







Speed Management Consultancy Services Panel Technical Assessment Report - SH5 Taupo to Bay View

Rev 1 - October 2020

Contents

	1.	Executive Summary1	
	2.	Introduction	
		2.1 Background	
		2.2 Site Location	0
	3.	Adjacent Projects4	ント
	4.	Technical Assessment	
		4.1 Desktop Technical Assessment Results	
		4.2 Side Road Assessment	
		4.3 Crash History	
		4.4 Speed Environment	
	5.	Discussion	
		5.1 Site Review	
		5.2 Recommended Safe and Appropriate Speed	
		5.3 Recommended Speed Limit Threshold Change Points	
	6.	Infrastructure Investment	
	7.	Safety in Design	
	8.	Conclusion16	
	Арр	pendix A – Technical Assessment	
	Арр	pendix B – Threshold Locations	
RELEA	Арр	Sendix C - Report Addendum Final reconical Assessment Following N2 TA Review	

1. Executive Summary

The NZ Transport Agency Safe Speed Programme is part of the speed and infrastructure response to the national road safety strategy to improve the safety of high-risk roads. The key outcome is to have safe and appropriate speeds that reflect corridor function, design, safety, and use. This includes performing technical assessments on the top 10% of the network that will result in the greatest reduction in deaths and serious injuries.

This technical assessment focuses on the SH5 Taupo to Bay View corridor. It is a 122 km corridor located in the Taupo and Hastings Districts, between Taupo, in the Waikato Region, and Bay View, in the Hawke's Bay Region. It extends from SH005-0137/0.000 to SH005-0249/12.464. The SH5 corridor is classified as 'Regional Strategic' under the One Network Road Classification.

The corridor starts at the eastern side of Taupo, at the intersection with SH1, and is relatively straight and flat as it travels through rural farmland and forest blocks. After passing through the regional boundary, the corridor becomes more winding and passes through steeper terrain. There are some small rural settlements along the western part of the corridor, before the corridor terminates at the intersection with SH2, in Bay View.

As part of the overall assessment of the corridor, adjacent projects that could potentially affect the implementation of the Safe Speed Programme were also considered. This included understanding the drivers of the projects and considering how the corridor being assessed ties into the wider context and strategy for the area. The consultant is aware of some adjacent projects currently proposed along this corridor of SH5, including SNP and / or BOOST projects.

The safe speed technical assessment of the SH5 Taupo to Bay View corridor was separated into six homogeneous network sections, based on their common and distinct features, such as alignment, land use and intersection density. Each of the six sections were evaluated via desktop analysis to determine the safe and appropriate speed (SaAS). The SaAS for each section shown in the MegaMaps tool was assessed directly against the Speed Management Guide, based on the road classification, road safety metrics (personal and collective risk) and the infrastructure risk rating (IRR) score. Both values were considered when recommending the SaAS for each section.

The results of the assessment indicate the recommended SaAS for section 1 is to be retained at 100 km/h. However, the carriageway is not median divided and would require other infrastructure improvements to justify retaining the 100 km/h posted speed limit. It is recommended an 80 km/h posted speed is installed for section 1, until such time that further infrastructure improvements are implemented. Additional measures will likely be required to maintain speeds close to the proposed speed limit of 80 km/h given the existing average speeds along section 1 are currently 90-95 km/h.

The recommended SaAS for sections 2, 4 and 5 is 80 km/h. The highway has an existing posted speed limit of 100 km/h and a medium IRR band for these three sections. The curved alignment of these rural sections with few accessways and some roadside hazards, such as trees, embankments, and drainage channels dictate a lower SaAS limit. A lower speed limit is also supported by the crash history and current mean operating speeds, which range from 75 km/h to 90 km/h.

The results of the Speed Management Guide (SMG) assessment show the recommended SaAS for section 3 is less than 80 km/h. The current posted speed limit is 100 km/h. Although the SMG suggests a SaAS of less than 80 km/h based on IRR band, it is sensitive to the roadside hazards as there are still some unprotected embankments along this section. It is recommended an 80 km/h posted speed limit is installed, with some infrastructure improvements, to retain consistency throughout the network. The speed data also shows vehicles may be naturally slowed by the alignment and vertical grade of the highway.

The results of the SMG assessment show the recommended SaAS for section 6 is 80 km/h. This is primarily due to the medium-high IRR band. A speed of 80 km/h would be consistent with the surrounding network and the mean operating speeds, which are between 80 km/h and 90 km/h. Additional infrastructure investment is recommended to improve safety and reduce speeds.

Other factors and characteristics of the corridor were also assessed, such as crash history, current operating speeds, accessways and intersection density. The mean operating speeds described in MegaMaps ranged from 75-95 km/h in the open road sections of rural highway to 65-75 km/h on more winding section of highway. Side roads were also assessed for any re-routing likelihood, which was deemed to be low for this corridor.

In addition to new and upgraded thresholds, it is also recommended to consider several infrastructure improvements along the corridor to compliment the speed changes. These include considering the following safety improvements; localise shoulder widening, line marking improvements e.g. wide edgeline and / or wide centreline, and additional roadside safety barrier.

This technical assessment has been undertaken via desktop analysis only. It is recommended a site visit be undertaken at a later stage to verify and confirm the results of the desktop technical assessment. A map of the proposed SaAS recommendations for the corridor is shown below in Figure 1.

Following review by NZTA, no further technical assessment was deemed required for this section of SH5. The results of the review (and corridor decision form) have been included in a short addendum to this report, attached in **Appendix C**.



Figure 1 - Proposed Safe and Appropriate Speed Limits for SH5 Taupo to Bay View

2. Introduction

2.1 Background

Urban Connection (UCL) has been commissioned to investigate and complete a safe speed technical assessment for a state highway corridor as part of the NZ Transport Agency Safe Speed Programme.

The Safe Speed Programme is focused on reducing deaths and serious injuries by treating the top 10% of the network. The programme aims to have safe and appropriate speeds that reflect corridor function, design, safety, and use.

The purpose of this report is to detail the safe speed technical assessment of the State Highway 5 (SH5) Taupo to Bay View corridor. The technical assessment has been carried out as a desktop analysis using the Speed Management Guide, the Infrastructure Risk Manual, network video and the MegaMaps GIS platform.

2.2 Site Location

The SH5 corridor being assessed is located in the Taupo and Hastings Districts, between Taupo, in the Waikato Region, and Bay View, in the Hawke's Bay Region. It also passes through the Bay of Rienty Region. The total length of the assessment is 122 km between SH005-0137/0.000 and SH005-0249/12,464.

The One Network Road Classification (ONRC) for the SH5 corridor is classified as 'Regional Strategic'. The corridor starts at the eastern side of Taupo, at the intersection with SH1, and is relatively straight and flat as it travels through rural farmland and forest blocks. After passing through the regional boundary, the corridor becomes more winding as it passes through steeper terrain. There are some small rural settlements along the western part of the corridor, before the corridor terminates at the intersection with SH2, in Bay View.

Following site information provided by the NZ Transport Agency, the corridor has been broken down into six homogenous sections for the technical assessment, reflecting the key changes in environment along the corridor. The homogenous sections are outlined below in Table 1. An aerial image showing the six homogeneous sections is also shown below, in Figure 2.

	Network Section No.	State Highway	Route Position Start	Route Position End	Length (km)	Corridor ID (MegaMaps Edition II)
	1	5	0137/0.000	0169/8.980	41.08	005_2691 005_2692 005_2684 005_62786
	2	5	0169/8.980	0169/17.160	8.18	005_62786
	3	5	0169/17.160	0190/5.500	9.59	005_62786 005_64534
	4 FASED	5	0190/5.500	0204/9.500	17.25	005_2685 005_2698 005_2699 005_2701 005_2700 005_2702
4	5	5	0204/9.500	0249/7.000	40.90	005_2702 005_2695
イ	6	5	0249/7.000	0249/12.464	5.46	005_2695 005_75966

Table 1 – Homogeneous Network Section Summary for SH5 Taupo to Bay View

Following an assessment of the existing and new speed threshold locations, recommendations have been made as to the most appropriate location for change points and logical extents for speed limits to be set. In addition, the adjacent sections of highway were also reviewed further to confirm the change points and to ensure any future speed limit change would provide good consistency along the corridor length.



Figure 2 – Aerial Image of the consider homogeneous sections for SH5 Taupo to Bay View

3. Adjacent Projects

As part of the overall assessment of the corridor, it is important to consider any projects in or near the area that may influence the implementation of the safe speed programme.

Adjacent projects that were considered as potentially affecting the SH5 corridor are as follows:

- NOC Projects (Maintenance)
- Safety Boost Programme
- Local Council Projects

The consultant is aware of Boost 2 works which have recently been completed on SH5. Boost 3 works are also planned for this corridor, as shown below in Figure 3. Works have included installation of ATP, curve signage upgrade, and some additional roadside barrier improvements. It is expected that general maintenance activities will continue to be undertaken as part of the NOC Maintenance Contract. Early identification and discussion with the relevant parties should continue to be undertaken to reduce the risk of conflicts and impact and investigate opportunities for any potential cost sharing.



Figure 3 – BOOST improvements to the SH5 Taupo to Bay View corridor

Technical Assessment 4.

4.1 Desktop Technical Assessment Results

A desktop assessment of the corridor was carried out using the template provided in the assessment brief and is attached in Appendix A.

rtres And the second se A summary of the technical assessment results shown below, in Table 2.

Table 2 – Teo	chnical Assess	ment Summary for Sl	H5 Taupo to Bay View							
Network Section No.	State Highway	Route Position Start	Route Position End	Length (km)	Corridor ID	Physical Description	Existing Posted Speed Limit	Safe and Appropriate Speed (MegaMaps Edition II)	Assessed Safe and Appropriate Speed Limit	Com
1	5	0137/0.000	0169/8.980	41.08	005_2691 005_2692 005_2684 005_62786	SH1 Intersection to Hawke's Bay Region / Iwitahi	100	100 & 80	100	• 9 • 0 9 • M
2	5	0169/8.980	0169/17.160	8.18	005_62786	lwitahi to Start of Descent to Tarawera	100	100 & 80	80	• 5 • 0 • 0 • 0 • 0 • 0 • 0 • 0 • 0 • 0 • 0
3	5	0169/17.160	0190/5.500	9.59	005_62786 005_64534	Descent to Tarawera	100 ORMA	80	<80	 S Q Q Q Q Q Q Q N k
4	5	0190/5.500	0204/9.500	17.254	005_2685 005_2698 005_2699 005_2701 005_2700 005_2702	Tarawera to straight south of Te Haroto	100	80	80	 S Q Q Q Q Q Q Q N k
5	5	0204/9.500	0249/7.000	40.908	005_2702 005_2695	Te Haroto straight to Eskdale	100	80	80	• 5 • 0 • 0 8 • M
6	5	0249/7.000	0249/12.464	5.464	005_2695 005_75966	Eskdale to SH2 Intersection	100	80	80	• 5 • 0 • 0 9 • M k
				DELEAS	5ED C					

ment

- SMG technical assessment suggests SaAS = 100 Current mean operating speeds from MegaMaps are 95-100 km/h
- Mooven data indicates average speeds between 90-95 km/h
- SMG technical assessment suggests SaAS = 80 Governing factor is IRR
- Current mean operating speeds from MegaMaps are 95-100 km/h
- Mooven data indicates average speeds between 85-90 km/h
- SMG technical assessment suggests SaAS < 80 Governing factor is IRR
- Current mean operating speeds from MegaMaps are 70-74 km/h
- Mooven data indicates average speeds between 65-75 km/h
- SMG technical assessment suggests SaAS = 80 Governing factor is personal risk
- Current mean operating speeds from MegaMaps are 75-79 & 90-95 km/h
- Mooven data indicates average speeds between 75-85 km/h
- SMG technical assessment suggests SaAS = 80 Governing factor is IRR
- Current mean operating speeds from MegaMaps are 85-89 & 90-94 km/h
- Mooven data indicates average speeds between 75-85 km/h
- SMG technical assessment suggests SaAS = 80 Governing factor is IRR
- Current mean operating speeds from MegaMaps are 90-94 & 85-89 km/h
- Mooven data indicates average speeds between 80-90 km/h

4.2 Side Road Assessment

As part of the technical analysis for the corridor, all side roads were assessed to understand wider impacts and any local road coordination that may be required to support the success of the programme. These are recorded in Table 3.

Side Road Name	Intersection Route Position	Network Section No.	Posted Speed Limit	Potential for Re - Routing	Comments
Mountain Rd	005-0137/2.833	1	100	No	No exit
Caroline Dr	005-0137/3.580	1	100	No	No exit
Motukino Rd	005-0150/1.360	1	'LSZ'	No	Forestry Access Road
High Level Rd	005-0150/5.050	1	90	No	Main Forestry Road
Low Level Rd	005-0150/8.337	1	-	No	Forestry Access Road
Taharua Rd	005-0150/10.573	1	100	No	No exit
Rangitaiki School Rd	005-0150/18.275	1	100	No	No exit
Matea Rd	005-0169/7.542	1	100	No	Unsealed access roadNo exit
Pohukura Rd	005-0169/14.607	2	- ,	No	
Pohukura Rd	005-0190/1.527	3	100	No	
Tataraakina Rd	005-0190/7.484	4	100	No	
Paratu Rd	005-0190/11.086	4	- 11 -	No	No exit
Kowaro Rd	005-0204/0.766	4	-	No	
Turangakumu Rd	005-0204/6.308	4	100	No	
McVicar Rd	005-0204/13.994	5	100	No	No exit
Waitara Rd	005-0220/1.897	5	100	No	
Te Pohue Loop Rd	005-0220/11.623	5	100	No	
Ohurakura Rd	005-0220/13.030	5	100	No	No exit
Rukumoana Rd	005-0233/1.936	5	100	No	No exit
Old Taupo Coach Rd	005-0233/2.011	5	100	No	• No exit
Palmer Rd	005-0233/2.798	5	-	No	No exit
Glengarry Rd	005-0233/12.668	5	100	Yes	
Beattie Rd	005-0249/3.403	5	100	No	No exit
Ellis Wallace Rd	005-0249/5.304	5	100	No	No exit
Waipunga Rd	005-0249/7.128	6	100	No	
Shaw Rd	005-0249/7.591	6	50	No	No exit
Hedgeley Rd	005-0249/8.159	6	100	Yes	
Yule Rd	005-0249/8.473	6	100	No	No exit
Linden Close	005-0249/8.997	6	100	No	No exit
Hill Rd	005-0249/10.066	6	100	Yes	
Eskdale Ln	005-0249/10.693	6	100	No	No exit
State Highway 2	005-0249/12.450	6	100	No	

Table 3 – Side Road Summary for SH5 Taupo to Bay View

It shows that the potential for traffic to re-route, where drivers choose an alternate route to avoid any lower speed limit, is low. This is to be expected as SH5 is the main east-west regional strategic route between the main centres of Taupo and Napier, with few alternatives.

Where a speed limit change is recommended and implemented, the side roads will need to be sign-posted accordingly. In addition to adjusting existing speed signage, the side roads where there is currently no speed signage will need to be sign posted to define the legal limit. For example, where there the speed limit is currently a continuation of the rural state highway speed limit, speed signage will need to be placed on the side road if the speed changes on the state highway. As this affects the local community, it is important this is identified early in the speed management process.

4.3 Crash History

-7108 The NZ Transport Agency Crash Analysis System (CAS) database was used to obtain details of all crashes recorded for a 10-year period from 2010 to 2019 inclusive within each homogeneous network section. The recorded crash history for the corridor is summarised below, in Table 4.

Section	Total		Total DSI			
No.	Crashes	Fatal	Serious	Minor	Non-Injury	Casualties
1	118	2	12	38	66	22
2	37	0	1	10	26	
3	111	0	10	34	67	11
4	116	5	7	36	68 🔨	17
5	220	3	19	59	139	33
6	39	1	6	7	25	7
Total	641	11	55	184	391	91

Table 4 – 10-Year Crash History by Network Section No. (2010-2019 Inclusive)

A total of 11 fatal crashes and 55 serious crashes have occurred within the corridor length assessed. Further investigation shows 67% of all crashes involved bend – loss of control / head on type crashes and 15% involved straight – loss of control / head on type crashes. Of note is the higher proportion of DSI crashes in section 3, which makes up only 7.8% of the total length of the corridor, but accounts for 15% of the total DSI crashes and has lower traffic volumes than the surrounding sections.

Speed was recorded as being a factor in 23% of total crashes. Poor handling, poor observation, poor judgement, incorrect lanes or position and road factors were recorded as the highest percentage contributing factors. Approximately 67% of crashes were during light / overcast conditions and 46% in dry conditions.

A review of the crashes in 2020 was also undertaken. Three fatal crashes and four serious crashes were recorded in the database. All the fatal crashes and three of the serious crashes were in sections 4 and 5, with the fourth serious crash in section 3.

It should be noted that the GAS records do not indicate any un-reported crashes.

Speed Environment 4.4

Mean operating speeds were obtained from the MegaMaps tool and compared against current average speed data provided by Mooven (using Google traffic data) from Tuesday 1 September 2020 to Thursday 10 September 2020. The average speed for a vehicle travelling in each section by time of day is shown below, in Figure 4 and Figure 5, and the two speed data sets are summarised below, in Table 5.

Average Speed



Figure 4 – Average speed for sections 1 – 3 (both increasing and decreasing directions) by time of day (Source: Mooven)



Figure 5 - Average speed for section 4 - 6 (both increasing and decreasing directions) by time of day (Source: Mooven)

Figure 3 shows that for section 1 the mean operating speeds are generally greater than 90 km/h. This is consistent with both the existing speed limit and suggested SaAS limit of 100 km/h. The mean operating speeds for section 2 are approximately 85 km/h. This contrasts with section 3, where the highway becomes more winding, which has an average speed of approximately 70 km/h. This shows that for sections 2 and 3, the mean operating speeds are currently lower than the existing posted speed limit of 100 km/h and more in line with the suggested SaAS limits of 80 km/h.

Figure 4 shows the mean operating speeds through sections 4 and 5, are approximately 75 km/h to 85 km/h. This is expected for the alignment and typical cross-section of the corridor. The speeds are lower than the current posted speed limit of 100 km/h and more in line with the suggested SaAS limit of 80 km/h.

The results also show that section 6 has a mean operating speed of approximately 85 km/h. This is a slightly higher average speed compared to section 4 and 5. Although a reduction in the operating speeds is expected, due to the increased development in section 6, there is an increase. This may be due to the improved visibility and a continuation of the higher speeds on SH2. Further analysis of the Mooven data shows the speeds in the decreasing direction (westbound away from Bay View) being noticeably higher than those in the increasing direction (eastbound towards Bay View). The results show the mean operating speeds are lower than the current posted speed limit of 100 km/h, but higher than the suggested SaAS of 80 km/h. Further improvements may be required to reduce speeds through this section.

It should be noted that, even in the absence of any physical changes to a road environment, the introduction of a lower posted speed limit typically results in a small reduction in observed mean speeds. Therefore, it is likely that the recommended lower speed limits for three sections would improve the currently observed speed behaviour further.¹

Network Section No.	Posted Speed Limit (km/h)	Mean Operating Speed (km/h, MegaMaps)	Mean Operating Speed (km/h, Mooven)	Corridor ID	Comments			
1	100	95-100	90-95	005_2691 005_2692 005_2684 005_62786	Straight section of SH5 with wider shoulders through rural farmland and forest area			
2	100	95-100	85-90	005_62786	Curved section through forest area			
3	100	70-74	65-75	005_62786 005_64534	Winding section with steep ascent/ descent Increasing direction (descent) with higher speeds			
4	100	75-79 90-95	75-85	005_2685 005_2698 005_2699 005_2701 005_2700 005_2702	Curved section through forest area			
5	100	85-89 90-94	75-85	005_2702 005_2695	Curved section through rural farmland			
6	100	90-94 85-89	80-90	005_2695 005_75966	Rural residential area of Eskdale End of corridor at intersection with SH2			
Discus	Discussion							

Table 5 – Mean Operating Speeds for SH5 Taupo to Bay View

Discussion 5.

5.2

5.1 Site Review

A site visit was not undertaken as it was agreed with the client that this would not form part of stage 1. Therefore, the technical assessment has been undertaken via desktop analysis and review only. As part of this desktop assessment, the NZ Transport Agency network video was used and the latest footage available was from November 2019.

It is recommended a site visit is undertaken at a later stage to confirm the results of the desktop technical assessment.

Recommended Safe and Appropriate Speed

The safe and appropriate speed (SaAS) for each section was initially extracted from the MegaMaps tool, as shown in Table 2. However, following further desktop investigation, it was determined these speeds may not be appropriate as the corridor was split further into six homogeneous sections. It was also noted that some of the input values in MegaMaps did not match the actual values of the assessed site, such as land use, alignment, road width and accessway density.

¹ Koorey G. (2019) The Mechanics and Politics of Changing a Speed Limit

As such, the SaAS was assessed directly using the Speed Management Guide (SMG), based on the road classification, road safety metrics (personal risk and collective risk) and infrastructure risk rating (IRR) score to determine the recommended SaAS. The assessed SaAS for each section is summarised in Table 2.

The results of the SMG assessment show the recommended SaAS for section 1, east of Taupo, is to be retained at 100 km/h. This is a result of low personal and collective risk and a low-medium IRR score, primarily due to only moderate roadside hazards and wider shoulders along this straight section of the SH5 corridor, as shown in Figure 6. Although a 100 km/h posted speed would match the existing speed and the classification in the SMG, the carriageway is not median divided and would require other infrastructure 10MACT 1982 improvements to justify retaining the 100 km/h posted speed limit. It is recommended an 80 km/h posted speed is installed for section 1, until such time that further infrastructure improvements are implemented.



Figure 6 – Example of section 1 (source: NZTA Network Video)

RELEASE

The recommended SaAS for sections 2, 4 and 5 is 80 km/h. The road environment is more curved and typical of a rural highway with few accessways and some roadside hazards, such as trees, embankments, and drainage channels Examples of this are shown in Figure 7, Figure 9, and Figure 10. The highway has an existing posted speed limit of 100 km/h and a medium IRR band for these three sections. A lower speed limit is supported by the crash history and current mean operating speeds, which range from 75 km/h to 90 km/h.

The results of the SMG assessment show the recommended SaAS for section 3 is less than 80 km/h. The current posted speed limit of 100 km/h. This section was considered separate to the adjacent sections for the purpose of the assessment as it is more winding than the surrounding sections, as shown in Figure 8. Although the SMG suggests a SaAS of less than 80 km/h based on IRR band, it is sensitive to the roadside hazards as there are still some unprotected embankments along this section. Additionally, the mean operating speed data suggests vehicles may be naturally slowed by the alignment and vertical grade of the highway. It is recommended an 80 km/h posted speed limit is installed, with some infrastructure improvements, to retain consistency throughout the network.



Figure 7 - Example of section 2 (source: NZTA Network Video)



Figure 8 - Example of section 3 (source NZTA Network Video)



Figure 9 - Example of section 4 (source: NZTA Network Video)



Figure 10 - Example of section 5 (source: NZTA Network Video)

The results of the SMG assessment show the recommended SaAS for section 6, through the rural residential area of Eskdale, is 80 km/h. This is primarily due to the medium IRR band, with a mix of vegetation, power poles and other structures present as roadside hazards, as shown in Figure 11. A speed of 80 km/h would be consistent with the surrounding network and the mean operating speeds, which are between 80 km/h and 90 km/h. Additional infrastructure investment is recommended to improve safety and encourage lower speeds.

NACT 1982



Figure 11 - Example of section 6 (source: NZTA Network Video)

5.3 Recommended Speed Limit Threshold Change Points

The recommended speed limit change points were determined by reviewing the existing locations, land use information, accessways and the network video. Locations have been identified where the signs are clearly visible to road users and where they have enough time to react to them. The locations are accurate to the nearest five metres, taken from the network video. These are summarised along with any proposed changes in Table 6, below.

In addition to the thresholds, repeater signs should be installed at regular intervals that indicate the speed limit when it is above 50 km/h but below 100 km/h, as per Table 1 of the Land Transport Rule Setting of Speed Limits 2017. This means the maximum length of road between signs for a speed limit of 80 km/h proposed in this assessment is 2.7 km.

Table 6 – Threshold Locations for SH5 Taupo to Bay View

Existing Threshold Location	Speed (Increasing / Decreasing)	Comments
005-0130/0.300 (proposed)	-	Proposed 80/100 thresholdExisting speed is 100 km/h
005-0249/12.060 (proposed)	-	Proposed 100/80 thresholdExisting speed is 100 km/h

6. Infrastructure Investment

The indicative infrastructure investment scenario for each treatment philosophy for each of the homogenous sections is summarised below, in Table 7. The client brief provided estimated costs per km for specific safety interventions for safe system transformation, safer corridors, and safety management.

8

Network Section No.	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)
1	41.08	\$106,808,000	\$51,350,000	\$16,432,000
2	8.18	\$21,268,000	\$10,225,000	\$3,272,000
3	9.59	\$24,934,000	\$11,9 87,500	\$3,836,000
4	17.25	\$44,860,400	\$21,567,500	\$6,901,600
5	40.91	\$106,360,800	\$51,135,000	\$16,363,200
6	5.46	\$14,206,400 🔨	\$6,830,000	\$2,185,600
Total	122.48	\$318,437,600	\$153,095,000	\$48,990,400

The above figures reflect the total cost of each safety intervention treatment if they were applied along the entire corridor. For this project, there may be sections of the corridor where these investment scenarios could be applied. For example, section 2 and 3 already contain large lengths of roadside barrier and would only require minor additional roadside barrier to fully protect the roadside hazards.

It is expected any proposed changes in speed for this corridor is also likely to require some infrastructure improvements to help ensure mean speeds are closer to the proposed SaAS of 80km/h. Through the desktop review, several possible additional infrastructure improvements have been identified and may be considered as part of the speed management solution for the corridor. These are summarised below, in Table 8.

Table 8 – Infrastructure Improvements Summary

Network Section No.	\checkmark	Infrastructure Improvements
ASEDUN	•	Install additional speed repeater signs Consider shoulder widening and the installation of a central median barrier (where practical to install) Consider further line marking improvements, e.g. wide edgeline and / or wide centreline, extending existing ATP edgeline and centreline markings
2	• • •	Install threshold speed signs Install additional speed repeater signs Consider further line marking improvements, e.g. wide edgeline Consider extending the roadside barrier to protect steep embankment hazards
3	•	Install threshold speed signs and consider pavement marking symbols at the speed change point where the road surface is suitable Consider further line marking improvements, e.g. wide edgeline Consider extending the roadside barrier to protect steep embankment hazards
	Network Section No.	Network Section No.

Network Section No.	Infrastructure Improvements
4	 Install additional speed repeater signs Consider further line marking improvements, e.g. wide edgeline Consider passing lane improvements, such as lengthening and improving deficient merge/diverge areas
5	 Install additional speed repeater signs Consider further line marking improvements, e.g. wide edgeline Consider passing lane improvements, such as lengthening and improving deficient merge/diverge areas
6	 Install threshold speed signs and consider pavement marking symbols at the speed change point where the road surface is suitable Consider localised shoulder widening Consider further line marking improvements, e.g. wide edgeline Consider removing, relocating or protecting roadside hazards, such as drainage ditches, power poles and vegetation

7. Safety in Design

Safety in design has not been undertaken during this first stage. The project is at a desktop assessment stage only, with no design required. It is proposed to undertake a project wide safety in design assessment and then analyse each individual section at the design stage of the project.

8. Conclusion

The results of the assessment indicate the recommended SaAS for section 1 is to be retained at 100 km/h. However, the carriageway is not median divided and would require other infrastructure improvements to justify retaining the 100 km/h posted speed limit. It is recommended an 80 km/h posted speed is installed for section 1, until such time that further infrastructure improvements are implemented.

The recommended SaAS for sections 2, 4 and 5 is 80 km/h. The highway has an existing posted speed limit of 100 km/h and a medium IRR band for these three sections. The curved alignment of these rural sections with few accessways and some roadside hazards, such as trees, embankments, and drainage channels dictate a lower SaAS limit. A lower speed limit is also supported by the crash history and current mean operating speeds, which range from 75 km/h to 90 km/h.

The results of the SMG assessment show the recommended SaAS for section 3 is less than 80 km/h. The current posted speed limit of 100 km/h. Although the SMG suggests a SaAS of less than 80 km/h based on IRR band, it is sensitive to the roadside hazards as there are still some unprotected embankments along this section. It is recommended an 80 km/h posted speed limit is installed, with some infrastructure improvements, to retain consistency throughout the network. The speed data also shows vehicles may be naturally slowed by the alignment and vertical grade of the highway.

The results of the SMG assessment show the recommended SaAS for section 6 80 km/h. This is primarily due to the medium-high IRR band. A speed of 80 km/h would be consistent with the surrounding network and the mean operating speeds, which are between 80 km/h and 90 km/h Additional infrastructure investment is recommended to improve safety and reduce speeds.

In addition to new and upgraded thresholds, it is also recommended to consider several infrastructure improvements along the corridor to compliment the speed changes. These include considering the following safety improvements; localised shoulder widening, line marking improvements e.g. wide edgeline and / or wide centreline, and additional roadside safety barrier.

A map of the proposed SaAS recommendations for the corridor is shown below in Figure 12.



Figure 12 - Proposed Sale and Appropriate Speed Limits for SH5 Taupo to Bay View



С 너는는 RELEASED UNDER THE OFFICIAL INFORMATION ACT 1982

Appendix A – Technical Assessment

18 | Urban Connection Limited | Speed Management Consultancy Services Panel | Technical Assessment Report – Site 12





The purpose of this for speed.	NZTA Speed Manage Based or rm is to document the technical assessment of a state highway netwo	ement Technic Word Document Ve ork section to deter	cal Assessmen rsion 0.2 rmine the safe and a	t Form	Legend Manual Input Req Automatic Inp NZ Transport Agend Select from Dropdo
1. Title		SH5 Tau	ipo to Napier	ONA	
Date	4/09/2020	Revision		OK I	RevA
<u>[</u>				$\langle \cdot \rangle$	
	2. Speed Man	agement Review M	anager Details		
Name		Phone	A		
Title		Mobile	, CN		
Organisation		Email			
	Safe Spe	ed Project Manage	Details		
Name		Phone			
Title		Mobile			
Organisation		Email			
	Safe Spee	d Technical Review	er Details		
Name		Phone			
Title		Mobile			
Organisation	\sim	Email			
	3. Techn	ical Assessment Tea	am Details		
	Assessor			Reviewe	
Name	section 9(2)(a) p	Name			section 9(2)(a) privat
Title	Transportation Engineer	Title		Principa	l Transport Engineer
Organisation	Urban Connection Ltd	Organisation		Urba	In Connection Ltd
Date	4/09/2020	Date			9/09/2020
Notes	-	Notes			-





4. Technical Assessment Summary									
Network Section No.	State Highway	Route Position		Length (km)	Corridor ID (MegaMaps Edition II)	Physical Description	Posted Speed Limit	Safe and Appropriate Speed (MegaMaps Edition II)	Assessed
1	5	0137/0.000	0169/8.980	41.08	005_2691 005_2692 005_2684 005_62786	SH1 Intersection to Hakwe's Bay Region / Iwitahi - Long straight sections through rural farmland and forest blocks, narrow shoulders, some roadside hazards	100	100,98	
2	5	0169/8.980	0169/17.160	8.18	005_62786	lwitahi to Start of Descent to Tarawera - Change in road alignment to curved, increased roadside hazards	100,07	80	
3	5	0169/17.160	0190/5.500	9.59	005_62786 005_64534	Descent to Tarawera - Steeper descent and winding alignment	100	80	
4	5	0190/5.500	0204/9.500	17.254	005_2685 005_2698 005_2699 005_2701 005_2700 005_2702	Tarawera to straight south of Te Haroto - Curved alignment, some minor residential and commercial activity, some steepr more winding sections, but generally curved	100	80	
5	5	0204/9.500	0249/7.000	40.908	005_2702 005_2695	Te Haroto straight to Eskdale - Curved alignment through rural farmland	100	80	
6	5	0249/7.000	0249/12.464	5464	005_2695 005_75966	Eskdale to SH2 Intersection - Rural residential area on the outskirts of Napier	100	80	
·			RELEP		•				





	5. Map of State Highway Speed Management Technical Assessment Summary
<u> </u>	

8°



6. Homogeneous Network Section Review Summary											
Network Section No.	State Highway	Route Position		Route Position		Route Position		Length (km)	Corridor ID (MegaMaps Edition II)	Match? Yes/No	State reasons why assessed section does not ma II section
		Start	End								
1	5	0137/0.000	0169/8.980	41.08	005_2691 005_2692 005_2684 005_62786	No	Homogeneous section considered to be different shown in MegaMaps				
2	5	0169/8.980	0169/17.160	8.18	005_62786	No	Homogeneous section considered to be different shown in MegaMaps				
3	5	0169/17.160	0190/5.500	9.59	005_62786 005_64534	No	Homogeneous section considered to be different shown in MegaMaps				
4	5	0190/5.500	0204/9.500	17.25	005_2685 005_2698 005_2699 005_2701 005_2700	No M	Homogeneous section considered to be different shown in MegaMaps				
5	5	0204/9.500	0249/7.000	40.91	005_2702 005_2695	No	Homogeneous section considered to be different shown in MegaMaps				
6	5	0249/7.000	0249/12.464	5.46	005_2695 005_75966	No	Homogeneous section considered to be different shown in MegaMaps				

RELEASED UNDER

ch MegaMaps Edition
o the section lengths

7. Safe and Appropriate Speed Classification Assessment								
Network Section No.	Classification Method (Urban or Rural)	Network Function / Feature	Road Sat Personal Risk	fety Metric Collective Risk	Infrastructure Risk Rating IRR Score IRR Band		Assessed Safe and Appropriate Speed	Comment
1	Rural	Regional	Low	Low	1.03	Low-Medium	100	2
2	Rural	Regional	Low	Low	1.49	Medium	80	CT 190
3	Rural	Regional	Medium	Medium	1.78	Medium-High	<80	A
4	Rural	Regional	Medium	Low-Medium	1.38	Medium	MA80	
5	Rural	Regional	Low	Low-Medium	1.29	Medium	80	
6	Rural	Regional	Medium-High	Medium-High	1.55	Medium	80	

RELEASED UNDER THE RELEASED

			8. Infrast	ructure Risk Rating Asse	ssment		
			8.	1. Network Section No. 1			
Route Position Start	0137/0.000	Route Po	sition End 0169/8.980	Length (km) 41.0	8	Classification Method:	Rural
Network	Section Description	1	SH1 Intersection to Hakwe's Bay	Region / Iwitahi - Long straig	ht sections through rural fa	armland and forest blocks, narro	w shoulders, some roadside hazards
	Field		MegaMaps Edition II Value	MegaMaps Eo UPDATED	dition II Value SECTION	Assessed Value	Comments
Road Stereotype			Two lane undivided	Two lane undivided		Two lane undivided	
Alignment			Straight	Straight		Straight	
	Lane Width		Wide (>3.5m)	Wide (>3.5m)		Medium (3.0m to 3.5m)	3.5m lanes
Carriageway	Shoulder Width		Narrow shoulder (0.5m to 1.0m)	Narrow shoulder (0.5m to	1.0m)	Narrow shoulder (0.5m to 1.0m) Varies, average approx. 0.5m, ATP EL present
Roadside Hazards	Left		High	High		Moderate	Varies, but generally traversable slope, some vegetation and shallow drainage
	Right		Moderate	Moderate	\diamond	Moderate	
Land Use	1		Rural residential	Rural residential	<u>ک</u> 0,	Remote rural	MegaMaps has multiple sections within this section
Intersection Density			<1 intersection / km	<1 intersection / km	,7'	<1 intersection / km	
Accessway Density			2 to <5 intersections / km	2 to <5 intersections / km		<1 intersection / km	
AADT			1,000 <6,000 veh/day	1,000 <6,000 veh/day	1,000 <6,000 veh/day		453
RR Score		1.24	1.24		1.03	*Calculated manually due to MegaMaps error	
IRR Band	and		Medium	Medium		Low-Medium	
Personal Risk	l Risk		Low-Medium	Low		2.06 Low	
Collective Risk	k		Low-Medium	Low-Medium		0.03 Low	
Safe and Appropriate Spee	ed (NZTA SMG)		80	80 100		Original Megamaps has a section with SaAS value of 100km/h	
10-year CAS Reported Cra	S Reported Crash History (2010 - 2019 inclusive) DSIs (Actual no. of death and serious injury casualties)		DSIs (Actual no. of death and serious injury casualties)	Total no. of Fatal 2 Crashes		Total no. of Serious Crashes	12
Additional Information Re	lated to Assessmen	t	S				·
Rangitaiki School off side ro	oad		Returned and the second s				



oadside hazards
Comments
rage approx. 0.5m, ATP
generally traversable e vegetation and inage
has multiple sections section
4539
manually due to error
gamaps has a section alue of 100km/h
12

				8.2	. Network Section N	No. 2			
Route Position Start	e Position Start 0169/8.980 Route Po		sition End	sition End 0169/17.160 Length (km) 8.18			Classifi	cation Method:	Rural
Networ	k Section Description			lwitahi	to Start of Descent to) Tarawera - Change in road alig	nment to curved, ir	ncreased roadside haza	ards
Field		MegaMaps Edition II Value		MegaN UP	Aaps Edition II Value DATED SECTION	Asse	Assessed Value		
Road Stereotype			Two lane undivided	l	Two lane undivided		Two lane undivi	ded	
Alignment			Curved		Curved		Curved		
Carriagoway	Lane Width		Wide (>3.5m)		Wide (>3.5m)		Medium (3.0m to	o 3.5m)	
Carriageway	Shoulder Width		Narrow shoulder (0	.5m to 1.0m)	Narrow shoulder (0	.5m to 1.0m)	Very narrow sho	oulder (0.to <0.5m)	
Roadside Hazards	Left		Moderate		Moderate		Moderate	7,	Some embar vegetation, protection
	Right		Moderate		Moderate		High		Some embar vegetation
Land Use			Remote rural		Remote rural		Remote rural		
Intersection Density			<1 intersection / kr	intersection / km		<1 intersection / km		intersection / km	
Accessway Density	ccessway Density		1 to <2 intersections / km		1 to <2 intersections / km		<1 intersection ,	<1 intersection / km	
AADT			1,000 <6,000 veh/day		1,000 <6,000 veh/day		1,000 <6,000 ve	1,000 <6,000 veh/day	
IRR Score			1.2		1.2		1.49		
IRR Band			Medium		Medium		Medium		
Personal Risk			Medium		Low-Medium		0.74	Low	
Collective Risk			Low-Medium		Low		0.01	Low	
Safe and Appropriate Spe	ed (NZTA SMG)		100		80		80		
10-year CAS Reported Crash History (2010 – 2019 inclusive)		DSIs (Actual no. of 1 death and serious injury casualties)		Total no. of Fatal 0 Crashes		Total no. of Serious Crashes			
Additional Information R	elated to Assessment		1		8-				
			2F-F-A						

]
Comments
nkment hazards, long lengths of barrier
nkment hazards,
4539
1

			8.2	2. Network Section	No. 3					
Route Position Start	oute Position Start 0169/17.160 Route Po		osition End 0190/5.500		Length (km) 9.59			Classification Method:		
Networl			Descent to Tarawera - Steeper descent and winding alignment							
Field		MegaMap	MegaMaps Edition II Value		MegaMaps Edition II Value UPDATED SECTION			Assessed Value		
Road Stereotype		Two lane undivid	ed	Two lane undivide	٤d		Two lane undivi	led O	ר	
Alignment		Curved		Curved			Winding			
Carriagoway	Lane Width	Wide (>3.5m)		Wide (>3.5m)			Medium (3.0m to	o 3.5m)		
Carriageway	Shoulder Width	Narrow shoulder	(0.5m to 1.0m)	Narrow shoulder ((0.5m to 1.0m)		Very narrow sho	ulder (0 to <0.5m)		
	Left	Moderate	Moderate		Moderate		Moderate	Ź,	Some steep vegetation, lengths of b	
Roadside Hazards	Right	Moderate	Moderate		Moderate			High		
Land Use	Remote rural			Remote rural			Remote rural			
Intersection Density	ntersection Density		<1 intersection / km		<1 intersection / km		<1 intersection / km			
Accessway Density		1 to <2 intersect	1 to <2 intersections / km		1 to <2 intersections / km		<1 intersection / km			
AADT		1,000 <6,000 vel	1,000 <6,000 veh/day		1,000 <6,000 veh/day		1,000 <6,000 veh/day			
IRR Score	RR Score		1.2				1.78			
IRR Band		Medium	Medium		Medium		Medium-High			
Personal Risk	rsonal Risk		Medium		High		6.29	Medium		
Collective Risk		Low-Medium	Low-Medium		Medium		0.10	Medium		
Safe and Appropriate Speed (NZTA SMG)		80	80		60		<80		IRR band go alignment	
0-year CAS Reported Crash History (2010 – 2019 inclusive)		ve) DSIs (Actual no. death and serior injury casualties	DSIs (Actual no. of 11 death and serious injury casualties)		Total no. of Fatal 0 Crashes		Total no. of Serious Crashes			
Additional Information R	elated to Assessment		5							
-		REFE		7 2						



Comments
embankments, several shorter parrier protection
ooth side, but some d cliff/embankment n warrant high hazard
4539

oeverns. Sensitive to



				8.2.	Network Section No	. 4					
Route Position Start	0190/5.500	Route Po	sition End	0204/9.500	Length (km)	17.25	Classific	cation Method:	Rural		
Network Section Description			Tarawera to strai	Tarawera to straight south of Te Haroto - Curved alignment, some minor residential and commercial activity, some steepr more winding sectio							
Field			MegaMaps Edition II Value		MegaMaps Edition II Value UPDATED SECTION		Asse	essed Value			
Road Stereotype			Two lane undivided	l	Two lane undivided		Two lane undivid	led			
Alignment			Curved		Curved		Curved				
Carriagoway	Lane Width		Wide (>3.5m)		Wide (>3.5m)		Medium (3.0m to	o 3.5m)			
Carriageway	Shoulder Width		Narrow shoulder (0.5m to 1.0m)		Narrow shoulder (0.5	m to 1.0m)	Very narrow shoulder (0 to <0.5m)				
Poodsido Hozarda	Left		Moderate		Moderate		Moderate				
Rudusiue Hazarus	Right	Right		Moderate		Moderate		Moderate			
Land Use		Remote rural		Remote rural		Remote rural					
Intersection Density			<1 intersection / km		<1 intersection / km		<1 intersection / km				
Accessway Density			1 to <2 intersections / km		1 to <2 intersections	/ km 🧳	1 to <2 intersections / km				
AADT			1,000 <6,000 veh/0	day	1,000 <6,000 veh/da	y 🔎	1,000 <6,000 veh/day				
IRR Score			1.2			1.2	1.38		*Calculated MegaMaps		
IRR Band			Medium		Medium		Medium				
Personal Risk		Medium		Medium		6.22	Medium				
Collective Risk			Low-Medium		Low-Medium		0.07	Low-Medium			
Safe and Appropriate Speed (NZTA SMG)			80		80		80		Some short suggest 60		
10-year CAS Reported Crash History (2010 – 2019 inclusive)			DSIs (Actual no. of death and serious injury casualties)	17	Total no. of Fatal Crashes	5	Total no. of Seri	ious Crashes			

Additional Information Related to Assessment

Noted passing lanes at RP190/9.5 - 10.0 have short merge and diverges and poor visibility

RELEASED



				8.2.	Network Section N	lo. 5					
Route Position Start	0204/9.500	Route Po	Position End 0249/7.000		Length (km)	Length (km) 40.91		ication Method:	Rural		
Network Section Description			Te Haroto straight to Eskdale - Curved alignment through rural farmland								
Field			MegaMaps Edition II Value		MegaMa UPD	aps Edition II Value ATED SECTION	Ass	Assessed Value			
Road Stereotype			Two lane undivided	I	Two lane undivided		Two lane undiv	ided			
Alignment			Curved		Curved		Curved				
Comionous	Lane Width		Wide (>3.5m)		Wide (>3.5m)		Medium (3.0m to 3.5m)				
Carriageway	Shoulder Width		Narrow shoulder (0.5m to 1.0m)		Narrow shoulder (0.5	im to 1.0m)	Very narrow shoulder (Q to <0.5m)				
Pondeido Hazarde	Left	Left			High		Moderate				
Rodusiue nazarus	Right	Right		Moderate			Moderate				
Land Use	^		Rural residential		Rural residential		Remote rural				
Intersection Density			<1 intersection / km		<1 intersection / km		<1 intersection	/ km			
Accessway Density			2 to <5 intersections / km		2 to <5 intersections	/ km 🧹	1 to <2 interse	ctions / km			
AADT			1,000 <6,000 veh/day		1,000 <6,000 veh/da	iy 🖉	1,000 <6,000 veh/day				
IRR Score			1.5			1.5	1.29				
IRR Band			Medium		Medium		Medium				
Personal Risk		Medium		Medium		3.31	Low				
Collective Risk			Medium-High		Medium		0.05	Low-Medium			
Safe and Appropriate Speed (NZTA SMG)			80		80		80				
10-year CAS Reported Crash History (2010 – 2019 inclusive)			DSIs (Actual no. of 33 death and serious injury casualties)		Total no. of Fatal 3 Crashes		Total no. of Serious Crashes				
Additional Information	Related to Assessment										

Hukarere College off side road





		8.2.	Network Section No. 6								
Route Position Start	0249/7.000 Route Po	osition End 0249/12.464	Length (km) 5.46	Classification Method:	Rural						
Network Section Description		Eskdale to SH2 Intersection - Rural residential area on the outskirts of Napier									
	Field	MegaMaps Edition II Value	MegaMaps Edition II Value UPDATED SECTION	Assessed Value							
Road Stereotype		Two lane undivided	Two lane undivided	Two lane undivided							
Alignment		Curved	Curved	Curved							
Carriagoway	Lane Width	Wide (>3.5m)	Wide (>3.5m)	Medium (3.0m to 3.5m)							
Carriageway	Shoulder Width	Narrow shoulder (0.5m to 1.0m)	Narrow shoulder (0.5m to 1.0m)	Narrow shoulder (0.5m to 1.0m)	varies, appr						
Roadside Hazards	Left	High	High	Moderate	Generally fla shallow drai power poles						
Roausiue frazarus	Right	Moderate	Moderate	Moderate	Generally fla shallow drai power poles						
Land Use		Rural residential	Rural residential	Rural residential							
Intersection Density		<1 intersection / km	<1 intersection / km	1 to <2 intersections / km							
Accessway Density		2 to <5 intersections / km	2 to <5 intersections / km	5 to <10 intersections / km							
AADT		1,000 <6,000 veh/day	1,000 <6,000 veh/day	1,000 <6,000 veh/day							
IRR Score		1.5	1.56	1.55							
IRR Band		Medium	Medium	Medium							
Personal Risk		Medium	Medium	7.88 Medium-High							
Collective Risk		Medium-High	Medium	0.13 Medium-High							
Safe and Appropriate Spee	ed (NZTA SMG)	80	80	80							
10-year CAS Reported Cra	sh History (2010 – 2019 inclusive)	DSIs (Actual no. of 7 death and serious injury casualties)	Total no. of Fatal Crashes	Total no. of Serious Crashes							
Additional Information Re	lated to Assessment	· //_									
-		RELEA									

Comments
οχ. 0. 5
inage and sturctures, s >5m
at, some vegetation, inage and sturctures, s >5m
4454
- 7
6

9. Homogeneous Segment Infrastructure Scenario										
Network Section 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)	
		Start	End							<u>1</u>
1	5	0137/0.000	0169/8.980	41.08	\$	106,808,000	\$	51,350,000	\$ 16,432,00	0
2	5	0169/8.980	0169/17.160	8.18	\$	21,268,000	\$	10,225,000	\$ 00 A 3,272,00	0
3	5	0169/17.160	0190/5.500	9.59	\$	24,934,000	\$	11,987,500	3,836,00	'O
4	5	0190/5.500	0204/9.500	17.25	\$	44,860,400	\$	21,567,500	\$ 6,901,60	'O
5	5	0204/9.500	0249/7.000	40.91	\$	106,360,800	s	CIAL 51,135,000	\$ 16,363,20	0
6	5	0249/7.000	0249/12.464	5.46	\$	14,206,400	Ş	6,830,000	\$ 2,185,60	⁷ 0
Total				122.48	s	318,437,600	\$	153,095,000	\$ 48,990,40	0
			RELEA	SEDUND	•					



Appendix B – Threshold Locations



RP 005 – 0130 / 0.300 Increasing direction (vieweast) – Proposed 80/100 threshold location



RP 005 - 0130 / 0.300 Decreasing direction (view west) - Proposed 80/100 threshold location



RP 005 – 0249 / 12.060 Increasing direction (view east) – Proposed 100/80 threshold location



Appendix C – Report Addendum **Final Technical Assessment Following NZTA Review** RELEASED UNDER THE OFFICIAL INFORMATION ACT 1982

1. Report Addendum

1.1 **NZTA Review**

REFERSED UNDER THE OFFICIAL INFORMATION ACT 1982 A technical review meeting was not required, as all sections of the technical assessment were agreed for this project. A summary of the NZTA review comments, along with the designer feedback, is attached to this addendum.

22 | Urban Connection Limited | Speed Management Consultancy Services Panel | Technical Assessment Report – Site 12

Technical Assessment Waka Kotahi Feedback

ROUTE CONSULTANT Document Reviewed: Document Location:

SH5 Taupo to Bay View Urban Connection SMP Site 12 - SH5 Taupo to Bay View Safe Speed Report_RevB.pdf https://infohub.transporthub.govt.nz/otcs/cs.dll?func=Il&objaction=overview&objid=47153015



					WAKA KOTAHI FEEDBACK				DESIGNER FEEDBACK	CORRIDOR DECISION	
					National Consistency		Regional Safety Engineer				
Document Reviewed b	y:				section 9(2)(a) privacy		Ben Grapes / Etiene Le Grange	section 9(2)(a) prive			
Date					9/10/2020		2/10/2020	16/10/2020			
SEGMENT	Posted Speed	Mega maps III	SaAS	Recom'd speed		NC Speed	RSE Speed		00		Agreed Speed
	1 100	100 & 80	100	80	Agree with the recommended speed limit of 80km/h.Land use appears to be rural residential for the length of section chosen. This would bring the IRR to be medium for SaAS of 80km/h. Disagree with the assessed IRR band and assessed SaAS of 100km/h in table 8.	80	Agree with an 80 km/h speed limit until such time that further infrastructure improvements are implemented (i.e. central wire rope barrier)	Agree. No fu	irther comment		
	2 100	100 & 80	80	80	Agree with the recommended speed limit of 80km/h.	80	Agree with an 80 km/h speed limit 80	Agree. No fu	rther comment		
	3 100	80	<80	80	Agree with the recommended speed limit of 80km/h. Agree with the assessed SaAS limit of <80 km/h in table 8.	80	Agree with an 80 km/h speed limit with some supporting infrastructure improvements on the more winding sections to retain consistency throughout the network	Agree. No fu	rther comment		
	4 100	80	80	80	Agree with the recommended speed limit of 80km/h.	80	Agree with an 80 km/h speed limit	Agree. No fu	rther comment		
	5 100	80	80	80	Agree with the recommended speed limit of 80km/h.	80	Agree with an 80 km/h speed limit 80	Agree. No fu	rther comment		
	6 100	80	80	80	Agree with the recommended speed limit of 80km/h.	80	Agree with an 80 km/h speed limit with additional 80 infrastructure investment to help encourage lower speeds through the Esk Valley section	Agree. No fu	rther comment		

The official we are a set of the official of t © Urban Connection Limited 2020

This document is and shall remain the property of Urban Connection Limited. The document may only be used for the purpose for which it was commissioned and in accordance with the Terms of Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited.

SMP Site 12 SH5 Taupo to Bay View Safe Speed Report_Rev1

Document Status: FINAL

	Revision	Date of issue	Author	Reviewer					
				Name	Signature				
Q.	Rev 0 – Final draft for client comment	18/09/2020	section 9(2)(a) privacy	section 9(2)(a) privacy	section 9(2)(a) privacy				
	Rev 1 – Final	27/10/2020	section 9(2)(a) privacy	section 9(2)(a) privacy	section 9(2)(a) privacy				