

Waitomo District Council

Speed Management Plan

December 2023



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Appendix A – Technical Assessment

1. Why a Speed Management Plan?

This Speed Management Plan is being developed by Waitomo District Council to support their short-term and long-term road safety goals. To achieve the desired goals a range of initiatives are required to be implemented such as speed limit changes and future improvements to roads to support either existing or changes in speed limits if and when required. These physical works will be undertaken in conjunction with education programmes and enforcement as required.

These works support Council's vision, "Waitomo – a vibrant district" by ensuring that vehicle speeds are appropriate for the areas where we live, work and go to school.

1.1 Setting of Speed Limits Rule

The Land Transport Rule: Setting of Speed Limits was updated in 2022 and came into effect on the 19th May 2022. This removes the requirement for Territorial Local Authorities to set speed limits through bylaws, enabling a whole of network approach that considers safety-related infrastructure improvements, speed limit changes and safety camera placement together.

Speed limits will now be regularly reviewed, and any proposed speed limit changes and safety infrastructure treatments identified as part of the development of a Speed management Plan for the district. These plans are to have a 10 year vision with a 3 year implementation plan and are to be reviewed in line with the National Land Transport Programme funding timelines.

All speed limit records are now held in the National Speed Limit Register (NSLR) and any change to an existing speed limit must conform to the changes proposed in a speed management plan to enable it to be certified and become operative.

1.2 Funding

The costs of implementing of road safety initiatives including speed management is shared between Waitomo District Council and Waka Kotahi as the agent for the New Zealand Government. The guidelines for receiving funding from Waka Kotahi include meeting requirements for projects identified that support speed management and a reduction in death and serious injuries.

Regional Land Transport Plans feed into the National Land Transport Programme and the projects that Waka Kotahi approve in the Programme on local roads receive funding assistance.

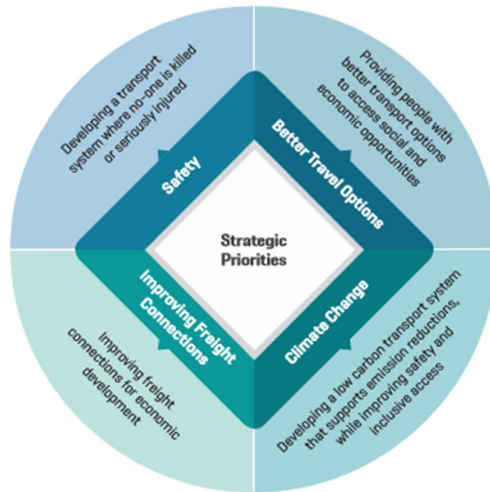
The National Land Transport Programme has a three yearly cycle, with 2024-2027 being the next cycle.

The outputs from this speed management plan will be used to develop a forward works programme for the Road to Zero programme, and funding will be sought for works to support speed management on these roads.

1.3 Government Policy Statement on Land Transport

The Ministry of Transport releases the Government Policy Statement (GPS) on land transport every three years¹. The GPS provides direction and guidance to those who are planning, assessing and making funding decisions on land transport over the next 10 years.

The GPS is reviewed every three years with the next update expected in 2024. The draft² review continues to have safety as one of the strategic priorities for investment in Land Transport.



1.4 Road to Zero

The NZ Government is committed to tackling unsafe speeds as part of their vision of a New Zealand where no one is killed or seriously injured in road crashes. The risk of a crash occurring and the resulting severity of injury resulting from the crash depends significantly on the speed of vehicles involved.

Road to Zero is underpinned by the safe system approach for the which the fundamental principle is that we are all human and as such we will make mistakes however these mistakes should not cost us our lives.



¹ <https://www.transport.govt.nz/assets/Uploads/Paper/GPS2021.pdf>

² <https://www.transport.govt.nz/area-of-interest/strategy-and-direction/government-policy-statement-on-land-transport-2024>

The creation of a speed management plan is one part of a wider Safe System approach to road safety with the four broad areas of the system being: safe speeds, safe vehicles, safe road use and safe roads and roadsides.

1.5 Road Safety

Road safety goes beyond our obligation to prevent deaths and injuries to improving lives and lifestyles too. By ensuring that everyone feels safe to use our transport network we open up opportunities for a more diverse use of modes and opportunities for improvement in health such as letting children walk, bike or scooter to school. This creation of road networks that allow for easy and multimodal transport use within our urban areas connect people and communities rather than dividing them. The largely rural road network continues to be a challenge in balancing the desire for high vehicle speeds / reduced travel times with constrained road cross sections and unforgiving road side environments.

Influencing road user behaviour and improving our driving culture will continue to be critical to making significant gains in road safety. All users of our roads, streets and footpaths have a responsibility to make good choices and follow the rules, while central and local government has a responsibility to support and enforce that behaviour.

2. What is speed management?

Speed management is about achieving safe and appropriate vehicle speeds on roads that reflect the roads' function, design, safety and use. People and goods need to move efficiently around our transport network; however, aligned to the Road to Zero vision, we also need to see a reduction in deaths and serious injuries on our roading network. Benefits gained from the implementation of appropriate vehicle speeds include enabling more active ways in how we get to where we need to go such as letting children walk, bike or scooter to school.

Speed management is not about reducing crashes it is about increasing the survivability of a crash when it occurs. Research has shown that only 30% of crashes are the result of deliberate violations i.e. exceeding the speed limit, with the majority of crashes the result of driver error or mistakes. Lower speed limits and travel speeds create an environment where people are more likely to survive and suffer less injury when a crash occurs.

The Global Road Safety Facility – World Bank released a report in 2020 titled Road Crash Trauma, Climate Change, Pollution and the Total Costs of Speed: Six graphs that tell the story. This report states that:

Reduced speeds of travel represent a major, yet under-appreciated, opportunity to improve safety, climate change impacts of travel, health, inclusion, the economy, and in some circumstances, congestion. Speed management can be achieved through a range of interventions including road infrastructure and vehicle technology, as well as enforcement and promotion.³

Speed management is more than just setting or adjusting speed limits. It requires input from policy makers, engineers, educators and the police to educate, encourage and influence road users to adopt safe and appropriate speeds.

³ [World Bank Document](#)

2.1 Crash survivability

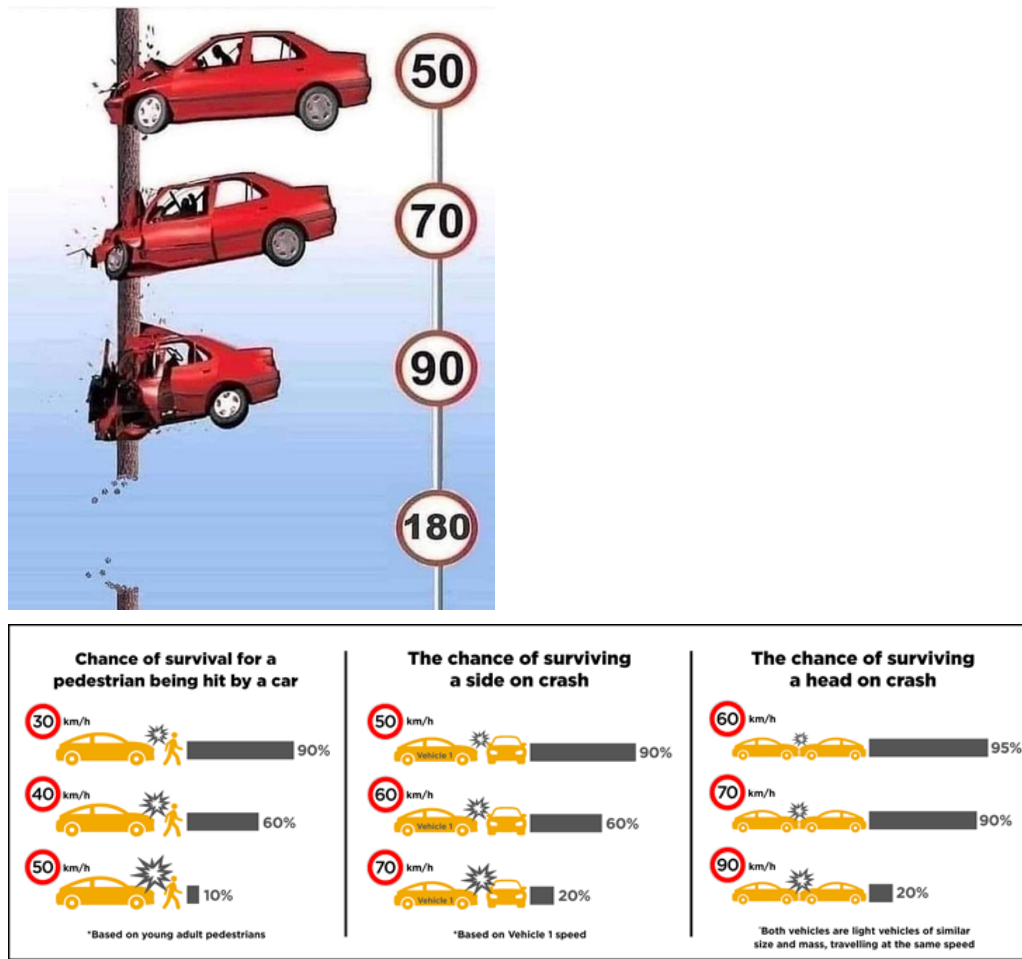
The role and impact of speed in crashes is often underestimated with the most common argument used against any reduction in speed limits being that “*vehicle speeds don’t cause crashes poor drivers do*”. This is correct in part.

The speed that a vehicle is traveling at does not cause the crash, however it has a direct effect on the severity of the crash and higher vehicle speeds increase the probability of a crash in several ways:

- by reducing the capacity of a driver/vehicle to stop in time;
- by reducing manoeuvrability in evading a problem;
- by making it impossible to negotiate curves and corners at speeds which are too high for the friction available;
- by reducing the driver’s field of vision; and
- by causing others to misjudge gaps.

Therefore, speed plays a significant role in the both the outcome of the crash as well as the potential for a crash to occur. The speed of the vehicle is the difference between a correctable mistake and a fatal error as illustrated in Figure 1.

Figure 1 Crash survivability⁴



⁴ NSW Centre for Road Safety

2.2 Crash types

A review of the crash data for the ten year period 2013 – 2022, shows that there has been nine fatal and thirty-nine serious crashes on local roads within the Waitomo District. The types of the crashes are shown in Table 1.

Table 1 Crash type: 2013 - 2022

Crash Type	Fatal	Serious	Minor	Non-injury	Total
Bend-Lost control/Head on	7	23	56	116	202
Rear end/obstruction	0	4	4	45	53
Straight-Lost control/Head on	1	5	8	28	42
Crossing/Turning	1	4	9	22	36
Overtaking	0	0	1	5	6
Pedestrian vs Vehicle	0	3	3	0	6
Miscellaneous	0	0	1	3	4
Total	9	39	82	219	349

2.3 Pedestrians and Cyclists

Safer speed limits around schools and other high pedestrian generating areas will help to support more liveable and thriving communities by improving safety and accessibility and encouraging more active modes of transport.

Pedestrian crashes can occur anywhere on the roading network, however there are opportunities to improve safety and accessibility, in particular around schools. Current speed limits within town centres and outside many schools do not make walking and cycling an appealing mode of transport and therefore increase the reliance on vehicles. Increased rates of children walking and cycling to school will reduce the level of congestion in the vicinity of schools, lowering the risk of crashes and stress to other road users. It may also have a range of co-benefits, including health and accessibility by helping people to feel safer to walk or bike to school which has benefits for the community as a whole.

Pedestrians and cyclists are particularly vulnerable in crashes involving vehicles. A crash with an impact speed of 50km/hr is 80% more likely to result in death or serious injury than one with an impact speed of 30km/hr.

In the 10-year period of 2013 to 2022 inclusive there have been six crashes involving pedestrians or cyclists on local roads within the Waitomo district with three resulting in serious injuries and three in minor injuries.

3. Speed Management Plans

Speed Management Plans are required to be developed by Road Controlling Authorities (RCA) to show their proposed short-term and long-term changes to the whole network with respect to speed management and identify future improvements to roads to support changes in speed limits if required.

Due to the requirement for funding to support any engineering treatments that need to be implemented the plans are proposed to have a 10-year horizon. The plans will be reviewed every 3 years to ensure that they are being delivered as expected, are adapting to any network changes and align with the Long -Term Planning process for funding.

The intention of the implementation of a speed management plan is not to undertake wholesale changes to speed limits within the district. The purpose of the plan is to provide a structured and methodological process for the review and change of speed limits and/or the implementation of speed management treatments as required to reduce the risk to road users. Where the road environment needs to be modified to support the desired speed limit then physical works will need to be undertaken. The nature of these engineering treatments will depend on the road and the speed management goal to be achieved.

3.1 Speed Limits

As a speed management tool, speed limits are not used to stop crashes but to align drivers' expectations with the reality of the road environment and improve survivability of a crash should it occur. Often lowering the speed limit will not significantly affect the travel time of vehicles but may stop a driver pushing the bounds on the speed that they think they can achieve on the road and hopefully reduce the risk of them losing control. This also works to provide better alignment of speeds between visitors (who are more cautious) and locals (who push the limits) by providing all drivers will a more accurate reflection of what speed they should be travelling at.

It is acknowledged that speed limits are an emotive topic and that the requirement for dramatic changes to speed limits from a risk management perspective is not fully understood by the community.

RCAs have the ability to set speed limits in 10km/hr increments from 20km/hr to 100km/hr. This range of limits is significant, and guidance has been provided by Waka Kotahi on what speed limits should be used in which environments.

3.2 Safe Journeys Risk Assessment Tool

Waka Kotahi have developed a Speed Management Guide and the Safer Journeys Risk Assessment Tool (known as MegaMaps) for use by council staff that provides a range of technical information on each road within New Zealand. These metrics are used as a starting point to help assess the safe and appropriate speed (SAAS) for each road / section of road within New Zealand, including Waitomo District.

The SAAS for a section of road is derived from the combination of:

- Safe System speed thresholds for crash survivability,
- One Network Framework street categories,

- Infrastructure Risk Rating (road stereotype, horizontal alignment, volume, carriageway width, access density and land use), and
- Presence or planned implementation of safety infrastructure.

The SAAS is based on a speed limit being appropriate for the road function, design, safety and use, and takes both safety and efficiency into account.

The use of these recommended speeds as a speed limit is not compulsory, however they do assist with ensuring that speed limits are consistent across the country.

As a result of changing the speed limit, the following effects can be calculated:

- Estimated death and serious injury savings per annum
- Travel time change per vehicle traversing the section of road
- Vehicle Operating Cost (VOC) change per vehicle traversing the section of road
- The change in CO2 emissions per annum.

The tool estimates the effect of speed limit changes only. Safety savings from engineering improvements are expected to be greater than those achieved from lowering the speed limit alone.

3.3 Treatment lengths and adjacent roads

The Waitomo District roading network is interlinked and as a result speed limits and treatments that are applied to one section of a road should be consistent with the adjacent sections of road. Schedule 1 of the Setting of Speed Limits Rule sets the minimum length of road over which a speed limit must apply. Where roads are directly connected then consideration should be given to applying the same speed limit over both, especially where the adjacent road is a cul-de-sac. Isolated sections of reduced speed limits are undesirable unless there is significant change in the environment or there are other factors such as a school in the vicinity to support the change.

Zones of influence

To ensure that the lower speed limits are applied where they will offer the greatest protection to vulnerable road users in the vicinity of high pedestrian usage areas such as schools a 'zone of influence' has been used. This is to ensure that the length of any speed restriction is reasonable, and the purpose of the restriction is obvious to a driver so that there is a greater level of compliance.

Based on stopping distance calculations the distances proposed ensures that the signs/restrictions are placed sufficient distance from the likely area of conflict such that a driver can observe, react and stop prior to hitting the potential hazard.

3.4 Road Design

Posted speed limits that are not consistent with the road layout will not be respected by drivers and not complied with. If the current road design is not consistent with the desired use of the road engineering treatment may be required to achieve compliance with the proposed speed limit.

3.5 Engineering treatments

Supporting engineering treatments will be required regardless of where and what changes are made to speed limits in an area. Some treatments will be standard layouts such as the signs and markings used at threshold locations or in the vicinity of schools, while others will be more bespoke designs depending on the location and outcomes sought.

Portions of the Waitomo District roading network provide little topographical constraints to a driver's speed, however the presence of power poles, trees and other hazards pose an increased risk to drivers should they leave the road. In these situations, there are a number of engineering works that can be implemented to manage the speed of vehicles.

Some features such as the installation of barriers are typically proposed to be implemented to support the existing speed limit by improving the safety of the route rather than lower the speed limit to match the existing environment.

4. 2023 Speed Management Plan

4.1 Objectives and principles

The objective of this Speed Management Plan is to:

“Create a roading network where residents and visitors can travel safely and efficiently around the district, no matter how they travel”.

The principles underpinning this Speed Management Plan are:

- Speed limits will align with the layout of the road, the adjacent land use and the role of the road.
- Speed limit reductions will be supported by signage, infrastructure, and education.
- Ensure speed limits are appropriate to the movement and place function of the transport network.
- Ensure safe speed limits around schools/kura, marae and other areas of local significance.

4.2 Roads for review

Those roads considered as part of the development of the inaugural speed management plan for Waitomo District have been identified from the following sources:

- Schools
- Maraes; and
- Roads of concern.

Changes to speed limits will be on going as development in the district continues and to achieve alignment with the NZ Governments Road to Zero Action Plan with respect to speed management. The initial plan will provide guidance on when, how and why speed should be managed on each of the roads identified.

Details on the technical assessment of each of the roads based on the above mentioned criteria are included in Appendix A.

4.2.1 Schools

There are seventeen schools within the Waitomo District. The current speed limit on roads in the vicinity of urban schools is 50km/hr and for rural schools either 70km/hr or 100km/hr depending on the location of the school.

By the end of 2027, the speed limits on roads in the vicinity of all schools must be reviewed and a reasonable effort have been made by the road controlling authority to have reduced the speed limits in the vicinity of all schools on local roads based on their category.

There are two categories of schools:

- Category 1 schools require a speed limit on the outside the school to be 30 km/h. All schools default to a category 1 school
- Category 2 schools are those where the road controlling authority deems a safe and appropriate speed limit of 60 km/h or less is suitable for the roads outside the school.

For a school to be category 2, it is expected to have the appropriate level of entranceway design and supporting safety infrastructure that removes or manages potential pedestrian crash conflicts to align within Safe System injury tolerances.

The reduced speed limits can be either variable or permanent. Where schools are located on a no exit road or within residential neighbourhoods then permanent speed limits should be installed. For locations that are on through roads with higher speed limits, then a variable speed limit is considered to be the most appropriate form of treatment.

Coordination is required to ensure that schools with frontages to both local roads and state highways are treated the same and all work occurs simultaneously to avoid confusion for drivers.

4.2.2 Maraes

Roads within the vicinity of maraes have been identified for review due to the potential for increased traffic movements in these areas. Speed limits associated with events such as tangi are not part of this process.

4.2.3 Roads of concern

Roads have also been identified for review from a number of sources such as crash data, customer service requests and community discussions. Roads that cross Council boundaries have also been reviewed to ensure alignment with neighbouring speed limits.

In addition, the Rule requires that if a road controlling authority has a speed limit of 70 km/h or 90 km/h on a road, it must review the speed limit and either confirm that the speed limit is appropriate or change it.

4.3 Consultation

The development of the Speed Management Plan requires a formal consultation process as part of the communication and engagement with the community to assist with building public understanding and awareness of safe and appropriate speed limits.

Engagement with schools/kura, Maraes, and other key stakeholders during the development of speed management plans helped to ensure that this Speed Management Plan supports the desires of the community, improves road safety outcomes and reduce the impacts of unsafe speed limits on all communities.

Consultation with all stakeholders including Iwi was undertaken in accordance with Waitomo District Council's communication guidelines.

The draft Speed Management Plan was put for public consultation between 24 July to 11 September 2023. Letters were sent directly to schools and marae within the District to remind them of the formal consultation process and a public notice was made on WDC's website. Posts were made to WDC's Facebook page and two radio interviews were undertaken.

A total of 27 submissions were received, 16 of these were standard submissions received either online, via email or via post. A further 11 comments were received via Social Pinpoint.

Submitters were asked three questions and to also provide comments on any specific locations.

Question 1: Do you agree with our approach to managing speeds outside and around schools within the District? 71% of respondents agreed with Council approach.

Question 2: Do you agree with our approach to managing speeds outside marae within the District? 60% of respondents agreed with Council approach.

Question 3: Do you support our draft Speed Management Plan in general? 38% of respondents supported the draft Speed Management Plan with a further 38% of respondents saying they would support it with some changes.

All comments were reviewed by Council during the deliberations process on the 28th November 2023.

4.4 Future reviews

Future reviews of the Speed Management Plan are likely to focus on the urban areas of Waitomo with a view to lowering speed limits within town centres and on local streets to 30km/h -40km/h.

The rural roading network will continue to be balance between safety and efficiency with speed limits required across local authority and regional boundaries to be consistent to avoid confusion and driver frustration. This will be a longer-term project requiring collaboration across the Waikato region between neighbouring Councils and Waka Kotahi.

5. Implementation Plan

Following the technical review of each road or section of road identified a number of recommendations were provided these have been collated to form an implementation plan. The full technical assessment is included in Appendix A.

The initial 10 year plan for implementation will be reviewed every three years in alignment with the Long Term Plan funding cycle to provide alignment with funding opportunities.

As there is limited funding available those locations that require physical works will need to be prioritised with school locations likely to be prioritised first.

5.1 Speed limits around schools

A summary of the proposed speed limits around schools in Waitomo District are shown in Table 2. The NLTP period is an indicative implementation date and will be refined based on available funding.

Table 2 Speed Limits around schools

School Name	Category	Proposed Speed Limit	Comments	NLTP
Aria School	Cat 1	30		2024/27
Bennydale Primary School	Cat 1	30		2024/27
Centennial Park School	Cat 1	30 variable		2024/27
Kinohaku School	Cat 2	60	Remote rural location	2024/27
Mokau School	Cat 1	30		2024/27
Piopio College	Cat 1	30 variable		2024/27
Piopio Primary School	Cat 1	30 variable		2024/27
Piripiri School	Cat 2	60	Remote rural location	2024/27
Pukenui School	Cat 1	30		2024/27
Rangitoto School	Cat 2	60	Remote rural location	2024/27
St Joseph's Catholic School (Te Kuiti)	Cat 1	30 variable		2024/27
Te Kuiti High School	Cat 1	30 variable		2024/27
Te Kuiti Primary School	Cat 1	30		2024/27
Te Kura O Tahaaroa	Cat 1	30		2024/27
Te Wharekura o Maniapoto	Cat 2	50	Remote rural location	2021/24
Waitomo Caves School			Access is from a private road	2024/27
Whareorino School	Cat 2	60	Remote rural location	2024/27

5.2 Speed limit changes

A summary of each road where a speed limit change has been recommended in the 2023 review process are tabled below. Due to funding limitations the locations have been prioritised for implementation with schools assigned the highest priority. Existing budgets have been used to determine a likely implementation time frame and these priorities will be reviewed each NLTP cycle as funding allocations are renegotiated.

Table 3 Speed Limit changes

Report Section	Road Name	Start RP	Start	End RP	End	Posted Speed Limit	Proposed Speed Limit	Speed Limit Type	Implementation timeframe (NLTP Period)	Safe and Appropriate Speed	Proposed = SAAS (Y/N)	Further Information	Dates / Times
7.1.3	Anne Street	0	Seddon Street	89	Queen Street	50	30	Variable	24/27	30	Y	School area - St Joseph's Catholic School (Te Kuiti)	8:25 – 9am, 2:55 – 3:15pm, School Days
2.2.1	Aria Road	11653	90m NW of Matai Street	12121	Ohura Road	70	50	Permanent	N/A	80	N	Signs on site do not match NSLR (50)	
5.1.1	Aria Terrace	298	Rerenga Street	537	Rangi Street	50	30	Permanent	27/30	30	Y	School area - Mokau School	
5.2.1	Awakino Heads Road	0	State Highway 3	940	State Highway 3	100	60	Permanent	24/27	60	Y		
2.1.1	Barclay Road	0	Ohura Road	325	196m South of Rimu Street	70	30	Permanent	24/27	60	N	School area - Aria School	
2.2.1	Barclay Road	0	Ohura Road	325	40m South of Miro Street	70	50	Permanent	N/A	60	N	Signs on site do not match NSLR (50)	
8.2.2	Brooklee Road	0	State Highway 37	527	End	100	80	Permanent	24/27	60	N	Speed limit to match adjacent road	
7.1.4	Eketone Street	0	Hill Street	377	Hospital Rd Extension	50	30	Variable	24/27	30	Y	School area - Te Kuiti High School	8:25 – 9am, 2:55 – 3:15pm, School Days
8.2.3	Fullerton Road	0	Oparure Road	8680	100m South of State Highway 37	100	80	Permanent	24/27	60	N	Speed limit to match adjacent road	
7.2.1	Gadsby Road	0	Te Kumi Rd (State Highway 3)	1583	End (Gate)	100	60	Permanent	24/27	60	Y		
7.1.4	George Street	155	155m south of Te Kumi Road (SH3)	467	Hill St	50	30	Variable	24/27	30	Y	School area - Te Kuiti High School	8:25 – 9am, 2:55 – 3:15pm, School Days
7.1.4	Hospital Road	0	Te Kumi Road (State Highway 3)	463	Eketone Street	50	30	Variable	24/27	30	Y	School area - Te Kuiti High School	8:25 – 9am, 2:55 – 3:15pm, School Days
7.1.2	John Street	0	South Street	138	King Street West	50	30	Permanent	24/27	30	Y	School area - Pukenui School	
6.1.1	Kawhia Harbour Road	0	Te Waitere Rd	450	450m east of Te Waitere Road	100	60	Permanent	24/27	60	Y	School area - Kinohaku School	

Report Section	Road Name	Start RP	Start	End RP	End	Posted Speed Limit	Proposed Speed Limit	Speed Limit Type	Implementation timeframe (NLTP Period)	Safe and Appropriate Speed	Proposed = SAAS (Y/N)	Further Information	Dates / Times
2.2.1	Kiekie Street	0	Ohura Road	389	Matai Street	70	50	Permanent	N/A	60	N	Signs on site do not match NSLR (50)	
7.1.2	King Street West	700	190m north of John Street	891	John Street	50	30	Permanent	24/27	30	Y	School area - Pukenui School	
8.2.1	Kiwi Street (Hangatiki)	0	Pukeroa Road	123	End	100	80	Permanent	24/27		N/A		
2.2.1	Kumara Road	0	Ohura Road	120	120m SW of Ohura Road	70	50	Permanent	N/A	60	N	Signs on site do not match NSLR (50)	
7.1.1	Manawaiti Street	0	Esplanade	171	End	50	30	Permanent	24/27	30	Y		
2.2.1	Matai Street	0	Aria Road	96	Kiekie Street	70	50	Permanent	N/A	60	N	Signs on site do not match NSLR (50)	
3.1.1	Mine Road	360	360m east of Maniaiti Street	725	725m east of Maniaiti Street	50	30	Permanent	24/27	30	Y	School area - Bennydale Primary School	
3.1.2	Ngapeke Road	0	Rangitoto Road	200	200m north of Rangitoto Road	100	60	Permanent	24/27	80	N	School area - Rangitoto School	
2.2.2	Ohura Road	133	90m East of Kiekie Street	930	870m east of Kiekie Street	100	80	Permanent	27/30	60	N	SAAS inappropriate for the function of the road and level of development	
2.2.1	Ohura Road	0	Aria Road	150	90m East of Kiekie Street	70	50	Permanent	N/A	60	N	Signs on site do not match NSLR (50)	
8.2.8	Oparure Road	0	State Highway 3	2300	95m east of Fullerton Road	100	80	Permanent	21/24	80	N		
8.1.1	Oparure Road	2300	95m east of Fullerton Road	3355	110m east of Boddie Road	80	50	Permanent	21/24	80	N	School area - Te Wharekura o Maniapoto	8:25 – 9am, 2:55 – 3:15pm, School Days
8.2.8	Oparure Road	4100	635m west of Boddie Road	8100	630m west of Troopers Road	100	80	Permanent	21/24	80	N	Speed limit to match adjacent road	
7.1.1	Park Street	0	Te Kuiti Rd	238	William Street	50	30	Variable	24/27	30	Y	School area - Centennial Park School	8:25 – 9am, 2:55 – 3:15pm, School Days
7.1.3	Princes Street	0	Queen Street	163	King Street West	50	30	Variable	24/27	30	Y	School area - St Joseph's Catholic School (Te Kuiti)	8:25 – 9am, 2:55 – 3:15pm, School Days
8.2.1	Pukeroa Road	0	State Highway 37	420	End	100	80	Permanent	24/27	60	N	Speed limit to match adjacent road	

Report Section	Road Name	Start RP	Start	End RP	End	Posted Speed Limit	Proposed Speed Limit	Speed Limit Type	Implementation timeframe (NLTP Period)	Safe and Appropriate Speed	Proposed = SAAS (Y/N)	Further Information	Dates / Times
7.1.3	Queen Street	280	65m north of Princes Street	488	Anne Street	50	30	Variable	24/27	30	Y	School area - St Joseph's Catholic School (Te Kuiti)	8:25 – 9am, 2:55 – 3:15pm, School Days
5.1.1	Rangi Street	99	Tainui Street	196	Aria Terrace	50	30	Permanent	27/30	30	Y	School area - Mokau School	
3.1.2	Rangitoto Road	9260	195m west of Ngapeke Road	9700	245m east of Ngapeke Road	100	60	Permanent	24/27	60	Y	School area - Rangitoto School	
2.2.1	Rimu Street	0	Barclay Road	42	End	100	30	Permanent	24/27	60	N	School area - Aria School	
7.1.5	Rora Street (North)	0	Rora Street	233	Cul-De-Sac	50	30	Permanent	24/27	30	Y	School area - Te Kuiti Primary School	
6.1.3	Rotopuhoe Road	0	Taharoa Road		End	50	30	Permanent	24/27	N/A		School area - Te Kura O Tahaaroa	
4.1.1	Ruru Street (Aria Road)	330	330m south of Tui Street	850	850m south of Tui Street	50	30	Variable	24/27	30	Y	School area - Piopio Primary School and Piopio College	8:25 – 9am, 2:55 – 3:15pm, School Days
7.1.3	Seddon Street	210	190m north of Anne Street	403	Anne Street	50	30	Variable	24/27	30	Y	School area - St Joseph's Catholic School (Te Kuiti)	8:25 – 9am, 2:55 – 3:15pm, School Days
8.2.9	Somerville Road	0	Tammadge Street	900	900m north of Tammadge Street	100	60	Permanent	27/30	80	N	Lower speed limit proposed due to level of activity on road	
7.1.2	South Street	148	Bayne Street	348	John Street	50	30	Permanent	24/27	30	Y	School area - Pukenui School	
6.1.3	Taharoa Road	18700	200m west of Kiwi Street	19070	End	50	30	Permanent	24/27	80	N	School area - Te Kura O Tahaaroa	
2.2.1	Tawa Street	0	Kiekie Street	326	End	70	50	Permanent	N/A	60	N	Signs on site do not match NSLR (50)	
8.2.10	Te Anga Road	0	Waitomo Village Road	270	Tumutumu Road Roundabout	100	60	Permanent	24/27	30	N	SAAS inappropriate for the function of the road and level of development	
8.2.10	Te Anga Road	270	Tumutumu Road Roundabout	2011	Ngatapuwa Road	100	60	Permanent	27/30	80	N	Lower speed limit proposed due to level of activity on road	
6.1.2	Te Anga Road	26400	200m east of School	26800	200m west of School	100	60	Permanent	27/30	80	N	School area - Piripiri School	

Report Section	Road Name	Start RP	Start	End RP	End	Posted Speed Limit	Proposed Speed Limit	Speed Limit Type	Implementation timeframe (NLTP Period)	Safe and Appropriate Speed	Proposed = SAAS (Y/N)	Further Information	Dates / Times
7.1.1	Te Kuiti Road	516	Lawrence Street	770		50	30	Variable	24/27	30	Y	School area - Centennial Park School	8:25 – 9am, 2:55 – 3:15pm, School Days
5.2.2	Te Mahoe Road	0	State Highway 3	5920	End (Gate)	100	60	Permanent	24/27	60	Y		
5.1.2	Waikawau Road	0	Manganui Road	180		100	60	Permanent	24/27	60	Y	School area - Whareorino School	
8.2.11	Waitomo Valley Road	0	State Highway 37	5000	Otorohanga Boundary	100	80	Permanent	24/27	80	Y		
8.2.12	Waitomo Village Road	0	State Highway 37	887	Te Anga Road	50	30	Permanent	24/27	30	Y		
5.2.3	Ye Old Mill Road	0	State Highway 3	197	End	100	40	Permanent	24/27	60	N	SAAS inappropriate for the function of the road and level of development	

5.3 Safety Infrastructure

A summary of the initial safety infrastructure recommendations in the 2023 review process is tabled below. This summary includes locations where safety infrastructure including speed limit signage and threshold treatments is required on a road with a proposed speed limit change as well as locations where safety infrastructure is required to support the existing speed limit. Existing budgets have been used to determine a likely implementation time frame and these priorities will be reviewed each NLTP cycle as funding allocations are renegotiated.

Table 4 Safety Infrastructure

Report Section	Road Name	Proposed safety infrastructure	Implementation timeframe (NLTP Period)	Comments
2.1.1	Aria School	Install school threshold style treatments on Barclay Road on both sides of the school.	2024/25	
2.2.2	Ohura Road	Install settlement threshold treatment at the 80/100 speed limit change location.	2027/28	
2.2.2	Ohura Road	Update existing and/or install new speed limit signage as required.	2027/28	
2.2.2	Ohura Road	Install advance and directional marae signage for Te Paemate Marae.	2027/28	
3.1.1	Benneydale Primary School	Install school threshold style treatments on Mine Road at RP362 and RP725.	2024/25	
3.1.2	Rangitoto School	Install school threshold treatments on Rangitoto Road and Ngapeke Road on the approaches to the school.	2024/25	
3.2.1	Rangitoto Road	Install advance and directional marae signage for Te Arohoa Marae on both approaches to the marae.	2027/28	
4.1.1	Piopio Primary School and Piopio College	Install variable school threshold treatments on Aria Road/Ruru Street on each approach to the schools	2025/26	
4.1.1	Piopio Primary School and Piopio College	Install additional school signage at RP600 to remind drivers that there is another school in the vicinity.	2025/26	
4.2.1	Napinapi Road	Install directional marae signage for Napinapi Marae at the intersection with Tikitiki Road.	2027/28	
5.1.1	Mokau School	Install school threshold style treatments on Rangi Street and Aria Terrace on the approaches to the school.	2029/30	
5.1.2	Whareorino School	Install school threshold style treatments on Waikawau Road at RP10 and RP180.	2024/25	
5.2.1	Awakino Heads Road	Install speed limit signage at both intersections with State Highway 3 and install repeater signs midblock to remind drivers.	2026/27	
5.2.2	Te Mahoe Road	Install speed limit signage at the beginning and repeater signs along the length of the road.	2026/27	
5.2.3	Ye Old Mill Road	Install speed limit signage at the intersection with State Highway 3.	2026/27	
6.1.1	Kinohaku School	Install school threshold treatments Te Anga Road on both approaches to the school.	2024/25	
6.1.2	Piripiri School	Install school threshold treatments Te Anga Road on both approaches to the school.	2024/25	
6.1.3	Te Kura o Tahaaroa	Install school threshold style treatments on Taharoa Road either side of the school.	2024/25	
7.1.1	Centennial Park School	Install variable school threshold treatments on Te Kuiti Road and Park Street approaches to the school.	2026/27	
7.1.1	Centennial Park School	Install speed limit signage on Manawaiti Street approach to Esplanade.	2025/26	
7.1.2	Pukenui School	Install school threshold treatments on King Street West and South Street approaches to the school.	2024/25	

Report Section	Road Name	Proposed safety infrastructure	Implementation timeframe (NLTP Period)	Comments
7.1.3	St Joseph's Catholic School	Install variable school threshold treatments on Queen Street, Seddon Street and Princes Street approaches to the school.	2024/27	
7.1.3	St Joseph's Catholic School	Consider upgrading the kea crossings on Queen Street and Princes Street to raised zebra crossings.	2027/30	
7.1.4	Te Kuiti High School	Install variable speed limit side road signage on Hill Street and Ailsa Street approaches to Eketone Street and Ngatai Street approach to George Street.	2027/30	
7.1.4	Te Kuiti High School	Install variable school threshold treatments on George Street and Hospital Street approaches to the school.	2027/30	
7.1.5	Te Kuiti Primary School	Install school threshold treatments on Rora Street approach to the school.	2024/27	
7.2.1	Gadsby Road	Update existing and/or install new speed limit signage as required.	2024/27	
8.1.1	Te Wharekura o Maniapoto	Install variable school threshold treatments on Oparure Road on both approaches to the school.	2027/30	
8.2.1	Hangatiki Township	Update existing and/or install new speed limit signage as required.	2024/27	
8.2.1	Hangatiki Township	Install threshold style treatments at the change in speed limit location on the approach to State Highway 37.	2024/27	
8.2.2	Brooklee Road	Update existing and/or install new speed limit signage as required.	2027/30	
8.2.3	Fullerton Road	Install threshold treatment at the change in speed limit south of State Highway 37.	2027/30	
8.2.3	Fullerton Road	Update existing and/or install new speed limit signage as required.	2024/27	
8.2.3	Fullerton Road	Install speed limit signs at regular intervals along the road.	2024/27	
8.2.4	Hangatiki East Road	Install advance and directional marae signage for Te Kauae Marae on both approaches to the marae.	2024/27	
8.2.4	Hangatiki East Road	Mark edgelines on both sides of the road for the full length of the road.	2024/27	
8.2.4	Hangatiki East Road	Review curve warning signage for the full length of the road and upgrade as necessary.	2024/27	
8.2.5	Mangarino Road	Install advance and directional marae signage for Te Kauae Marae on both approaches to the marae	2024/27	
8.2.6	Mangatea Road	Install advance and directional marae signage for Mōtiti and Tomotuki (Parekaitini) maraes on the approaches to the maraes.	2024/27	
8.2.7	Ngatapuwaē Road	Install advance and directional marae signage for Pohatuirī marae on the approach to the marae	2024/27	
8.2.8	Oparure Road	Install threshold treatment at the change in speed limit locations.	2024/27	
8.2.8	Oparure Road	Install speed limit signs at regular intervals along the road.	2024/27	
8.2.9	Sommerville Road	Install settlement threshold treatments at the 50/60 change in speed limit at Tammadge Street.	2024/27	
8.2.10	Te Anga Road - Waitomo Valley Road and Tumutumu Road	Install threshold treatments on the Tumutumu Road and Te Anga Road (west) approach to the roundabout.	2030+	
8.2.10	Te Anga Road - Tumutumu Road and Ngatapuwaē Road	Install threshold treatments on the Te Anga Road approach to Ngatapuwaē Road.	2024/27	

Report Section	Road Name	Proposed safety infrastructure	Implementation timeframe (NLTP Period)	Comments
8.2.10	Te Anga Road - Tumutumu Road and Ngatapuwaē Road	Install advance and directional marae signage for Tokikapu marae on both approaches to the marae.	2024/27	
8.2.11	Waitomo Valley Road	Update existing and/or install new speed limit signage as required.	2024/27	
8.2.11	Waitomo Valley Road	Install threshold treatment at the change in speed limit north of State Highway 37.	2024/27	
8.2.12	Waitomo Village Road	Update existing and/or install new speed limit signage as required.	2021/24	
8.2.12	Waitomo Village Road	Install threshold treatment at the change in speed limit west of State Highway 37.	2024/27	

Appendices

Appendix A – Technical Assessment

Waitomo District Council

Speed Management Plan Technical Assessments

December 2023



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1. Purpose of this document

Waitomo District Council is developing a 10-year speed management plan for the district, as is required by the government. The plan includes short-term and long-term road safety goals; speed limit changes for the whole network, and future improvements to roads to support changes in speed limits if and when required.

Changes to speed limits will be on-going as development in the district continues and to achieve alignment with the Governments Road to Zero Action Plan with respect to speed management. This initial plan will provide guidance on when, how and why speed should be managed on each of the roads identified.

The plan will be reviewed every 3 years in alignment with the Long Term Plan funding cycle to provide alignment with funding opportunities. The plan will also be reviewed when significant changes in development or funding occur necessitating a change to the implementation plan.

This document sets out the technical assessment undertaken on each of the roads identified for review in 2023.

1.1 2023 Speed Management Reviews

Those roads considered as part of the development of the inaugural speed management plan for Waitomo District have been identified from the following sources:

- Schools
- Maraes; and
- Roads of concern.

Each of the roads / locations originally identified are listed below, with additional information and their assessment as well as details of any adjacent roads or sections of road that were included in the review.

2. Aria

2.1 Schools

There is one school in Aria for which the speed limit needs to be lowered in the vicinity of to assist with safety and accessibility.

2.1.1 Aria School

Aria School is a contributing school (Years 1-6) with a roll of 39 students. Vehicle and pedestrian access to Aria School is from Barclay Road and Rimu Street, with the bus using Rimu Street to drop off and pick up students. The school is located in a primarily rural environment with no cycle facilities provided in the area. A footpath is provided on the east side of Barclay Road between Ohura Road and Rimu Street but does not connect to the school. The majority of students arrive and depart by bus or car.

There have been no reported crashes in the last 10 years in the vicinity of the school.

Safety and speed information from MegaMaps shows the following.

	Barclay Road	Rimu Street
<i>AM Peak mean speed</i>	25 km/hr	18 km/hr
<i>PM Peak mean speed</i>	25 km/hr	18 km/hr
<i>Freeflow speed</i>	33 km/hr	18 km/hr
<i>Posted speed limit</i>	50 km/hr	50 km/hr

Figure 1 Aria School



Due to the low traffic volumes and vehicle speeds in this area a permanent speed limit is considered to be the most appropriate in this location. The existing speed limit can be reduced in this area with no noticeable effect on travel times.

Recommendation

The following changes are recommended in the vicinity Aria School:

- Lower the speed limit to 30km/hr on the full length of Rimu Street.
- Lower the speed limit to 30km/hr on Barclay Road from Ohura Road to RP 325
- Install school threshold style treatments on Barclay Road on both sides of the school.

2.2 Other roads

2.2.1 Aria Township

The National Speed Limit Register (NSLR) shows the speed limit for roads within the Aria Townships as being 70km/hr, however all signage on site shows 50km/hr. This lower speed limit is more consistent with the travel speeds in the area and should be supported.

The following sections of road are affected:

Road Name	Start	End	Current Speed Limit (km/hr)	Proposed Speed Limit (km/hr)
Aria Road	90m NW of Matai Street	Ohura Road	70	50
Kumara Road	Ohura Road	120m SW of Ohura Road	70	50
Ohura Road	Aria Road	90m east of Kiekie Street	70	50
Barclay Road	Ohura Road	40m south of Miro Street	70	50
Matai Street	Aria Road	Kiekie Street	70	50
Kiekie Street	Ohura Road	Matai Street	70	50
Tawa Street	Kiekie Street	End	70	50

Recommendation

No works are required in Aria.

2.2.2 Ohura Road

Ohura Road is a local road that runs east from Aria for 18.7km to the district boundary with Ruapehu District Council and has an open road speed limit outside of the Aria Township.

This road was identified for review as Te Paemate marae is located on this road which is located approximately 660m east of Kumara Road.

Safety and speed information from MegaMaps shows the following.

Ohura Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	70km/hr
<i>Safe and Appropriate Speed</i>	60km/hr	<i>Infrastructure Risk Rating</i>	Medium

Figure 2 Ohura Road / Te Paemate marae



Consideration should be given to lowering the speed limit on Ohura Road from the existing 50/100 speed limit change to RP930 which covers the section of road with the highest risk and most roadside activity including access to Te Paemate marae to provide consistency for drivers. Extension of the 80km/hr speed limit needs to be considered as part of a wider strategy for speed limits on rural roads across the district.

The location of Te Paemate marae is currently not identified and advance and directional signage should be installed to show the location of the marae.

Recommendation

The following changes are recommended for Ohura Road:

- Lower the speed limit to 80km/hr from the existing 50/100 speed limit change to 870m east of Kiekie Street (RP930).
- Install settlement threshold treatment at the 80/100 speed limit change location.
- Update existing speed limit signage as required.
- Install advance and directional marae signage for Te Paemate Marae.

3. Mangaokewa

3.1 Schools

There are two schools in Mangaokewa for which the speed limit needs to be lowered in the vicinity of to assist with safety and accessibility.

3.1.1 Bennydale Primary School

Benneydale Primary School is a full primary school (Years 1-8) with a roll of 37 students. Vehicle and pedestrian access to Benneydale Primary School is from Mine Road. The school is located in a rural environment with no cycle facilities and limited pedestrian facilities provided in the area. A path has recently been installed between School Road and Mine Road with a crossing point provided on Mine Road. The majority of students arrive and depart by bus or car.

There have been no reported crashes in the last 10 years in the vicinity of the school.

Safety and speed information from MegaMaps shows the following.

	Mine Road
<i>AM Peak mean speed</i>	32 km/hr
<i>PM Peak mean speed</i>	32 km/hr
<i>Freeflow speed</i>	34 km/hr
<i>Posted speed limit</i>	50 km/hr

Figure 3 Benneydale Primary School



Due to the low traffic volumes on Mine Road a permanent speed limit of 30km/hr is considered to be the most appropriate in this location.

Recommendation

The following changes are recommended in the vicinity of Benneydale Primary School:

- Lower the speed limit to 30km/hr on Mine Road between 360m and 725m east of Maniaiti Street (RP360 - 725).
- Install school threshold style treatments on Mine Road at RP360 and RP725.

3.1.2 Rangitoto School

Rangitoto School is a full primary school (Year 1-8) with a current roll of 30 students. The school is located on the corner of Ngapeke Road and Rangitoto Road with vehicle and pedestrian access off Rangitoto Road only.

Due to the rural location of the school there are no pedestrian or cycle facilities in the area.

Speed information from MegaMaps shows the following.

	Rangitoto Road	Ngapeke Road
<i>AM Peak mean speed</i>	73 km/hr	36 km/hr
<i>PM Peak mean speed</i>	73 km/hr	36 km/hr
<i>Freeflow speed</i>	75 km/hr	36 km/hr
<i>Posted speed limit</i>	100 km/hr	100 km/hr

Figure 4 Rangitoto School



Based on the low traffic volumes on Rangitoto Road and Ngapeke Road a lower permanent speed limit of 60km/hr is considered to be the most appropriate in this location. As the school is located at the intersection with Ngapeke Road the speed limit should be extended to include the school frontage on Ngapeke Road as well.

Recommendation

The following changes are recommended in the vicinity of Rangitoto School:

- Lower the speed limit to 60 km/hr on the following sections of road:
 - Rangitoto Road between 195m west (RP 9260) and 245m east (RP 9700) of Ngapeke Road.
 - Ngapeke Road from Rangitoto Road for 200m.
- Install school threshold treatments on Rangitoto Road and Ngapeke Road on the approaches to the school.

3.2 Other roads

3.2.1 Rangitoto Road

Rangitoto Road is a collector road that runs east from Te Kuiti for 16.5km to the intersection with Tahaia Bush Road and Barber Road and has an open road speed limit.

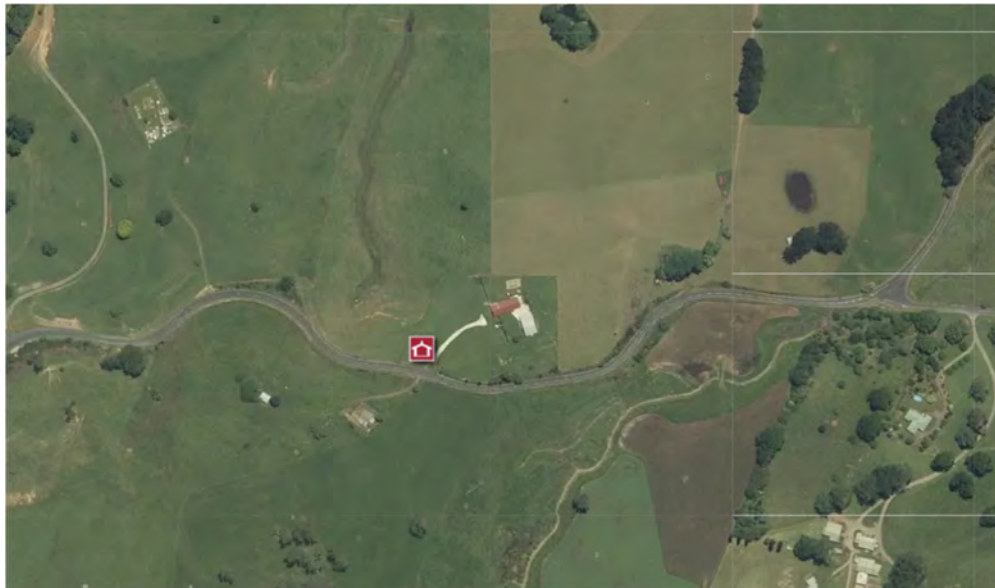
This road was identified for review as Te Ahoroa marae is located on this road approximately 480m west of Ahoroa Road and 8km east of Te Kuiti.

Safety and speed information from MegaMaps shows the following.

Rangitoto Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	70km/hr
<i>Safe and Appropriate Speed</i>	60km/hr	<i>Infrastructure Risk Rating</i>	Medium

Figure 5 Rangitoto Road / Te Ahoroa marae



Due to the limited interaction between the marae and the road no changes to the speed limit are proposed in this area at this stage. Changes to the speed limit in this area needs to be considered as part of a wider strategy for speed limits on rural roads across the district.

The location of Te Arohoa marae is currently not identified and advance and directional signage should be installed to show the location of the marae.

Recommendation

The following changes are recommended for Rangitoto Road in the vicinity of Te Arohoa marae:

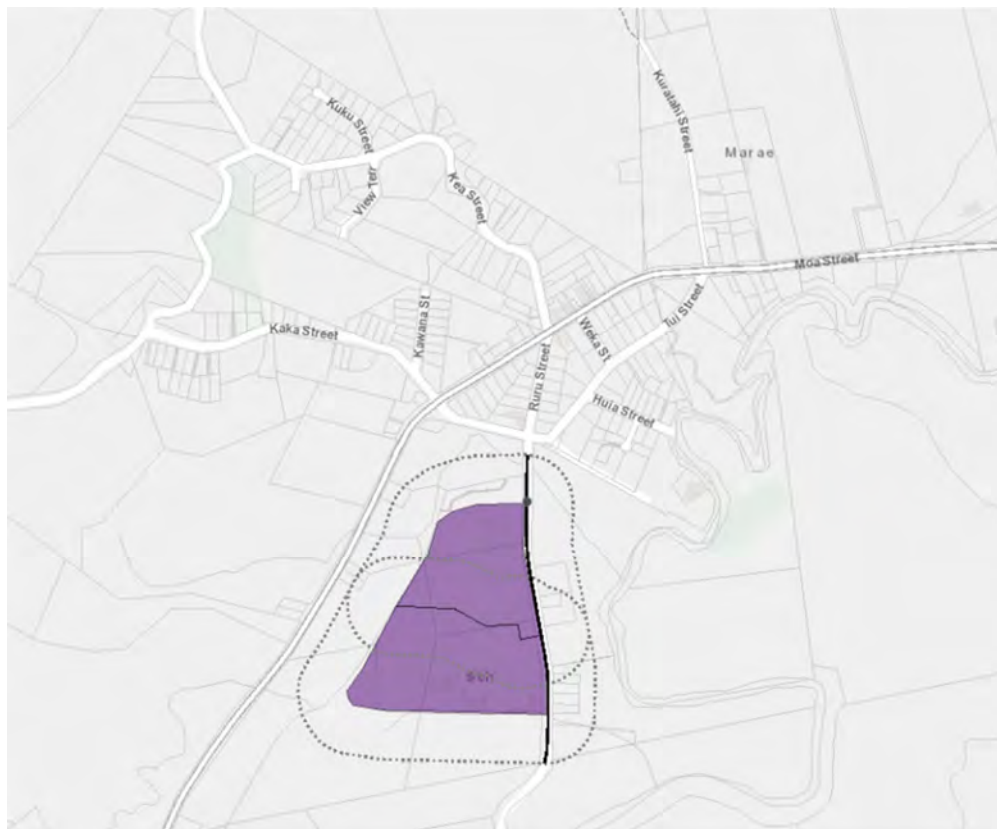
- Install advance and directional marae signage for Te Arohoa Marae on both approaches to the marae.

4. Paemako

4.1 Schools

There are two schools in Paemako for which the speed limit needs to be lowered in the vicinity of to assist with safety and accessibility as shown in Figure 6.

Figure 6 Piopio Schools



4.1.1 Piopio Primary School and Piopio College

Piopio Primary School and Piopio College are located next to each other on the southern side of Piopio with all vehicle and pedestrian access to the sites from Ruru Street. A footpath is provided on one side of the road however there are no cycle facilities provided in the area. All parking is provided off street with large pick up and drop areas at both schools.

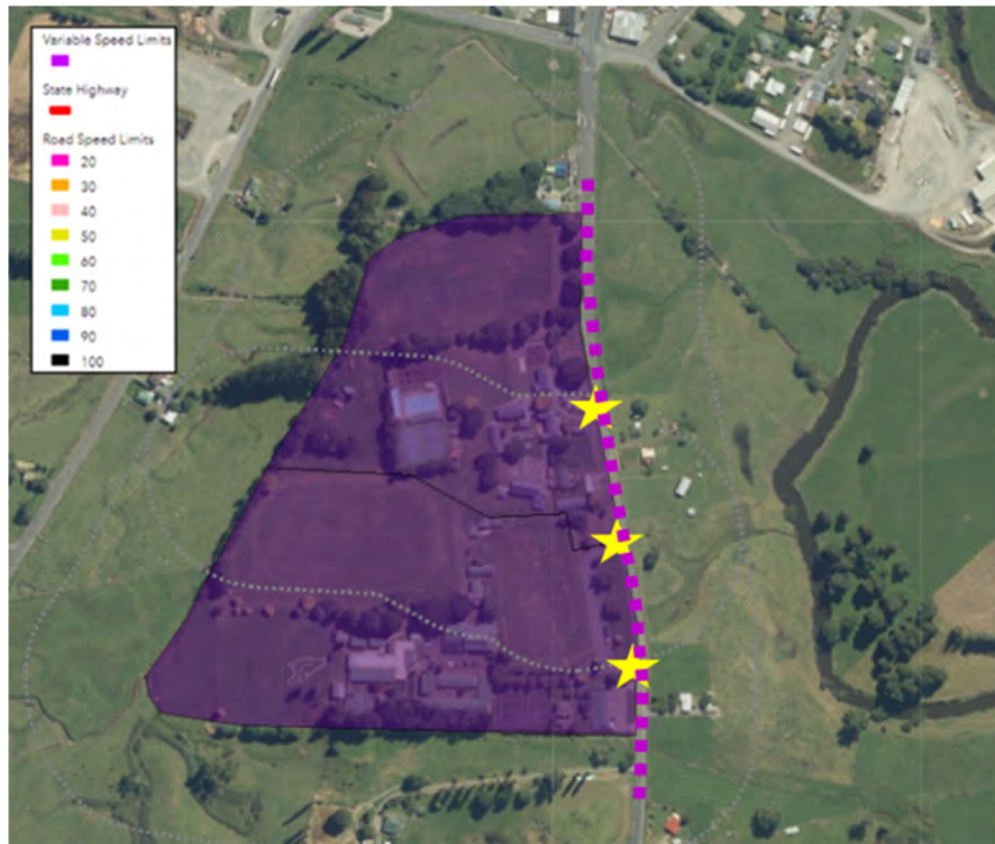
The NSLR shows that the speed limit in this area is 50km/hr up to 500m south of Tui Street when the speed limit becomes open road (100km/hr). The signage on site shows the speed limit change at 750m south of Tui Street.

There is some confusion as to the road name for this section as Google and the NSLR shows this section as being Aria Road, however Council's RAMM database and the on-site signage shows this section as being Ruru Street and the change to Aria Road is approximately 750m south of Tui Street.

Safety and speed information from MegaMaps shows the following.

	Ruru Street – Piopio Primary School	Ruru Street – Piopio College School
<i>AM Peak mean speed</i>	54 km/hr	58 km/hr
<i>PM Peak mean speed</i>	52 km/hr	57 km/hr
<i>Freeflow speed</i>	62 km/hr	64 km/hr
<i>Posted speed limit</i>	50 km/hr	50 km/hr

Figure 7 Piopio Primary School and Piopio College



The high vehicle speeds are symptomatic of the open road environment and lack of visibility of the schools and interaction with the road. The Piopio Playcentre is located on the northern side of Piopio Primary School which has limited off street parking.

Due to the through-road nature of Ruru Road and to provide better compliance and assist with speed management it is recommended that a variable speed limit is installed. Additional repeater signs will be required to remind drivers of the lower speed limit.

Recommendation

The following changes are recommended in the vicinity of Piopio Primary School and Piopio College:

- Install a 30km/hr variable speed limit on Ruru Street between 330m (RP330) and 850m (RP850) south of Tui Street.
- Install variable school threshold treatments on Ruru Street on each approach to the schools.
- Install additional school signage at RP600 to remind drivers that there is another school in the vicinity.

4.2 Other roads

4.2.1 Napinapi Road

Napinapi Road is a local no exit road off Tikitiki Road that is 1177m long and has an open road speed limit.

This road was identified for review as Napinapi marae is located at the end of this road.

Safety and speed information from MegaMaps shows the following.

Napinapi Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	32km/hr
<i>Safe and Appropriate Speed</i>	60km/hr	<i>Infrastructure Risk Rating</i>	Low

Figure 8 Napinapi Road / Napinapi marae



The default safe and appropriate speed for all unsealed roads is 60km/hr. Due to the limited interaction between the marae and the road no changes to the speed limit are proposed in this

area at this stage. Changes to the speed limit in this area needs to be considered as part of a wider strategy for speed limits on rural roads across the district.

The location of Napinapi marae is currently not identified and directional signage should be installed at the intersection with Tikitiki Road.

Recommendation

The following changes are recommended for Napinapi Road:

- Install directional marae signage for Napinapi Marae at the intersection with Tikitiki Road.

5. Tainui

5.1 Schools

There are two schools in Tainui for which the speed limit needs to be lowered in the vicinity of to assist with safety and accessibility.

5.1.1 Mokau School

Mokau School is a full primary school (Years 1-8) with a roll of 25 students. Vehicle and pedestrian access to Mokau School is from Aria Terrace. There are limited pedestrian and no cycle facilities provided in the area. The only footpath is provided along the State Highway 3 frontage and along Rangī Street.

Safety and speed information from MegaMaps shows the following.

	Rangī Street	Aria Terrace
<i>AM Peak mean speed</i>	24 km/hr	17 km/hr
<i>PM Peak mean speed</i>	24 km/hr	17 km/hr
<i>Freeflow speed</i>	27 km/hr	19 km/hr
<i>Posted speed limit</i>	50 km/hr	50 km/hr

Figure 9 Mokau School



Due to the low traffic volumes on Rangī Street and Aria Terrace a lower permanent speed limit of 30km/hr is considered to be the most appropriate in this location.

Recommendation

The following changes are recommended in the vicinity of Mokau School:

- Lower the speed limit to 30km/hr on the following sections of road:
 - Aria Terrace from Rerenga Street to Rangī Street
 - Rangī Street from Tainui Street to Aria Terrace
- Install school threshold style treatments on Rangī Street and Aria Terrace on the approaches to the school.

5.1.2 Whareorino School

Whareorino School is a full primary school (Years 1-8) with a roll of 11 students. Vehicle and pedestrian access to Whareorino School is from Waikawau Road. The school is located in a rural environment with no pedestrian or cycle facilities provided in the area. All students arrive and depart by bus or car.

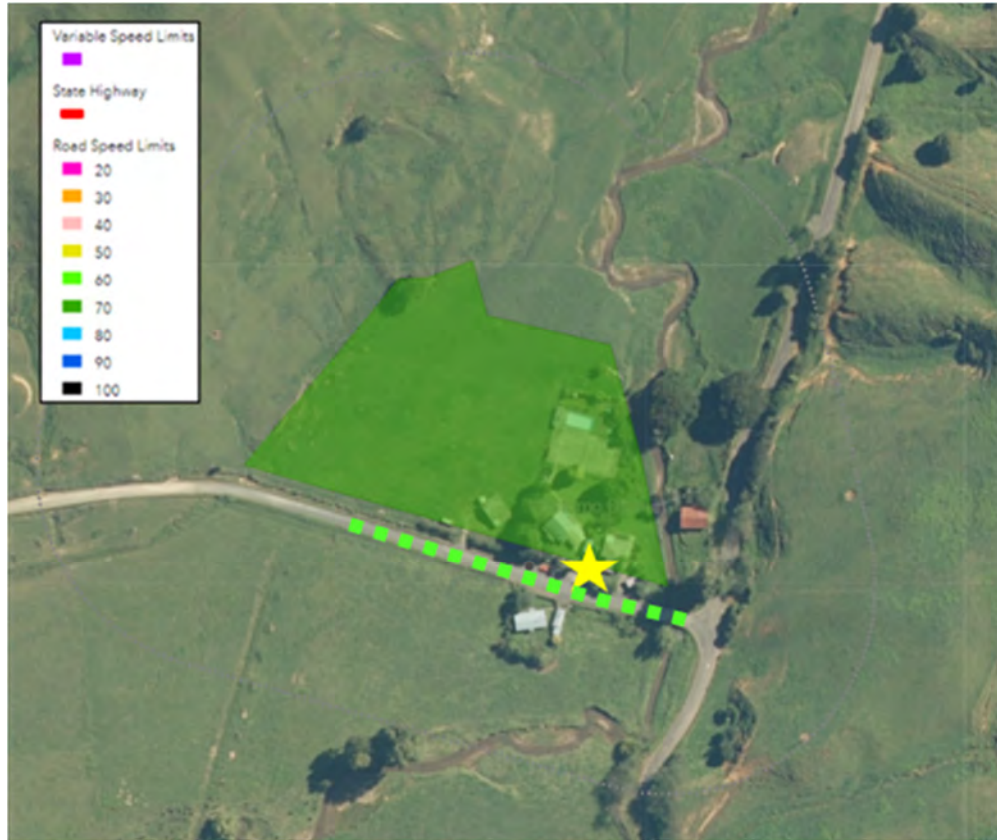
There have been no reported crashes in the last 10 years in the vicinity of the school.

Safety and speed information from MegaMaps shows the following.

	Waikawau Road
<i>AM Peak mean speed</i>	35 km/hr
<i>PM Peak mean speed</i>	35 km/hr
<i>Freeflow speed</i>	30 km/hr

<i>Posted speed limit</i>	100 km/hr
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Figure 10 Whareorino School



Recommendation

The following changes are recommended in the vicinity Whareorino School:

- Lower the speed limit to 60km/hr on Waikawau Road from the intersection with Manganui Road for 180m.
- Install school threshold style treatments on Waikawau Road at RP10 and RP180.

5.2 Other roads

5.2.1 Awakino Heads Road

Awakino Heads Road is a local road that is 945m long and runs parallel to State Highway 3 with an open road speed limit.

This road was identified for review as the existing speed limit is inappropriate for the low volume one lane road that provides access to a number of residential properties and the beach.

Safety and speed information from MegaMaps shows the following.

Awakino Heads Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	21km/hr
<i>Safe and Appropriate Speed</i>	60km/hr	<i>Infrastructure Risk Rating</i>	High

Figure 11 Awakino Heads Road



The default safe and appropriate speed for all unsealed roads is 60km/hr. Due to the low traffic volumes and vehicles speeds as well as the unpredictable unsealed surface a lower speed limit is considered appropriate for this road.

Recommendation

The following changes are recommended for Awakino Heads Road:

- Lower the speed limit to 60km/hr for the full length of Awakino Heads Road.
- Install speed limit signage at both intersections with State Highway 3 and install repeater signs midblock to remind drivers.

5.2.2 Te Mahoe Road

Te Mahoe Road is a local road that is 5920m long and runs east from State Highway 3 which provides access to a number of properties and the river.

This road was identified for review as the existing speed limit is out of context with the operation of the road, which is narrow with the majority of it unsealed. There has been one serious crash on this road in the last 10 years, which was a head on crash that occurred in 2018.

Safety and speed information from MegaMaps shows the following.

Te Mahoe Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	38km/hr
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<i>Safe and Appropriate Speed</i>	60km/hr	<i>Infrastructure Risk Rating</i>	High
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Figure 12 Te Mahoe Road



The default safe and appropriate speed for all unsealed roads is 60km/hr. Due to the low traffic volumes and vehicles speeds as well as the unpredictable unsealed surface a lower speed limit is considered appropriate for this road.

Recommendation

The following changes are recommended for Te Mahoe Road:

- Lower the speed limit to 60km/hr for the full length of Te Mahoe Road.
- Install speed limit signage at the beginning and repeater signs along the length of the road.

5.2.3 Ye Old Mill Road

Ye Old Mill Road is a local road that is 197m long and runs parallel to State Highway 3 with an open road speed limit.

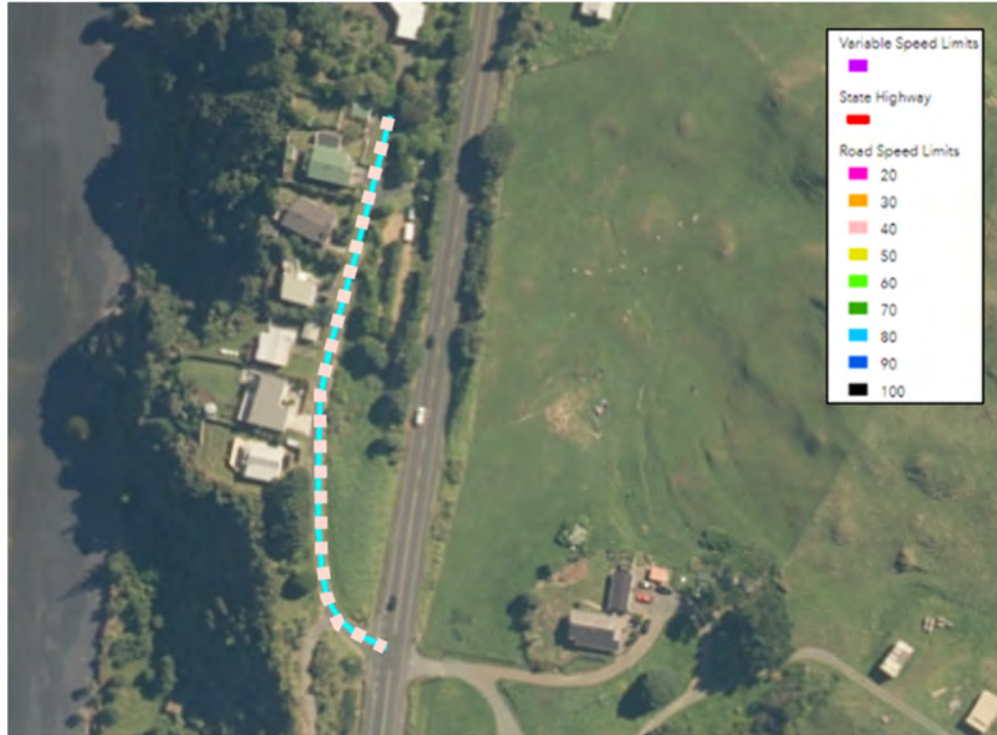
This road was identified for review as the existing speed limit is inappropriate for the low volume one lane road that provides access to a number of residential properties.

Safety and speed information from MegaMaps shows the following.

Ye Old Milli Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	17km/hr
<i>Safe and Appropriate Speed</i>	60km/hr	<i>Infrastructure Risk Rating</i>	High

Figure 13 Ye Old Mill Road



Recommendation

The following changes are recommended for Ye Old Mill Road:

- Lower the speed limit to 40km/hr for the full length of Ye Old Mill Road.
- Install speed limit signage at the intersection with State Highway 3.

6. Te Anga

6.1 Schools

There are three schools in Te Anga for which the speed limit needs to be lowered in the vicinity of to assist with safety and accessibility.

6.1.1 Kinohaku School

Kinohaku School is a full primary school (Years 1-8) with a roll of 8 students. Vehicle and pedestrian access to Kinohaku School is from Kawhia Harbour Road. Due to the rural location there are no pedestrian or cycle facilities in the area with all students arriving and departing by bus or car.

There has been one non injury crash reported in the last 10 years in the vicinity of the school which occurred in 2017 and was the result of a drunk driver losing control.

Safety and speed information from MegaMaps shows the following.

	Kawhia Harbour Road
<i>AM Peak mean speed</i>	48 km/hr

<i>PM Peak mean speed</i>	48 km/hr
<i>Freeflow speed</i>	54 km/hr
<i>Posted speed limit</i>	100 km/hr

Figure 14 Kinohaku School



To improve the survivability of crashes in this area 60 km/hr is considered to be the safe and appropriate speed for this locality as there is little to no pedestrian activity in the area. Due to the location of the school on a bend, a permanent speed limit is recommended in this location.

To assist with the management of vehicle speeds and pedestrian safety additional signage and road marking should be installed.

Recommendation

The following changes are recommended in the vicinity of Kinohaku School:

- Lower the speed limit to 60km/hr on Kawhia Harbour Road from the intersection with Te Waitere Road to RP 450.
- Install school threshold treatments Te Anga Road on both approaches to the school.

6.1.2 Piripiri School

Piripiri School is a full primary school (Years 1-8) with a roll of 10 students. Vehicle and pedestrian access to Piripiri School is from Te Anga Road. Due to the rural location there are no pedestrian or cycle facilities in the area with all students arriving and departing by bus or car.

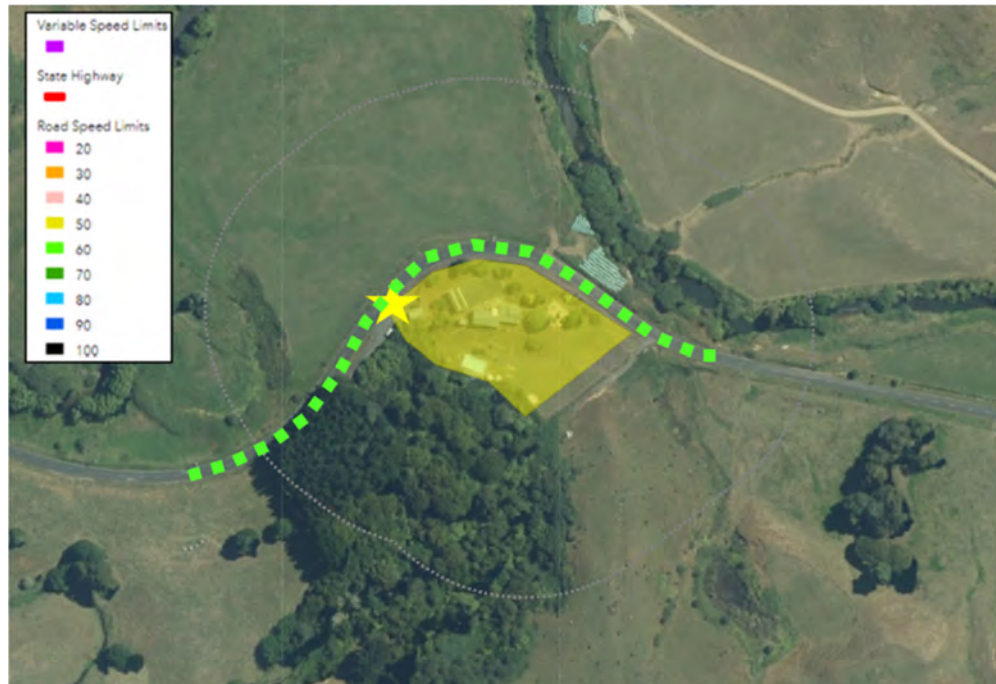
There have been no reported crashes in the last 10 years in the vicinity of the school.

Safety and speed information from MegaMaps shows the following.

	Te Anga Road
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<i>AM Peak mean speed</i>	56 km/hr
<i>PM Peak mean speed</i>	56 km/hr
<i>Freeflow speed</i>	56 km/hr
<i>Posted speed limit</i>	100 km/hr

Figure 15 Piripiri School



To improve the survivability of crashes in this area 60 km/hr is considered to be the safe and appropriate speed for this locality. Due to the location of the school on a bend a permanent speed limit is recommended in this location.

To assist with the management of vehicle speeds and pedestrian safety additional signage and road marking should be installed.

Recommendation

The following changes are recommended in the vicinity of Piripiri School:

- Lower the speed limit to 60km/hr on Te Anga Road from 200m east of the school access (RP 26400) to 200m west of the school access (RP 26800).
- Install school threshold treatments Te Anga Road on both approaches to the school.

6.1.3 Te Kura o Tahaaroa

Te Kura o Tahaaroa is a full primary school (Years 1-8) with a roll of 35 students. Vehicle and pedestrian access to Te Kura o Tahaaroa is from Taharoa Road. The school is located in a rural environment with limited pedestrian facilities with a footpath provided on the eastern side of Taharoa Road linking to Rotopuhoe Road and no cycle facilities provided in the area.

There have been no reported crashes in the last 10 years in the vicinity of the school.

Safety and speed information from MegaMaps shows the following.

	Taharoa Road
<i>AM Peak mean speed</i>	37 km/hr
<i>PM Peak mean speed</i>	37 km/hr
<i>Freeflow speed</i>	40 km/hr
<i>Posted speed limit</i>	50 km/hr

Figure 16 Te Kura o Tahaaroa



The road in the vicinity of the school is a series of right angle bends and there is a zebra crossing located 200m south of the school resulting in a slow speed environment. Due to the low traffic volumes and traffic speeds a permanent 30km/hr speed limit on Taharoa Road in the vicinity of the school is considered to be appropriate.

This lower speed limit could be extended to encompass the whole of the settlement at a later stage.

Recommendation

The following changes are recommended in the vicinity of Te Kura o Tahaaroa:

- Lower the speed limit to 30km/hr on Taharoa Road from 200m west of Kiwi Street (RP 18700) to the end of the public road at RP 19070.
- Install school threshold style treatments on Taharoa Road either side of the school.

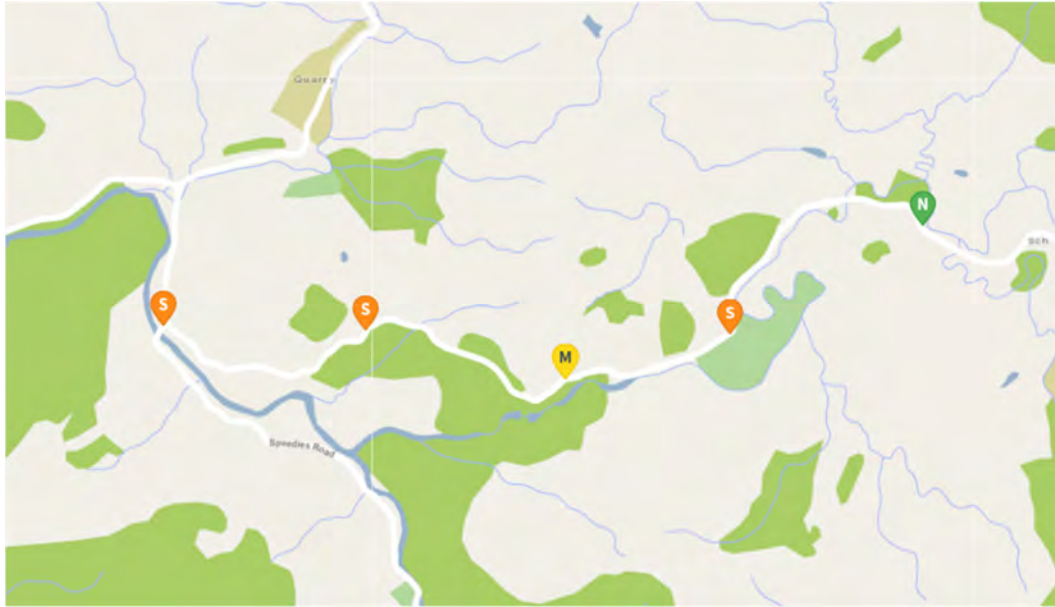
6.2 Other roads

6.2.1 Te Anga Road

Te Anga Road has runs between Waitomo and Te Anga and has a number of distinct sections. The section under review is between RP 28000 and Taharoa Road which has had three serious crashes in the last 10 years.

The last reported crash was in 2016 and involved a cyclist falling off their bike. There are no commonalities between the crashes.

Figure 17 Te Anga Road crashes



Safety and speed information from MegaMaps shows the following.

Te Anga Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	43km/hr
<i>Safe and Appropriate Speed</i>	80km/hr	<i>Infrastructure Risk Rating</i>	Medium

Due to the remote location any change in speed limit in this area needs to be considered as part of a wider strategy for speed limits on rural roads across the district.

Recommendation

No changes are proposed to this section of Te Anga Road.

6.2.2 **Āruka, Te Kōraha and Marokopa (Mirumiru) Marae**

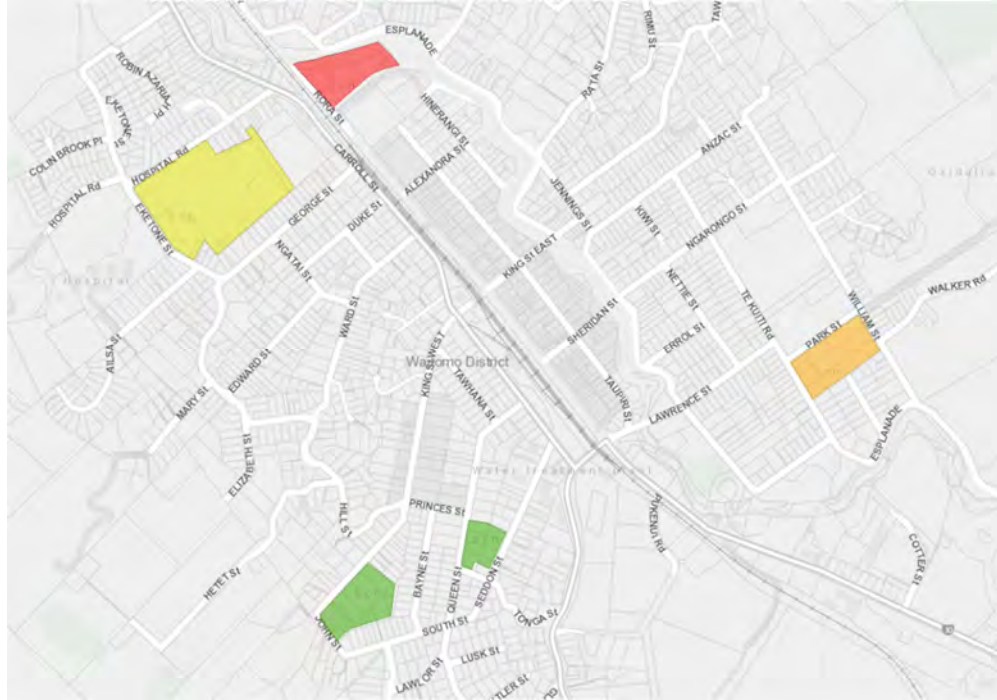
Āruka, Te Kōraha and Marokopa (Mirumiru) Marae do not have public road access and as such have not been considered as part of this review.

7. Te Kuiti

7.1 Schools

There are five schools in Te Kuiti for which the speed limit needs to be lowered in the vicinity of to assist with safety and accessibility as shown in Figure 6.

Figure 18 Te Kuiti Schools



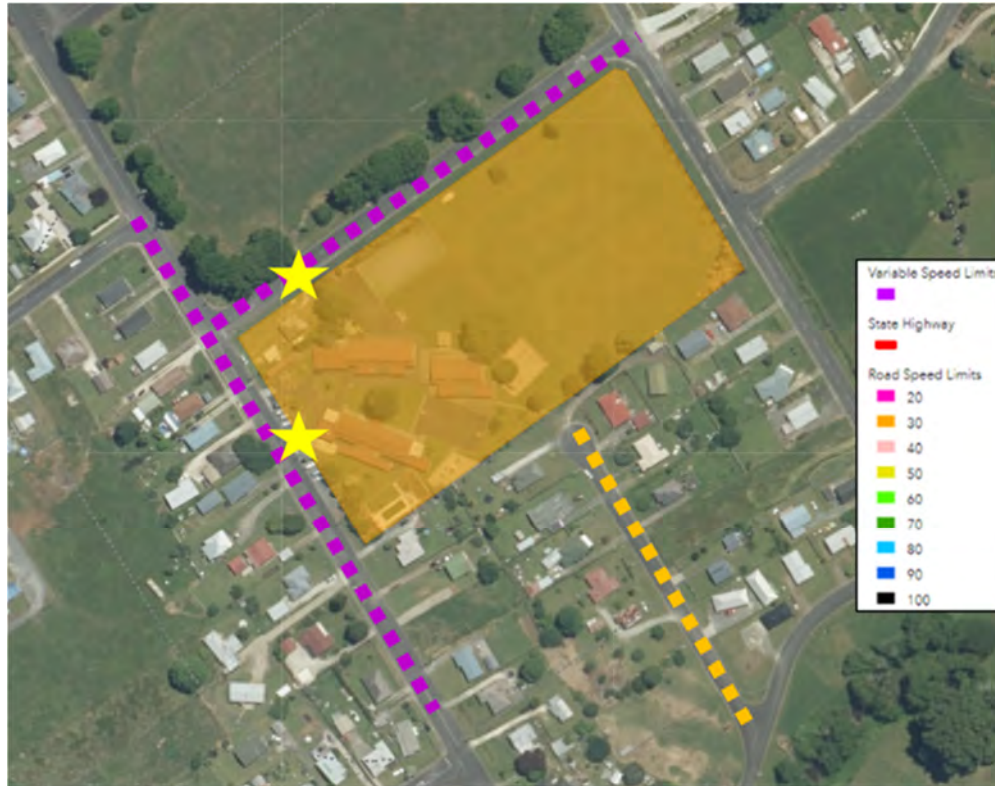
7.1.1 Centennial Park School

Centennial Park School is a full primary school (Years 1-8) with a roll of 64 students. The main vehicle and pedestrian access to Centennial Park School is from Te Kuiti Road with pedestrian access also available on Park Street. Footpaths are provided on the south side of Park Street and the western side of Te Kuiti Road. A kea crossing is operated on Te Kuiti Road south of Park Street. There are no cycle facilities in the area.

Safety and speed information from MegaMaps shows the following.

	Te Kuiti Road	Park Street	Manawaiti Street
<i>AM Peak mean speed</i>	33 km/hr	31 km/hr	
<i>PM Peak mean speed</i>	35 km/hr	31 km/hr	
<i>Freeflow speed</i>	41 km/hr	36 km/hr	
<i>Posted speed limit</i>	50 km/hr	50 km/hr	

Figure 19 Centennial Park School



Due to the through road nature of Te Kuiti Road and to provide better compliance and assist with speed management it is recommended that a variable speed limit is installed in this location. As Manawaiti Street is a no exit residential street a permanent speed limit is considered appropriate for this street.

Recommendation

The following changes are recommended in the vicinity of Centennial Park School:

- Install a 30km/hr variable speed limit on the following sections of road:
 - Te Kuiti Road between Lawrence Street and 35m north of Esplanade (RP770).
 - Park Street from Te Kuiti Road to William Street.
- Lower the speed limit to 30km/hr on the full length of Manawaiti Street.
- Install variable school threshold treatments on Te Kuiti Road and Park Street approaches to the school.
- Install speed limit signs on the Manawaiti Street approach to Esplanade.

7.1.2 Pukenui School

Pukenui School is a full primary school (Years 1-8) with a roll of 175 students. The main vehicle and pedestrian access to Pukenui School is from King Street with pedestrian access only also off South Street. Footpaths are provided on the school side of King Street and South Street. There are no patrolled crossing points or cycle facilities provided in the area.

The parking area for the Te Kuiti Little Theatre to the rear of the school is also used for student pick up and drop off.

Safety and speed information from MegaMaps shows the following.

	King Street West	John Street	South Street
<i>AM Peak mean speed</i>	32 km/hr	24 km/hr	25 km/hr
<i>PM Peak mean speed</i>	33 km/hr	29 km/hr	28 km/hr
<i>Freeflow speed</i>	40 km/hr	36 km/hr	34 km/hr
<i>Posted speed limit</i>	50 km/hr	50 km/hr	50 km/hr

Figure 20 Pukenui School



Due to the slow road environment and use of the theatre buildings outside of school hours it is recommended that a permanent speed limit is installed in this location.

Recommendation

The following changes are recommended in the vicinity of Pukenui School:

- Lower the speed limit to 30km/hr on the full length of John Street.
- Lower the speed limit to 30km/hr on the following sections of road:
 - King Street West between John Street and 190m north of John Street (RP 700).
 - South Street from Bayne Street to John Street.
- Install school threshold treatments on King Street West and South Street approaches to the school.
- Install new speed limit signage as required.

7.1.3 St Joseph's Catholic School

St Joseph's Catholic School is a full primary school (Years 1-8) with a roll of 73 students. The main vehicle access to St Joseph's Catholic School is from Seddon Street with pedestrian access primarily off Queen Street. Footpaths are provided on both sides of Queen Street and only on the school side of Seddon Street. Kea crossings are provided on Queen Street, outside the school and on Princes Street. There are no cycle facilities provided in the area.

Safety and speed information from MegaMaps shows the following.

	Seddon Street	Queen Street	Princes Street	Anne Street
<i>AM Peak mean speed</i>	18 km/hr	30 km/hr	23 km/hr	17 km/hr
<i>PM Peak mean speed</i>	22 km/hr	31 km/hr	23 km/hr	19 km/hr
<i>Freeflow speed</i>	28 km/hr	42 km/hr	25 km/hr	28 km/hr
<i>Posted speed limit</i>	50 km/hr	50 km/hr	50 km/hr	50 km/hr

Figure 21 St Joseph's Catholic School



Due to the through road nature of Seddon Street and Queen Street it is recommended that a variable speed limit is installed in this location.

Recommendation

The following changes are recommended in the vicinity of St Joseph's Catholic School:

- Install a 30km/hr variable speed limit on the following sections of road:
 - Seddon Street between Anne Street and 190m north of Anne Street (RP210).
 - Queen Street between 65m north of Princes Street (RP 280) and Anne Street.
 - Princes Street between Queen Street and King Street west.

- Anne Street between Seddon Street and Queen Street.
- Install variable school threshold treatments on Queen Street, Seddon Street and Princes Street approaches to the school.
- Install new speed limit signage as required.
- Consider upgrading the kea crossings on Queen Street and Princes Street to raised zebra crossings.

7.1.4 Te Kuiti High School

Te Kuiti High School is a secondary school (Years 9-15) with a roll of 277 students. The main vehicle and pedestrian access to Te Kuiti High School is from Hospital Street with access also available off Eketone Street. Footpaths are provided on both sides of Hospital Road and Eketone Street to the school entrance, after which they are only on the opposite side of the road. No pedestrian crossing or cycle facilities provided in the area.

Safety and speed information from MegaMaps shows the following.

	Hospital Street	Eketone Street
<i>AM Peak mean speed</i>	30 km/hr	26 km/hr
<i>PM Peak mean speed</i>	30 km/hr	32 km/hr
<i>Freeflow speed</i>	41 km/hr	42 km/hr
<i>Posted speed limit</i>	50 km/hr	50 km/hr

Figure 22 Te Kuiti High School



A variable speed limit is recommended to be installed in this location. Further discussion should be held with the community with respect to lowering the speed limit in this area.

Recommendation

The following changes are recommended in the vicinity of Te Kuiti High School:

- Install a 30km/hr variable speed limit on the following sections of road:
 - Hospital Street between State Highway 3 (RP 210) and Eketone Street.
 - Eketone Street between Hill Street and Hospital Road.
 - George Street from Eketone Street to 155m south of State Highway 3 (RP155).
- Install variable school threshold treatments on George Street and Hospital Street approaches to the school.
- Install variable speed limit side road signage on Hill Street and Ailsa Street approaches to Eketone Street and Ngatai Street approach to George Street.

7.1.5 Te Kuiti Primary School

Te Kuiti Primary School is a full primary school (Years 1-8) with a roll of 325 students. The main vehicle access to Te Kuiti Primary School is from Rora Street with additional access also available off the Domain access road. Footpaths are provided on the school side of Rora Street and the domain side of the access road, except for the section adjacent to the school buildings where there are footpaths on both sides of the road. There is a patrolled zebra crossing across the Domain access road in the vicinity of the school. There are no cycle facilities provided in the area.

Safety and speed information from MegaMaps shows the following.

	Rora Street	Domain access road
<i>AM Peak mean speed</i>	20 km/hr	-- km/hr
<i>PM Peak mean speed</i>	20 km/hr	-- km/hr
<i>Freeflow speed</i>	25 km/hr	-- km/hr
<i>Posted speed limit</i>	50 km/hr	20 km/hr

Figure 23 Te Kuiti Primary School



Due to the isolated and contained area surrounding Te Kuiti Primary School a permanent speed limit is recommended for this area. It should be noted that the speed limit on the Domain access road is 20km/hr.

Recommendation

- The following changes are recommended in the vicinity of Te Kuiti Primary School:
- Lower the speed limit to 30km/hr on Rora Street (North) from Rora Street to its end.
- Install school threshold treatments on Rora Street approach to the school.

7.2 Other roads

7.2.1 Gadsby Road

Gadsby Road is a local no exit road off State Highway 3 at the northern end of Te Kuiti that is 1583m long and has an open road speed limit.

This road was identified for review from a resident request.

Safety and speed information from MegaMaps shows the following.

Gadsby Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	41km/hr
<i>Safe and Appropriate Speed</i>	60km/hr	<i>Infrastructure Risk Rating</i>	Medium

Figure 24 Gadsby Road



This side road intersects with State Highway 3 which has a 70km/hr speed limit and a similar level of development.

Recommendation

The following changes are recommended for Gadsby Road:

- Lower the speed limit to 60km/hr for the full length of Gadsby Road.
- Update existing and install new speed limit signage as required.

8. Waitomo

8.1 Schools

There are two schools in Waitomo for which the speed limit needs to be lowered in the vicinity of to assist with safety and accessibility.

8.1.1 Te Wharekura o Maniapoto

Te Wharekura o Maniapoto is a composite school (Year 1-15) with a current roll of 116 students. The school is located on Oparure Road with vehicle and pedestrian access off Oparure Road only.

Due to the rural location of the school there are no pedestrian or cycle facilities in the area.

Speed information from MegaMaps shows the following.

	Oparure Road
<i>AM Peak mean speed</i>	54 km/hr
<i>PM Peak mean speed</i>	55 km/hr
<i>Freeflow speed</i>	59 km/hr
<i>Posted speed limit</i>	80 km/hr

Figure 25 Te Wharekura o Maniapoto



Based on the through road nature of this location a lower variable speed limit of 50km/hr is considered to be the most appropriate in this location.

Recommendation

The following changes are recommended in the vicinity of Te Wharekura o Maniapoto:

- Install a variable speed limit of 50 km/hr on Oparure Road from 400m west of Fullerton Road (RP 2800) to 110m east of Boddie Road (RP 3355).
- Install variable school threshold treatments on Oparure Road on both approaches to the school.

Following the Council hearing and deliberation process it was resolved to:

Lower speed limit permanently on Oparure Road from 95m east of Fullerton Road (RP2300) to 580m west of Boddie Road (RP4050).

Install school threshold treatments on Oparure Road on both approaches to the school.

8.1.2 Waitomo Caves School

Waitomo Caves School is a full primary school (Years 1-8) with a roll of 25 students. Vehicle and pedestrian access to Waitomo Caves School is from a private road off Waitomo Village Road. There are limited pedestrian facilities and no cycle facilities in the area with the majority of students arriving and departing by bus or car.

There have been no reported crashes in the last 10 years in the vicinity of the school.

Figure 26 Waitomo Caves School



As the school is located on a private road there is no safety and speed information in MegaMaps.

8.2 Other Roads

8.2.1 Hangatiki Township

All local roads within Hangatiki currently have an open road (100km/hr) speed limit. This is considered to be inappropriate, and the speed limit should be reduced to better reflect the use of these roads.

Safety and speed information from MegaMaps shows the following.

Road Name	Posted speed limit (km/hr)	Mean Free Flow Speed (km/hr)	Safe and Appropriate Speed (km/hr)	Infrastructure Risk Rating
Pukeroa Road	100	30	60	High

No data is available for the remaining roads in the area.

Figure 27 Pukeroa Road and Kiwi Street



The public road sections of Pukeroa Road and Kiwi Street have very little development along their length and an 80km/hr speed limit is considered to be appropriate. It should be noted that the private road sections of Pukeroa Road and Kiwi Street have residential dwellings accessing them and signage indicating that a 50km/hr speed limit applies.

Recommendation

The following changes are recommended for Hangatiki:

- Lower the speed limit to 80km/hr on the full length of the following roads:
 - Pukeroa Road
 - Kiwi Street
- Install threshold style treatments at the change in speed limit location on the approach to State Highway 37.

8.2.2 Brooklee Road

Brooklee Road is a short no exit road off State Highway 37 that currently has an open road speed limit.

This road was identified for review as the existing speed limit is out of context with the operation of the road.

Safety and speed information from MegaMaps shows the following.

Brooklee Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	36km/hr
<i>Safe and Appropriate Speed</i>	60km/hr	<i>Infrastructure Risk Rating</i>	Medium

It should be noted that the safe and appropriate speed for all unsealed roads is 60km/hr.

Figure 28 Brooklee Road



Due to the straight alignment of the short length of road and its low traffic volume an 80km/hr speed limit is considered to be appropriate to provide consistency with the adjacent state highway.

Recommendation

The following changes are recommended for Brooklee Road:

- Lower the speed limit to 80km/hr on the full length of Brooklee Road.
- Update existing and/or install new speed limit signage as required.

8.2.3 Fullerton Road

Fullerton Road runs between State Highway 37 and Oparure Road and is an alternative route between Waitomo and Te Kuiti that currently has an open road speed limit.

This road was identified for review as the existing speed limit is out of context with the road environment.

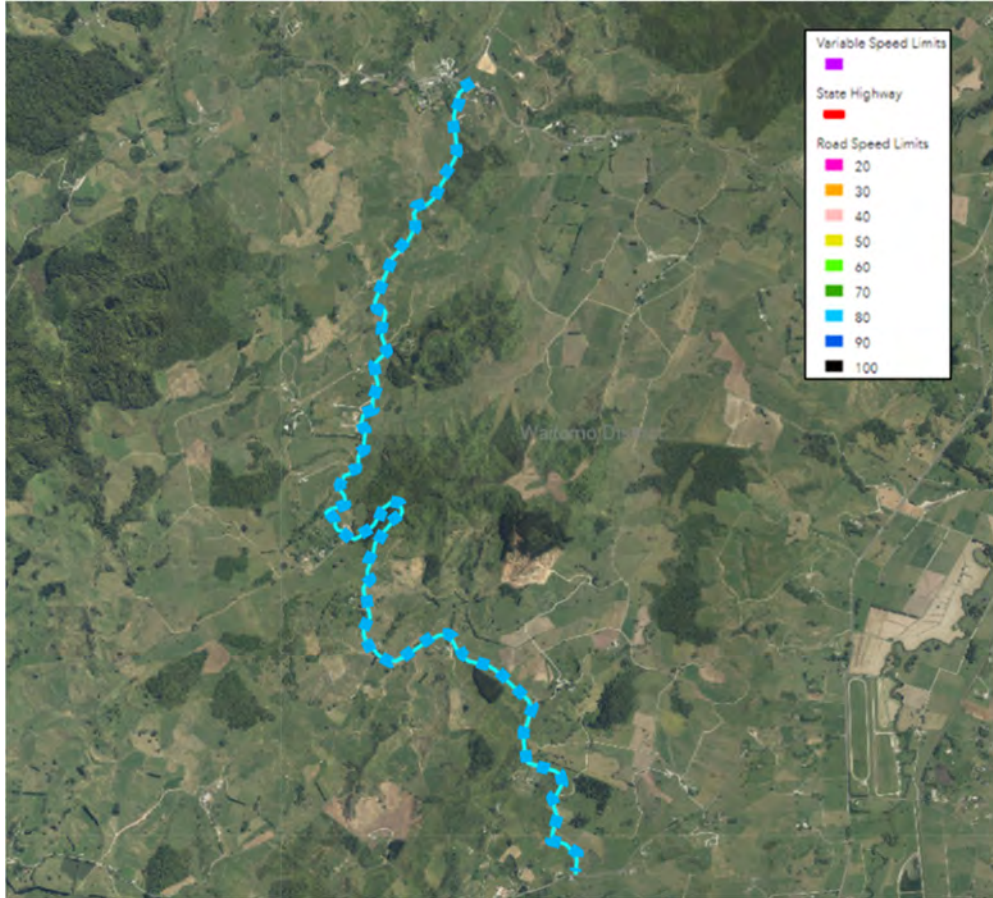
Safety and speed information from MegaMaps shows the following.

Fullerton Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	48km/hr
<i>Safe and Appropriate Speed</i>	60km/hr	<i>Infrastructure Risk Rating</i>	High

There has been one report crash in the last 10 years which was a loss of control crash that resulted in a fatality in 2014.

Figure 29 Fullerton Road



Due to the tortuous alignment of the road and its low traffic volume an 80km/hr speed limit is considered to be appropriate.

Recommendation

The following changes are recommended for Fullerton Road:

- Lower the speed limit to 80km/hr on Fullerton Road from Oparure Road to the existing 50km/hr speed limit 100m south of State Highway 37.
- Install threshold treatment at the change in speed limit south of State Highway 37.
- Install speed limit signs at regular intervals along the road.

8.2.4 Hangatiki East Road

Hangatiki East Road is a collector road that runs between Te Kumi and Te Kuiti for and 6km long with a primarily open road speed limit.

This road was identified for review as Te Korapatu Pa is located on the southern end of this road and concerns have been raised about the speed and number of heavy vehicles using this road. Te Korapatu Pa is located approximately 1km north of the Te Kumi Station Road intersection.

Safety and speed information from MegaMaps shows the following.

Hangatiki East Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	60km/hr
<i>Safe and Appropriate Speed</i>	80km/hr	<i>Infrastructure Risk Rating</i>	Medium High

Figure 30 Hangatiki East Road / Te Korapatu Pa



Due to the limited interaction between the marae and the road and the straight alignment which will result in poor compliance no changes to the speed limit are proposed in this area at this stage. Changes to the speed limit in this area need to be considered as part of a wider strategy for speed limits on rural roads across the district.

To assist with speed management, edgelines should be marked for the full length of the road. The curve warning signage especially north of the fertiliser work should be reviewed and upgraded as required.

The location of Te Korapatu Pa is currently not identified and advance and directional signage should be installed to show the location of the marae.

Recommendation

The following changes are recommended for Hangatiki East Road:

- Install advance and directional marae signage for Te Kauae Marae on both approaches to the marae.
- Mark edgelines on both sides of the road for the full length of the road.
- Review curve warning signage for the full length of the road and upgrade as necessary.

8.2.5 Mangarino Road

Mangarino Road is a collector road that runs between Hangitaiki and Te Kuiti for and 12km long with a primarily open road speed limit.

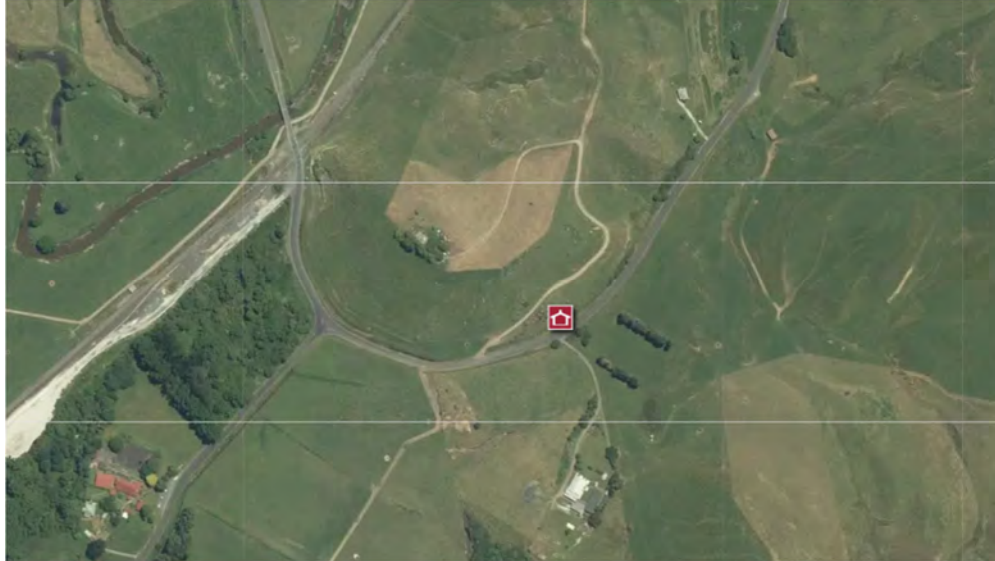
This road was identified for review as Te Kauae marae is located approximately 1110m west of State Highway 3 at Hangitiki.

Safety and speed information from MegaMaps shows the following.

Mangarino Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	57km/hr
<i>Safe and Appropriate Speed</i>	80km/hr	<i>Infrastructure Risk Rating</i>	Medium High

Figure 31 Mangarino Road / Te Kauae marae



Due to the limited interaction between the marae and the road no changes to the speed limit are proposed in this area at this stage. Changes to the speed limit in this area needs to be considered as part of a wider strategy for speed limits on rural roads across the district.

The location of Te Kauae marae is currently not identified and advance and directional signage should be installed to show the location of the marae .

Recommendation

The following changes are recommended for Mangarino Road in the vicinity of Te Kauae marae:

- Install advance and directional marae signage for Te Kauae Marae on both approaches to the marae

8.2.6 Mangatea Road

Mangatea Road is a local no exit road off State Highway 3 that is 4875m long with an open road speed limit. The last 2.6km of the road is unsealed.

This road was identified for review as Mōtiti and Tomotuki (Parekaitini) maraes are located on the northern end of this road.

Safety and speed information from MegaMaps shows the following.

Mangatea Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	26km/hr
<i>Safe and Appropriate Speed</i>	60km/hr	<i>Infrastructure Risk Rating</i>	High

The default safe and appropriate speed for all unsealed roads is 60km/hr. Due to the limited interaction between the marae and the road no changes to the speed limit are proposed in this area at this stage. Changes to the speed limit in this area needs to be considered as part of a wider strategy for speed limits on rural roads across the district.

Figure 32 Mangatea Road / Mōtiti and Tomotuki (Parekaitini) maraes



The location of Mōtiti and Tomotuki (Parekaitini) maraes is currently not identified and advance and directional signage should be installed to show the location of the maraes.

Recommendation

The following changes are recommended for Mangarino Road in the vicinity of Mōtiti and Tomotuki (Parekaitini) maraes:

- Install advance and directional marae signage for Mōtiti and Tomotuki (Parekaitini) maraes on the approaches to the maraes.

8.2.7 Ngatapuwaē Road

Ngatapuwaē Road is a no exit local road off Te Anga Road that is 3100m long with an open road speed limit that is unsealed.

This road was identified for review as Pohatuirī marae is located on the northern end of this road.

Safety and speed information from MegaMaps shows the following.

Ngatapuwaē Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	20km/hr
<i>Safe and Appropriate Speed</i>	60km/hr	<i>Infrastructure Risk Rating</i>	High

The default safe and appropriate speed for all unsealed roads is 60km/hr. Due to the limited interaction between the marae and the road no changes to the speed limit are proposed in this

area at this stage. Changes to the speed limit in this area needs to be considered as part of a wider strategy for speed limits on rural roads across the district.

Figure 33 Ngatapuwaee Road / Pohatuiri marae



The location of Pohatuiri marae is currently not identified and advance and directional signage should be installed to show the location of the marae.

Recommendation

The following changes are recommended for Ngatapuwaee Road:

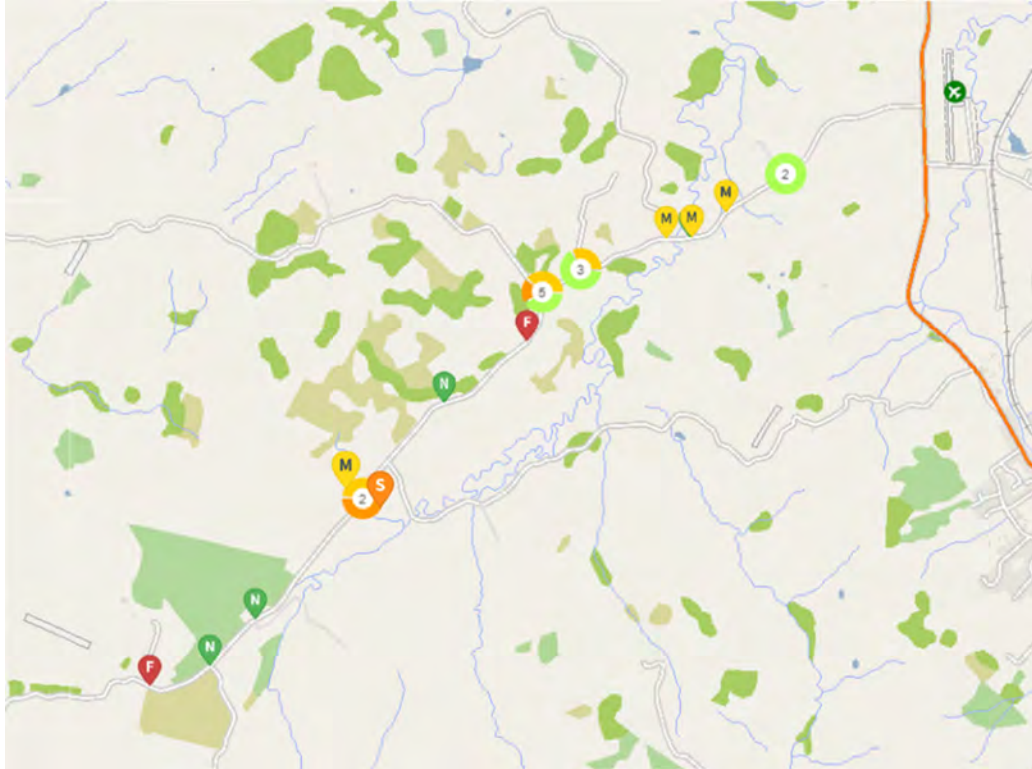
- Install advance and directional marae signage for Pohatuiri marae on the approach to the marae

8.2.8 Oparure Road

Oparure Road runs between State Highway 3 and Ngapaenga Road and is 19.1km long with an 80km/hr speed limit between RP 2550 and 4100 and an open road speed limit on the remaining sections of the road. The section under review is between State Highway 3 and RP8100. See Section 8.1.1 for proposed speed limits in the vicinity of Te Wharekura o Maniapoto.

This section of Oparure Road was identified for review due to having three or more fatal and/or serious crashes in the last 10 years as well as having Oparure (Te Waipatoto) marae located on this road.

Figure 34 Oparure Road crashes



There have been twenty-five crashes reported in the 10 year period 2013 – 2022 inclusive with two fatal, two serious, eight minor and fourteen non-injury crashes. Twenty-one of the crashes occurring in the section between State Highway 3 and RP 8100. The majority of the crashes were single vehicle loss of control crashes with one of the fatal crashes an intersection type crash at the quarry entrance. There have been no fatal or serious crashes reported since 2018.

Safety and speed information from MegaMaps shows the following.

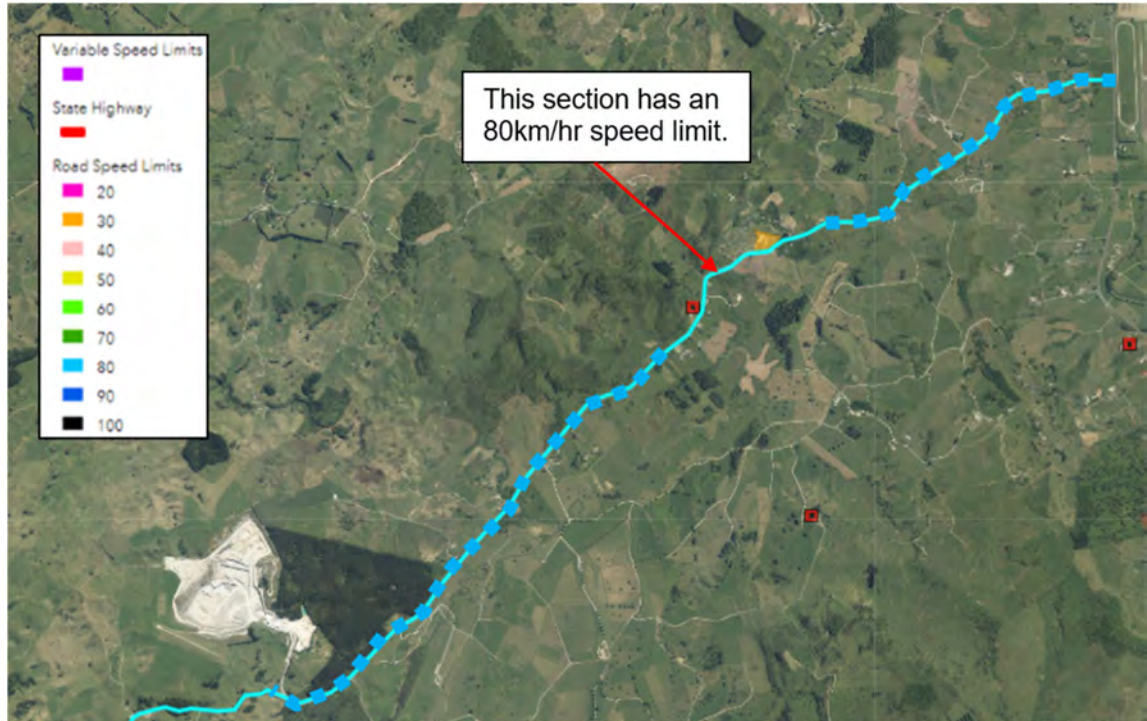
Oparure Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	78-86km/hr
<i>Safe and Appropriate Speed</i>	80km/hr	<i>Infrastructure Risk Rating</i>	Medium

A lower speed limit in the vicinity of the quarry access at RP 8000 was a recommendation from the coroner’s report following the fatal crash at this location in 2016. Improvements including a right turn bay and widening have been installed at this intersection.

The alignment of the road varies with a primarily straight alignment between State Highway 3 and Troopers Road changing to a more winding environment to the west of Troopers Road.

Figure 35 Oparure Road / Oparure (Te Waipatoto) marae



Due to the high number of crashes, the number of accesses including the marae and the section between State Highway 3 and Fullerton Road being part of the alternative route between Te Kuiti and Waitomo a lower speed limit is considered to be appropriate in this area.

See Section 8.1.1 for proposed speed limits in the vicinity of Te Wharekura o Maniapoto. Any changes to the speed limit on the remaining section of Oparure Road needs to be considered as part of a wider strategy for speed limits on rural roads across the district.

Recommendation

The following changes are recommended for Oparure Road:

- Lower the speed limit to 80km/hr on the following sections of road;
 - Oparure Road from State Highway 3 to 160m west of Fullerton Road (RP2550)
 - Oparure Road from 635m west of Boddie Road (RP 4100) to 630m west of Troopers Road (RP8100)
- Install threshold treatment at the change in speed limit locations.
- Install speed limit signs at regular intervals along the road and on side roads as required.

Following the Council hearing and deliberation process it was resolved to lower the speed limit permanently on Oparure Road from 95m east of Fullerton Road (RP2300) to 580m west of Boddie Road (RP4050).

This changes the start and end locations for the proposed 80km/hr speed limit on Oparure Road to:

- *Oparure Road from State Highway 3 to 95m east of Fullerton Road (RP2300)*
- *Oparure Road from 580m west of Boddie Road (RP4050) to 630m west of Troopers Road (RP8100)*

8.2.9 Somerville Road

Sommerville Road runs between Te Kuiti and Te Kumi and is part of an alternative route between Waitomo and Te Kuiti with Hangatiki East Road. The road currently has an open road speed limit with a section at the Te Kuiti end under a temporary 70km/hr speed limit.

This road was identified for review due to concerns regarding the appropriateness of the existing speed limit.

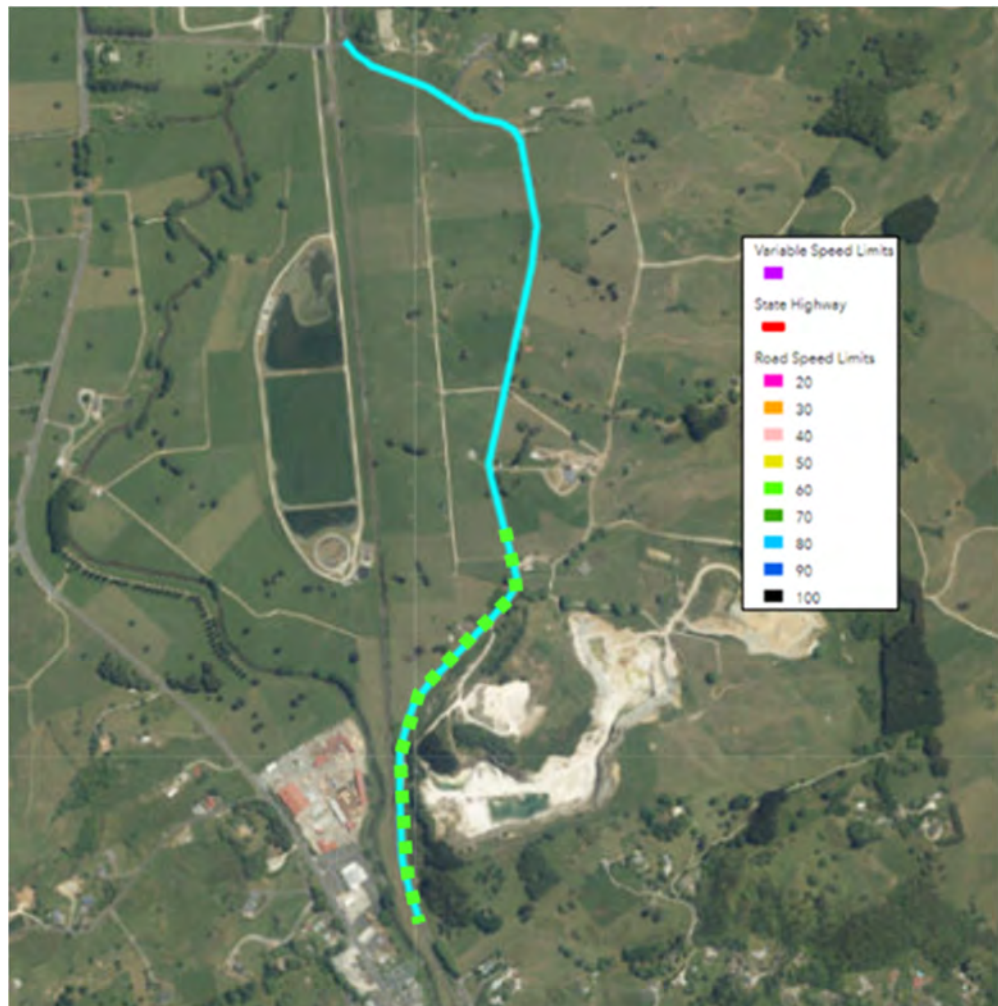
Safety and speed information from MegaMaps shows the following.

Somerville Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	61km/hr
<i>Safe and Appropriate Speed</i>	80km/hr	<i>Infrastructure Risk Rating</i>	Medium

There have been eight crashes reported on Somerville Road the last 10 years all of which were loss of control that resulted in two minor and six non-injury crashes. Seven of the crashes have occurred in the last 3 years.

Figure 36 Somerville Road



Due to the alignment and number of accesses the current 900m section under a temporary speed limit should have a lower speed limit of 60km/hr installed.

Any changes to the speed limit on the remaining section of Somerville Road needs to be considered in conjunction with Hangatiki Road and as part of a wider strategy for speed limits on rural roads across the district.

Recommendation

The following changes are recommended for Sommerville Road:

- Lower the speed limit to 60km/hr on Sommerville Road from Tammadge Street north for a distance of 900m.
- Install settlement threshold treatments at the 50/60 change in speed limit at Tammadge Street.

8.2.10 Te Anga Road

Te Anga Road has runs between Waitomo and Te Anga and has a number of distinct sections. Two sections near Waitomo have been identified for review below.

Te Anga Road - Waitomo Valley Road and Tumutumu Road

The section under review is between Waitomo Valley Road and Tumutumu Road which has an open road speed limit, however there are signs on site indicating that the speed limit is 50km/hr in this area.

This road was identified for review as the existing speed limit is out of context with the use of this section of road for parking and access to the Waitomo Caves.

Safety and speed information from MegaMaps shows the following.

Te Anga Road - Waitomo Valley Road and Tumutumu Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	43km/hr
<i>Safe and Appropriate Speed</i>	30km/hr	<i>Infrastructure Risk Rating</i>	High

Figure 37 Te Anga Road – Waitomo



There have been no reported crashes on this section of Te Anga Road. Due to the low pedestrian movements but high vehicle manoeuvres a 60km/hr speed limit is considered to be appropriate.

Recommendation

The following changes are recommended for Te Anga Road between Waitomo Valley Road and Tumutumu Road:

- Lower the speed limit to 60km/hr on Te Anga Road from Waitomo Village Road to the intersection with Tumutumu Road.
- Install threshold treatments on the Tumutumu Road and Te Anga Road (west) approach to the roundabout.

Te Anga Road - Tumutumu Road and Ngatapuwa Road

The section under review is between Tumutumu Road and Ngatapuwa Road which has an open road speed limit.

This road was identified for review as Tokikapu marae is located on this section of the road.

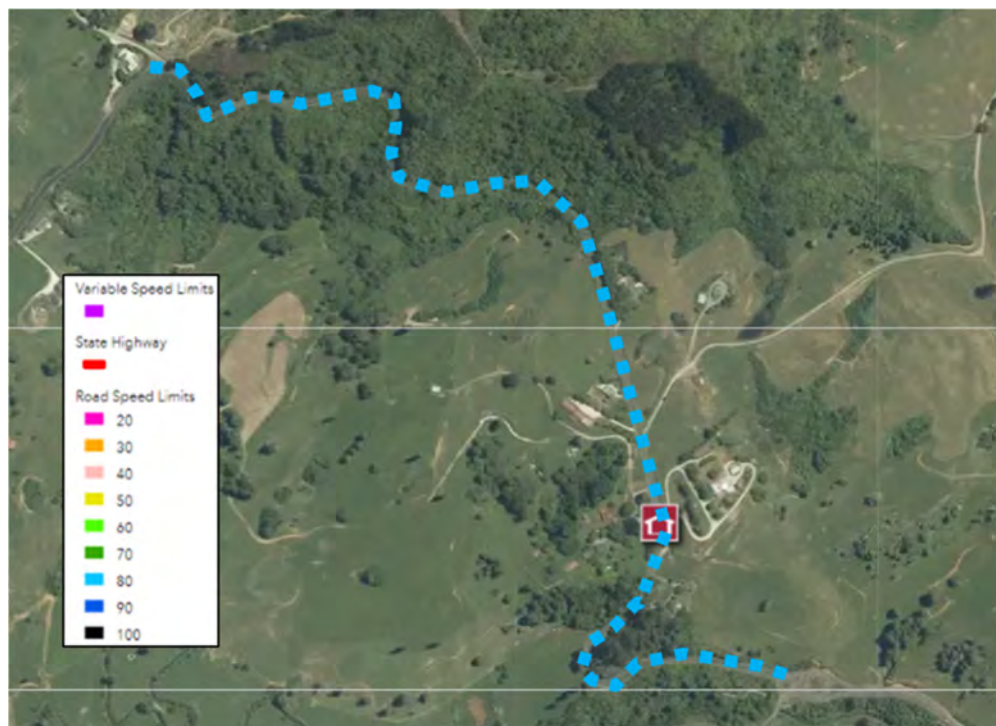
Safety and speed information from MegaMaps shows the following.

Te Anga Road - Tumutumu Road and Ngatapuwa Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	56km/hr
<i>Safe and Appropriate Speed</i>	80km/hr	<i>Infrastructure Risk Rating</i>	High

There have been seven reported crashes on this section of Te Anga Road in the last 10 years resulting in two serious, two minor and three non-injury crashes. The majority of crashes were loss of control with one head-on crash with inappropriate speed a contributing factor in over half of the crashes.

Figure 38 Te Anga Road / Tokikapu marae



Due to the tortuous alignment, high crash rate and number of accesses in this section a lower speed limit is considered to be appropriate.

Further changes to the speed limit in this area needs to be considered as part of a wider strategy for speed limits on rural roads across the district.

The location of Tokikapu marae is currently not identified and advance and directional signage should be installed to show the location of the maraes.

Recommendation

The following changes are recommended for Te Anga Road between Tumutumu Road and Ngatapuwaē Road:

- Lower the speed limit to 80km/hr on Te Anga Road between the intersections of Tumutumu Road and Ngatapuwaē Road.
- Install threshold treatments on the Te Anga Road approach to Ngatapuwaē Road.
- Install advance and directional marae signage for Tokikapu marae on both approaches to the marae.

8.2.11 Waitomo Valley Road

Waitomo Valley Road runs between State Highway 37 and State Highway 31 and has an open road speed limit. This road is shared with Otorohanga District Council, with 5km of the road under Waitomo District Council jurisdiction.

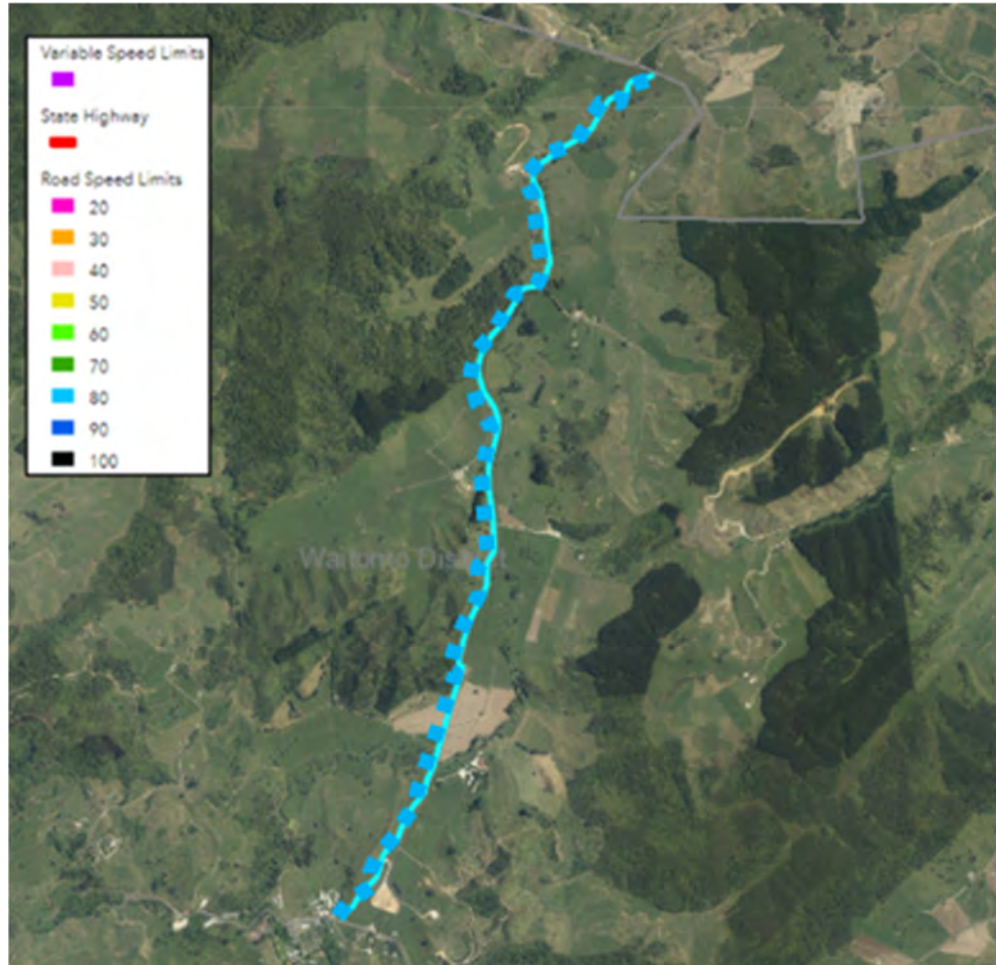
This road was identified for review as the existing speed limit is out of context for the road environment and with the operation of the wider roading network.

Safety and speed information from MegaMaps shows the following.

Waitomo Valley Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	60km/hr
<i>Safe and Appropriate Speed</i>	80km/hr	<i>Infrastructure Risk Rating</i>	Medium High

Figure 39 Waitomo Valley Road



This route is often used a shortcut to access the Waitomo Caves from the north to avoid the State Highway however the alignment is not suitable for unfamiliar drivers especially those from overseas and a lower speed limit of 80km/hr is considered to be appropriate. This is also consistent with proposed changes to the speed limit on Fullerton Road and the existing 80km/hr speed limit on State Highway 37.

Recommendation

The following changes are recommended for Waitomo Valley Road:

- Lower the speed limit to 80km/hr on Waitomo Valley Road for its full length.
- Install threshold treatment at the change in speed limit north of State Highway 37.
- Update existing and/or install new speed limit signage as required.

Any changes to the speed limit on Waitomo Valley Road will need to be coordinated with Otorohanga District Council to provide consistency for drivers.

8.2.12 Waitomo Village Road

Waitomo Village Road runs between State Highway 37 and Te Anga Road and has a speed limit of 50km/hr. The road name changes to Te Anga Road 887m west of Waitomo Valley Road.

This road was identified for review as the existing speed limit is out of context with the high volume of pedestrians and manoeuvring vehicles in this area.

Safety and speed information from MegaMaps shows the following.

Waitomo Village Road

<i>Posted speed limit</i>	50km/hr	<i>Mean Free Flow Speed</i>	44km/hr
<i>Safe and Appropriate Speed</i>	30km/hr	<i>Infrastructure Risk Rating</i>	Medium High

There have been twelve reported crashes in the last 10 years with four minor and eight non-injury. Five of the crashes were the result of drivers crossing the centreline.

Figure 40 Waitomo Village Road



Due to the high volume of unfamiliar drivers and manoeuvring vehicles a lower speed limit of 30km/hr is considered to be appropriate.

Recommendation

The following changes are recommended for Waitomo Village Road:

- Lower the speed limit to 30km/hr on Waitomo Village Road for its full length.
- Install threshold treatment at the change in speed limit west of State Highway 37.
- Update existing and/or install new speed limit signage as required.

9. Summary

A summary of the recommendations for each road or section of road identified above is tabled below.

Report No.	School / Road Name	Recommendations
2.1.1	Aria School	<p>Lower the speed limit to 30km/hr on the full length of Rimu Street and Barclay Road from Ohura Road to RP 325</p> <p>Install school threshold style treatments on Barclay Road on both sides of the school.</p>
2.2.1	Aria Township	<p>Correct the legal speed limit to match the posted speed limit of 50km/hr on the following sections of road:</p> <ul style="list-style-type: none"> • Aria Road from 90m NW of Matai Street to Ohura Road • Kumara Road from Ohura Road to 120m SW of Ohura Road • Ohura Road from Aria Road to 90m east of Kiekie Street • Barclay Road from Ohura Road to 40m south of Miro Street • Matai Street from Aria Road to Kiekie Street • Kiekie Street from Ohura Road to Matai Street • Tawa Street from Kiekie Street to End
2.2.2	Ohura Road	<p>Lower the speed limit to 80km/hr on Ohura Road from the existing 50/100 speed limit change to 870m east of Kiekie Street (RP930).</p> <p>Install settlement threshold treatment at the 80/100 speed limit change location.</p> <p>Update existing and/or install new speed limit signage as required.</p> <p>Install advance and directional marae signage for Te Paemate Marae.</p>

Report No.	School / Road Name	Recommendations
3.1.1	Benneydale Primary School	Lower the speed limit to 30km/hr on Mine Road between 360m and 725m east of Maniaiti Street (RP360 - 725). Install school threshold style treatments on Mine Road at RP362 and RP725.
3.1.2	Rangitoto School	Lower the speed limit to 60 km/hr on Rangitoto Road between 195m west (RP 9260) and 245m east (RP 9700) of Ngapeke Road and on Ngapeke Road from Rangitoto Road for 200m. Install school threshold treatments on Rangitoto Road and Ngapeke Road on the approaches to the school.
3.2.1	Rangitoto Road	Install advance and directional marae signage for Te Arohoa Marae on both approaches to the marae.
4.1.1	Piopio Primary School and Piopio College	Install a 30km/hr variable speed limit on Ruru Street between 330m (RP330) and 850m (RP850) south of Tui Street. Install variable school threshold treatments on Ruru Street on each approach to the schools. Install additional school signage at RP600 to remind drivers that there is another school in the vicinity.
4.2.1	Napinapi Road	Install directional marae signage for Napinapi Marae at the intersection with Tikitiki Road.
5.1.1	Mokau School	Lower the speed limit to 30km/hr on Aria Terrace from Rerenga Street to Rangi Street and Rangi Street from Tainui Street to Aria Terrace. Install school threshold style treatments on Rangi Street and Aria Terrace on the approaches to the school.
5.1.2	Whareorino School	Lower the speed limit to 60km/hr on Waikawau Road from the intersection with Manganui Road for 180m. Install school threshold style treatments on Waikawau Road at RP10 and RP180.
5.2.1	Awakino Heads Road	Lower the speed limit to 60km/hr for the full length of Awakino Heads Road. Install speed limit signage at both intersections with State Highway 3 and install repeater signs midblock to remind drivers.

Report No.	School / Road Name	Recommendations
5.2.2	Te Mahoe Road	Lower the speed limit to 60km/hr for the full length of Te Mahoe Road. Install speed limit signage at the beginning and repeater signs along the length of the road.
5.2.3	Ye Old Mill Road	Lower the speed limit to 40km/hr for the full length of Ye Old Mill Road. Install speed limit signage at the intersection with State Highway 3.
6.1.1	Kinohaku School	Lower the speed limit to 60km/hr on Kaiwhai Harbour Road from the intersection with Te Waitere Road to RP 450. Install school threshold treatments Te Anga Road on both approaches to the school.
6.1.2	Piripiri School	Lower the speed limit to 60km/hr on Te Anga Road from 200m east of the school access (RP 26400) to 200m west of the school access (RP 26800). Install school threshold treatments Te Anga Road on both approaches to the school.
6.1.3	Te Kura o Tahaaroa	Lower the speed limit to 30km/hr on Taharoa Road from 200m west of Kiwi Street (RP 18700) to the end of the public road at RP 19070. Install school threshold style treatments on Taharoa Road either side of the school.
6.2.1	Te Anga Road - between RP 28000 and Taharoa Road	No changes are proposed to this section of Te Anga Road.
7.1.1	Centennial Park School	Install a 30km/hr variable speed limit Te Kuiti Road between Lawrence Street and 35m north of Esplanade (RP770), Park Street from Te Kuiti Road to William Street. Lower the speed limit to 30km/hr on the full length of Manawaiti Street. Install variable school threshold treatments on Te Kuiti Road and Park Street approaches to the school. Install speed limit signs on the Manawaiti Street approach to Esplanade.

Report No.	School / Road Name	Recommendations
7.1.2	Pukenui School	<p>Lower the speed limit to 30km/hr on the full length of John Street, King Street West between John Street and 190m north of John Street (RP 700) and South Street from Bayne Street to John Street.</p> <p>Install school threshold treatments on King Street West and South Street approaches to the school.</p>
7.1.3	St Joseph's Catholic School	<p>Install a 30km/hr variable speed limit on Seddon Street between Anne Street and 190m north of Anne Street (RP210), Queen Street between 65m north of Princes Street (RP 280) and Anne Street, Princes Street between Queen Street and King Street west and Anne Street between Seddon Street and Queen Street</p> <p>Install variable school threshold treatments on Queen Street, Seddon Street and Princes Street approaches to the school.</p> <p>Consider upgrading the kea crossings on Queen Street and Princes Street to raised zebra crossings.</p>
7.1.4	Te Kuiti High School	<p>Install a 30km/hr variable speed limit Hospital Street between State Highway 3 (RP 210) and Eketone Street, Eketone Street between Hill Street and Hospital Road and George Street from Eketone Street to 155m south of State Highway 3 (RP155).</p> <p>Install variable school threshold treatments on George Street and Hospital Street approaches to the school.</p> <p>Install variable speed limit side road signage on Hill Street and Ailsa Street approaches to Eketone Street and Ngatai Street approach to George Street.</p>
7.1.5	Te Kuiti Primary School	<p>Lower the speed limit to 30km/hr on Rora Street (North) from Rora Street to its end.</p> <p>Install school threshold treatments on Rora Street approach to the school.</p>
7.2.1	Gadsby Road	<p>Lower the speed limit to 60km/hr for the full length of Gadsby Road.</p> <p>Update existing and/or install new speed limit signage as required.</p>

Report No.	School / Road Name	Recommendations
8.1.1	Te Wharekura o Maniapoto	Lower the speed limit to 50 km/hr on Oparure Road from 95m east of Fullerton Road (RP2300) to 580m west of Boddie Road (RP4050). Install school threshold treatments on Oparure Road on both approaches to the school.
8.1.2	Waitomo Caves School	Private Road
8.2.1	Hangatiki Township	Lower the speed limit to 80km/hr on the full length of Pukeroa Road and Kiwi Street. Update existing and/or install new speed limit signage as required. Install threshold style treatments at the change in speed limit location on the approach to State Highway 37.
8.2.2	Brooklee Road	Lower the speed limit to 80km/hr on the full length of Brooklee Road. Update existing and/or install new speed limit signage as required.
8.2.3	Fullerton Road	Lower the speed limit to 80km/hr on Fullerton Road from Oparure Road to the existing 50km/hr speed limit 100m south of State Highway 37. Install threshold treatment at the change in speed limit south of State Highway 37. Update existing and/or install new speed limit signage as required. Install speed limit signs at regular intervals along the road.
8.2.4	Hangatiki East Road	Install advance and directional marae signage for Te Kauae Marae on both approaches to the marae. Mark edgelines on both sides of the road for the full length of the road. Review curve warning signage for the full length of the road and upgrade as necessary.
8.2.5	Mangarino Road	Install advance and directional marae signage for Te Kauae Marae on both approaches to the marae

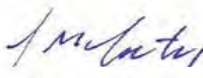
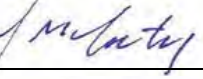
Report No.	School / Road Name	Recommendations
8.2.6	Mangatea Road	Install advance and directional marae signage for Mōtiti and Tomotuki (Parekaitini) maraes on the approaches to the maraes.
8.2.7	Ngatapuwaē Road	Install advance and directional marae signage for Pohatuiri marae on the approach to the marae
8.2.8	Oparure Road	Lower the speed limit to 80km/hr on Oparure Road from State Highway 3 to 95m east of Fullerton Road (RP2300) and from 580m west of Boddie Road (RP4050) to 630m west of Troopers Road (RP8100) Install threshold treatments at the change in speed limit locations. Install speed limit signs at regular intervals along the road.
8.2.9	Sommerville Road	Lower the speed limit to 60km/hr on Sommerville Road from Tammadge Street north for a distance of 900m. Install settlement threshold treatments at the 50/60 change in speed limit at Tammadge Street
8.2.10	Te Anga Road - Waitomo Valley Road and Tumutumu Road	Lower the speed limit to 60km/hr on Te Anga Road from Waitomo Village Road to the intersection with Tumutumu Road. Install threshold treatments on the Tumutumu Road and Te Anga Road (west) approach to the roundabout.
8.2.10	Te Anga Road - Tumutumu Road and Ngatapuwaē Road	Lower the speed limit to 80km/hr on Te Anga Road between the intersections of Tumutumu Road and Ngatapuwaē Road. Install threshold treatments on the Te Anga Road approach to Ngatapuwaē Road. Install advance and directional marae signage for Tokikapu marae on both approaches to the marae.
8.2.11	Waitomo Valley Road	Lower the speed limit to 80km/hr on Waitomo Valley Road for its full length. Update existing and/or install new speed limit signage as required. Install threshold treatment at the change in speed limit north of State Highway 37.

Report No.	School / Road Name	Recommendations
8.2.12	Waitomo Village Road	<p>Lower the speed limit to 30km/hr on Waitomo Village Road for its full length.</p> <p>Update existing and/or install new speed limit signage as required.</p> <p>Install threshold treatment at the change in speed limit west of State Highway 37.</p>

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