/h.
N3	Urban	National strategic – Urban state highway	low medium Collective Risk and medium Personal Risk	1.81 (low medium)	60km/h assessed, 50km/h recommended	The assessed IRR was calculated by using IRR manual, updated tables for the Speed Management Guide and Determine Safety Risk Practitioners Spreadsheet as Corridor Editor showed "Invalid Segment" error and did not work for assessing this section. The assessed IRR is not consistent with the MegaMaps IRR or the SaAS. The section is undivided through an urban residential area with a straight alignment. The existing speed limit is 50km/h and should be retained given the urban residential land use and high access density.

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Network Section No.	Classification Method (Urban or Rural)	Network Function / Feature	Road Safety Metric	Infrastructure Risk Rating	Assessed Safe and Appropriate Speed	Comment
N4	Rural	National strategic – Rural state highway	medium Collective Risk and medium Personal Risk	1.47 (medium)	80km/h	The assessed IRR is consistent with the MegaMaps IRR band and the SaAS. The section is undivided through a rural residential area with curved alignment and high to minor roadside hazards. There have been intermittent roadside barriers along the corridor where the roadside hazard risk is high and it is feasible to install. The speed limit of 80km/h is considered appropriate given that the historical crashes show that there has been a high risk of head-on and lost control crashes due to the curved alignment and high speed environment. There are ATP centreline markings applied along the passing lane just on the south of Picton. ATP markings are recommended over long lengths for all the rural residential sections with a proposed speed limit of 80km/h and above to reduce head-on crash risk and discourage inadvertent crossing behaviours.
N5	Rural	National strategic – Rural state highway	medium high Collective Risk and high Personal Risk	1.05 (low medium)	80km/h	The assessed IRR is consistent with the MegaMaps IRR band and the SaAS. The section is undivided through a rural residential area with straight alignment and moderate to minor roadside hazards. There have been intermittent roadside barriers along the corridor where the roadside hazard risk is high and it is feasible to install. The speed limit of 80km/h is considered appropriate given that the section has a history of a fatal crash and injury crashes even though it is a short and relatively straight section. There has been a risk of lost control and head-on crashes. ATP markings are recommended for this section with the proposed speed limit of 80km/h. ATP markings will reduce the head-on crash risk and run-off road risk.
N6	Rural	National strategic – Rural state highway	low Collective Risk and low Personal Risk	1.23 (medium)	80km/h	The assessed IRR is consistent with the MegaMaps IRR band and the SaAS. The section is undivided through a rural residential area with straight alignment and high to minor roadside hazards. The speed limit of 80km/h is considered appropriate given that the section has many accessways along the eastern side of the road and the roadside hazard on the eastern side of the road is high. ATP markings are recommended for this section with the proposed speed limit of 80km/h. ATP markings will reduce the head-on crash risk and run-off road risk.

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Network Section No.	Classification Method (Urban or Rural)	Network Function / Feature	Road Safety Metric	Infrastructure Risk Rating	Assessed Safe and Appropriate Speed	Comment
						Given there are more developments on the frontage of the road, it is recommended that speed limit repeater signs be installed on both ends of the section to raise drivers' awareness.
N7	Rural	National strategic – Rural state highway	medium Collective Risk and low medium Personal Risk	1.44 (medium)	80km/h	The assessed IRR is consistent with the MegaMaps IRR band and the SaAS. The section is undivided through a rural residential area with curved alignment and moderate roadside hazards. The speed limit of 80km/h is considered appropriate given that the historical crashes show that there has been a high risk of head-on and lost control crashes due to the curved alignment and high speed environment. There are ATP centreline markings applied along with the majority of the section. More ATP markings are recommended for this section with the proposed speed limit 80km/h. ATP markings will reduce the head-on crash risk and run-off road risk.
N8	Rural	National strategic – Rural town	medium Collective Risk and medium Personal Risk	2.12 (medium)	50km/h assessed, 60km/h recommended	The assessed IRR is consistent with the MegaMaps IRR band and the SaAS. The section is undivided through Tuamarina, a rural town with curved alignment and high to severe roadside hazards. A speed limit of 60km/h is recommended over 50km/h in this road environment. The speed limit of 50km/h is unlikely to get good compliance due to the rural town land use and low level of pedestrian activity. The current mean operating speed of the section is 75km/h – 80km/h. If a speed limit of 50km/h is proposed, new infrastructure, such as pedestrian refuge islands in the middle to create visual narrowing, streetlights, and a footpath along the road with more accessways will be required to make the road environment self-explaining. There have been 6 injury crashes (1 serious and 5 minor injury crashes) over the last 10 years, and all of them happened at or near intersections. The only road user involved in the injury crashes was vehicle drivers. The crash analysis has been undertaken in the technical assessment in Table 8, and the following recommendations are made to reduce the risk along this section: • The curve at the intersection of Bush Road and SH1 should be delineated by WYC1 chevron curve indicator signs to help drivers identify the curve. • The WYT3 chevron board should be installed at the intersection of Bush Road and SH1 to help drivers to recognise the intersection ahead.

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Network Section No.	Classification Method (Urban or Rural)	Network Function / Feature	Road Safety Metric	Infrastructure Risk Rating	Assessed Safe and Appropriate Speed	Comment
N9	Rural	National strategic – Rural state highway	medium Collective Risk and low medium Personal Risk	1.18 (low medium)	100km/h	The assessed IRR is consistent with the MegaMaps IRR band and the SaAS. The section is undivided through a rural residential area with straight alignment and moderate roadside hazards. It is noted that this section has a similar environment with Section 12, which has a recommended SaAS of 100km/h, as both are relatively straight with some roadside barriers present. Given the above, 100km/h is considered appropriate for this section. ATP markings are recommended for this section with the proposed speed limit of 100km/h. ATP markings will reduce the head-on crash risk and run-off road risk.
1	Rural	National strategic – Rural Town	medium high Collective Risk and medium Personal Risk	1.62 (Low-medium)	80km/h assessed; 60km/h recommended	The assessed IRR is not consistent with the MegaMaps IRR band but consistent with the SaAS. The section is a rural town area with a straight alignment and a roundabout. There is a shoulder that is infrequently marked as a cycle lane. There is a Four-Square shop opposite to the train station. Pedestrian refuges are provided on the split islands of the roundabout. Besides, it is found the footpath on the south of the roundabout is damaged, which is likely resulted by trucks going through the roundabout. Given above, a speed limit of 60km/h is considered more appropriate than the assessed SaAS of 80km/h for this segment.
2	Rural	National strategic – Rural state highway	medium high Collective Risk and medium Personal Risk	1.25 (Medium)	80km/h	The assessed IRR is consistent with the MegaMaps IRR band and the SaAS. The section is undivided through a rural residential area with a straight alignment and moderate to low roadside hazards. The intersection density and accessway density are low so few crossing movements are expected. Although the Personal Risk of this section is only Low Medium, the crash history indicates the section is high-risk: there were 12 DSIs in the last ten years (2010-2019) with lost control/head on as the major types of injured crashes. Given the above, a speed limit of 80km/h is recommended. Besides, given lost control/head-on is the main type of injured crashes, it is recommended to provide Audio Tactile Profiles (ATP) road markings to reduce head-on crash risk.

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Network Section No.	Classification Method (Urban or Rural)	Network Function / Feature	Road Safety Metric	Infrastructure Risk Rating	Assessed Safe and Appropriate Speed	Comment
3	Rural	National strategic – Rural state highway	medium Collective Risk and low medium Personal Risk	1.58 (Medium)	80km/h	The assessed IRR is not consistent with the MegaMaps IRR band or the SaAS. The section is undivided through a rural residential area with a straight alignment and severe to high roadside hazards. The intersection density and accessway density are much higher than the Section 2. It travels through the edge of Grovetown with a cluster of development. The assessed speed limit of 80km/h is considered appropriate given there are not many pedestrian crossing movements expected or cycling activities due to the off-street cycle lane on the east of the railways. Besides, the IRR score is at the lower range of IRR band Medium High (1.60). The railways at <5m from edge of shoulder is coded as high roadside hazards in the assessment however it is not coded as a roadside hazard in IRR manual. Given the section travels through the edge of Grovetown, it is recommended to install 80km/h speed limit repeater signs on both sides of the Grovetown to raise drivers' awareness.
4	Urban	National strategic – Urban state highway	medium Collective Risk and medium Personal Risk	1.22 (Low)	60km/h assessed; 40km/h recommended	The assessed IRR is not consistent with the MegaMaps IRR band or the SaAS. The section is undivided through the new Ōpaoa River Bridge with very wide lane width. Given there is not much information on the new bridge from available sources, the assessment uses assumed features to assess SaAS of this section. The section extents and SaAS may change when more information of the section features is available or from a site visit. Although the land use is controlled access, and there are few pedestrian crossing activities, a 40km/h speed is recommended to discourage high travel speeds prior to Section 5 which has the recommended speed of 40km/h.
5	Urban	National strategic – Urban state highway	medium high Collective Risk and medium Personal Risk	2.64 (Medium High)	40km/h	The assessed IRR is not consistent with the MegaMaps IRR band or the SaAS. The section is undivided through an urban commercial big box area with a straight alignment and high roadside hazards. A speed limit of 40km/h is recommended, given the land use of commercial big box / industrial and on street parking on both sides with some pedestrian crossing activities expected for this section. Remarking the wide lanes to a narrow width, horizontal and vertical deflection and urban road furniture should be considered to make the proposed speed more understandable.

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Network Section No.	Classification Method (Urban or Rural)	Network Function / Feature	Road Safety Metric	Infrastructure Risk Rating	Assessed Safe and Appropriate Speed	Comment
6	Urban	National strategic – Urban state highway	medium Collective Risk and high Personal Risk	2.15 (Medium)	50km/h	The assessed IRR is not consistent with the MegaMaps IRR band but consistent with the SaAS. The section is undivided through an urban residential area with s curved alignment and moderate roadside hazards, so a speed limit of 50km/h is appropriate.
7	Rural	National strategic – Rural state highway	low Collective Risk and low Personal Risk	1.74 (Medium High)	60km/h	The assessed IRR is consistent with the MegaMaps IRR band but not consistent with the SaAS. The section is undivided through a rural residential area with a curved alignment and severe to moderate roadside hazards. Given there are frequent accessways with pedestrian crossing movements and cycling activities present, a speed limit of 60km/h is recommended.
8	Rural	National strategic – Rural town	low medium Collective Risk and low medium Personal Risk	2.05 (Medium)	60km/h	The assessed IRR is not consistent with the MegaMaps IRR band or the SaAS. The section is undivided through a rural town area with curved alignment and high roadside hazards. Riverlands School can be accessed from the its intersection with Alabama Road. Given the above, a speed limit of 60km/h is considered appropriate. It is recommended to place residential zone signs with speed limit repeater signs to raise drivers' awareness that it is an area with dense residential developments and frequent accessways ahead.
9	Rural	National strategic – Rural state highway	low Collective Risk and low Personal Risk	1.31 (Medium)	80km/h assessed; 60km/h recommended	The assessed IRR is not consistent with the MegaMaps IRR band but is consistent with the SaAS. The section is undivided through a rural residential area with straight alignment and moderate to high roadside hazards. The section includes a few houses, the existing speed limit is 70km/h. Given it is close to a major intersection with Alabama Road, the speed limit of 60km/h is recommended to provide a buffer for drivers in the decreasing direction to slow down before reaching out to the intersection. Besides, there is not enough space to place threshold signs (at least 10.5m between signs) near the intersection due to the railway and fences on both sides.

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Network Section No.	Classification Method (Urban or Rural)	Network Function / Feature	Road Safety Metric	Infrastructure Risk Rating	Assessed Safe and Appropriate Speed	Comment
10	Rural	National strategic – Rural state highway	medium Collective Risk and medium Personal Risk	1.23 (Medium)	80km/h	The assessed IRR is consistent with the MegaMaps IRR band and SaAS. The section is undivided through a rural residential area with curved alignment and moderate to high roadside hazards. The crash history shows there were 8 serious crashes and 1 fatal crash, which resulted in 12 DSIs over the last ten years. The major type of injured crashes is bend-lost control/head on. Given the above, a speed limit of 80km/h is considered appropriate. Besides, given lost control/head-on is the main type of injured crashes, it is recommended to provide Audio Tactile Profiles (ATP) road markings to reduce head-on crash risk.
11	Rural	National strategic – Rural state highway	medium high Collective Risk and high Personal Risk	2.05 (High)	60km/h	The assessed IRR is not consistent with the MegaMaps IRR band or SaAS. The section is undivided through a rural residential area with a winding, inclined and narrow alignment and high roadside hazards. Given the above, a speed limit of 60km/h is appropriate.
12	Rural	National strategic – Rural state highway	low medium Collective Risk and low personal Risk	0.87 (Low Medium)	100km/h	The assessed IRR is not consistent with the MegaMaps IRR band or SaAS. The section is undivided through an open rural residential area with a relatively straight alignment and moderate roadside hazards. Wide to very wide shoulder width is generally present along the section. In addition, metal and concrete safety barriers and wire rope safety barriers are provided for the high-risk areas which make the section a forgiving road environment. Given the above the speed limit of 100km/h is considered appropriate for this section.
13	Rural	National strategic – Rural town	low Collective Risk and low Personal Risk	2.05 (Medium)	60km/h	The assessed IRR is consistent with the MegaMaps IRR band and SaAS. The section is undivided through a rural town area of Seddon with a curved alignment and moderate roadside hazards. There are several intersections and a few accessways. Few pedestrian crossing movements are expected along this section given there is no destination. Given the above, a speed limit of 60km/h is appropriate.

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Network Section No.	Classification Method (Urban or Rural)	Network Function / Feature	Road Safety Metric	Infrastructure Risk Rating	Assessed Safe and Appropriate Speed	Comment
14	Rural	National strategic – Rural town	low Collective Risk and low Personal Risk	2.01 (Medium)	60km/h assessed; 50km/h recommended	The assessed IRR is consistent with the MegaMaps IRR band but not consistent with the SaAS. The section is undivided through a rural town area of Seddon with a curved alignment and moderate roadside hazards. Different from section 13, this section contains a few shops facing to the road, and there is a school nearby (Seddon School). Besides, there is a pedestrian access point in the town centre. Therefore, a few crossing movements are expected. Given the above, while the assessed SaAS is 60km/h, a speed limit of 50km/h is recommended.
15	Urban	Regional strategic – Urban state highway	medium high Collective Risk and high Personal Risk	2.15 (Medium)	40km/h	The assessed IRR is not consistent with the MegaMaps IRR band or SaAS. The section is undivided through a commercial big box area of Blenheim with a straight alignment and moderate roadside hazards. It should be noted that Speed Management Guide Tool Table 2.1 instead of MegaMaps is used to assess the SaAS for this section. A speed limit of 40km/h is considered appropriate for this road environment. Similar to Section 2, traffic calming treatments, such as remarking wide lanes to a narrow width, horizontal and vertical deflection and urban road furniture, are recommended to make the 40km/h environment more understandable.
16	Urban	Regional strategic – Urban state highway	low medium Collective Risk and low medium Personal Risk	1.82 (Low Medium)	60km/h assessed; 50km/h recommended	The assessed IRR is consistent with the MegaMaps IRR band but not consistent with the SaAS. The section is undivided through an urban residential area of Blenheim with moderate to high roadside hazards. There is a school nearby (Marlborough Girls' College) and a 40km/h variable speed limit zone has been set for this school from 006-0000-B/0.989 to 006-0000-B/1.422. There are pedestrian refuges provided along the section. Frequent pedestrian movements are expected. Given the above, while the assessed SaAS is 60km/h, a speed limit of 50km/h is recommended.
17	Urban	Regional strategic – Urban state highway	low medium Collective Risk and low Personal Risk	2.34 (Medium)	50km/h	The assessed IRR is not consistent the MegaMaps IRR band but consistent with the SaAS. The section is undivided through an urban residential area of Blenheim with high roadside hazards and some commercial activity. A speed limit of 50km/h is recommended, given the high number of pedestrian crossing movements expected along the section due to some commercial developments along the section.

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Notes

- The Road Safety Metric used in Table 7 is recalculated by MegaMaps Corridor Editor. Due to the alternation in length of the MegaMaps segment extents in the speed assessment, the Road Safety Metric score has also changed.

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8. Infrastructure Risk Rating Assessment

8.1. Network Section No. N1

Route Position Start	01S-0000-B/0	**Route Position End**	01S-0000-B/0.430	**Length (km)**	0.43	**Classification Method:**	Urban

Network Section Description	Urban area in Picton adjacent to the Port

Field		MegaMaps Edition III Value	Assessed Value	Comments
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Curved	Straight	Generally straight with an isolated curve in the northern section
Carriageway	**Lane Width**	>3.5m - Wide	>3.5m - Wide	As measured from Marlborough District Plan's Smart Maps (The Smart Maps), the lane width is more than 3.5m.
	Shoulder Width	>2.0m - Very Wide	>2.0m - Very Wide	As measured from The Smart Maps, the shoulder width is about 2m – 2.5m.
Roadside Hazards	**Left**	Severe	Severe	Severe: 20+ non-frangible point hazards (power poles and posts) at <5m buildings (100%)
	Right	Moderate	Severe	Severe: 20+ non-frangible point hazards (power poles and posts) at <5m buildings (100%)
Land Use		Commercial Strip Shopping	Commercial Big Box	According to Marlborough District Plan's map, the land use along the section is zoned as Business Zone 1, which is used within town centres in the region. The land use of this section should be commercial big box
Intersection Density		5 to <10 per km	3 to <5 per km	There are two intersections
Accessway Density		20+ per km	20+ per km	There are 21 accessways
AADT		6000-12000	1000-6000	Mobile Road (2020): 5,660 vpd
IRR Score		2.54	1.87	Increase in IRR score related to the change in alignment, land use and intersection.

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IRR Band	Medium High		Low Medium		Decreased IRR score results in a lower IRR band.	
10-year CAS Reported Crash History (2011 – 2020 inclusive)	**DSIs (Actual no. of death and serious injury casualties)**	0	**Total no. of Fatal Crashes**	0	**Total no. of Serious Crashes**	0

Additional Information Related to Assessment

Crash analysis has been done, based on injured crashes from 2011 to 2020:

There has been only one minor-injury crash over the last 10-year period. It was a rear-end / obstruction crash, involved a cyclist.

Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
London Quay	50km/h	01S-0000-B/0.106	No
Dublin Street (Crossroad)	50km/h	01S-0000-B/0.297	No

8.2. Network Section No. N2

Route Position Start	01S-0000-B/0.430	**Route Position End**	01S-0000-B/0.666	**Length (km)**	0.236	**Classification Method:**	Urban

Network Section Description	Urban area in Picton

Field		MegaMaps Edition III Value	Assessed Value	Comments
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Curved	Curved	Central curve in the short segment
Carriageway	**Lane Width**	>3.5m - Wide	>3.5m - Wide	As measured from Marlborough District Plan's Smart Maps (The Smart Maps), the lane width is generally more than 3.5m.
	Shoulder Width	>2.0m - Very Wide	>2.0m - Very Wide	As measured from The Smart Maps, the shoulder width is about 2m – 2.5m.
Roadside Hazards	**Left**	Severe	High	Severe: 20+ non-frangible point hazards (power poles and posts) at <5m and buildings (40%) High: Roll over down slope at <5m (40%)

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				Moderate: 20+ non-frangible point hazards (power poles and posts) at 5m <10m and buildings (20%)
	Right	Moderate	Moderate	Severe: 20+ non-frangible point hazards (power poles and posts) at <5m (40%) Moderate: 20+ non-frangible point hazards (power poles and posts) at 5m <10m and buildings (60%)
Land Use		Commercial Strip Shopping	Controlled Access	According to Marlborough District Plan's map, the land use along the section is zoned as Urban Residential Zone 2. This section is mostly an intersection/bridge with limited accesses.
Intersection Density		5 to <10 per km	3 to <5 per km	There is one intersection
Accessway Density		20+ per km	<1 per km	There are 0 accessways
AADT		6000-12000	1000-6000	Mobile Road (2020): 5,660 vpd
IRR Score		2.54	1.53	Decrease in IRR score related to the change in roadside hazard, land use, intersection density, accessway density and AADT.
IRR Band		Medium High	Low	Decreased IRR score results in a lower IRR band.

10-year CAS Reported Crash History (2011 – 2020 inclusive)	**DSIs (Actual no. of death and serious injury casualties)**	0	**Total no. of Fatal Crashes**	0	**Total no. of Serious Crashes**	0

Additional Information Related to Assessment

Crash analysis has been undertaken, based on injured crashes from 2011 to 2020:

There has been only one minor-injury crash over the last 10 years. It was a lost control/head-on crash at the intersection of SH1 and Broadway.

Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Broadway (Crossroad)	50km/h	01S-0000-B/0.548	No
Otago Street (Crossroad)	50km/h	01S-0000-B/0.556	No

8.3. Network Section No. N3

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Route Position Start	01S-0000-B/0.666	Route Position End	01S-0000-B/2.008	Length (km)	1.533	Classification Method:	Urban
Network Section Description	Urban residential area in Picton						

Field		MegaMaps Edition III Value	Assessed Value	Comments
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Curved	Straight	Confirmed through visual inspection
Carriageway	Lane Width	>3.5m - Wide	>3.5m - Wide	As measured from Marlborough District Plan's Smart Maps (The Smart Maps), the lane width is generally more than 3.5m.
	Shoulder Width	>2.0m - Very Wide	1.0m to <2.0m - Wide	As measured from The Smart Maps, the shoulder width is generally 1.5m to 2.0m.
Roadside Hazards	Left	Severe	Moderate	Severe: 20+ non-frangible point hazards (power poles) at <5m (1+ per 50m) (25%) Moderate: Semi-rigid structures at <5m, with car parking at <5m (55%) Low: Low severity property damage hazards at any distance (20%)
	Right	Moderate	Moderate	Severe: 20+ non-frangible point hazards (power poles) at <5m (1+ per 50m) (35%) High: Roll-over downslopes at <5m (10%) Moderate: Rigid structures at 5m to <10m and semi-rigid structures at <5m, with on-street parking at <5m (20%) Minor: Semi-rigid structure at 5m to <10m (20%) Low: Low severity property damage hazards at any distance (15%)

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Land Use	Urban Residential		Urban Residential		According to Marlborough District Plan's map, the land use along the section is zoned as Urban Residential Zone.	
Intersection Density	10+ per km		5 to <10 per km		There are 13 intersection	
Accessway Density	20+ per km		20+ per km		There are 40 accessways	
AADT	6000-12000		1000-6000		Mobile Road (2020): 5,660 vpd	
IRR Score	2.60		1.81		Decrease in IRR score related to the change of shoulder width, alignment, roadside hazards, intersection density and traffic volumes.	
IRR Band	Medium High		Low Medium		Decreased IRR score results in the change of IRR band.	
10-year CAS Reported Crash History (2011 – 2020 inclusive)	**DSIs (Actual no. of death and serious injury casualties)**	1	**Total no. of Fatal Crashes**	0	**Total no. of Serious Crashes**	1

Additional Information Related to Assessment

Crash analysis has been undertaken, based on injury crashes from 2011 to 2020:

There have been five injury crashes over the last 10-year period, with one serious injury crash and four minor injury crashes. There was one pedestrian crash at the large roundabout, and it was a minor injury crash. The serious injury crash was a crossing/turning crash at a T-intersection.

Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Waitohi Place	50km/h	01S-0000-B/0.790	No
Devon Street (Crossroad)	50km/h	01S-0000-B/0.835	No
Scotland Street (East)	50km/h	01S-0001-W/0.055	No
Oxford Street (South)	50km/h	01S-0001-W/0.107	No
York Street (South)	50km/h	01S-0001-W/0.159	No
Scotland Street (West)	50km/h	01S-0001-W/0.264	No
Oxford Street (North)	50km/h	01S-0001-W/0.320	No
York Street (North)	50km/h	01S-0001-W/0.370	No
Kent Street (Crossroad)	50km/h	01S-0000-B/1.250	No
Canterbury Street	50km/h	01S-0000-B/1.378	No
Durham Street	50km/h	01S-0000-B/1.393	No
Durham Street	50km/h	01S-0000-B/1.427	No
Angle Street	50km/h	01S-0000-B/1.750	No

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8.4. Network Section No. N4							
Route Position Start	01S-0000-B/2.008	**Route Position End**	01S-0000-B/5.290	**Length (km)**	3.282	**Classification Method:**	Rural
Network Section Description	Rural residential area between Picton and Koromiko, with curved alignment						

Field		MegaMaps Edition III Value	Assessed Value	Comments
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Curved	Curved	Confirmed through visual inspection
Carriageway	**Lane Width**	>3.5m - Wide	>3.5m - Wide	As measured from Marlborough District Plan's Smart Maps (The Smart Maps), the lane width is generally more than 3.5m.
	Shoulder Width	1.0m to <2.0m - Wide	1.0m to <2.0m - Wide	As measured from The Smart Maps, the shoulder width is between 1 and 2m.
Roadside Hazards	**Left**	High	High	Severe: 20+ non-frangible point hazards (power poles) at <5m (5%) High: Roll-over upslopes at <5m (55%) Minor: Metal safety barriers at <5m (25%) Low: Low severity property damage hazards at any distance (15%)
	Right	Moderate	Minor	High: Roll-over upslopes at <5m (10%) Minor: Metal safety barriers at <5m (75%) Low: Low severity property damage hazards at any distance (15%)
Land Use		Rural Residential	Rural Residential	According to Marlborough District Plan's map, the land use along the section is zoned as Rural Zone. There are residential dwellings along the road.

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Intersection Density	<1 per km		<1 per km		There are no intersections.		
Accessway Density	2 to <5 per km		5 to <10 per km		There are 19 accessways		
AADT	6000-12000		6000-12000		Mobile Road (2020): 6150 vpd		
IRR Score	1.55		1.47		Decrease in IRR score related to the change of roadside hazards.		
IRR Band	Medium		Medium		Decreased IRR score dose not lower IRR band.		
10-year CAS Reported Crash History (2011 – 2020 inclusive)	**DSIs (Actual no. of death and serious injury casualties)**	1	**Total no. of Fatal Crashes**	0	**Total no. of Serious Crashes**	1	

Additional Information Related to Assessment

The passing lanes are present at the following locations:

Increasing direction: 01S-0000-B/2.008 to 01S-0000-B/2.536

Decreasing direction: 01S-0000-B/3.790 to 01S-0000-B/4.260

Crash analysis has been undertaken, based on injury crashes from 2011 to 2020:

There have been 10 minor injury crashes over the last 10-year period, with one serious injury crash, nine minor injury crashes. Of the injury crashes, eight were bend-lost control / head on crashes.

8.5. Network Section No. N5

Route Position Start	01S-0000-B/5.290	**Route Position End**	01S-0000-B/6.682	**Length (km)**	1.392	**Classification Method:**	Rural

Network Section Description	Rural residential area between Picton and Koromiko, with straight alignment

Field		**MegaMaps Edition III Value**	**Assessed Value**	**Comments**
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Curved	Straight	Confirmed through visual inspection
Carriageway	**Lane Width**	>3.5m - Wide	>3.5m - Wide	As measured from Marlborough District Plan's Smart Maps (The Smart Maps), the lane width is generally more than 3.5m.
	Shoulder Width	1.0m to <2.0m - Wide	1.0m to <2.0m - Wide	As measured from The Smart Maps, the shoulder width is about 1m – 2m.

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Roadside Hazards	**Left**	Moderate	Moderate	High: Roll-over upslopes at <5m (35%) Minor: Metal safety barriers at <5m (50%) Low: Low severity property damage hazards at any distance (10%)
	Right	Moderate	Minor	Minor: Metal safety barriers at <5m (90%) Low: Low severity property damage hazards at any distance (10%)
Land Use		Remote Rural	Rural Residential	According to Marlborough District Plan's map, the land use along the section is zoned as Rural Zone. There are residential dwellings along the state highway, which indicates the land use of rural residential is appropriate.
Intersection Density		<1 per km	<1 per km	There is one intersection.
Accessway Density		1 to <2 per km	2 to <5 per km	There are six accessways.
AADT		6000-12000	6000-12000	Mobile Road (2020): 6150 vpd
IRR Score		1.25	1.05	Decrease in IRR score related to the change of alignment and roadside hazards.
IRR Band		Medium	Low Medium	Decreased IRR score resulted in change in IRR band.

10-year CAS Reported Crash History (2011 – 2020 inclusive)	**DSIs (Actual no. of death and serious injury casualties)**	3	**Total no. of Fatal Crashes**	1	**Total no. of Serious Crashes**	1

Additional Information Related to Assessment

Crash analysis has been undertaken, based on injury crashes from 2011 to 2020:

There has been one fatal crash, one serious crash and six minor crashes over the last ten years. The fatal crash was a head-on crash in 2020 due to fatigue. The lost control / head on crashes were the major type of injury crashes along this section (50%). ATP centreline markings are recommended to discourage inadvertent crossing behaviours.

Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Lindens Road	100km/h	01S-0000-B/5.633	No

8.6. Network Section No. N6

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Route Position Start	01S-0000-B/6.682	Route Position End	01S-0000-B/7.830	Length (km)	1.148	Classification Method:	Rural
Network Section Description	Rural residential area of Koromiko, with relatively higher accessway density						

Field		MegaMaps Edition III Value	Assessed Value	Comments
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Curved	Straight	Confirmed through visual inspection
Carriageway	Lane Width	>3.5m - Wide	>3.5m - Wide	As measured from Marlborough District Plan's Smart Maps (The Smart Maps), the lane width is generally more than 3.5m.
	Shoulder Width	1.0m to <2.0m - Wide	1.0m to <2.0m - Wide	As measured from The Smart Maps, the shoulder width is generally 1.2m to 2.0m.
Roadside Hazards	Left	Moderate	High	Severe: deep ditches at <5m (35%) High: Roll-over upslopes at <5m (15%) Moderate: 20+ non-frangible point hazards per km (1+ per 50m) at 5m to <10m (35%) Low: Low severity property damage hazards at any distance
	Right	Moderate	Minor	Minor: Metal safety barriers at <5m (100%)
Land Use		Remote Rural	Rural Residential	According to Marlborough District Plan's map, the land use along the section is zoned as Rural Zone. There are residential dwellings along the state highway, which indicates the land use of rural residential is appropriate.
Intersection Density		<1 per km	<1 per km	There is one intersection.
Accessway Density		1 to <2 per km	10 to <20 per km	There are 12 accessways.
AADT		6000-12000	6000-12000	Mobile Road (2020): 6150 vpd

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IRR Score	1.25		1.23		Decrease in IRR score related to the change in alignment and land use	
IRR Band	Medium		Medium		Decreased IRR score resulted in the change in IRR band	
10-year CAS Reported Crash History (2011 – 2020 inclusive)	**DSIs (Actual no. of death and serious injury casualties)**	0	**Total no. of Fatal Crashes**	0	**Total no. of Serious Crashes**	0

Additional Information Related to Assessment

Crash analysis has been undertaken, based on injury crashes from 2011 to 2020:

There has been one minor injury crash over the last ten years. It was a rear end crash.

Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Freeths Road	100km/h	01S-0000-B/7.184	No

8.7. Network Section No. N7

Route Position Start	01S-0000-B/7.830	**Route Position End**	01S-0018-B/0.699	**Length (km)**	10.517	**Classification Method:**	Rural
Network Section Description	Rural Residential area between Koromiko and Tuamarina, with curved alignment						

Field		MegaMaps Edition III Value	Assessed Value	Comments
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Curved	Curved	Confirmed through visual inspection
Carriageway	**Lane Width**	>3.5m - Wide	>3.5m - Wide	As measured from Marlborough District Plan's Smart Maps (The Smart Maps), the lane width is generally more than 3.5m.
	Shoulder Width	1.0m to <2.0m - Wide	1.0m to <2.0m - Wide	As measured from The Smart Maps, some sections are a bit wider than 2.0m, and some sections are a bit narrower than 1.0m but the shoulder width is generally 1.0m to 2.0m.

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Roadside Hazards	**Left**	Moderate		Moderate		Severe: 20+ non-frangible point hazards (power poles and trees) at <5m (5%) High: Roll-over upslopes at <5m (30%) Moderate: (10%) Minor: Metal safety barriers at <5m (40%) Low: Low severity property damage hazards at any distance (5%)	
	Right	Moderate		Moderate		Severe: 20+ non-frangible point hazards (power poles and trees) at <5m (5%) High: Roll-over upslopes at <5m (30%) Minor: Metal safety barriers at <5m (55%) Low: Low severity property damage hazards at any distance (10%)	
Land Use		Remote Rural		Rural Residential		According to Marlborough District Plan's map, the land use along the section is zoned as Rural Zone. There are residential dwellings along the state highway, which indicates the land use of rural residential is appropriate	
Intersection Density		<1 per km		<1 per km		There are four intersections	
Accessway Density		1 to <2 per km		2 to <5 per km		There are 30 accessways.	
AADT		6000-12000		6000-12000		Mobile Road (2020): 6150 vpd	
IRR Score		1.25		1.44		Increase in IRR score related to the change of land use and accessway intersection.	
IRR Band		Medium		Medium		Increased IRR score does not result in change in IRR band.	
10-year CAS Reported Crash History (2011 – 2020 inclusive)		**DSIs (Actual no. of death and serious injury casualties)**	5	**Total no. of Fatal Crashes**	1	**Total no. of Serious Crashes**	3
Additional Information Related to Assessment Passing lanes are present at the following locations: Increasing direction: 01S-0000-B/10.037 - 01S-0000-B/10.677							

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Decreasing direction: 01S-0000-B/11.684 - 01S-0000-B/10.12.497

Crash analysis has been undertaken, based on injury crashes from 2011 to 2020:

There has been one fatal crash, three serious injury crashes and 19 minor injury crashes over the last ten years. Lost control / head on was the main type of crashes, with the proportion of 57%. Rear end was the secondary type of crashes, with the proportion of 35%.

Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Factory Road	100km/h	01S-0000-B/8.329	No
Station Road	100km/h	01S-0000-B/8.613	No
Speeds Road	100km/h	01S-0000-B/9.203	No
Para Road	100km/h	01S-0000-B/11.089	No

8.8. Network Section No. N8

Route Position Start	01S-0018-B/0.699	**Route Position End**	01S-0018-B/1.407	**Length (km)**	0.708	**Classification Method:**	Rural
Network Section Description	Rural town of Tuamarina						

Field		MegaMaps Edition III Value	Assessed Value	Comments
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Curved	Curved	Confirmed through visual inspection
Carriageway	**Lane Width**	>3.5m - Wide	>3.5m - Wide	As measured from Marlborough District Plan's Smart Maps (The Smart Maps), the lane width is generally more than 3.5m
	Shoulder Width	1.0m to <2.0m - Wide	1.0m to <2.0m - Wide	The shoulder width on the eastern side of the road is approximately 1m, and the shoulder width on the western side of the road is approximately 2m - 3m.
Roadside Hazards	**Left**	Severe	High	Severe: 20+ non-frangible point hazards (trees) at <5m (5%) High: Roll-over upslopes at <5m (45%)

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				Low: Low severity property damage hazards at any distance (50%)
	Right	Moderate	Severe	Severe: 20+ non-frangible point hazards (power poles) at <5m (75%) Minor: Metal safety barriers at <5m (10%) Low: Low severity property damage hazards at any distance (15%)
Land Use		Rural Town	Rural Town	It is a small rural town with residential development with accessways present and a school nearby (Tua Marina School). According to Marlborough District Plan's map, the land use along this section is zoned as Township Residential Zone. Therefore, the land use of Rural Town for this section is considered appropriate.
Intersection Density		3 to <5 per km	3 to <5 per km	There are four intersections
Accessway Density		5 to <10 per km	10 to <20 per km	There are 14 accessways
AADT		6000-12000	6000-12000	Mobile Road (2020): 7442 vpd
IRR Score		2.02	2.12	Increase in IRR score related to the change of roadside hazards and accessway density.
IRR Band		Medium	Medium	Increased IRR does not result in change in IRR band.
10-year CAS Reported Crash History (2011 – 2020 inclusive)		**DSIs (Actual no. of death and serious injury casualties)** 1	**Total no. of Fatal Crashes** 0	**Total no. of Serious Crashes** 1

Additional Information Related to Assessment

Crash analysis has been undertaken, based on injury crashes from 2011 to 2020:

There have been six injury crashes over the last ten years, with one serious crash and five minor crashes. The only road user involving injury crashes was vehicle drivers. One minor injury crash occurred on the curve near the intersection of Hunter Road and SH1, involving a northbound vehicle losing control at the bend.

The serious crash and four minor crashes happened at the intersection of Bush Road and SH1 and the curve at the intersection.

- There was one minor crash occurring at the intersection because the driver on Bush Road missed the intersection and did not stop in front of the limit line in time. The WYT3 chevron board should be installed at the intersection of Bush Road and SH1 to help drivers to recognise the intersection ahead.
- The other three injury crashes were lost control type crashes. The curve at the intersection of Bush Road and SH1 should be delineated by WYC1 chevron curve indicator signs to help drivers identify the curve.

Table of local road intersections:

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Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Bush Road	80km/h	01S-0018-B/0.790	No
Pioneer Place (North)	80km/h	01S-0018-B/0.805	No
Pioneer Place (South)	80km/h	01S-0018-B/0.973	No
Hunter Road	80km/h	01S-0018-B/1.142	No

8.9. Network Section No. N9

Route Position Start	01S-0018-B/1.407	**Route Position End**	01S-0018-B/4.290	**Length (km)**	2.883	**Classification Method:**	Rural

Network Section Description	Rural residential area between Tuamarina and Spring Creek

Field		MegaMaps Edition III Value	Assessed Value	Comments
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Straight	Straight	Confirmed through visual inspection
Carriageway	**Lane Width**	>3.5m - Wide	>3.5m - Wide	As measured from Marlborough District Plan's Smart Maps (The Smart Maps), the lane width is generally more than 3.5m
	Shoulder Width	1.0m to <2.0m - Wide	1.0m to <2.0m - Wide	As measured from The Smart Maps, the shoulder width varies
Roadside Hazards	**Left**	Moderate	Moderate	Severe: 20+ non-frangible point hazards (power poles) at <5m (35%) Minor: Metal and concrete safety barriers at <5m (25%) Low: Low severity property damage hazards at any distance (40%)
	Right	Moderate	Moderate	Moderate: 20+ non-frangible point hazards (power poles) at 5m to <10m (40%) Minor: Metal and concrete safety barriers (60%)
Land Use		Remote Rural	Rural Residential	According to Marlborough District Plan's map, the land use

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							along the section is zoned as Rural Zone. There are residential dwellings along the state highway, which indicates the land use of rural residential is appropriate
Intersection Density	<1 per km		<1 per km				There are two intersections.
Accessway Density	1 to <2 per km		2 to <5 per km				There are 10 accessways
AADT	6000-12000		6000-12000				Mobile Road (2020): 7442 vpd
IRR Score	1.00		1.18				Increase in IRR score related to the change of land use and accessway density.
IRR Band	Low Medium		Low Medium				Increased IRR score does not result in change in IRR band.
10-year CAS Reported Crash History (2011 – 2020 inclusive)	**DSIs (Actual no. of death and serious injury casualties)**	0	**Total no. of Fatal Crashes**	0	**Total no. of Serious Crashes**	0	

Additional Information Related to Assessment

A passing lane is present at the following location:

Decreasing direction: 01S-0018-B/3.65 to 01S-0018-B/4.270

Crash analysis has been completed, based on injury crashes from 2011 to 2020:

There have been five injury crashes over the last ten years, with one crossing/turning crash and four straight lost control/head on crashes.

Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Hillocks Road	40km/h	01S-0018-B/2.450	No
River Access	40km/h	01S-0018-B/2.532	No

8.10. Network Section No. 1							
Route Position Start	01S-0018-B/4.290	**Route Position End**	01S-0018-B/4.894	**Length (km)**	0.60	**Classification Method:**	Rural
Network Section Description	Rural town of Springs Creek						

Field	MegaMaps Edition III Value	Assessed Value	Comments

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Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Straight	Straight	Confirmed through visual inspection
Carriageway	**Lane Width**	>3.5m – Wide	>3.5m – Wide	As measured from Marlborough District Plan's Smart Maps (The Smart Maps), the lane width is more than 3.5m.
	Shoulder Width	>2.0m – Very Wide	0.5m to 1.0m - Wide	As measured from The Smart Maps, the shoulder width is about 1.7m. However, given the marked cycle lanes around the roundabout are not recognised as shoulder width, the overall shoulder width should be lower on average.
Roadside Hazards	**Left**	High	Moderate	Severe: 20+ non-frangible point hazards (power poles) at <5m (10%) Minor: Metal safety barriers at <5m (20%) Low: Low severity property damage hazards at any distances (70%)
	Right	Moderate	Moderate	Severe: 20+ non-frangible point hazards (power poles) at <5m (1+ per 50m) (25%) Moderate: 20+ Frangible point hazards (light poles, signs) > 10cm diameter at <5m (40%) Low: Low severity property damage hazards at any distance (35%)
Land Use		Rural Residential	Rural Town	According to Marlborough District Plan's map, the land use along the section is zoned as Township Residential Zone. Besides, it is within the boundary of Rural Settlement classified by Stats NZ. Therefore, the land use of Rural Town is more appropriate for this section.
Intersection Density		1 to <2 per km	1 to <2 per km	There is one roundabout intersection
Accessway Density		5 to <10 per km	5 to <10 per km	There are four accessways

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AADT	6,000 – 12,000		6,000 – 12,000		Mobile Road (2019): 8,021 vpd	
IRR Score	1.26		1.62		Increase in IRR score related to the change of land use and shoulder width.	
IRR Band	Medium		Low Medium		Increased IRR score results in higher IRR band.	
10-year CAS Reported Crash History (2010 – 2019 inclusive)	**DSIs (Actual no. of death and serious injury casualties)**	2	**Total no. of Fatal Crashes**	1	**Total no. of Serious Crashes**	1

Additional Information Related to Assessment

Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Ferry Road / SH62 Roundabout	50km/h on Ferry Road and 70km/h on SH62	01S-0018-B/4.576	No

8.11. Network Section No. 2							
Route Position Start	01S-0018-B/4.894	**Route Position End**	01S-0018-B/6.800	**Length (km)**	1.91	**Classification Method:**	Rural
Network Section Description	Rural residential area between Spring Creek and Grovetown						

Field		MegaMaps Edition III Value	Assessed Value	Comments
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Straight	Straight	Confirmed through visual inspection
Carriageway	**Lane Width**	>3.5m – Wide	>3.5m – Wide	As measured from The Smart Maps, the lane width is more than 3.5m.
	Shoulder Width	1.0m to <2.0m – Wide	1.0m to <2.0m – Wide	As measured from The Smart Maps, the narrower side of the shoulder width is about 1.0m.
Roadside Hazards	**Left**	High	High	High: Roll-over upslopes at <5m (45%) Moderate: Railways at 5m to <10m, 10+ to <20 non-frangible

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				point hazards per km (1 per 50m to 100m) (45%) Minor: Metal safety barriers at <5m (10%)
	Right	Moderate	Minor	Minor: Metal safety barriers at <5m (30%) Low: Low severity property damage hazards at any distance (wire-rope barriers, frangible posts and poles <10 cm diameter), all hazards at >=10m (70%)
Land Use		Rural residential	Rural residential	According to Marlborough District Plan's map, the land use along the section is zoned as Rural.
Intersection Density		2 to <3 per km	1 to <2 per km	There are two intersections
Accessway Density		2 to <5 per km	1 to <2 per km	There are two accessways
AADT		6000-12000	6000-12000	Mobile Road (2019):10,159 vpd
IRR Score		1.39	1.25	Decrease in IRR score related to the change of roadside hazards and intersection / accessway density.
IRR Band		Medium	Medium	Decreased IRR score results in lower IRR band.

10-year CAS Reported Crash History (2010 – 2019 inclusive)	**DSIs (Actual no. of death and serious injury casualties)**	12	**Total no. of Fatal Crashes**	2	**Total no. of Serious Crashes**	5

Additional Information Related to Assessment

Crash analysis has been done, based on injured crashes from 2010 to 2019:

Straight-Lost control/head on, Rear end/obstruction and bend-lost control/head on are the major types of injured crashes, with the proportion of 35% 29% and 24% respectively. The 71% crashes occurred at midblock and 29% crashes occurred at intersections.

Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Mills & Ford Road East	100km/h	01S-0018-B/5.955	No
Vickerman Street	50km/h	01S-0018-B/6.072	No

8.12. Network Section No. 3

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Route Position Start	01S-0018-B/6.800	Route Position End	01S-0018-B/8.825	Length (km)	2.03	Classification Method:	Rural
Network Section Description	Rural residential area between Grovetown and Blenheim						

Field		MegaMaps Edition III Value	Assessed Value	Comments
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Straight	Straight	Confirmed through visual inspection
Carriageway	**Lane Width**	>3.5m - Wide	>3.5m - Wide	As measured from The Smart Maps, the lane width is more than 3.5m.
	Shoulder Width	>2.0m – Very Wide	1.0m to 2.0m - Wide	As measured from The Smart Maps, the shoulder width between 1.0m and 2.0m is generally present along this section.
Roadside Hazards	**Left**	High	High	High: Railways at <5m (40%) Moderate: 20+ non frangible point hazards (power poles, trees) at <5m (1+ per 50m) (60%)
	Right	Moderate	High	Severe: 20+ non-frangible point hazards per km (1+ per 50m) at <5m, rigid structures at <5m (45%) High: Roll-over upslopes at <5m (5%) Minor: Semi-rigid structures or buildings at 5m to <10m (15%) Low: Low severity property damage hazards at any distance (35%)
Land Use		Rural Residential	Rural Residential	According to Marlborough District Plan's map, the land use along the section is zoned as Rural. Grovetown is on the east of railways, and the residential dwellings cannot be accessed directly from the State Highway.
Intersection Density		2 to <3 per km	3 to <5 per km	There are seven intersections

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Accessway Density	1 to <2 per km		5 to <10 per km		There are 16 accessways	
AADT	6,000-12,000		6,000-12,000		Mobile Road (2019): 10,694 vpd	
IRR Score	1.28		1.58		Increase in IRR score related to the change of shoulder width, roadside hazards and intersection/accessway density.	
IRR Band	Medium		Medium		Increased IRR score does not result in higher IRR band.	
10-year CAS Reported Crash History (2010 – 2019 inclusive)	**DSIs (Actual no. of death and serious injury casualties)**	2	**Total no. of Fatal Crashes**	0	**Total no. of Serious Crashes**	2

Additional Information Related to Assessment

Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Staces Road	100km/h	01S-0018-B/6.866	No
Fell Street	50km/h	01S-0018-B/7.013	No
Nolans Road	100km/h	01S-0018-B/7.182	No
Ross Lane	100km/h	01S-0018-B/7.505	No
Rowley Crescent	100km/h	01S-0018-B/8.141	No
Aberharts Road	80km/h	01S-0018-B/8.189	No
Lower Wairau Road	100km/h	01S-0018-B/8.510	No

8.13. Network Section No. 4

Route Position Start	01S-0018-B/8.825	**Route Position End**	01S-0018-B/9.300	**Length (km)**	0.48	**Classification Method:**	Urban
Network Section Description	A section including the existing Ōpaoa River Bridge. The traffic has been flowing in both directions over the new Ōpaoa River Bridge since mid of July 2020. The assessment is based on the features of new Ōpaoa River Bridge with assumptions of features.						

Field	MegaMaps Edition III Value	Assessed Value	Comments
Road Stereotype	Two lane undivided	Two lane undivided	Assumed
Alignment	Curved	Curved	Confirmed through visual inspection from the proposed alignment.

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Carriageway	**Lane Width**	<3.0m - Narrow	>3.5m – Very Wide	Assumed the lane width is more than 3.5m given the update from Waka Kotahi NZ Transport Agency indicates the bridge has the total width of 10m.
	Shoulder Width	0m to <0.5m - Very Narrow	1.0m to <2.0m - Wide	Assumed the shoulder width is 1.5m given it is provided as a preferred solution on Waka Kotahi NZ Transport Agency.
Roadside Hazards	**Left**	High	Minor	Minor: Metal and concrete safety barriers at <5m
	Right	Moderate	Minor	Minor: Metal and concrete safety barriers at <5m
Land Use		Controlled Access	Controlled Access	Most of the section is the bridge, which has controlled access.
Intersection Density		3 to <5 per km	<1 per km	No intersection
Accessway Density		1 to <2 per km	<1 per km	No accessway
AADT		>12,000	>12,000	Mobile Road (2019): 12,833 vpd
IRR Score		2.35	1.22	Decrease in IRR score related to the change of lane width, shoulder width, roadside hazard and intersection and accessway densities.
IRR Band		Medium	Low	Decreased IRR score results in lower IRR band.

10-year CAS Reported Crash History (2010 – 2019 inclusive)	**DSIs (Actual no. of death and serious injury casualties)**	0	**Total no. of Fatal Crashes**	0	**Total no. of Serious Crashes**	0
Additional Information Related to Assessment						

8.14. Network Section No. 5							
Route Position Start	01S-0018-B/9.300	**Route Position End**	01S-0028-B/1.220	**Length (km)**	1.91	**Classification Method:**	Urban
Network Section Description	Commercial big box area of Blenheim						

Field	MegaMaps Edition III Value	Assessed Value	Comments

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Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection. The flush median do not prevent vehicle movements across them and therefore are coded as undivided according to IRR Manual.
Alignment		Curved	Straight	The alignment is relatively straight.
Carriageway	**Lane Width**	>3.5m – Wide	>3.5m – Wide	As measured from The Smart Maps, the lane width is more than 3.5m.
	Shoulder Width	>2.0m – Very Wide	>2.0m – Very Wide	As measured from The Smart Maps, the very wide shoulder width is generally present along this section. On-street parallel parking is recognised as shoulders.
Roadside Hazards	**Left**	Severe	High	Severe: 20+ non frangible point hazards per km (1+ per 50m) at <5m, rigid structure/buildings at <5m (40%) Moderate: Rigid structures/ buildings at 5m to <10m, Car parking or semi-rigid structures at <5m (60%)
	Right	Moderate	High	Severe: 20+ non frangible point hazards per km (1+ per 50m), rigid structure/buildings at <5m (30%) Moderate: Rigid structures/ buildings at 5m to <10m, Car parking or semi-rigid structures at <5m (70%)
Land Use		Commercial Strip Shopping	Commercial Big Box / Industrial	According to Marlborough District Plan's map, the land use along this section is the combination of Industrial Zone and Central Business Zone. The land use of Commercial Big Box / Industrial is considered more appropriate than the land use of Commercial Strip Shopping given intermittent large accessways and intersections to large car parking areas are provided.
Intersection Density		5 to <10 per km	10+ per km	There are 15 intersections

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Accessway Density	20+ per km		20+ per km		Approximately 70 accessways	
AADT	>12,000		>12,000		Mobile Road (2019): 13,949	
IRR Score	2.67		2.64		Decrease in IRR score related to the change of alignment and land use.	
IRR Band	Medium High		Medium High		Decreased IRR score does not result in change in IRR band.	
10-year CAS Reported Crash History (2010 – 2019 inclusive)	**DSIs (Actual no. of death and serious injury casualties)**	5	**Total no. of Fatal Crashes**	0	**Total no. of Serious Crashes**	5

Additional Information Related to Assessment

Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Dodson Street	50km/h	01S-0018-B/9.325	No
Budge Street	50km/h	01S-0018-B/9.452	No
Farmar Street	50km/h	01S-0018-B/9.602	No
Herbert St	50km/h	01S-0018-B/9.735	No
Pitchill Street	50km/h	01S-0018-B/9.770	No
Dillons Point Road / Sh6	50km/h	01S-0018-B/9.992	No
Auckland Street	50km/h	01S-0028-B/0.136	No
Horton Street / Alfred Street	50km/h	01S-0028-B/0.306	No
Leeds Quay	50km/h	01S-0028-B/0.389	No
Park Terrace / Main Street West / Redwood Street	30km/h on Main Street, 50km/h on Park Terrace and Redwood Street	01S-0028-B/0.603	No
Freswick Street	50km/h	01S-0028-B/0.750	No
Opawa Street	50km/h	01S-0028-B/0.867	No
Sutherland Terrace	50km/h	01S-0028-B/1.009	No
Stuart Street	50km/h	01S-0028-B/1.110	No
Dunbeath Street	50km/h	01S-0028-B/1.207	No

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8.15. Network Section No. 6							
Route Position Start	01S-0028-B/1.220	**Route Position End**	01S-0028-B/1.637	**Length (km)**	0.42	**Classification Method:**	Urban
Network Section Description	Urban residential area of Blenheim						

Field		MegaMaps Edition III Value	Assessed Value	Comments
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Curved	Curved	Confirmed through visual inspection
Carriageway	**Lane Width**	>3.5m - Wide	>3.5m - Wide	As measured from The Smart Maps, the lane width is more than 3.5m.
	Shoulder Width	>2.0m - Very Wide	>2.0m - Very Wide	As measured from The Smart Maps, the very wide shoulder width is generally present along this section. On-street parallel parking is recognised as shoulders.
Roadside Hazards	**Left**	Severe	Moderate	Moderate: 10+ to <20 non-frangible point hazards per km (1 per 50m to 100m), Car parking or semi-rigid structures or buildings at <5m (50%) Minor: Metal and concrete safety barriers at <5m, Car parking or semi-rigid structures or buildings at 5m to <10m (20%) Low: Low severity property damage hazards at any distance (30%)
	Right	Moderate	Moderate	Moderate: Car parking or semi-rigid structures or buildings at <5m (90%) Low: Low severity property damage hazards at any distance (10%)
Land Use		Urban Residential	Urban Residential	According to Marlborough District Plan's map, the land use

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							along this section is zoned as Urban Residential One.
Intersection Density	10+ per km		5 to <10 per km				There are four intersections
Accessway Density	20+ per km		20+ per km				There are 13 accessways
AADT	6,000 – 12,000		6,000 – 12,000				Mobile Road (2019): 11,624 vpd
IRR Score	2.60		2.15				Decrease in IRR score related to the change of roadside hazards and intersection density.
IRR Band	Medium High		Medium				Decreased IRR score results in decrease in IRR score.
10-year CAS Reported Crash History (2010 – 2019 inclusive)	**DSIs (Actual no. of death and serious injury casualties)**	1	**Total no. of Fatal Crashes**	0	**Total no. of Serious Crashes**	1	

Additional Information Related to Assessment

Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Keiss Street	50km/h	01S-0028-B/1.307	No
Elzy Street	50km/h	01S-0028-B/1.424	No
Main Street East	50km/h	01S-0028-B/1.461	No
Lybster Street	50km/h	01S-0028-B/1.561	No

8.16. Network Section No. 7							
Route Position Start	01S-0028-B/1.637	**Route Position End**	01S-0028-B/2.520	**Length (km)**	0.88	**Classification Method:**	Rural
Network Section Description	Rural residential area between Blenheim and Riverlands						

Field		**MegaMaps Edition III Value**	**Assessed Value**	**Comments**
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Curved	Curved	Confirmed through visual inspection
Carriageway	**Lane Width**	>3.5m - Wide	>3.5m - Wide	As measured from The Smart Maps, the lane width is more than 3.5m.

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	Shoulder Width	>2.0m - Very Wide	>2.0m - Very Wide	As measured from The Smart Maps, the very wide shoulder width is generally present along this section.
Roadside Hazards	**Left**	High	Severe	Severe: 20+ non-frangible point hazards per km (1+per 50m) at <5m (85%) Low: Low severity property damage hazards at any distance (15%)
	Right	Moderate	High	Severe: 20+ non-frangible point hazards per km (1+per 50m) at <5m (trees) (25%) Moderate: 10+ to <20 non-frangible point hazards per km (1 per 50m to 100m) (25%) Low: Low severity property damage hazards at any distance (50%)
Land Use		Rural Residential	Rural Residential	According to Marlborough District Plan's map, the land use along this section is zoned as Rural Three. There are infrequent accessways and few private dwellings. There are farms along the state highway, which indicates the land use of rural residential is appropriate.
Intersection Density		1 to <2 per km	<1 per km	No intersection
Accessway Density		5 to <10 per km	10 to <20 per km	There are 14 accessways
AADT		>12,000	>12,000	Mobile Road (2019): 12,786 vpd
IRR Score		1.65	1.74	Increase in IRR score related to the change of accessway density and roadside hazards.
IRR Band		Medium High	Medium High	Decreased IRR score does not lower IRR band.
10-year CAS Reported Crash History (2010 - 2019 inclusive)		**DSIs (Actual no. of death and serious injury casualties)** 0	**Total no. of Fatal Crashes** 0	**Total no. of Serious Crashes** 0
Additional Information Related to Assessment				

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8.17. Network Section No. 8							
Route Position Start	01S-0028-B/2.520	**Route Position End**	01S-0028-B/3.080	**Length (km)**	0.56	**Classification Method:**	Rural
Network Section Description	Rural town area of Riverlands						

Field		MegaMaps Edition III Value	Assessed Value	Comments
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Curved	Curved	Confirmed through visual inspection
Carriageway	**Lane Width**	>3.5m - Wide	>3.5m - Wide	As measured from The Smart Maps, the lane width is more than 3.5m.
	Shoulder Width	>2.0m - Very Wide	>2.0m - Very Wide	As measured from The Smart Maps, the very wide shoulder width is generally present along this section.
Roadside Hazards	**Left**	High	High	Severe: 20+ non-frangible point hazards per km (1+per 50m) at <5m (30%) Moderate: Car parking or semi-rigid structures or buildings at <5m (40%) Minor: Metal and concrete safety barriers at <5m (30%)
	Right	Moderate	High	Severe: 20+ non-frangible point hazards per km (1+per 50m) at <5m (40%) Moderate: Car parking or semi-rigid structures or buildings at <5m (50%) Minor: Metal and concrete safety barriers at <5m (5%) Low: Low severity property damage hazards at any distance (5%)
Land Use		Rural Residential	Rural Town	It is a small rural town with residential development with accessways present and a school nearby (Riverlands School).

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			According to Marlborough District Plan's map, the land use along this section is zoned as Township Residential. Therefore, the land use of Rural Town for this section is considered appropriate.
Intersection Density	1 to <2 per km	1 to <2 per km	There is one intersection
Accessway Density	5 to <10 per km	20+ per km	There are 24 accessways
AADT	>12,000	>12,000	Mobile Road (2019): 11,624 vpd The AADT of more than 12,000 vpd is considered appropriate given the data from Mobile Road is not the current situation (2020) and it is close enough to 12,000 vpd.
IRR Score	1.65	2.05	Increase in IRR score related to the changes of land use, roadside hazards and accessway density.
IRR Band	Medium High	Medium	Increased IRR score results in change in IRR band.

10-year CAS Reported Crash History (2010 – 2019 inclusive)	**DSIs (Actual no. of death and serious injury casualties)**	1	**Total no. of Fatal Crashes**	0	**Total no. of Serious Crashes**	1

Additional Information Related to Assessment

Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Alabama Road	70km/h	01S-0028-B/3.030	No

8.18. Network Section No. 9

Route Position Start	01S-0028-B/3.080	**Route Position End**	01S-0028-B/3.658	**Length (km)**	0.58	**Classification Method:**	Rural

Network Section Description	Rural residential area of Riverlands

Field	MegaMaps Edition III Value	Assessed Value	Comments

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Road Stereotype		Two lane undivided		Two lane undivided		Confirmed through visual inspection	
Alignment		Straight		Straight		Confirmed through visual inspection	
Carriageway	**Lane Width**	>3.5m - Wide		>3.5m - Wide		As measured from The Smart Maps, the lane width is more than 3.5m.	
	Shoulder Width	1.0m to <2.0m - Wide		1.0m to <2.0m - Wide		As measured from The Smart Maps, the wide shoulder width is generally present along this section.	
Roadside Hazards	**Left**	Moderate		Moderate		Severe: Rigid structures/ bridges/ buildings at <5m (20%) High: Roll-over upslopes at <5m (30%) Minor: Metal and concrete safety barriers at <5m (35%) Low: Low severity property damage hazards at any distance (15%)	
	Right	Moderate		High		High: Railways at <5m	
Land Use		Remote Rural		Rural Residential		There are a few accessways on the north of the section while the land use is controlled access on the south of the section due to the railways. According to Marlborough District Plan's map, the land use along this section is zoned as Rural Three. The land use of Rural Residential is considered appropriate.	
Intersection Density		<1 per km		<1 per km		No intersection	
Accessway Density		2 to <5 per km		5 to <10 per km		There are three accessways	
AADT		6,000 – 12,000		6,000 – 12,000		Mobile Road: 8,903 vpd	
IRR Score		1.01		1.31		Increase in IRR score related to the changes of land use, roadside hazards and accessway density.	
IRR Band		Low Medium		Medium		Increased IRR score results in higher IRR band.	
10-year CAS Reported Crash History (2010 – 2019 inclusive)		**DSIs (Actual no. of death and serious injury casualties)**	0	**Total no. of Fatal Crashes**	0	**Total no. of Serious Crashes**	0
Additional Information Related to Assessment							

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8.19. Network Section No. 10							
Route Position Start	01S-0028-B/3.658	**Route Position End**	01S-0028-B/12.105	**Length (km)**	8.45	**Classification Method:**	Rural
Network Section Description	Two-lane undivided with curved alignment. Rural residential area between Riverlands and Seddon.						

Field		MegaMaps Edition III Value	Assessed Value	Comments
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Winding	Curved	Confirmed through visual inspection
Carriageway	**Lane Width**	>3.5m - Wide	>3.5m - Wide	As measured from The Smart Maps, the lane width is more than 3.5m.
	Shoulder Width	0.5m to <1.0m - Narrow	1.0m to <2.0m - Wide	As measured from The Smart Maps, the wide shoulder width is generally present along this section.
Roadside Hazards	**Left**	Moderate	Moderate	High: Roll-over upslopes and downslopes at <5m (20%) Moderate: 20+ non-frangible point hazards per km (1+ per 50m) at 5m to <10m OR 10+ to <20 non-frangible point hazards per km (1 per 50m to 100m) at <5m (55%) Minor: Metal safety barriers at <5m (5%) Low: Low severity property damage hazards at any distance (20%)
	Right	Moderate	Moderate	Severe: 20+ non-frangible point hazards per km (1+per 50m) at <5m (10%) High: Roll-over upslopes, downslopes and railways at <5m (35%)

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				Minor: Metal safety barriers at <5m (5%) Low: Low severity property damage hazards at any distance (50%)
Land Use		Remote Rural	Rural Residential	According to Marlborough District Plan's map, this section mainly travels through Rural Zone with farms and intersections to industrial areas. Overall, the land use of Rural Residential is considered appropriate.
Intersection Density		<1 per km	<1 per km	There are right intersections
Accessway Density		1 to <2 per km	1 to <2 per km	There are approx. 11 accessways
AADT		1,000 – 6,000	1,000 – 6,000	Mobile Road (2019): 4,521 – 8,903 A sensitivity test has been done by change the AADT to 6,000-12,000. It is found the IRR score will be increased from 1.23 to 1.43 while the SaAS is unchanged and keeps the same as 80km/h.
IRR Score		1.49	1.23	Decrease in IRR score related to the change of alignment and shoulder width.
IRR Band		Medium	Medium	Decreased IRR score does not result in change in IRR band.
10-year CAS Reported Crash History (2010 – 2019 inclusive)	**DSIs (Actual no. of death and serious injury casualties)** 12	**Total no. of Fatal Crashes** 1	**Total no. of Serious Crashes** 8	

Additional Information Related to Assessment

Locations of Passing lanes:

01S-0028-B/7.350 – 01S-0028-B/8.372 (Increasing direction)

01S-0028-B/9.627 – 01S-0028-B/10.700 (Decreasing direction)

Crash analysis has been done, based on injured crashes from 2010 to 2019:

Bend-lost control/head on is the major types of injured crashes, with the proportion of 64%. The 77% crashes occurred at midblock and 23% crashes occurred at intersections.

Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Mccallums Road	100km/h	01S-0028-B/4.272	No
Cob Cottage Road	100km/h	01S-0028-B/4.657	No
Malthouse Road	100km/h	01S-0028-B/4.857	No

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Sheffield Street	50km/h	01S-0028-B/5.089	No
Hardings Road	100km/h	01S-0028-B/5.916	No
Roadhouse Drive	50km/h	01S-0028-B/7.252	No
Cloudy Bay Drive	50km/h	01S-0028-B/7.658	No
Redwood Pass Road	100km/h	01S-0028-B/8.829	No

8.20. Network Section No. 11							
Route Position Start	01S-0028-B/12.105	**Route Position End**	01S-0043-B/0	**Length (km)**	3.65	**Classification Method:**	Rural
Network Section Description	Two-lane undivided with winding alignment. Rural residential area between Riverlands and Seddon.						

Field		MegaMaps Edition III Value	Assessed Value	Comments
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Winding	Winding	Confirmed through visual inspection
Carriageway	**Lane Width**	>3.5m - Wide	3.0m to 3.5m - Medium	As measured from The Smart Maps, the medium lane width is generally present.
	Shoulder Width	0.5m to <1.0m - Narrow	0m to 0.5m – Very Narrow	As measured from The Smart Maps, the very narrow shoulder width is generally present along this section.
Roadside Hazards	**Left**	Moderate	High	High: Roll-over upslopes or downslopes at <5m (85%) Minor: Metal safety barriers at <5m (15%)
	Right	Moderate	High	Severe: Cliffs and drop-offs at <5m (20%) High: Roll-over upslopes or downslopes at <5m (45%) Minor: Metal safety barriers at <5m (35%)
Land Use		Remote Rural	Rural Residential	According to Marlborough District Plan's map, this section mainly travels through Rural Zone with farms therefore the land use

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						of Rural Residential is considered more appropriate than Remote Rural.
Intersection Density	<1 per km		<1 per km		No intersection	
Accessway Density	1 to <2 per km		<1 per km		There are three accessways	
AADT	1,000 - 6,000		1,000 - 6,000		Mobile Road (2019): 4,521 vpd	
IRR Score	1.49		2.05		Increase in IRR score related to the change of lane width, shoulder width, roadside hazards and land use.	
IRR Band	Medium		High		Increased IRR score results in the change in IRR band.	
10-year CAS Reported Crash History (2010 – 2019 inclusive)	**DSIs (Actual no. of death and serious injury casualties)**	7	**Total no. of Fatal Crashes**	0	**Total no. of Serious Crashes**	4
Additional Information Related to Assessment Crash analysis has been done, based on injured crashes from 2010 to 2019: Bend-lost control/head on is the major types of injured crashes, with the proportion of 92%.						

8.21. Network Section No. 12							
Route Position Start	01S-0043-B/0	**Route Position End**	01S-0043-B/8.180	**Length (km)**	8.18	**Classification Method:**	Rural
Network Section Description	Two-lane undivided with relatively straight alignment. Rural residential area between Riverlands and Seddon.						

Field		**MegaMaps Edition III Value**	**Assessed Value**	**Comments**
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Curved	Straight	The alignment is relatively straight, confirmed through visual inspection
Carriageway	**Lane Width**	>3.5m - Wide	>3.5m - Wide	As measured from The Smart Maps, the lane width is more than 3.5m.
	Shoulder Width	0.5m to <1.0m - Narrow	>2.0m – Very Wide	As measured from The Smart Maps, the very wide shoulder

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				width is generally present along this section.
Roadside Hazards	**Left**	Moderate	Moderate	High: Roll-over upslopes or downslopes at <5m (10%) Minor: Metal and concrete safety barriers at <5m (30%) Low: Low severity property damage hazards at any distance (60%)
	Right	Moderate	Moderate	High: Roll-over upslopes or downslopes at <5m (15%) Moderate: 20+ non-frangible point hazards per km (1+ per 50m) at 5m to <10m OR 10+ to <20 non-frangible point hazards per km (1 per 50m to 100m) (20%) Minor: Metal and concrete safety barriers at <5m (25%) Low: Low severity property damage hazards at any distance (40%)
Land Use		Remote Rural	Rural Residential	According to Marlborough District Plan's map, this section mainly travels through Rural Zone with farms therefore the land use of Rural Residential is considered more appropriate than Remote Rural.
Intersection Density		<1 per km	<1 per km	There is one intersection
Accessway Density		1 to <2 per km	1 to <2 per km	There are 12 accessways
AADT		1,000-6,000	1,000-6,000	Mobile Road (2019): 4,467 – 4,657 vpd
IRR Score		1.20	0.87	Decrease in IRR score related to the change of alignment and shoulder width.
IRR Band		Medium	Low Medium	Decreased IRR score results in lower IRR band.
10-year CAS Reported Crash History (2010 – 2019 inclusive)		**DSIs (Actual no. of death and serious injury casualties)** 0	**Total no. of Fatal Crashes** 0	**Total no. of Serious Crashes** 0
Additional Information Related to Assessment Locations of Passing lane: 01S-0043-B/6.060 - 01S-0043-B/7.200 (decreasing direction)				

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Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Redwood Pass Road / Awatere Valley Road1	100km/h	01S-0043-B/5.678	No

8.22. Network Section No. 13

Route Position Start	01S-0043-B/8.180	**Route Position End**	01S-0043-B/8.875	**Length (km)**	0.70	**Classification Method:**	Rural
Network Section Description	Two-lane undivided with curved alignment. Rural town area of Seddon. Existing 60km/h Zone.						

Field		MegaMaps Edition III Value	Assessed Value	Comments
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Curved	Curved	Confirmed through visual inspection
Carriageway	**Lane Width**	>3.5m - Wide	>3.5m - Wide	As measured from The Smart Maps, the lane width is more than 3.5m.
	Shoulder Width	1.0m to <2.0m - Wide	0.5m to <1.0m - Narrow	As measured from The Smart Maps, the narrow shoulder width is generally present along this section.
Roadside Hazards	**Left**	Severe	Moderate	Severe: 20+ non-frangible point hazards per km (1+per 50m) at <5m (20%) Moderate: Rigid structures at 5m to <10m (10%) Low: Low severity property damage hazards at any distance (60%)
	Right	Moderate	Moderate	Moderate: Impact absorbing light poles at <5m (70%) Minor: Metal safety barriers at <5m (20%) Low: Low severity property damage hazards at any distance (10%)

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Land Use	Rural Town		Rural Town		Rural town of Seddon with high intersection density due to the residential development. According to Marlborough District Plan's map, the east of the section is zoned as Rural Township, and the west of the section does not have development due to the railways. In addition, this section is within the rural settlement classified by Stats NZ. Therefore, the land use of Rural Town for this section is considered appropriate.	
Intersection Density	5 to <10 per km		5 to <10 per km		There are five intersections.	
Accessway Density	10 to <20 per km		10 to <20 per km		There are 11 accessways.	
AADT	1,000 - 6,000		1,000 - 6,000		Mobile Road (2019): 4,467 vpd	
IRR Score	2.08		2.05		Decrease in IRR score related to the change of roadside hazards.	
IRR Band	Medium		Medium		Decreased IRR score does not result in lower IRR band.	
10-year CAS Reported Crash History (2010 – 2019 inclusive)	**DSIs (Actual no. of death and serious injury casualties)**	0	**Total no. of Fatal Crashes**	0	**Total no. of Serious Crashes**	0

Additional Information Related to Assessment

Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Fearon Street	50km/h	01S-0043-B/8.236	No
Tetley Street	50km/h	01S-0043-B/8.383	No
Goulter Street	50km/h	01S-0043-B/8.515	No
Fell Street	50km/h	01S-0043-B/8.723	No
Carkeek Street	50km/h	01S-0043-B/8.841	No

8.23. Network Section No. 14

Route Position Start	01S-0043-B/8.875	**Route Position End**	01S-0043-B/9.606	**Length (km)**	0.73	**Classification Method:**	Rural
Network Section Description	Two-lane undivided with curved alignment. Rural town area of Seddon. Existing 50km/h Zone.						

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Field		MegaMaps Edition III Value	Assessed Value	Comments
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Curved	Curved	Confirmed through visual inspection
Carriageway	**Lane Width**	>3.5m - Wide	>3.5m - Wide	As measured from The Smart Maps, the lane width is more than 3.5m.
	Shoulder Width	1.0m to <2.0m - Wide	1.0m to <2.0m - Wide	As measured from The Smart Maps, the wide shoulder width is generally present along this section.
Roadside Hazards	**Left**	Severe	High	High: Roll-over upslopes at <5m (40%) Moderate: Rigid structures at 5m to <10m (15%) Minor: Metal safety barriers at <5m (25%) Low: Low severity property damage hazards at any distance, All hazards at >=10m (20%)
	Right	Moderate	Moderate	Severe: 20+ non-frangible point hazards per km (1+per 50m) at <5m (5%) High: Roll-over downslopes at <5m (10%) Moderate: Car parking or semi-rigid structures or buildings at <5m (10%) Minor: Metal and concrete safety barriers at <5m (45%) Low: (30%)
Land Use		Rural Town	Rural Town	It is a small rural town with a mixture of residential development and some shops with sone intersections and accessways present and school nearby (Seddon School). According to Marlborough District Plan's map, the east of the section is zoned as Rural Township, and the west of the section does not have

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							development due to the railways. In addition, this section is within the rural settlement classified by Stats NZ. Therefore, the land use of Rural Town for this section is considered appropriate.
Intersection Density	5 to <10 per km			5 to <10 per km			There are four intersections.
Accessway Density	10 to <20 per km			5 to <10 per km			There are six accessways.
AADT	1,000 – 6,000			1,000 – 6,000			Mobile Road (2019): 4,467 – 4,780 vpd
IRR Score	2.08			2.01			Decrease in IRR score related to the changed of roadside hazards and accessway density.
IRR Band	Medium			Medium			Decreased IRR score does not result in change in IRR band.
10-year CAS Reported Crash History (2010 – 2019 inclusive)	**DSIs (Actual no. of death and serious injury casualties)**	0		**Total no. of Fatal Crashes**	0	**Total no. of Serious Crashes**	0

Additional Information Related to Assessment

Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Mills Street	50km/h	01S-0043-B/9.116	No
Wakefield Street	50km/h	01S-0043-B/9.162	No
Newcome Street	50km/h	01S-0043-B/9.267	No
Marama Road	50km/h	01S-0043-B/9.396	No

8.24. Network Section No. 15

Route Position Start	006-0000-B/0	**Route Position End**	006-0000-B/0.400	**Length (km)**	0.40	**Classification Method:**	Urban
Network Section Description	Two-lane undivided with a flush median and straight alignment. Commercial big box area of Blenheim.						

Field	MegaMaps Edition III Value	Assessed Value	Comments
Road Stereotype	Two lane undivided	Two lane undivided	Confirmed through visual inspection

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Alignment		Curved		Straight		The alignment is straight despite of curves due to roundabouts.	
Carriageway	**Lane Width**	>3.5m - Wide		>3.5m - Wide		As measured from Marlborough District Plan's Smart Maps (The Smart Maps), the lane width is more than 3.5m.	
	Shoulder Width	>2.0m - Very Wide		>2.0m - Very Wide		As measured from The Smart Maps, the very wide shoulder width is generally present along this section. On-street parallel parking is recognised as shoulders.	
Roadside Hazards	**Left**	Severe		Moderate		Moderate: Car parking or semi-rigid structures or buildings at <5m (45%) Low: Low severity property damage hazards at any distance (55%)	
	Right	Moderate		Moderate		Severe: Rigid structures/bridges/buildings at <5m (5%) Moderate: Rigid structures/ buildings at 5m to <10m, Car parking or semi-rigid structures or buildings at <5m (50%) Low: Low severity property damage hazards at any distance (45%)	
Land Use		Commercial Big Box / Industrial		Commercial Big Box / Industrial		According to Marlborough District Plan's map, the land use along this section is zoned as Industrial One. Therefore, the land use of commercial big box is considered appropriate.	
Intersection Density		5 to <10 per km		5 to <10 per km		There are three intersections.	
Accessway Density		5 to <10 per km		20+ per km		There are approx. 20 accessways.	
AADT		>12,000		>12,000		Mobile Road (2019): 15,028 vpd	
IRR Score		2.49		2.15		Decrease in IRR score related to the change of alignment and roadside hazards.	
IRR Band		Medium High		Medium		Decreased IRR score results in change in IRR band.	
10-year CAS Reported Crash History (2010 – 2019 inclusive)		**DSIs (Actual no. of death and**	2	**Total no. of Fatal Crashes**	1	**Total no. of Serious Crashes**	1

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	serious injury casualties)					

Additional Information Related to Assessment

Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Dillons Point Road / SH1	50km/h	006-0000-B/0	No
Bomford Street	50km/h	006-0000-B/0.086	No
Hutcheson Street	50km/h	006-0000-B/0.285	No

8.25. Network Section No. 16							
Route Position Start	006-0000-B/0.400	**Route Position End**	006-0000-B/1.572	**Length (km)**	1.18	**Classification Method:**	Urban
Network Section Description	Two-lane undivided with a straight alignment. Urban residential area of Blenheim.						

Field		**MegaMaps Edition III Value**	**Assessed Value**	**Comments**
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Straight	Straight	Confirmed through visual inspection
Carriageway	**Lane Width**	>3.5m – Wide	>3.5m – Wide	As measured from Marlborough District Plan's Smart Maps (The Smart Maps), the lane width is more than 3.5m.
	Shoulder Width	>2.0m – Very Wide	>2.0m – Very Wide	As measured from The Smart Maps, the very wide shoulder width is generally present along this section. On-street parallel parking is recognised as shoulders.
Roadside Hazards	**Left**	Severe	Moderate	Severe: Rigid structures/ buildings at <5m (10%) Moderate: Car parking or semi-rigid structures or buildings at <5m (55%) Low: Low severity property damage hazards at any distance (35%)

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	Right	Moderate	High	Severe: Rigid structures/ buildings at <5m (25%) High: Roll-over upslopes at <5m (20%) Moderate: Car parking or semi-rigid structures or buildings at <5m (45%) Low: Low severity property damage hazards at any distance (10%)
Land Use		Urban Residential	Urban Residential	According to Marlborough District Plan's map, the land use along this section is zoned as Urban Residential One. Given there are private dwellings with frequent driveways, the land use of Urban Residential is considered appropriate.
Intersection Density		1 to <2 per km	2 to <3 per km	There are three intersections.
Accessway Density		20+ per km	20+ per km	There are more than 30 accessways.
AADT		>12,000	>12,000	Mobile Road (2019): 15,028 vpd
IRR Score		1.84	1.82	Decrease in IRR score related to the change of roadside hazards.
IRR Band		Low Medium	Low Medium	Decreased IRR score does not result in change in IRR band.
10-year CAS Reported Crash History (2010 – 2019 inclusive)		**DSIs (Actual no. of death and serious injury casualties)** 3	**Total no. of Fatal Crashes** 1	**Total no. of Serious Crashes** 2

Additional Information Related to Assessment

Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Curry Street	50km/h	006-0000-B/0.801	No
Mill Stream Lane	50km/h	006-0000-B/1.174	No
Mclauchlan Street	50km/h	006-0000-B/1.186	No

8.26. Network Section No. 17

Route Position Start	006-0000-B/1.572	**Route Position End**	006-0000-B/3.060	**Length (km)**	1.49	**Classification Method:**	Urban

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Network Section Description		Two-lane undivided with a straight alignment. Urban residential area of Blenheim with some commercial activity.		
Field		**MegaMaps Edition III Value**	**Assessed Value**	**Comments**
Road Stereotype		Two lane undivided	Two lane undivided	Confirmed through visual inspection
Alignment		Straight	Straight	Confirmed through visual inspection
Carriageway	**Lane Width**	>3.5m – Wide	>3.5m – Wide	As measured from Marlborough District Plan's Smart Maps (The Smart Maps), the lane width is more than 3.5m.
	Shoulder Width	>2.0m – Very Wide	1.0m to 2.0m – Wide	As measured from The Smart Maps, the very wide shoulder width is generally present along this section. On-street parallel parking is recognised as shoulders. However, marked cycle lane is present with the length of approximately 500m from 006-0000-B/1.670 to 006-0000-B/2.220, which is considered as 0m shoulder width. The overall shoulder width is coded as 1.0m to 2.0m to take the marked cycle lanes into account.
Roadside Hazards	**Left**	Severe	High	Severe: 20+ non-frangible point hazards per km (1+per 50m) at <5m, rigid structures at <5m (35%) Moderate: Rigid structures/ buildings at 5m to <10m, car parking or semi-rigid structures or buildings at <5m (45%) Low: Low severity property damage hazards at any distance (20%)

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	Right	Moderate	High	Severe: 20+ non-frangible point hazards per km (1+per 50m) at <5m, rigid structures/ buildings at <5m (45%) Moderate: Car parking or semi-rigid structures or buildings at <5m (45%) Low: Low severity property damage hazards at any distance (10%)
Land Use		Urban Residential	Urban Residential	According to Marlborough District Plan's map, this section travels through mainly the urban residential area. Blocks from Boyce Street to Battys Road pass by the commercial activities. The overall land use of urban residential is considered appropriate.
Intersection Density		3 to <5 per km	5 to <10 per km	There are seven intersections.
Accessway Density		20+ per km	20+ per km	There are approx. 70 accessways.
AADT		>12,000	>12,000	Mobile Road (2019): 15,028 vpd
IRR Score		1.96	2.34	Increase in IRR score related to the change of shoulder width, roadside hazards and intersection density.
IRR Band		Low Medium	Medium	Increased IRR score results in higher IRR band.
10-year CAS Reported Crash History (2010 – 2019 inclusive)		**DSIs (Actual no. of death and serious injury casualties)** 0	**Total no. of Fatal Crashes** 0	**Total no. of Serious Crashes** 0

Additional Information Related to Assessment

Table of local road intersections:

Full Road Name	Posted Speed Limit	RS_RP	Rat running potential?
Boyce Street	50km/h	006-0000-B/1.636	No
Colemans Road	50km/h	006-0000-B/1.806	No
Battys Road / Murphys Road	50km/h	006-0000-B/2.223	No
Adams Lane	50km/h	006-0000-B/2.422	No
Severne Street	50km/h	006-0000-B/2.585	No
Rose Street	50km/h	006-0000-B/2.646	No

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Westwood Avenue	50km/h	006-0000-B/2.889	No

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9. Homogeneous Segment Infrastructure Scenario								
Network Segment No.	State Highway	Route Position		Length (km)	Safe System Transformation (Estimated cost per km $2.6M)	Safer Corridors (Estimated cost per km $1.25M)	Safety Management (Estimated cost per km $0.4M)	Comments
		Start	End					
N4	01S	01S-0000-B/2.008	01S-0000-B/5.290	3.282		$0.05M/km * 3.285km = $0.23M		Install ATP markings (edgelines and centrelines). The cost range of ATP markings is between $0.01M and $0.05M per km, according to Standard Safety Intervention Toolkit. The upper value is used to obtain the estimated cost.
N5	01S	01S-0000-B/5.290	01S-0000-B/6.682	1.392		$0.05M/km * 1.392km = $0.07M		Install ATP markings (edgelines and centrelines).
N6	01S	01S-0000-B/6.682	01S-0000-B/7.830	1.15		$0.05M/km * 1.15km = $0.06M		Install ATP markings (edgelines and centrelines). Install 80km/h speed limit repeater signs on both sides of the section to raise drivers' awareness.
N7	01S	01S-0000-B/7.830	01S-0018-B/0.699	10.517		$0.05M/km * 10.517km = $0.53M		Install ATP markings (edgelines and centrelines).
N8	01S	01S-0018-B/0.699	01S-0018-B/1.407	0.71				Install WYC1 chevron indicator signs at the curve at the intersection of Bush Road and Sh1 to help drivers identify the curve. Install WYT3 chevron board at the

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								intersection of Bush Road and SH1 to help drivers recognise the intersection ahead.
N9	01S	01S-0018-B/1.407	01S-0018-B/4.290	2.88		$0.05M/km * 2.88km = $0.14M		Install ATP markings (edgelines and centrelines).
2	01S	01S-0018-B/4.894	01S-0018-B/6.800	1.91		$0.05M/km * 1.91km = $0.1M		ATP centreline markings to reduce head-on crash risk.
3	01S	01S-0018-B/6.800	01S-0018-B/8.825	2.03				Install 80km/h speed limit repeater signs on both sides of the Grovetown to raise drivers' awareness.
5	01S	01S-0018-B/9.300	01S-0028-B/1.220	1.91			$0.4M/km * 1.91km = $0.8M	Remark the wide lanes to a narrow width, horizontal and vertical deflection and urban road furniture to make the proposed 40km/h more understandable.
8	01S	01S-0028-B/2.520	01S-0028-B/3.080	0.56				Residential zone with repeater speed limit signs to raise drivers' awareness.
10	01S	01S-0028-B/3.658	01S-0028-B/12.105	8.45		$0.05M/km * 8.45km = $0.5M		ATP centreline markings to reduce head-on crash risk.
15	006	006-0000-B/0	006-0000-B/0.400	0.40			$0.4M/km * 0.40km = $0.16M	Remark the wide lanes to a narrow width, horizontal and vertical deflection and urban road furniture to make the proposed 40km/h more understandable.

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