

Regional Speed Limit Review Waipu, Ruakaka/ One Tree Point (Marsden) and Vinegar Hill

Recommendations Report

Table of Contents

Table of Contents	2
1 Overview	4
1.1 Purpose and Scope	4
1.2 Implementation of recommended speed limits	5
2 Delegations	5
3 Community Consultation Process	5
3.1 Notification	5
3.2 Hearings	6
3.3 Hearing Summary	6
4 Submissions Overview	10
4.1 Submissions Out of Scope	10
4.1.1 Speed limits in other areas	10
4.1.2 Enforcement	11
4.1.3 Climate Change	11
4.2 Other issues raised	11
4.2.1 Crashes occur on State Highways	12
4.2.2 Dust	12
4.2.3 Maintenance and Upgrade	12
4.2.4 70kph Speed Limit	13
4.2.5 Attainable Speed Limits	13
4.2.6 European Speed Limits	14
4.3 Statutory Consultee Submissions	14
4.3.1 Automobile Association (AA)	15
4.3.2 New Zealand Transport Agency (NZTA)	15
5 Schools	18
5.1 Bream Bay College	18
5.2 Ruakaka School	19
5.3 One Tree Point School	19
5.4 Waipu Primary School	20
5.5 Te Kura Kaupapa Māori o Te Rawhiti Roa	21
6 Significant Roads	21
6.1 Marsden Point Road	22
6.1.1 Community Feedback – Marsden Point Road	22

WDC Speed Review – Vinegar Hill, Marsden, Waipu, Te Toiroa Rd

6.1.2	Marsden Point Road Analysis	25
6.1.3	Recommendation	30
6.2	Vinegar Hill Road	30
6.2.1	Community Feedback – Vinegar Hill Road	30
6.2.2	Analysis – Vinegar Hill Road	32
6.3	Ruakaka and One Tree Point Urban Traffic Area	34
6.3.1	Community Feedback – Ruakaka and One Tree Point Urban Traffic Area	34
6.3.2	Analysis – Ruakaka and One Tree Point Urban Traffic Area	34
6.4	The Centre Road - Waipu	38
6.4.1	Community Feedback – The Centre Road	38
6.4.2	Analysis – The Centre Road and Waipu Urban traffic Area	38
7	Summary of submissions received and recommendations (road by road)	40
Appendix 1: Recommended Urban Traffic Area Maps – Ruakaka, One Tree Point and Waipu		
Appendix 2: Recommended Speed Limit Maps		
Appendix 3 – Glossary of Technical Terms		
Appendix 4 – Traffic Note 37 and 56 Variable Speed Limits Outside Schools		

1 Overview

Whangarei District Council (Council) is a Road Controlling Authority (RCA) within the Whangarei District and has a statutory role in managing the District's local roads (except State Highways), including the setting of speed limits. This statutory role as an RCA is set out under the Land Transport Act 1998, which also enables Council to make a bylaw that fixes the maximum speed of vehicles on any road for the safety of the public, or for the better preservation of any road (*Section 22AB(1)(d)*).

The Whangarei District Speed Limits Bylaw 2019 sets the speed limits on all local roads within the District, with the Schedules and maps in that Bylaw identifying the enforceable speed limits and where they apply.

Council undertook community consultation on proposed new speed limits within the following areas:

- Marsden Point area, including Ruakaka and One Tree Point
- Waipu / Nova Scotia Drive
- Vinegar Hill
- Te Toiroa Road

The proposed changes to speed limits were publicly notified in accordance with Section 156 of the Local Government Act 2002; with feedback being sought from 4th November to 5pm, Friday 9th December 2019. Hearings were held at Council Chambers, Forum North on 17th March 2020.

This Report brings together all the information that must be considered under Section 4.2(2) of the Setting of Speed Limits Rule 2017, including:

- Community feedback and recommendations (main body of Report)
- Recommended Speed Limit Maps (Appendix 1)
- Technical Information to be considered (Appendix 2 as a separate attachment)
- Statement of Proposal as notified (Appendix 3 as a separate attachment)
- Implementation Costs and Schedule (Appendix 4)
- Traffic Notes 37 and 56 (Appendix 5)

1.1 Purpose and Scope

The purpose of this Report is to provide all the information that the RCA is required to consider when setting speed limits under Section 4.2(2) of the Setting of Speed Limits Rule 2017.

The detailed technical information that was collated and considered when proposing new speed limits for public notification and community feedback forms part of the decision-making process and is appended to this Report.

This report meets the requirement of the Local Government Act (2002): Principles of Consultation (Section 82 and 82A). The report provides:

- A summary of the feedback received
- A discussion of the issues raised by submitters, either individually; or collectively where there are similar themes.
- The recommendations arising from the feedback, including the reasons for the recommendations.

Feedback is acknowledged in this report; but individual submissions may not be specifically referenced within the body of this report due to the similarity of the decisions requested, reasons given, and the volume of submissions received.

1.2 Implementation of recommended speed limits

There are a number of factors that are required to ensure that a speed limit is legally enforceable:

- The Speed Limit must be set in accordance with the Setting of Speed Limits Rule 2017. This has been achieved through the speed limit review process (including the associated consultation process).
- New speed limits signage must be installed in accordance with Setting of Speed Limits Rule 2017 and relevant standards
- Speed limit signage must match the operative speed limits set out in the Speed Limits Bylaw

Given the physical works required to ensure the enforceability of proposed new speed limits, Council will be requested to debate and adopt the recommendations in this Report. Council will then make a separate decision to make the proposed speed limits operative once signage has been installed. Implementation requirements are included in Appendix 4.

2 Delegations

Speed Limits within the District are set by the RCA. The RCA is responsible for decisions relating to feedback on proposed speed limits. The Speed Limits Bylaw is made under Section 22AB(1)(d) of the Land Transport Act.

3 Community Consultation Process

The Whangarei District Speed Limits Bylaw is made pursuant to the Land Transport Act 1998. Section 22AD (1) of the Land Transport Act 1998 states that Section 156 of the Local Government Act 2002 applies. Section 156 (LGA) sets out the consultation requirements when making or amending a Bylaw.

- The Local Government Act 2002 provides the process for consultation
- The Land Transport Act 1998 and the Setting of Speed Limits Rule 2017 identifies who must be consulted.

The proposed changes to the Speed Limits Bylaw was assessed against the requirements of Section 156 of the LGA 2002. This assessment determined that the proposed changes would; or would likely to have; a significant impact on the public. The significance of the proposal relates to the wide-ranging proposals to change speed limits within the affected catchment area. These proposed changes would have the potential to impact on all road users to some degree.

Given the significance of the proposed changes, it was determined that consultation should be undertaken in accordance with Section 83 of the LGA 2002 – Special Consultative Procedures.

3.1 Notification

A Statement of Proposal (Appendix 3) was prepared in accordance with the requirements of the LGA 2002 and notified in local media and on Council's website. In addition:

- The full Statement of Proposal and supporting technical information was made available on Council's website
- Press releases relating to the review and proposed speed limit changes were featured in local media
- Key Stakeholders and Statutory Consultees (Refer Section 8.10 of Appendix 2) were notified directly
- Information, including the Statement of Proposal and Technical Information was made available at Council offices and service centres
- Information and community "drop in" sessions, attended by key staff were held in Waipu, Ruakaka and One Tree Point.

- A letter, outlining the proposed changes, how to make a submission and where to obtain additional information was sent to all residents in the Vinegar Hill Catchment Area (as no drop-in session was held in the area).

3.2 Hearings

Section 83(1)(d) and (e) of the LGA 2002 requires the Local Authority to provide an opportunity for persons to present their views to the local authority in a manner that enables spoken (or New Zealand sign language) interaction between the person and the Local Authority, or any representatives to whom an appropriate delegation has been made.

The community was provided with an opportunity to provide written submissions between 4th November and 9th December 2019. All submitters were asked to indicate if they wished to be heard in person to support their submission.

A total of nine people presented their submissions at a formal hearing on 17th March 2020, held in Council Chambers at Forum North, Whangarei.

The Hearing was attended by full Council in their capacity as the Road Controlling Authority. Key Northland Transportation Alliance Staff, who are responsible for recommending decisions to the RCA were also in attendance.

3.3 Hearing Summary

A range of issues were expanded upon by submitters at the hearing. Most of those issues have been addressed throughout this Report in some detail.

Carol Dean (Submitter 37) raised specific concerns relating to Simes Road (Ruakaka) and Marsden Point Road, including the service lanes that are located at different points along Marsden Point Road.

The submitter opposed the proposal to retain a short 60kph section along Simes Road, discussing the need for safe access to sports fields that are located adjacent to the proposed 60kph zone on Simes Road. The submitter also noted that the 60kph and 50kph zones would be confusing and that the current level of use along Simes Road would justify a 50kph zone extending along the entire length of the road.

The 60kph zone on Simes Road was proposed as a way of regularising the speed limit in accordance with current national guidance that seeks to avoid 70kph zones in favour of 60kph or 80kph. It is inappropriate to raise the speed limit on Simes Road to 80kph, therefore the option of making a slight reduction in the speed limit was proposed. Following consultation and a more general desire to extend the use of 40kph zones in coastal community areas, except main thoroughfares and arterial routes, (refer Section 6.3) it is considered appropriate to create a 50kph zone extending along the entire length of Simes Road. Simes Road is subject to several submissions and is addressed in the Tables in Section 7 of this Report.

The submitter expressed support for the proposal for lowering the speed limit on Marsden Point Road from State Highway 1 to Simes Road. In supporting the proposed reduction, the submitter noted that the lower speed limit would reduce noise. The submitter also highlighted that this section of Marsden Point Road provides a direct route from residential areas to central services in the Ruakaka Town Centre. However, the shoulder area on the road is very limited and footpaths are very narrow, particularly over the Ruakaka Bridge where pedestrians are within 1 meter of vehicles on the carriageway (it should be noted that this is an issue raised by other submitters). Marsden Point Road is specifically addressed in Section 6.1 of this Report.

The submitter considered that the speed limit on part of Marsden Point Road from Simes Road to State Highway 15A should be further reduced from the proposed 80kph to 60kph. The position of this submitter is supported by a range of other submissions (refer Section 6.1.1).

Marsden Point Road includes some access roads that run parallel to Marsden Point Road providing access to residences. The access roads are narrow and do not generally have footpaths. Where the access roads join a main road, there are effectively “triple intersections” where the access roads join a side road almost immediately adjacent to Marsden Point road. The access roads are utilised by pedestrians, including many children. The submitter sought a speed limit reduction from 50kph to 20kph on these narrow access roads. Marsden Point Road Access Roads are the subject of several submissions and is addressed in the tables in Section 7 of this Report.

Peter Schouten (*Submitter 40*) raised concerns relating to the Vinegar Hill Catchment area. The submitter questioned aspects of the Technical Report that supports the proposed speed limit changes in the Vinegar Hill Area. The submitter stated that some of the data relied upon was an order of magnitude incorrect, including traffic counts. However, the submitter did not provide any additional evidence as to his opinion, nor any evidence as to how his concerns would have had a material effect on the proposed speed limits or the review outcomes.

The submitter noted that there has been a noticeable increase in traffic on Vinegar Hill Road in recent years. In addition, there has been much more urbanisation of the Vinegar Hill environment. The submitter is correct that there has been an increase in traffic on Vinegar Hill Road and an increase in the urbanisation of the area generally. Given changes to the Whangarei District Plan, increased urbanisation is expected to continue in the foreseeable future.

The submitter is seeking a further reduction in the proposed 80kph speed limit to either 60kph or 70kph throughout the catchment.

It should be noted that national speed management guidance clearly discourages the use of 70kph speed zones. Implementing a 70kph speed limit requires the Road Controlling Authority to additional approvals from NZTA, with national guidance clearly indicating that a 70kph zone should only be utilised where there is a clear case that 60kph is too low a speed limit and 80kph is too high a speed limit.

It should be noted that several submitters have sought an alternative speed limit for all, or part of Vinegar Hill Road. Vinegar Hill Road is specifically addressed in Section 6.2 of this Report.

M&E Mathews (Submitter 41) was primarily concerned with speed on Vinegar Hill Road and sought an extension of the proposed 60kph heading north from Boundary Road to Riversong Corner.

The submitter noted that Vinegar Hill Road is no longer a quiet country road and now has a high number of commuters that often travel at higher speeds. The submitter's residence is located on Vinegar Hill Road. The exit to the submitter's property has limited visibility, making exiting or entering the property dangerous when there are speeding drivers. The visibility creates a very limited braking distance, from the point at which a vehicle on the main carriageway would see another vehicle entering the carriageway. The submitter provided photographs of the road and the visibility issues. It is noted that there are several other accessways that have a similar issue.

The submitter noted that some visitors no longer go to her property, and they have expressed that a fear of fast traffic is the reason. Roadworks have exacerbated the issue.

The submitter expressed that a 70kph speed limit for the road would be good, or perhaps a 60kph speed limit.

It should be noted that several submitters have sought an alternative speed limit for all, or part of Vinegar Hill Road. Vinegar Hill Road is specifically addressed in Section 6.2 of this Report.

O&H Krollman (Submitter 25) lives in One Tree Point and generally sought lower speed limits than proposed on a number of roads in the Marsden Catchment Area. The submitter's principle was the impact of speed limits on pedestrians and cyclists.

The submitter noted that their submission touched on a number of roads within the Marsden / Ruakaka / One Tree Point Review Area. However, the submitter focussed on the areas summarised below. It should be noted that all of the specific roads addressed in both the written and at the hearing are addressed individually in the Tables in Section 7 of this Report.

McEwen Road: The submitter sought a lower speed limit of 60kph on McEwen Road. The submitter felt that McEwen Road did not meet the definition of an 80kph road as set out in the Statement of Proposal and the associated Technical Reports. The concern is that there is slow speed traffic on this road, including cyclists, scooters and trucks. There are no shoulder areas and a general lack of infrastructure for cyclists and pedestrians. The Marsden Play Centre is located on McEwen Road. Refer to Tables in Section 7 of this Report for specific recommendations relating to McEwen Road.

One Tree Point Road: The submitter believes that 100kph speed limit on One Tree Point Road is too high and should be lowered to 60kph. The submitter noted that the road is unsafe to drive at 80kph in several areas, including around Marsden City and Takahiwai intersections. The lower 50kph or 60kph speed zone near the One Tree Point urban area should be extended further. Refer to Tables in Section 7 of this Report for specific recommendations relating to One Tree Point Road.

Marsden Bay Drive: The submitter considered that 80kph on Marsden Bay Drive is too high. The speed limit on this road should be lowered to 60kph as the road is narrow, has no shoulder and is utilised by cyclists and pedestrians. Refer to Tables in Section 7 of this Report for specific recommendations relating to Marsden Bay Drive.

The submitter also sought a lower speed limit of 30kph in the One Tree Point Ruakaka urban areas and Marsden City. Lowering speed limits within coastal communities is addressed in detail within Section 6.3 of this Report.

Given that Council has declared a Climate Emergency, the submitter considered that the impacts of speed limits on climate change should be considered. Climate change issues are specifically addressed in Section 4.1.3 of this Report.

Barry Pyle (Submitter 68) lives on Pyle road and is supportive of the proposed speed limit along Pyle Road. The submitter has lived on Pyle Road his entire life and is therefore familiar with the road and issues associated with it.

The submitter noted that Pyle road is a school bus route, and there are a lot of people that walk, run and cycle along the road, as well as ride horses. Dust is also an issue on the road and, gravel being thrown from the road onto his property. However, despite the dust, the submitter noted that he would prefer the road to remain unsealed; but needs regular maintenance.

The submitter noted that Pyle Road East is often used as a short cut. The submitter believes that further lowering speed limits on other roads, for example, McEwen Road, will have the effect of diverting more traffic down Pyle Road East in preference to longer sealed routes.

The submitter noted that reducing the speed limit from 100kph to 60kph on Pyle Road East makes good sense.

Ruakaka Parish Ratepayers and Residents Association (Submitter 87) focussed on parts of Marsden Point Road, Sime Road and Marsden Bay Drive and Karawai / Te Kamo Streets in Ruakaka. The submitter also raised additional points relating to speed limits or intersections on State Highways. These additional points are addressed as out of scope submissions in Section 4.1 of this Report.

Marsden Point Road (State Highway 1 to Simes Road): The submitter is seeking a speed limit of 50kph along this length of Marsden Point Road. The submitter noted that the road is residential along most of the length, with town centre facilities near the Simes Road end.

The submitter notes that there are very limited pedestrian facilities and separation for pedestrians along many parts of Marsden Point Road.

It was also noted that Heavy Goods Vehicles utilise this road as a short cut to access State Highway 1 Southbound from the Port area. The submitter reinforced that State highway 15A was specifically built for Marsden Port traffic. In the submitter's opinion, a lower speed limit along Marsden Point Road would reduce the attractiveness of this road to Heavy Goods Vehicles as a short cut. This would reduce noise, vibration and improve safety for pedestrians.

Marsden Point Road (Simes Road to State Highway 15A): The submitter sought a further lowering of the speed limit along this section of Marsden Point Road from the proposed 80kph to 60kph. The submitter stated that the view to reduce the speed limit along this stretch of road was generally supported by trucking companies that operate in the area. NTA Staff note that feedback from some commercial businesses at drop-in sessions supports the submitters claim.

Marsden Point Road is the subject of several submissions and is addressed in Section 6.1 of this Report.

Marsden Bay Drive: The submitter sought a further lowering of the speed limit along Marsden Bay Drive from the proposed 80kph to 60kph. The submitter noted that Marsden Bay Drive is heavily utilised by both cars and cars with boat trailers accessing the marina and boat ramps. There can be up to 300 boat trailers being towed on Marsden Bay Drive in a single day. Often the boat trailers are the maximum legal width. Refer to Tables in Section 7 of this Report for specific recommendations relating to Marsden Bay Drive.

Sime Road: The submitter believes that Sime Road should be 50kph along its full length. The submitter noted that on its southern side, Sime Road is bordered by a tavern, sports grounds and other commercial activities. The number of pedestrians can be quite high when sports activities take place. Simes Road is subject to several submissions and is addressed in the Tables in Section 7 of this Report.

K W Monk (Submitter 72) was focussed on Vinegar Hill Road and sought a further lowering of the speed limit from the proposed 80kph to 60kph. The submitter noted that the Vinegar Hill area has been the subject of increased subdivision in recent years, which has the effect of increasing traffic.

The submitter also highlighted that Vinegar Hill Road has numerous very tight bends and that, overall, the description of a 60kph zone contained in the Statement of Proposal and Technical Reports fits well with the characteristics of Vinegar Hill Road.

The submitter stated that an 80kph speed limit was in effect an invitation to travel at up to 89kph, as many people drove approximately 9kph over the posted speed limit. It is the submitters opinion that there is no-where on Vinegar Hill Road that there is a need to drive over 80kph.

The submitter believes that lowering the speed limit to 60kph is an opportunity to fulfil a social obligation for a safe community. When asked if it was a primarily a speed limit issue, or whether engineering options could be used to increase safety and mitigate speed; the submitter indicated that engineering mitigation options are limited, and in this case a reduction in the speed limit is the only option.

Christine McCartney (Submitter 102) was generally opposed to lower speed limits, except where they were located outside kindergartens and schools. The submitter stated that lowering speed limits is mainly for revenue collecting and that there should be a focus on compulsory driver education and a requirement to re-sit driver licences (refer Section 4.1.2

of this Report for detailed responses). The submitter also stated that, in Germany, higher speed limits on highways have statistically lower fatalities than on slower roads (Refer Section 4.2.6 of this Report). The submitter provided some statistical analysis to support this statement.

The submitter also indicated that they spend a large amount of time in a vehicle, and that slower speed limits will restrict people's freedom to drive at a speed they consider appropriate. The submitter also notes that over time, speed limits have increased, and fatalities per 100,000 have dropped.

The submitter stated that, reducing the speed limit to 80kph will cost their transport company approximately \$38,000 per year. It is unclear how this estimate was calculated, however, the broader issue is addressed in Section 6.1.2 of this Report.

The submitter made comments on specific roads at the hearing and within their written submission. These comments are addressed in the Tables in Section 7.

Margaret Hicks (Submitter 85) was generally supportive of slower speed limits, particularly the proposal to reduce the speed limit on Marsden Point Road to Simes Road from 70kph to 50kph. The submitters main concerns were in relation to Ruakaka River Bridge and Billar Road in Ruakaka.

The submitter stated that road traffic, especially Heavy Goods Vehicles has increased markedly in recent years. The submitter is concerned that Heavy Goods Vehicles crossing the bridge at speed produces significant vibration that may be damaging the bridge. The submitter believes that the number of Heavy goods Vehicles on the bridge will not decrease unless they are discouraged with a slower speed limit, making the State Highway 15A route more attractive for vehicles heading south, or coming from the south. The issue of vibration on the Ruakaka Bridge is addressed in Section 6.1 of this Report.

Billar Road is located alongside the Ruakaka Estuary and the submitter is seeking to have this road stopped and turned into an Esplanade Reserve. The submitter stated that, by making the formed Billar Road a reserve with no vehicles, and informing residents of their responsibilities, the area can be replanted to protect the main riverbank and the Wildlife Reserve. It was noted that the formed section of Biller Road should at least have a lower speed limit of 30kph.

The submitter discussed other roads at the hearing and these have been addressed in the Tables in Section 7 of this Report.

4 Submissions Overview

4.1 Submissions Out of Scope

Out of scope submissions seek changes to speed limits that are outside of the current review area; are seeking non-speed related decisions, for example, road maintenance; or seek solutions that are beyond Council's legal mandate, for example, enforcement issues.

The main out of scope issues are set out below. Specific submission numbers are not quoted to avoid confusion as often submissions also included comments and feedback that were both in and out of the scope of the review.

4.1.1 Speed limits in other areas

Submissions seeking a change in speed limit in areas outside of the review area are out of the scope of the current review and associated consultation. In order to make a legal change to a speed limit outside of the current review area; additional technical assessments would be required, as well as a separate consultation process. Submissions relating to areas outside the current review area, where Whangarei District RCA has jurisdiction have been retained on file for later consideration.

4.1.1.1 State Highways

Some submitters requested speed reviews to be undertaken on parts of the State Highway network, including State Highway 1 and 15A.

Council is an RCA for local roads only. This excludes State Highways, which are administered by the NZ Transport Agency (NZTA). NZTA have embarked on a review of speed limits on portions of the State Highway Network and are following a similar community consultation process to WDC. It should be noted that State Highways near the review areas of Waipu, Ruakaka, One Tree Point and Vinegar Hill are not currently being reviewed by NZTA.

All submissions relating to the State Highway network has been noted and passed through to the NZTA Speed Limits Review Group.

4.1.2 Enforcement

Some submitters have raised the issue of enforcement. The feedback received can be categorised into the following broad topics:

- Without proper enforcement, lower speed limits won't work
- Lower speed limits are intended for revenue collection

Although speed limits are set by the road Controlling Authority (Whangarei District Council), the responsibility for enforcing those speed limits is with the NZ Police. Any fines, including speed camera fines, do not go to Council. Nor do they go directly to the NZ Police.

It is agreed that enforcement is a key component of ensuring compliance with speed limits and improving safety on our roads. However, if the speed limit is neither safe, nor appropriate for the road environment, then, even with a good level of enforcement, safety outcomes will not be achieved.

NZ Police base their enforcement activities on risk, with the sole purpose of reducing serious and fatal crashes on our roads. The NZ Police target drivers that are driving in an unsafe manner for the road environment or exceeding a safe and appropriate speed (proposed speed limits).

4.1.3 Climate Change

The Road Controlling Authority is required to set speed limits in accordance with the legislation, rules and guidance of the day. The legislation that enables Council as an RCA to set a speed limit is the Land Transport Act 1998. Section 22AB(1)(d) states that the Road Controlling Authority may set a speed limit for the purposes of the safety of the public or for the better preservation of the road.

Current legislation does not allow the RCA to set a speed limit to better manage climate change. Studies do show that a lower speed limit does lead to lower fuel consumption and associated emissions. Some recent studies show that any increased costs associated with a longer journey time are offset by lower fuel and maintenance costs for commercial drivers. It is therefore considered that positive impacts on climate impacting emissions and fossil fuel usage may be an outcome of proposed lower speed limits; but cannot be a principle reason for setting a speed limit.

4.2 Other issues raised

Some submitters raised specific speed related issues that need to be specifically addressed. These issues raised by submitters were utilised to either oppose the lowering of speed limits generally; or justify a different speed limit.

4.2.1 Crashes occur on State Highways

One submitter stated that the Northland District Health Boards Briefing Paper on Fatal and Non-Fatal Motor Vehicle accidents in Northland identifies that the overwhelming majority of fatal crashes from 2013-2018 are on State Highways in Northland.

The submitter is correct in that many fatal and serious crashes do occur on our State Highways. Council does not have jurisdiction to set speed limits on State Highways as this is the responsibility of the NZ Transport Agency.

The speed reviews are based on a number of risk factors, including Personal Risk (number of vehicles vs crashes), Collective Risk (based on the km driven), and Infrastructure Risk (road and roadside hazards). These risks, and a range of other factors are considered when identifying a safe and appropriate speed for any given road.

Mapping of speed related crash statistics for the 10-year period from 2008 to 2018 (refer Technical Review Report) show the distribution of fatal, serious and minor crashes across all roads in the review area. It should be noted that the definition of a serious crash is where one or more persons have spent 3 days or more in hospital as a result of the crash. The mapping also only captures speed related crashes that have been reported through NZ Police and NZTA.

Anecdotal evidence suggests a significant number of speed related crashes are not reported, with farmers or local people pulling cars from ditches, particularly on unsealed roads.

Managing speed and setting a safe and appropriate speed limit that reflects the road environment is one component in reducing the number of these crashes.

4.2.2 Dust

Dust was identified as an issue on Pyle Road East and on Sanford Road. Submitters noted that a slower speed limit would go a long way to reducing dust as long as the road remains unsealed and will reduce stones and chip being thrown off the road onto the roadside lawn (B. Pyle - Pyle Road East).

Dust generated on unsealed roads is influenced by both speed and the number / weight of wheels on the road. For example, a large logging truck traveling at 80kph will generate significantly more dust than a car travelling at the same speed. Likewise, a logging truck travelling at 60kph will generate less dust than if it were travelling at 80kph. There are other factors that have a significant influence on dust, including weather, road geometry and road surface materials.

Dust reduction is a potential outcome of a reduced speed limit. However, under the Land Transport Act 1998 (which restricts the purpose for a speed limit Bylaw), dust is not a principal reason for setting a speed limit.

The focus of the speed limit review is to identify and set a safe and appropriate speed that reflects the road environment, which includes, among other factors, dust generation. However, a reduced speed limit has been recommended for roads where submitters identified dust as an issue.

4.2.3 Maintenance and Upgrade

Some submitters stated that Council should expend more effort on road maintenance rather than lowering speed limits. It was also noted that Council should upgrade or improve the roads instead of lowering speed limits.

4.2.3.1 Maintenance

Roading currently consumes one third of Council's overall Operating Expenditure (this excludes capital expenditure). In addition, Council receives additional subsidised funding from the government, which effectively triples Council budget for most road maintenance.

Council has an extensive road maintenance programme. However, the local road network in the Whangarei is extensive and includes a very high portion of unsealed roads.

4.2.3.2 Upgrading and widening roads

Submitters that have opposed the lowering of speed limits have stated that Council should widen or upgrade roads so that they are better quality, instead of lowering the speed limit.

Whilst upgrade and widening work may be desirable or planned; it is necessary to ensure that our speed limits reflect the current road environment. As roads are upgraded, speed limits can be revisited.

Upgrading roads comes at a significant financial cost. Council has a limited budget available for maintaining and upgrading our road network, even with government subsidies. Given the costs involved, it is necessary to prioritise which roads should be upgraded over time. Consideration needs to be given to a range of matters, including:

- The strategic nature of the road, for example, roads providing an efficient east-west linkage.
- The economic benefits of upgrading the road, for example reduced travel times.
- Other road priorities, including sealing unsealed roads

Once a road is identified for an upgrade, the time required to secure finances (including government subsidies), complete planning and design work and undertake the upgrades is typically in the 2-5 year timeframe, depending on the size and nature of the work to be undertaken. In most cases, it is cost prohibitive to upgrade the full length of a road to a consistent 100kph standard. Therefore, any upgrade work is normally undertaken in a staged manner over a several years.

Recommendations within this Report do identify some strategic roads where improving safety and upgrading the road should be considered over the medium to long term.

4.2.4 70kph Speed Limit

Some submitters, including the Automobile Association have suggested that some roads have a speed limit of 70kph set on them. The Automobile Association submission requests that a 70kph speed limit apply to most unsealed roads as that is a speed that is attainable on those roads (refer 4.2.4 below on attainable speeds).

The RCA must work within a hierarchy of legislation, national rules and guidance documents when setting speed limits. The RCA may set a 70kph speed limit. The National Speed Management Guidance 2016 and the Setting of Speed Limits Rule 2017 discourage 70kph zones, except in exceptional circumstances.

The Setting of Speed Limits Rule 2017 requires additional sign-off at a national level when setting a 70kph speed limit.

Consistent with the above documents, 70kph zones will only be used where there is clear evidence that both 60kph and 80kph are inappropriate. Where there is an existing 70kph zone, consideration will be given to the benefits of changing that speed limit to 60kph or 80kph.

4.2.5 Attainable Speed Limits

The Automobile Association (AA) makes a general comment in its submission that a safe speed is totally dependent on the current state of the road. On a recently graded road with copious loose gravel, a maximum speed of 50 kph may be appropriate, but on a well-swept road with minimal loose gravel, speeds of 70 kph are safe.

It is noted that the speed review is recommending a 60kph speed limit on many unsealed roads. This speed limit would seem appropriate, based on the AA example of different speeds on un-sealed roads. It is also noted that 60kph is near the actual speed that most road users travel at on unsealed roads in the Whangarei District.

On some sections of road (whether sealed or unsealed) a higher speed than the posted speed limit may be attainable. Conversely, there will be other sections of the road where a much slower speed is required.

The purpose of the reviewed speed limits is to set a safe and appropriate speed for the road as whole, having consideration to the road geometry and the wider road environment and its principle uses. The safe and appropriate speed is intended to promote a safer driving environment for all road users, including other traffic, pedestrians and cyclists where appropriate.

4.2.6 European Speed Limits

One submitter presented detailed information on European speed limits at the Hearing with specific reference to the unlimited speed limit in Germany. The submitter was opposed to the lowering of speed and as part of the evidence opposing the reduction, relied on both speed and fatality data from Germany.

It is noted that, in Germany the only “unlimited” speed limit is on the Autobahn (motorway) that has been designed and maintained to an exceptionally high standard. It is also noted that there are sections of the Autobahn where a fixed lower speed limit applies due to the geometry of the road. In all cases, the posted recommended speed limit on the Autobahn is 130kph. Speeding tickets are also issued where a vehicle is travelling at a speed that is inappropriate for the conditions or the car itself.

Elsewhere in Germany, speed limits are generally 100kph and 50kph in urban areas. Speed limits are strictly enforced by police and there is an extensive network of speed cameras.

The roads in Germany and Western Europe as a whole, are of significantly higher design standards than New Zealand roads. Many of the main routes and arterial roads are dual carriageway. In comparison, roads in the Whangarei District are often unsealed, narrow and have significant curves. Sealed roads in the Whangarei District also tend to be relatively narrow with limited shoulder areas.

Comparison between New Zealand Roads and European Roads, including speed limits and relative crash and fatality rates is inappropriate as there are vast differences in the overall road environment.

4.3 Statutory Consultee Submissions

Section 2.5 of the Land Transport Rule: Setting of Speed Limits 2017 sets out the persons or groups that must be consulted before setting a speed limit. In addition to the local communities that may be affected, the Rule requires the RCA to consult:

- The Territorial Authorities that are affected by the proposed speed limits
- The Commissioner of Police
- The Chief Executive of the Automobile Association
- The Chief Executive of the Road Transport Forum New Zealand
- New Zealand Transport Agency (NZTA)
- Any other organisation or road user group that the RCA considers affected

All of the above Statutory Consultees were directly notified of the proposed new speed limits; were provided a full Statement of Proposal and advised of where additional information could be found. The current review area is entirely contained within the Council's Boundaries.

The following Statutory Consultees provided no formal response:

- The Commissioner of Police, including the Northland Area Commander
- The Chief Executive of the Road Transport Forum New Zealand

It should be noted that, in addition to the Chief Executive of the Road Safety Forum, all local Road Safety Forum groups and their members were notified of the proposed changes and

provided an opportunity to make a submission. Submissions from these groups or individuals are summarised in the tables below.

4.3.1 Automobile Association (AA)

The AA was consulted through the Chief Executive and the Northland Branch. The submission received stated that:

At the AA Northland District Council meeting on 19 Nov, the majority of our board members were in support of the proposed Whangarei speed review programme, with the one proviso that 60 km/h should be increased to 70 km/h for rural unsealed roads. While these are unlikely to be subject to intensive speed monitoring, councillors who frequently drive on unsealed roads felt that under certain road conditions (e.g. well-swept, little loose material), speeds in excess of 60 could be safely achieved.

The general support of the AA is noted. AA feedback on specific roads are addressed in the tables in Section 7 of this Report. The more general issues noted by the AA are addressed specifically in 4.2.4 and 4.2.5 above.

4.3.2 New Zealand Transport Agency (NZTA)

The NZTA submission and the response is set out below:

The Land Transport Rule: Setting of Speed Limits 2017 (the Rule) details a number of requirements for road controlling authorities in setting speed limits on their network:

- *Section 2.2(2): "In carrying out its functions under 2.2(1), a road controlling authority must consider whether a speed limit for a road is safe and appropriate in accordance with this Rule."*
- *Section 4.2(2) "In reviewing a permanent, holiday, or variable speed limit or considering a new permanent, holiday, or variable speed limit, a road controlling authority must have regard to—*
 - (a) the information about speed management developed and maintained by the Agency; and*
 - (b) any relevant guidance on speed management provided by the Agency; ..."*

The information and guidance provided by the Agency meets its requirements under the following sections of the Rule:

- *2.4(1) "The Agency must supply, to each road controlling authority, information about speed management for public roads within that road controlling authority's jurisdiction."*
- *2.4(2) "The Agency must, in supplying information under 2.4(1), prioritise information about public roads where achieving travel speeds that are safe and appropriate is likely to deliver the highest benefits in terms of safety and efficiency."*

The guidance provided by the Agency is in the new Speed Management Guide dated November 2016, and the Safer Journeys Risk Assessment Tool (MegaMaps) available to all road controlling authorities (Edition II dated September 2018 is the latest edition). Safe and Appropriate travel speeds for all roads in the network that the Agency has information available for, together with the top 10% of regional networks likely to deliver the highest benefit in terms of safety and efficiency, are detailed in the MegaMaps.

The Agency's response, and the comments below, are focused on assisting Council with alignment of the proposals with the Rule and the intent of the Speed Management Guide, and on achieving national consistency (ie alignment with the information provided to RCAs by the Agency) for speed limits across all RCAs.

Roads in the top 10% of high benefit speed management opportunities

The government has tasked all Road Controlling Authorities to accelerate the implementation of the new Speed Management Guide, focusing on treating the top 10 percent of the network which will result in the greatest reduction in death and serious injury

(DSi) as quickly as possible (refer 2018-21 Government Policy Statement page 12). Vinegar Hill Road is included in the top 10% DSi saving network lengths in the District is addressed by the current proposals. The other top 10% local roads within the Whangarei District are Papiwai Road North, Ngunguru Rd North, Maungakarama Road, Dent Street, Riverside Drive South, Whangarei Heads Road and Cove Road (outside the urban traffic area). Addressing speed on these roads has been assessed to address over 2 DSi each year, and contribute to the 319 DSi saving annually through addressing the top 10% across the country. The Agency encourages Council to treat these top 10% corridors with safe and appropriate speed limits as quickly as possible.

The Agency generally agrees with all the proposals with the following exceptions/comments:

All Urban Traffic Areas – SAAS for residential access roads is 40km/h and is recommended for all residential access roads in urban traffic areas. Extending existing 50km/h speed limits does not reflect the intent of the Speed management Guide.

Vinegar Hill Review Area

- Vinegar Road – introducing the 800m length of 60km/h limit on a straight length of road after the 80km/h length on the previous windy section, with no clear change of environment at the change point, does not conform with clause 3.3(3) of the Rule, and is unlikely to conform with clause 4.4(2)(c) of the Rule. The SAAS for the entire length of Vinegar Hill Road is 60km/h, with the governing factor high personal risk – this implies 80 could be made safe provided safety improvements to address the personal road safety risk are implemented. Note that speed limit buffers do not comply with 3.3(3) of the Rule and there is little evidence that they work – advance warning speed limit signs 2-300m in advance of the actual change of environment/speed limit change point have been shown to be far more effective in achieving compliance. Recommend either a consistent 60km/h speed limit for the whole length, or a consistent 80km/h on the whole length conditional on safety improvements being implemented.
- Steere Place, Thomas Street, Townsend Place and Balmoral Road all have SAAS of 40km/h, not 50km/h as proposed.
- The unsealed length of Main Road (IRR 2.02; mean speeds 30-34km/h) will not be safe at 80km/h – recommend 60km/h (and for the whole length if 60 is applied to Vinegar Hill Road)

Ruakaka Review Area

- Mean speeds on Marsden Point Road from SH1 to 70m north of Sime Road are 55-59km/h, so 50km/h speed limit will require engineering interventions to ensure compliance with clause 4.4(2)(c). A 60km/h speed limit would align with the Sime Road proposed 60km/h.
- SAAS for Mcewen Road is 60km/h (mean speeds 60-64km/h), governed by high personal risk – 80km/h as proposed will be safe only if the personal crash road safety risk is addressed
- Bens View Road has SAAS of 40km/h, not 50km/h as proposed
- Te Kamo Street and Karawai Street is proposed as 30, but the last length of Tamingi Street, which looks and feels the same, has been left at 50 – the SAAS for all this 40km/h which is recommended and would reflect national consistency/the intent of the Speed Management Guide
- Rama Road SAAS is 60 (IRR 1.71/1.89) and Marsden Bay Drive SAAS is 60 (IRR 1.74, so higher than 1.6 that makes 80 safe) and neither will be safe at the 80km/h proposed – recommend 60km/h for both
- One Tree Point Road SAAS is 80 (IRR 1.42 so higher than 1.2 that makes 100 safe), mean speeds are 60-64, yet existing 100 is proposed – recommend 80km/h to reflect SAAS
- Prescott Road SAAS is 60 (IRR 1.88/1.96/2.39, so well higher than 1.6 that makes 80 safe), mean speeds are 35-39 – recommend 60km/h to reflect SAAS

Waipu Review Area

- *Cove Road – the obvious change in the nature of the road where the lower 40 speed limit should start seems to be at Insley Road, not Braemar Lane where there is no obvious change in environment - physical infrastructure change/threshold will be required at Braemar Lane (or somewhere between Braemar Lane and Insley Road) to meet clause 3.3(3) of the Rule.*
- *The Braigh doesn't look or feel like a 50km/h urban environment, and mean speeds reflect this at 55-59km/h – recommend 60km/h speed limit.*

Responses to NZTA Submission

Specific responses to speed limits on roads identified in the NZTA submission are set out in Section 6 (Significant roads) and the Tables in Section 7, alongside a summary of submissions received by the wider community. Urban Traffic Area's are addressed in section 6 of this Report.

The NZTA comments relating to the Top 10% of roads are noted, and the following response is provided by way of clarification:

The Whangarei RCA acknowledge that the government has tasked RCA's with accelerating the implementation of the Speed Management Guide, and the requirement to address the top 10% High Benefit roads as quickly as possible. The NZTA Submission has identified the relevant roads in the District.

The Whangarei RCA is focussed on the highest benefit roads. However, there are also a number of areas where there is a strong community desire to address speed limits. This desire arises from a perception of road safety, but is primarily driven by rapid development, particularly in the Ruakaka and One Tree Point area. The RCA has therefore developed a prioritisation matrix that gives priority to the highest risk roads, but also takes account of community concerns.

Pro-actively managing speed limits in rapidly developing areas enables the Road Controlling Authority to manage longer term risk, rather than taking an entirely re-active approach.

To resolve the competing priorities of current risk; growing risk due to development; and community concerns; a wider, more wholistic approach to managing speed limits was considered appropriate. A catchment-based approach that centres around the highest benefit roads was adopted.

The catchment wide approach takes an initial focus on high benefit roads; but also extends the review area out to a logical catchment area. This reduces the number of anomalies in speed limits (for example, where a sealed high-risk road has a reduced speed limit, and an unsealed poor-quality side road retains a 100kph speed limit); and enables the road Controlling Authority to address wider community issues.

The Whangarei RCA has developed its draft forward work programme as part of a regional approach to speed limit reviews, consistent with the Northland Transportation Alliance delivery model. The forward work programme sees the additional roads identified by NZTA and their catchments prioritised in the ongoing review programme.

Cove Road connects with Kaipara District Council and it is necessary to co-ordinate the review of Cove Road in both districts. Kaipara District Council will be notifying speed reviews in the Mangawhai Area in mid-2020. A review of the Whangarei District end of Cove Road will be co-ordinated with the Kaipara District review.

5 Schools

In late 2019, central government released its Road to Zero National Road Safety Strategy. The Strategy includes provision that all urban schools should have a maximum speed limit of 40kmph when children are present, and all rural schools should have a maximum speed limit of 60kmph when children are present. This change is expected to be supported with amendments to the Setting of Speed Limits Rule by mid-2021.

Speed limits adjacent to schools were not specifically identified within the Statement of Proposal. However, feedback was received relating to some schools.

To ensure consistency with the Road to Zero Strategy, this Recommendations Report identifies all schools within the review area in accordance with current Ministry of Education data. This Report sets out the recommended speed limits outside each school and considers whether any further changes will be necessary to meet proposed changes in the setting of Speed Limits Rule.

The schools identified are:

- Bream Bay College – Corner Peter Snell Drive and Marsden Point Road
- Ruakaka School – Corner SH1 and Sandford Road
- One Tree Point School – One Tree Point Road
- Waipu Primary School – Argyle Street
- Te Kura Kaupapa Māori o Te Rawhiti Roa – Vinegar Hill Road

Early Childhood Centres are generally operated as small businesses and can include houses and other will fenced and supervised facilities.

5.1 Bream Bay College

Bream Bay College is located on the corner of Peter Snell Drive and Marsden Point Road. The primary entry into the school is on Peter Snell Drive. The school is fenced along Marsden Point Road.

The Ruakaka Shopping Centre is located opposite the school and it is anticipated that school students that do not take a bus to and from school will access the shopping centre before and after school.



Figure 1: Bream Bay College main entrance

Bream Bay College has a dedicated off-street pick-up and drop off zone for private vehicles and school busses. Peter Snell Drive is dual carriageway with islands separating opposing carriageways.

Peter Snell Drive is currently 50kph, with an approximately 50m section of 70kph at the intersection of Marsden Point Road. With the reduction of speed limit on Marsden Point Road, this short 70kph will become 50kph. The remainder of Peter Snell Drive is an arterial route and is recommended to remain at 50kph.

Recommendation

To maintain consistency with the National Road to Zero Road Safety Strategy and proposed changes to the Setting of Speed Limits Rule it is recommended that a Variable School Speed Limit of 30kph be installed.

5.2 Ruakaka School

Ruakaka School is located on the corner of State Highway 1 and Sandford Road. The entrance to the school is on Sandford Road approximately 50m from the State Highway 1 intersection. The school is well fenced along the State Highway 1 boundary.

It should be noted that Kaipara district Council does not have jurisdiction on State Highway 1.

Ruakaka School is a rural school and as such the Road to Zero Strategy and proposed amendments to the Setting of Speed Limits Rule require a maximum 60kph speed limit outside the school.

It is recommended that the speed limit on Sandford Road be reduced to 60kph. This speed limit will meet the Road to Zero Strategy guidance.

Vehicles turning off State Highway 1 will approach the school with a slow speed. North bound (toward SH1) vehicles are expected to be slowing at they approach the intersection. For this reason, a variable school speed limit is not expected to achieve any additional safety benefits from the reduced 60kph speed limit. However, it is recommended that additional signage be installed to ensure a higher awareness of the school and the potential for children to be present.



Figure 2: Ruakaka School main entrance – Sandford Road

Recommendation

To maintain consistency with the National Road to Zero Road Safety Strategy and proposed changes to the Setting of Speed Limits Rule it is recommended that a permanent 60kph speed limit apply on Sandford Road and that additional signage be installed to heighten the visibility of the school and potential for children to be present.

5.3 One Tree Point School

One Tree Point School is located on One Tree Point Road toward the Marsden Cove development. There is a main entrance way that provides for pick-up and drop off of students. A separate carpark is provided for staff members and other school visitors.

The school has pedestrian access on both sides of the road, with an uncontrolled pedestrian crossing outside the school.

There is an existing variable school speed zone outside the school, providing for a 40kph speed limit before and after school. The current permanent speed limit is 50kph.



Figure 3: One tree Point School main entrance – One Tree Point Road

It is recommended that the permanent speed limit on One Tree Point Road is 40kph to reflect the residential and small coastal community nature of One Tree Point urban area. The existing variable speed limit can be changes to 30kph, which will reflect the national Road to Zero Strategy and will provide a greater awareness of children being present before and after school.

Recommendation

To maintain consistency with the National Road to Zero Road Safety Strategy and proposed changes to the Setting of Speed Limits Rule it is recommended that the current variable school speed limit be reduced from 40kph to 30kph.

5.4 Waipu Primary School

Waipu Primary School is located on Argyle Street in Waipu. The school is set back from the road, however there is little or no off-street parking provided. A significant number of vehicles are angle parked on Argyle Street.

Argyle Street is a narrow single lane street with no road markings. There are footpaths on both sides of the street. The street has a low design speed and a 30kph – 40kph speed limit would not be unexpected.

Given the location of the school, and the slow street layout of Argyle Street, it is recommended that a permanent speed limit of 30kph be implemented.



Figure 4: Waipu Primary School main entrance – Argyle Street

Recommendation

To maintain consistency with the National Road to Zero Road Safety Strategy and proposed changes to the Setting of Speed Limits Rule it is recommended that a permanent 30kph speed limit apply to Argyle Street.

5.5 Te Kura Kaupapa Māori o Te Rawhiti Roa

Te Kura Kaupapa Māori o Te Rawhiti Roa is located on Vinegar Hill Road between Thomas Street and Balmoral Road. The main entrance is located on Vinegar Hill Road, which provides the principal access for vehicles and busses. There is a secondary entrance located on Thomas Street. Aside from the two entrances, the school does not have any significant direct road frontage.



Figure 5: Te Kura Kaupapa Māori o Te Rawhiti Roa – Vinegar Hill Road and Thomas Street

A permanent 40kph speed limit is recommended for Thomas Street and 50kph on Vinegar Hill Road outside the school. Pedestrians accessing the school are expected to utilise the Thomas Street entrance as this affords a more direct route to the school for most pedestrians. Few pedestrians cross Vinegar Hill road to access the school.

There is no current variable school speed zone along Vinegar Hill Road as the school does not meet the current requirements of Traffic Note 37 to be eligible for such a zone, as such a Variable School Speed Limit is not recommended.

Recommendation

It is recommended that a permanent 50kph speed zone apply on Vinegar Hill Road outside Te Kura Kaupapa Māori o Te Rawhiti Roa and a permanent speed limit of 40kph will apply to Thomas Street.

6 Significant Roads

Following the consideration of submissions received, NTA Staff undertook additional site visits to further assess submitters views and the road environment. All recommended speed limits are set out in the Tables in Section 7 of this Report. Additional detail as to the reasons for recommendations have been provided for the following four roads (or road groups) as they were subject of extensive submissions, or the submissions raised specific issues that required additional consideration:

- Marsden Point Road
- Vinegar Hill Road
- Ruakaka and One Tree Point Urban Traffic Area

- The Centre - Waipu

6.1 Marsden Point Road

Marsden Point Road connects State Highway 1 with State Highway 15A via the edge of the Ruakaka Township. There are some residential dwellings and a few commercial activities on the western side of Marsden Point Road. However, the western side of much of Marsden Point Road can be characterised as rural.

There are two distinct parts to Marsden Point Road. The part of Marsden Point Road from State Highway 1 to Simes Road is largely residential in nature (eastern side of the road) culminating in Bream Bay College, and the Ruakaka town centre at the Simes Road end.

The part of Marsden Point Road from Simes Road to State Highway 15A is characterised by light to medium industrial activities to the east of the road and a continuation of a rural character on the western side of the road. The industrial activities, including transport hubs are set well back from Marsden Point Road. Access to these sites is a combination of direct access and access by private roads.

Marsden Point Road crosses the Ruakaka River with a two-lane bridge with a narrow pedestrian footpath on the eastern side of the bridge. The footpath attached to the bridge is the only pedestrian access from the main residential area to the town centre, including Bream Bay College. Pedestrian facilities servicing the residential area along Marsden Point Road are relatively narrow with limited separation from the main carriageway.

Prior to the construction and opening of State Highway 15A, Marsden Point Road provided access to Northport and Marsden Point Oil Refinery. The purpose of State Highway 15A is to provide more direct access between Northport, Marsden Point Oil Refinery, and associated industrial activities with State Highway 1.

There is evidence that some Heavy Goods Vehicles heading south are accessing State Highway 1 via Marsden Point Road. It is unclear as to the origin of these vehicles. It is noted that there is a truck washing facility, heavy transport depot's and light to medium industrial located off Marsden Point Road between Simes Road and State Highway 15A.

It was proposed that the current speed limit on Marsden Point Road of 70kph from State Highway 1 to Sime Road be reduced to 60kph and the current 100kph speed limit from Sime Road to State highway 15A be reduced to 80kph.

6.1.1 Community Feedback – Marsden Point Road

There was consistent support for implementing a reduction of the speed limit along all parts of Marsden Point Road with a total on 19 submitters expressing support or partial support of a reduced speed limit on Marsden Point Road from State Highway 1 through to Sime Road. Most submitters supporting a lower speed limit were seeking a 50kph speed limit to reflect the urban nature of the road.

State Highway 1 to Sime Road

The majority of submissions on Marsden Point Road were specific to the section of road from State Highway 1 to Sime Road, which encompasses the majority of the residential areas along this road.

There were nine submitters opposed to the proposed reduction in speed limit on Marsden Point Road from State Highway 1 to Sime Road. Opposing submitters can be categorised on two ways:

- Three submitters were opposed to the proposal on the basis that they were seeking a lower speed limit than that which was proposed.
- Five submissions that were opposed were identical and signed by the same person (but in the names of separate people or organisations). The reasons for opposing a reduction in the speed limit included that the road was wide and safe and that the current

70kph speed limit is slow enough and that driver behaviour is the key issue, not the speed limit.

The feedback received can be categorised into the following key themes:

- Concerns about Heavy Good Vehicles using the road
- Pedestrian use and safety along the road, including access to schools and the shopping centre
- Submitters opposed

NZTA noted that mean speeds on Marsden Point Road from SH1 to 70m north of Sime Road are 55-59km/h, so 50km/h speed limit will require engineering interventions to ensure compliance with clause 4.4(2)(c). A 60km/h speed limit would align with the Sime Road proposed 60km/h.

Heavy Goods Vehicles

The number and speed of Heavy Goods Vehicles (HGV's) is the most significant theme of submissions received. Concerns over HGV use of the road has been consistently raised by the community over a long period of time. The issue was the primary matter that was raised during community engagement meetings held during the submission period.

Submitters consider that a reduced speed limit will reduce the attractiveness of the road to HGV's. One submitter provided a good summary of the concerns raised by stating that *"the proposed reduction along Marsden Point Road will have the added benefit of reducing heavy traffic which currently uses Marsden Point Road when coming from and to the South as a shortcut. Reducing the permitted speed will encourage these heavy vehicles for the port and refinery to continue up State Highway 1 and use the Port Highway (State Highway 15A) as the quicker route. This will avoid undue road wear on a secondary road as well as improving safety."*

Submitters were not only concerned with the safety associated with HGV's using the road, but also the noise and vibration associated with the HGV's. Submitters noted that HGV's utilise this road at all hours of the day, including at night and early mornings.

One submitter stated that *"the noise from trucks at night (often from midnight on) is excessive and disturbs sleep"*. Another submitter noted the noise and vibration on the Ruakaka Bridge due to heavy Vehicles and expressed a concern that *"the bridge is not designed to take this type of use"*. Other submitters stated that trucks travel too fast on the road and that their house shakes like an earthquake every time a truck drives past at speed.

Another submitter who was concerned about the safety, noise, and vibration of HGV's on the road indicated that a 60kph speed limit may be appropriate now. However, this should be reduced to 50kph when the new expanded port opens.

Pedestrians access to town centre and Safety

Several submitters noted that the pedestrian facilities along the road are limited. There is little separation between pedestrians and the road. The footpath is often narrow and poorly formed. There is only one pedestrian route from the main residential area to the town centre shops, facilities and Bream Bay College. This route crosses the Ruakaka River Bridge. The footpath on the bridge is narrow, and there is no feeling of safety for pedestrians [note: this is also the current route of Te Araroa – New Zealand's Trail].

One submitter stated that *"this section of road services a shopping centre and has both a Nursery School and Bream Bay College sited on it. The road is frequently used by HGV's accessing Port Marsden to the social discomfort of residents living along the road."* The issue of school safety was reflected in other submissions that noted that a lower speed limit would improve the safety of the current risky environment for pedestrians, *"including school children waiting for or dropping off school buses"*.

Other submitters indicated that the road is dangerous and there are speeding vehicles on it. One submitter stated that *“the road is used as a race-track and is very dangerous, trucks use it and boy racers use it. The speed limit is not adhered too. Being a straight road, at night cars fly down it. It is so dangerous and should be brought down to 50kms, Its a residential road”*.

One submitter summed up pedestrian access to the town centre by stating that “I am a frequent walker from Marsden Point Road to the Ruakaka Town Centre and I approach and cross the Ruakaka River Bridge on high alert. Why? Because a single file pathway in close proximity to traffic, many heavy vehicles moving at 70kph plus, and separated only by a “safety rail” built from construction scaffolding, is the current option for children and adults who prefer to walk or can’t drive from south of the bridge to the services, schools and shops available at the Ruakaka Centre. The proposal to lower the speed limit for Marsden Point Road to 50 kmph is the chance to deliver safer access for walkers of all ages and purposes”.

One cyclist noted that the shoulders are “*diabolical*” they are narrow and there are potholes. Cycling along Marsden Point road is often a choice of riding on the road and the associated risks or riding on the shoulder with the risks of crashing with the potholes and other obstacles.

A summary of those submissions in support of a lower speed limit, particularly those supporting a 50kph speed limit was provided by one submitter who stated that *“the problems of noise at night and speeding vehicles concerning cyclist and pedestrian safety will be greatly helped by a 50km/hr speed limit”*.

Submitters opposed

There were submitters that considered the current speed limit is appropriate and were opposed to any lowering of the speed limit. In some cases, submitters were opposed to lowering the speed limit, but indicated that they would be open to a small reduction, for example, to 60kph. One submitter stated that *“the road was specifically built for the refinery to a high standard. Most problems are driver error, not the road. If there is a reduction in speed it should only be to 60kph. Marsden Point is wide enough and has service lanes. Focus on driver education”*. Other submitters that were opposed also reflected the opinion that driver behaviour was principally to blame, not the speed limit. One submitter was *“opposed to reduction in the speed limit because Marsden Point Road is a wide safe road”*.

Sime Road to State Highway 15A

There were seven submitters in support. Or in partial support of the proposal to reduce the speed limit from 100kph to 80kph. Two submitters were opposed.

The submitters that were in partial support of the proposal were seeking a lower speed limit than that which was proposed. One submitter sought a 70kph speed limit; two sought a 60kph speed limit and one sought a 50kph speed limit.

The Ruakaka Residents Association is seeking a 60kph speed limit along this section of road as it passes by an industrial / commercial zone. Heavy vehicles are frequently encountered exiting and entering premises. Local business operators have called for lower speed limits on this section of road.

One submitter questioned the proposed 80kph speed limit. This submitter stated that “60kph would future proof this fast developing, busy, business section of road. The design and nature of the road is poor with no turning lanes (or safe, left side road shoulder space) to access right turning entry to all business premises.” The submitter also noted that there are important community resources located in this area, including the Bream Bay Toy Library, leisure and recreational facilities including a trail bike track and model yacht club and a coffee shop on Lakeside road.

A submitter seeking a 50kph speed limit reasoned that it would match proposed reduction in urban area so would be consistent. There is also frequent low-speed truck traffic in a busy industrial area.

Although not included in submissions, feedback from a local transport operator during a Ruakaka community engagement meeting indicated that he would support a lower speed limit of 60kph on this stretch of road. The transport operator stated that Heavy Goods Vehicles turning onto Marsden Point Road, heading toward State Highway 15A had to cross the road at slow speed. From a virtual standstill, fully laden HGV's took some time to increase speed. This meant that, often HGV's would be encountered, requiring cars or other vehicles to slow substantially. A slower speed limit of 60kph would make the road safer.

Submitters opposed to the proposal made general comments and felt that a slower speed would frustrate drivers and cause crashes. No additional evidence was provided to support this statement.

6.1.2 Marsden Point Road Analysis

All submissions were assessed, alongside evidence-based matters and relevant speed management guidance, legislation and engineering standards. The following options were considered:

1. Retain the existing speed limits
2. Implement the speed limits as proposed (60kph and 80kph)
3. Reduce the speed limits to 60kph along the entire length of Marsden Point Road
4. Reduce the speed limit from State Highway 1 to Sime Road to 50kph and Sime Road to State Highway 15A to 60kph

Option 1: Retain the existing speed limits

State Highway 1 to Sime Road

This option would retain the current speed limit of 70kph from State Highway 1 to Sime Road and 100kph from Sime Road to State highway 15A.

70kph is a speed limit that is discouraged under national guidance unless there is compelling evidence, favouring 60kph or 80kph. Although the 70kph speed limit is an existing speed limit, it is necessary to assess whether that speed limit remains appropriate, and if it is, obtain additional approval in accordance with the Setting of Speed Limit Rule 2017.

NZTA noted that mean speeds on Marsden Point Road from SH1 to 70m north of Sime Road is 55-59km/h. A speed limit of 70kph would be more than 10% above the mean speed on that stretch of road. In addition, feedback from the community clearly indicates a range of speed related issues with the current speed. It is also noted that the Ruakaka community has sought a lower speed limit for several years.

Issues such as pedestrian and cycle safety will not be addressed appropriately if the speed limit were to be retained.

Sime Road to State Highway 15A

This option would retain the speed limit of 100kph from Sime Road to State Highway 15A. It is noted that the eastern side of the road is characterised by light to medium industrial uses, including several transport operators. The area to the east of this section of Marsden Point Road is zoned Business 4 in the Whangarei District Plan.

The Business 4 Environment primarily contains heavy industrial areas, including Marsden Point Oil Refinery and the Marsden Point Port.

The Business 4 Environment enables heavy industrial activities, and strongly discourages retail, residential and other associated land-uses. Activities that generate up to 200 traffic

movements per day (24 hours) are permitted, with larger traffic movements a Controlled Activity (Consent will be granted but may be subject to conditions).

The Business 4 Environment is expected to generate a higher proportion of heavy vehicles and light to medium commercial vehicles. This has the potential effect of increasing the number of turning vehicles and slowing overall traffic flow.

The road itself does not meet the overall safety and design standards of a 100kph road. Retaining the current 100kph speed limit would be inconsistent with proposed changes to other roads in the immediate vicinity and wider District.

Option recommendation

Following the consideration of the submissions received, the road environment, as well as current and future planned development, it is recommended that Option 1, retain current speed limits be rejected.

Option 2: Implement the speed limits as proposed (60kph and 80kph)

Option 2 would result in a speed limit of 60kph on Marsden Point Road from State Highway 1 to Sime Road and a speed limit of 80kph from Sime road to State Highway 15A.

The mean speeds on Marsden Point Road from SH1 to 70m north of Sime Road is 55-59km/h, which is indicative of an appropriate speed limit of either 50kph or 60kph and this is reflected in the original proposal. Extensive feedback from the community indicated that a slower speed limit of 50kph would be more appropriate. The arguments presented were compelling.

A 60kph speed limit provides a slight lowering of the speed limit from the current 70kph. However, this modest change is unlikely to slow vehicles along this stretch of road as the current mean speed is less than the proposed 60kph speed limit. The primary purpose of lowering the speed limit, which is increased safety benefits would be unlikely to be achieved. In addition, community outcomes expressed in feedback received would not be achieved.

A benefit of a 60kph speed limit is that additional engineering interventions would not be required to meet Speed Management Guidance. This provides the community with significant cost savings over time.

It needs to be acknowledged that little or no engineering interventions would be a poor outcome for the community, no matter what the speed limit is. A clear and consistent theme of the feedback received was the safety of pedestrians and cyclists and the lack of proper walking infrastructure. It is therefore considered that, although the implementation costs may be lower than for a 50kph speed limit, pedestrian and urbanising infrastructure will still be required in the medium term. This benefit can therefore be discounted.

The section of Marsden Point Road from Sime Road to State Highway 15A would normally be expected to be an 80kph road, based on its character, geometry and carriageway width. The stretch of road does not meet any of the 100kph requirements. However, the land adjacent to the road is zoned as Business 4 under the District Plan. This encourages heavy industrial activities, including those that generate significant Heavy Goods Vehicle movements (200 per day permitted; more than 200 controlled). This land use is currently evident on the eastern side of Marsden Point Road.

Marsden Point Road is the only vehicle access route onto State Highway 15A and toward the port from this area. Feedback received through submissions, as well as at community engagement meetings indicated that Heavy Goods Vehicles turning onto Marsden Point Road do so at slow speed and that it often takes a significant period to accelerate to near the speed limit, particularly when fully laden. A representative of a local transport company who access the road had the view that the disparity between the speed of Heavy Goods Vehicles as they accelerate and faster vehicles already on the road created a dangerous situation. A lower speed limit would improve safety.

Option 3: Reduce the speed limits to 60kph along the entire length of Marsden Point Road

Option 3 would result in a single speed limit along Marsden Point Road from State Highway 1 to State Highway 15A. The overall reduction in speed limit would achieve two of the key issues raised by submitters:

- Reduce the attractiveness of Marsden Point road as an alternative route for southbound Heavy Goods Vehicles or those vehicles accessing the port area from the south.
- Recognise the industrial nature of the wider road environment between Sime Road and State Highway 15A, particularly in relation to Heavy Goods Vehicles turning onto the road and travelling at a slower speed as they launch to proper speed.

Option 3 is likely to reduce the number of Heavy Goods Vehicles utilising the road. This would have flow on benefits, including a reduction in noise and vibration and improved pedestrian and cycle safety. Although pedestrians may not be accessing the carriageway, a reduction in Heavy Goods would increase the perception of pedestrian safety and more people would opt for walking or cycling to access town centre services.

From an engineering and speed management guidance perspective, a single speed limit along the full length of the road is not recommended. Marsden Point Road exhibits an abrupt change in character north of Sime Road. The road quickly transitions from a more urban feel with residential dwellings, shops and schools through to a more open environment with industrial and transport activities set back from the road.

Speed Management Guidance seeks to ensure that a safe and appropriate speed is set, based on the road environment. The principles of good speed management is that the speed limit should be credible and changes in the speed limit should be marked by a clear change in the road environment. The road user should be able to perceive that they are moving from one environment into another and naturally slow down or speed up as appropriate.

As single speed limit along the full length of Marsden Point Road does not recognise the change of environment at Sime Road. A road user will be naturally inclined to increase speed as they move from the more urban setting into a more open industrial setting. This is likely to be exacerbated by the presence of the shopping centre and Bream Bay College near the Sime Road intersection.

Conversely, a road user travelling from State Highway 15A would have no prompt to slow down as they approach the shopping centre and more urbanised setting. Without a prompt to slow down because the speed limit remains the same, drivers are less likely to initially recognise the additional hazards within the new environment.

It should be noted that the mean speed of vehicles on Marsden Point Road is 55-59kph. This indicates that an appropriate speed limit is either 50kph or 60kph along this stretch of road. The more open nature of the road, coupled with the additional hazards of Heavy Goods Vehicles accessing the main carriageway and needing to “launch themselves”, along with the road geometry indicates that a speed limit of between 60kph and 80kph is appropriate.

Travel times are addressed in Option 4 below.

Option recommendation

Following the consideration of the submissions received, the changes in the road environment, as well as current and future planned development, it is recommended that Option 3, to implement a single speed limit of 60kph along the entire length of Marsden Point Road be rejected.

Option 4: Reduce the speed limit from State Highway 1 to Sime Road to 50kph and Sime Road to State Highway 15A to 60kph

Option 4 would lower the speed limit between State Highway 1 and Sime Road to 50kph to reflect a more urban nature of that part of the road. Sime Road to State highway 15A would be reduced to 60kph to reflect the more open nature, but industrial environment of this section of road. This option would result in a slight lowering of the speed limit from that originally proposed in the Statement of Proposal.

Submitters made a clear case for reducing the speed limit to either 50kph or 60kph, with a very strong case made for 50kph. Submitters highlighted a wide range of issues, including safety issues for pedestrians and cyclists accessing the schools and the shopping centre, as well as the number of Heavy Goods Vehicles using the road as a preferred route south, rather than using State Highway 15A. Submitters identified noise and vibration as major issues. In addition, the poor quality of pedestrian facilities, particularly crossing the Ruakaka Bridge, coupled with the speed that vehicles travel at discourages residents from walking to access facilities.

In addition to the issues raised by submitters, it should also be noted that the Te Araroa New Zealand's Trail utilises part of Marsden Point Road as the Ruakaka Bridge is currently the only crossing point.

The NZTA submission noted that the mean speed along the current 70kph section Marsden Point Road is 55kph – 59kph. This would indicate that the speed limit should be either 50kph or 60kph.

The overall expectation of urban streets in New Zealand is that they are 50kph. This speed limit is a legacy from when speed limit options were generally 50kph, 70kph or 100kph. Recently, a lower speed limit of 40kph is being applied to many urban areas, with key arterial routes maintaining a 50kph speed limit. Marsden Point Road is a key arterial route that has many urban characteristics, as such the slower 40kph speed limit would not apply. A 50kph speed limit would reflect the more urban nature of the road.

It should be recognised that there are parts of Marsden Point Road where residential dwellings are serviced by service lanes. However, these lanes do not extend along the full length of the road. There are also significant sections of the road where residential and some commercial buildings have direct access to the carriageway, on both sides of the road.

From a Speed Management Guidance perspective, there is a need to ensure that the speed limit matches the road environment. Given that the mean speed is currently 55kph-59kph, a speed limit below 50kph would need to be accompanied by engineering interventions to ensure that the driver naturally perceives the appropriate speed limit. In the case of Marsden Point Road, this would mean ensuring that there are engineering interventions that give the road more of an urban feel. Interventions vary, but could include:

- The installation of several gateway signs and repeater signs at strategic locations along the road.
- The installation of crossings, including traffic islands or lane separation at intervals along the road.
- Improving pedestrian facilities, and pedestrian separation from the carriageway, particularly on the approaches to Ruakaka Bridge.
- The installation of kerb and channelling.

The above engineering interventions are discussed in more detail within the accompanying Engineering and Implementation Report.

A 60kph speed limit along the section of Marsden Point Road from Sime Road to State Highway 15A would also require some form of engineering intervention. The intervention on this stretch of road would not have to be as extensive as for the other section of the road and may only require strategic repeater signs and a gateway sign at either end of the road section.

The benefits of Option 3 include the recognition that State Highway 1 to Sime Road is largely an urban setting that is expected to grow. With increased housing, both in Ruakaka and

One Tree Point, the existing town centre shopping area is expected to grow. Current zoning within the Whangarei District Plan allows for this expansion.

In addition to recognising the urban nature of the road environment, it is expected that a slower speed limit will reduce the attractiveness of this route for Heavy Goods Vehicles accessing southern destinations from the port area. Decreasing the attractiveness of this route will encourage Heavy Goods Vehicles to utilise State Highway 15A. This benefit will increase significantly if, and when Marsden Port expands.

The key benefit of further reducing the speed limit to 60kph from Sime Road to State Highway 15A will be to reduce the conflict between vehicles travelling at high speed along this section of road when they encounter significantly slower Heavy Goods Vehicles as they turn onto the road from their various depot's. A speed limit of 60kph will reduce the difference in speeds, which in turn reduces the risk of side impact and rear impact crashes.

It should also be noted that one submitter, also representing a commercial business in the Marsden Point Road area was opposed to a reduction in the speed limit as it would cost their business significantly in terms of increased travel time and lost productivity. The differences in travel time are discussed under Option 4. Travel times calculated on the basis of traveling the full length of road from Sime Road to State highway 15A at the maximum speed limit at all times is set out in the table below.

100kph	80kph	60kph	100kph verse Proposed 80kph	Proposed 80kph verse 60kph
1 min 12 sec ¹	1 min 30 sec ¹	2 min 00 sec ¹	18 seconds	30 seconds

Travel time comparisons

Note 1: Travel times assume the maximum speed is maintained at all times and the traveller does not slow down for road conditions or slower traffic.

Based on the above travel times, assuming that the driver is travelling the full length of Marsden Point Road from Sime road to State Highway 15A, it would take approximately 75 trips to increase the overall travel time by one hour, based on the difference between a 100kph speed limit and a 60kph speed limit, assuming the maximum speed limit is attained at all times.

Although there is potential for a marginal increase in travel times, NZTA studies have shown that a reduced speed limit also provides cost savings in lower fuel costs and wear and tear on the vehicle. In addition, there is a significant cost saving to the community in lower road maintenance costs.

Travel times will not be significantly increased along the section of road from State Highway 1 through to Sime Road. The travel time between State Highway 1 and Sime Road at 60kph is 4 min and 6 seconds. At 50kph, the travel time is 4 min 55 seconds. Given that most vehicles currently travel this section of road at between 55kph and 59kph, the difference in travel time with a 50kph speed limit is between 27 seconds and 45 seconds.

The difference in travel time from Sime Road to State Highway 15A from an 80kph speed limit and a 60kph speed limit, assuming the driver maintains the maximum speed at all times is 30 seconds.

It is considered that the potential increased travel times are insignificant in comparison to the safety and community benefits that will be achieved by lowering the speed limit. However, the difference in travel time between the Marsden Point Road route and the State Highway 15A route for Heavy Goods Vehicles will favour the state Highway 15A route. The State Highway route also provides more consistent speeds and higher quality road. Combining these aspects will encourage Heavy Goods Vehicles to preferentially utilise State Highway 15A.

It is recommended that Option 4 be adopted to reduce the speed limit on the section of Marsden Point Road from State Highway 1 and Sime Road to 50kph and that this reduction be accompanied by a minimum of gated speed signs and repeater signs. Compliance with the speed limit should then be monitored to determine whether additional engineering interventions are required and what form they may take. It is also recommended that the speed limit from Sime road to State Highway 15A be reduced to 60kph, accompanied by gateway signage and appropriate repeater signs.

6.1.3 Recommendation

It is recommended that the speed limit be reduced on the section of Marsden Point Road from State Highway 1 and Sime Road to 50kph and that this reduction be accompanied by a minimum of gated speed signs and repeater signs. Compliance with the speed limit should then be monitored to determine whether additional engineering interventions are required and what form they may take.

It is also recommended that the speed limit from Sime road to State Highway 15A be reduced to 60kph, accompanied by gateway signage and appropriate repeater signs.

6.2 Vinegar Hill Road

Vinegar Hill Road connects Tikipunga with State Highway 1 to the north. Through traffic is increasing on this road although it is limited due to the hilly and winding nature of the road. Through traffic from Tikipunga to State Highway 1 is expected to utilise Puna-Rere Drive (extension to Spedding Road) to access the Kamo Bypass (State Highway 1) as this route is generally faster.

Vinegar Hill Road is undulating with some significant hills and has significant lower speed curves and blind corners. There are numerous accesses directly onto the main carriageway, often with limited visibility. Although the current posted speed limit on Vinegar Hill Road is 100kmph, the practical operational speed is expected to be significantly lower.

Vinegar Hill Road was included in the first tranche of speed reviews because it has been identified in the top 5% high benefit roads where a speed review will provide significant safety benefits. The personal risk, which is a measure of the danger to each individual using the road, taking account of traffic volume, is high.

6.2.1 Community Feedback – Vinegar Hill Road

Feedback was received on three key sections on Vinegar Hill Road, which included:

- The existing 50kph speed limit zone from Corks Road
- Vinegar Hill Road from current 50kmph boundary to a point 800m north of the intersection with Balmoral Road
- Vinegar Hill Road from a point 800m north of Balmoral Road to a point 200m south-east of the intersection with Saleyards Road
- Vinegar Hill Road from a point 200m south-east of the intersection with Saleyards Road to the intersection with State Highway 1

Existing 50kph zone

Some submitters expressed concern that the existing 50kph zone would be increased to 60kph or 80kph. To avoid uncertainty, there is no proposal to increase the speed limit in this area. However, there may be some consideration to extending the speed limit further along the road.

Two submitters suggested that the speed limit from Corks Road to Balmoral Road should be reduced to 40kph or made into a School Zone. Te Kura Kaupapa Maori O Te Rawhitiroa School and a children's play area is located on the corner of Corks Road and Vinegar Hill Road and a slower speed limit should be introduced.

Vinegar Hill Road from current 50kmph boundary to a point 800m north of the intersection with Balmoral Road

There were 12 submissions either supporting or partially supporting the proposal, and two submissions opposed. Two submitters sought a speed limit of 50kph, two sought 60kph (as proposed), one sought 70kph and another 80kph.

The Automobile Association considered that the proposed 80kph speed limit for Vinegar Hill Road is appropriate.

NZTA considered that *"introducing the 800m length of 60km/h limit on a straight length of road after the 80km/h length on the previous windy section, with no clear change of environment at the change point, does not conform with clause 3.3(3) of the Setting of Speed Limits Rule, and is unlikely to conform with clause 4.4(2)(c) of the Setting of Speed Limits Rule. NZTA consider that speed buffers do not generally work and that advance warning speed signs 2-300m in advance of the actual change have been shown to be more effective."*

One submitter who opposed to the proposed 60kph speed limit on this section of road stated that the speed limit should be 80kph because *"the hill would make it very difficult for trucks and towing vehicles to crawl up this hill that is pretty straight and will create more traffic congestion on this windy piece of road"*. Another submitter stated that *"the grade of this section of the road is too severe for such a speed reduction particularly heading up what is a significant grade"*.

One submitter suggested that the speed limit going up the hill should be 80kph, but the speed limit coming into Tikipunga should be reduced as the current change is very abrupt.

A consistent theme of submitters considered that the proposed 60kph speed limit should be extended further along the road, with several submitters suggesting it should be extended to Riversong Road.

Submitters seeking an extension to the proposed 60kph zone provided extensive information relating to the safety issues associated with entering and exiting their driveways. One concern was that the proposed boundary of the 60kph and 80kph transition is near the brow of a hill with limited visibility. The submitter stated that the *"proposed 60kph limit appears to end just before the brow of the rise, adjacent to an unnamed side road with six houses. Opposite this small road with steepish access (with cars skidding on the stones to stop), is our driveway (number 132) plus two more in close proximity, out of sight to southbound drivers. Just over the hill north are more house and farm exits."*

We have a problem in that by the time frustrated drivers travelling south to Whangarei come out of all the slow corners over the hill and past Riversong corner they are flying – and we have to come out unseen by these drivers."

One submitter noted that a number of their friends are afraid to visit their house because of the perceived danger associated with speeding drivers and lack of visibility.

Vinegar Hill Road from a point 800m north of Balmoral Road to a point 200m south-east of the intersection with Saleyards Road

There were 18 submissions in support or partial support of the proposal and one opposed. Two submissions sought a speed limit of 60kph, six sought 70kph and four sought 80kph. Although many submitters supported the proposed reduction in the speed limit to 80kph, there was a clear theme that the speed limit along the length of the road should be further reduced to 60kph.

NZTA noted that Vinegar hill road has a high personal risk, placing it in the top 5% high benefit roads where a speed review would provide significant safety benefits. NZTA also noted that the Safe and Appropriate Speed for Vinegar Hill Road is 60kph. A higher speed limit of 80kph could be supported in conjunction with safety improvements to the road and road environment.

One submitter seeking a 70kph speed limit provided a good summary of the key concerns by stating that “*Vinegar Hill Road is a populated area with many properties opening onto the Road. There are many bends with restricted speed limits (45kph and 55kph). An overall speed limit of 70kph would be appropriate. Witnessed many single vehicles crashes on Vinegar Hill Road.*”

One submitter noted that “*at present drivers accelerate up the hill from both directions and are driving at high speeds when they encounter bends*”.

The rural residential nature of the road was highlighted by one submitter who stated that “as the Vinegar Hill road is now a residential area and increasingly so, the maximum speed should be 60kph, not the proposed 80kph. There is a prevailing driving attitude to drive to the limit, meaning 9kph over the stated limit; Therefore an 80kph limit would invite rally-style driving to 89kph with rapid bursts of acceleration and braking between the tight bends”.

Long-time residents of Galliard Way (14 years) noted that “during that time traffic using Vinegar Hill Road has increased greatly - both commercial and residential. When the Totara Grove subdivision connects with Vinegar Hill Road there will be even more traffic. It has become a shortcut from SH1 to many northern parts of the city. The majority of the road, however, remains narrow and winding with no berms and steep drop-offs or large drains. Despite the lower speed restrictions on many of the corners, drivers are still consistently going too fast and using the wrong side of the road. The narrow and winding summit section is particularly dangerous if current limits are exceeded.

We approve of the majority of proposed changes but feel that the 80 kph limit between the lower speed posted corners is still too high and would prefer to see this set at 70kph. The distances between those corners are too short to be classed as open road. If you can keep a speed camera working (unlike the one near Balmoral Road), then that would be a good deterrent for drivers who ignore posted speed limits."

On submitter who drives regularly to Tikipunga along Vinegar Hill Road found that it is possible to comfortably drive at between 60 and 70 kph along the road.

Vinegar Hill Road from a point 200m south-east of the intersection with Saleyards Road to the intersection with State Highway 1

There were two submissions supporting the 60kph speed limit along the section of Vinegar hill Road from Saleyards Road to State Highway 1. One submitter was concerned about Saleyards Road into Vinegar Hill Road as far as Logan Cameron Road and stated that “a radar now and then would be helpful in keeping the speed limit in check in this area. It is like a race-track at times and the limit is too high”.

6.2.2 Analysis – Vinegar Hill Road

Existing 50kph Zone

The existing 50kph zone encompasses the part of Vinegar Hill Road that enters the Whangarei urban area at Tikipunga. Several submitters raised a concern that the proposal was to increase this 50kph speed limit to either 60kph or 80kph. The 50kph zone encompasses the urban area of Vinegar Hill road and there is no proposal to increase the speed limit in this area.

Two submitters raised the issue that Te Kura Kaupapa Maori O Te Rawhitiroa School and a children's play area are located on this road and the speed limit should be 40kph or a school speed zone should be introduced.

The implementation of a school speed zone is assessed in accordance with NZTA Traffic Note 37 and Traffic Note 56 (Appendix 5). Assessment criteria include the number of students utilising the road, drop off areas and other risk factors. Te Kura Kaupapa Maori O Te Rawhitiroa School is set well back from Vinegar Hill Road and is fenced. There is a well-designed vehicle entrance to the school. This entrance culminates in a large radius turning circles that can cater for both car and bus drop offs within the school grounds.

Te Kura Kaupapa Maori O Te Rawhitiroa School does not meet Traffic Note 37 or 56 criteria for a school speed zone. However, the Whangarei Urban area speed limits will be reviewed in the next two years, and part of that review will further consider the implementation of 40kph speed limits.

The children's playground referenced by submitters is located on the corner of Corks Road and Vinegar Hill Road. The intersection of Corks Road and Vinegar Hill Road is a significant intersection with both roads forming arterial urban streets. Vehicles approaching the playground on Vinegar Hill Road are required to slow to a stop at the intersection. Vehicles turning onto Corks Road do so from a standing start.

Lowering the speed limit on this part of Vinegar Hill Road is unlikely to achieve a slower speed than what is currently being driven at or near the intersection where the playground is. However, there is currently only one sign located near Te Kura Kaupapa Maori O Te Rawhitiroa School that indicates that children may be crossing the road. Additional signage near the playground would assist in raising awareness. Additional engineering interventions, including a crossing island will also improve safety to a much greater extent than a 40kph speed limit.

Proposed 60kph Zone

It is noted that NZTA advises against the introduction of a 60kph buffer as research indicates that early warning signs of a slower speed limit ahead is more effective in slowing vehicles down. This is particularly the case where there is no clear change in the road environment.

It is also noted that extensive urban development is occurring adjacent to Vinegar Hill Road and that the District Plan has zoned additional land for urban development in this area. Current development is located near the 50kph speed boundary. One submitter, seeking a 60kph zone for the entire length of the road noted that Vinegar Hill road is becoming increasingly residential in nature. Given this development, it is considered appropriate that the current 50kph zone be extended approximately 100m north to take in new development currently underway.

Submitters raised concerns that the proposed 60kph terminated near the brow of a hill and that there was little visibility at this location. These submitters sought an extension of the 60kph zone to Riversong Road.

NTA Staff have visited the location. The issue of a change of speed limit at or near the brow of the hill is acknowledged. Vinegar Hill Road has extensive curves that commence near Riversong Road and Continue to Logan Campbell Road. Most of the curves have either 55kph or 45kph advisory signs associated with them. A change of speed limit in this area would not properly match the road environment, with a slower speed limit being in place for a much straighter section of the road.

It is noted that NZTA identify the entire length of Vinegar Hill Road as having a safe and Appropriate Speed of 60kph. A higher speed of 80kph could be made safe provided safety improvements to address the personal road safety risk are implemented.

A slower speed limit of 60kph, which better matches the road environment would not have a significant impact on overall travel times, as much of the road cannot be safely driven at 60kph to 70kph. As such, it is considered that lowering the speed limit to 60kph for the entire length of the road would match the speed limit to most driver's current speed. This will have the effect of limiting any effect on the average driver but will slow faster drivers as they attempt to match a higher speed limit.

It is noted that the section of Vinegar Hill Road from the urban area to the proposed end of the 60kph zone is not a self-explaining 60kph zone. That is, the road environment does not lead the driver to a slower speed because of queues from the environment such as curves, and urban areas. In addition, there is expected to be a natural inclination for drivers to speed up as they reach the downhill section south of Riversong Road. To counter this, and ensure

compliance, it will be necessary to install repeater signs in this area. Advance warning signs of the upcoming 50kph zone will also assist with overall compliance.

Recommendation

Install additional “children present” signage on the approaches to the playground area and investigate the installation of a safe crossing point, including an island refuge at or near the playground near the intersection with Corks Road.

Extend the existing 50kph zone approximately 100m to the north to encompass current and planned urban development.

Extend the proposed 60kph zone to extend to the full length of Vinegar Hill Road.

Note: to ensure consistency, smaller side roads that extend from Vinegar Hill road will have a 60kph speed limit.

6.3 Ruakaka and One Tree Point Urban Traffic Area

The Ruakaka and One Tree Point Urban Traffic areas are being addressed together. Both Urban traffic Areas are similar in that they have the characteristics of a small coastal community. However, One Tree Point is expanding faster than Ruakaka.

6.3.1 Community Feedback – Ruakaka and One Tree Point Urban Traffic Area

There was one submission relating to the One Tree Point, Marsden City and Ruakaka urban areas generally. The submitter suggested that *“a lower speed limit of 30kph be considered in these urban areas as there is a current lack of proper infrastructure for low-speed traffic (for example bicycles and scooters) and pedestrians. Cyclists, scooters, and pedestrians have to share the roads with cars until shared paths and cycleways have been established in these areas.”* The submitter agreed with the proposed extensions to the Urban Traffic Areas.

One submission was opposed to proposed slower speed limits in Te Kamo Toad and Karawai Street. The submitter did *“not understand why there is a difference in the proposed speed limit for this street compared to contiguous residential streets with 50kph speed limit.”*

One submitter was specifically concerned about speed on Ruakaka Beach Road and stated that it is proposed that the road will continue to be 50kph. *“Please reduce to 30kph or add garden beds to force people to concentrate and slow down. Drivers come over the one-way bridge and then speed along by the park and up to the round-about. Many times, we have seen drivers texting at the same time. We have a number of children in the area we would like them to have the opportunity to cross the roads safely”.*

Another submitter focussed on Billar Road. This is a partially formed access road alongside the Ruakaka Estuary. The submitter requested that Billar Road be stopped and turned into an Esplanade Reserve *[It should be noted that stopping a road is outside the scope of this speed review and is subject to a separate legal process]*. The submitter also noted that the formed section of Billar Road, at a minimum should have a speed limit of 30kph.

Within the One Tree Point Urban Traffic Area, a submission signed by 16 people sought a 30kph speed limit on Marsden Bay Drive from Finch St to the end of the road. The submitters were concerned that *“there is a playground that many children use, and families picnic here. Vehicles do wheelies and stir up the dust in the carpark area and come at great speed down the road toward the play area.”*

6.3.2 Analysis – Ruakaka and One Tree Point Urban Traffic Area

Community feedback received through a range of sources, across many of Whangarei District’s smaller coastal communities indicate a desire for some change with respect to speed limits. In considering the specific feedback received as part of the notification process, NTA staff have also considered feedback from a wide range of sources, including other coastal communities and other Districts.

Whilst there was limited specific feedback on the Urban Traffic areas, there was a consistent theme of wanting a slower speed limit in the urban areas. This theme is consistent with feedback that other Councils have received with respect to urban traffic areas.

Over the past few years, urban design and subdivision development has focussed on better walking and cycling connections, pedestrian friendly streets and a slow design speed for new subdivision development. This design focus is evident in the Marsden Cove development where there are curving streets with multiple round-a-bouts and slow street features.

The traditional speed limit with urban areas in New Zealand has been 50kph. This is reflected within the legal framework where the Setting of speed Limits Rule identifies an Urban Traffic Area as having a 50kph speed limit, with other speed limits identified as exceptions. However, the Setting of Speed Limits Rule also provides for speed limits lower than 50kph. Within this context, the feedback from NZTA on Te Kamo Street and Karawai Street in the Ruakaka Urban Traffic Area is noted where they state that *"the Safe and Appropriate Speed for all this area is 40kph, which is recommended and would reflect national consistency and the intent of the Speed Management Guidance."*

The options available are:

1. Retain a speed limit of 50kph in the Urban Traffic Area with other speed limits by exception
2. Reduce all speed limits to 40kph within the Urban Traffic Areas
3. Reduce speed limits to 40kph in most urban areas; but retain 50kph on arterial routes.

Retain a speed limit of 50kph in the Urban Traffic Area with other speed limits by exception

This option is to retain the status quo and only adjust the boundary of the Urban Traffic Areas to consolidate them and encompass existing development and new proposed development.

All three main Urban traffic Areas of One Tree Point, Ruakaka, and Waipu are seeing significant sub-division development. Increased sub-division at One Tree Point and Marsden Cove is particularly noticeable.

Recent development has a design that moves away from the more traditional wide street and car-based approach of older, more established developments. There is more focus on "slow street" design features, including more reliance on round-a-bouts narrower carriageways and streetscapes. More provision is put in to encourage pedestrian and cycle linkages to other parts of the community.

In most cases, new subdivision development has a design speed of 40kph, and in some highly pedestrianised areas, 30kph. The intent of Speed Management Guidance is to set safe and appropriate speeds for the road environment. A blanket 50kph speed limit, particularly in these slow speed areas would therefore not be consistent with Speed Management Guidance. This position is supported by NZTA.

Reduce all speed limits to 40kph within the Urban Traffic Areas

A reduction of all speed limits within the Urban Traffic area to 40kph would generally reflect the intent of the speed Management Guidance. A blanket 40kph speed limit will also reflect the coastal community and holiday feel to smaller communities such as Ruakaka and One Tree Point.

It is noted that submitters talked about pedestrian use of the road environment in relation to a number of roads, including Marsden Point Road. A significant issue raised was the ability of pedestrians and cyclists to access shopping centres and other services from residential areas. It is also noted that the small coastal community feel to One Tree Point, Ruakaka and Waipu does give rise to increased pedestrian activity, especially during the summer months. This is reflected in the number of holiday homes in these communities.

Pedestrian and cycle infrastructure is still being developed within the older parts of these communities. Pedestrians in these areas do tend to access the carriageway more often. Until this infrastructure is developed; it is appropriate to ensure that speed limits are appropriate for multiple use of the carriageway.

There is a high number of permanent residents that commute to work, whether it is at Marsden Point Oil Refinery, the Port or in Whangarei. A blanket 40kph speed limit may not be desirable in these circumstances, particularly on the wider arterial routes. In the case of Ruakaka and One Tree Point, these routes provide relatively direct access to the State Highway network or shops and facilities.

Reduce speed limits to 40kph in most urban areas; but retain 50kph on arterial routes.

Implementing this option would retain the existing 50kph or higher speed limit on strategic and arterial roads. These roads are used to commute from a wider residential area to shops, services or main commuter and State Highway routes. All access roads within the urban area would have a 40kph speed limit.

The merits of a 40kph speed limit and a 50kph speed limit has been discussed as part of the analysis of the other options. The major advantage of this option is that a speed limit that reflects the access nature of many of the highly urbanised roads, particularly within newer subdivisions can be implemented. At the same time, key routes that are generally wider and act as collector roads can still function as they are intended with a slightly higher speed limit.

A further possibility that has been considered as part of this option is to implement a 40kph speed limit on roads or areas that have slow street features. This possibility has been dismissed as the majority of the streets within the urban area of Ruakaka and One Tree Point have a high portion of holiday houses and a more coastal holiday feel to them already, whether they are the older wider streets or not. This holiday feel encourages more pedestrians to utilise the carriageway.

Recommendation

Reduce speed limits within the Urban Traffic Area of Ruakaka and One Tree Point to 40kph, with the exception of key collector roads which are to remain at 50kph in accordance with the maps set out in Appendix 1 and shown below.

WDC Speed Review – Vinegar Hill, Marsden, Waipu, Te Toiroa Rd

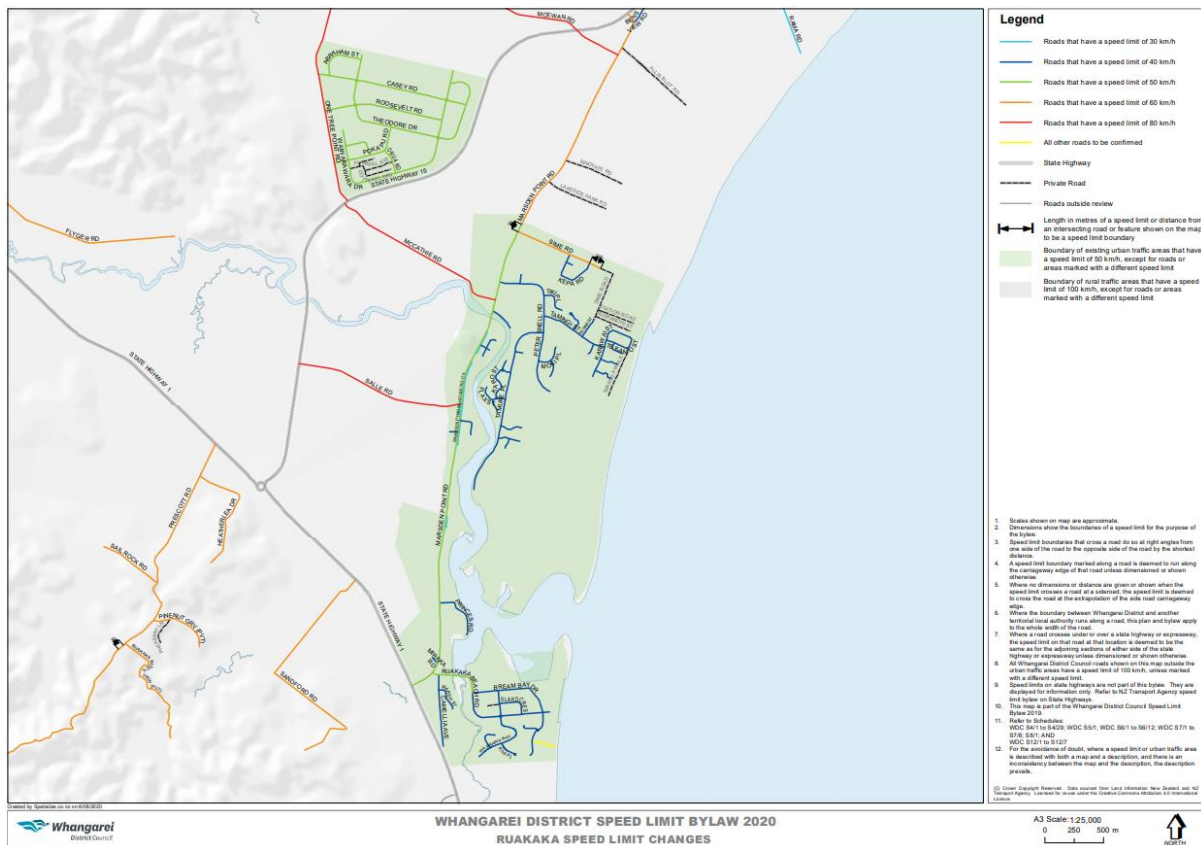


Figure 6: Ruakaka and Marsden City Urban Traffic Area

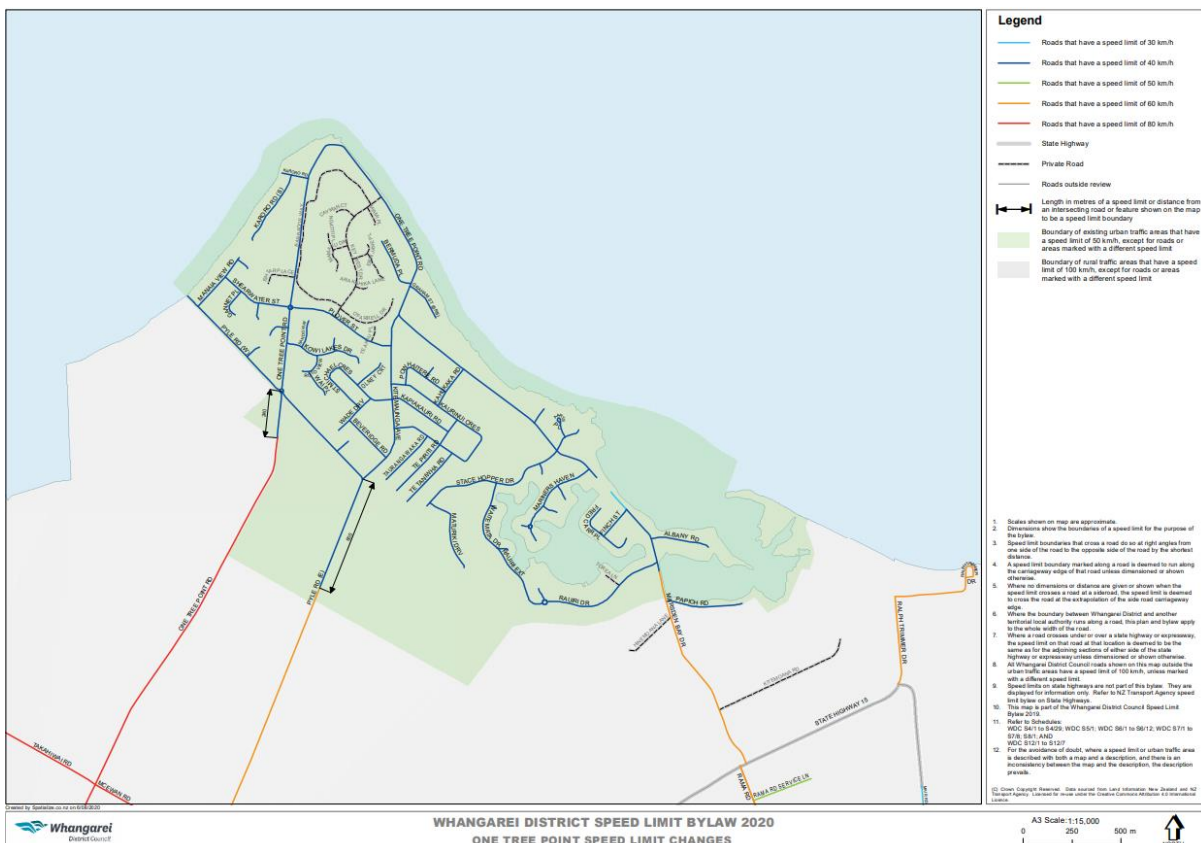


Figure 7: One Tree Point Urban Traffic Area

6.4 The Centre Road - Waipu

6.4.1 Community Feedback – The Centre Road

There were eight submitters in support or partially in support of the proposal. Six submitters sought a lower speed limit of 30kph, and one sought a speed limit of 50kph.

Submitters seeking a 30kph speed limit felt that the number of vehicles and pedestrians frequenting the Waipu Town Centre was not properly considered when proposing a 40kph speed limit. One submitter noted that *“the town centre has a high occurrence of elderly, children, including both locals and tourists, particularly during the summer months and that any speed reduction must strive to ensure the balance of priority is swung towards the pedestrian”*.

The submitter continued to state that *“Waipu town centre is the heart of the community. There is significant development occurring within the Urban Traffic Area, with a projected increase in population and pedestrian footfall, the proposed reduction to the speed limit must appropriately reflect this.”*

The proposed 40 kph will not adequately ensure this, and the risk of death and serious injury will remain inappropriately high, therefore the Authority must revise their proposed speed reduction to 30kph (Austroads Balance between harm reduction and mobility in setting speed limits: a feasibility study (2005)).”

One submitter stated that if a lower speed limit of 30kph was not imposed, then *“a schedule of complementary measures at key locations must be delivered to support the higher 40kph speed limit that is proposed. Measures include:*

- *An additional pedestrian crossing at the eastern end of The Circle (Road)*
- *Vertical traffic calming features (raising pedestrian crossings)*
- *Entry treatments to define the town centre area and its change in speed limit.”*

The Automobile Association was partially supportive of the proposal noting that a *“40kph speed limit may be appropriate in the town centre during shop opening hours when there are numerous pedestrians around and there are cars reversing into street parking spaces, overly rigid enforcement at other times would be unwelcome”*. The Automobile Association also questioned whether lowering the speed limit from 50kph is necessary.

Several submitters suggested that the lower speed limit should be extended to the west and east. The extent of the extensions to the lower speed area varied between submitters and included:

- Extend from near the bus stop west of St Mary’s Road to Insley Street
- Extend to include the Waihoihoi River Bridge in the west and Braemar Lane to the east

In seeking an extension to the proposed 40kph zone (and lowering to 30kph) submitters highlighted that *“there is a natural slowing down period or distance that occurs when a driver sees a change in speed zones and this extension would mean that an adjustment will have been made by the time the driver reaches the areas of concern. The Pizza Barn is a very popular venue and travelling at 50kph past this establishment on a busy night is too fast. Similarly, at the other end of town are the Inter-city bus stops and public toilets, both busy on weekends”*.

6.4.2 Analysis – The Centre Road and Waipu Urban traffic Area

Waipu is a relatively small village with some rural service businesses. State Highway 1 bypasses Waipu and as a result there is only limited through traffic. However, it forms part of the route from Whangarei to Waipu Cove and Mangawhai and is a popular stop for these people. The Waipu township can become busy with large numbers of pedestrians at times. Waipu also has a relatively high population of older people.

The merits of different urban speed limits have been discussed in 6.3.2 above. The discussion and issues apply equally to the Waipu Urban Traffic Area and is not repeated here. Suffice to say that the same or similar recommendation would apply to Waipu.

The key speed related issues that need to be addressed in Waipu are:

- The high numbers of pedestrians that access the main carriageway on The Centre
- New subdivisions in Waipu that have a lower design speed (40kph) within them, including slow street features
- Safe access across The Centre, particularly for older residents
- Safe walking access to the Early Childhood Centre on The Braigh
- The need to incorporate engineering solutions to match the road environment to the proposed speed limit

A wider urban speed limit in Waipu of 40kph is considered appropriate, in terms of consistency with recommendations for One Tree Point and Ruakaka. New subdivision, which now make up a significant portion of the Waipu Village have a lower design speed in their roads (40kph). The older parts of Waipu are characterised by roads that have narrow carriageways and, in some cases, limited pedestrian facilities. The only exception to the general narrow carriageways is South Road and The Braigh.

In recommending a general urban speed limit of 40kph, it would be reasonable to reduce the speed limit to 30kph within the area currently proposed as 40kph. This would satisfy submitters seeking a lower 30kph speed limit in this area. In addition, this option would satisfy those submitters seeking to extend the proposed 40kph zone east and west.

A 30kph speed limit in The Centre reflects the use of this area as a town centre with a high number of pedestrians. It is however considered appropriate that additional engineering interventions are incorporated into the town centre area to match a 30kph speed limit. It is considered appropriate that the new 30kph speed limit be extended approximately 50m east along Cove Road to encompass popular eateries that are located east of the intersection with Nova Scotia Drive. This extension would encourage drivers to slow prior to the major and complex intersection with Nova Scotia Drive and South Road.

Reducing the speed limit within the Urban Traffic Area will have the effect of reducing the speed limit on Nova Scotia Drive from The Centre to a point 260m south of the intersection with The Centre.

There are few direct accesses onto Nova Scotia Drive from 260m south of The Centre to McClean Bridge. New subdivisions create a single access point only. Extending a 40kph or a 50kph speed limit to McClean Bridge cannot be justified as there is insufficient urban development that has direct access to the road. The road environment along this part of Nova Scotia Drive does not support a lower 50kph speed limit without significant engineering interventions. Such interventions would be required to achieve an appropriate level of compliance. However, there is a change in the road environment from McClean Bridge that will support a 60kph speed limit.

The current 50kph / 100kph boundary is located approximately 100m south of Lochalish Drive. The section of Nova Scotia Drive that is currently 50kph is characterised by the Fire Station, Waipu Citizens and Services Club, Church and residential dwellings with direct access onto the road. Inclusion of this area within the 40kph zone is reasonable. However, this boundary coincides with a clear change in the road environment. A 40kph speed limit beyond this point is not supported.

Although not part of "The Centre", consequential changes to The Braigh would include:

- Extend the new 40kph speed limit along The Braigh to approximately 50m south of the "Kids 1st" Early Childhood Centre. This change would enable a more appropriate and slowing speed limit outside the Early Childhood Centre and along the section of the

Braigh that is used to access the Early Childhood Centre and address the concerns of several submitters.

- The remainder of the Braigh to be 60kph. This would satisfy those submitters that consider a 50kph speed limit to be too slow on the outskirts of Waipu.

Recommendation

Reduce the speed limit of within the Waipu Urban Traffic Area to 40kph, with the exception of the following areas:

- **A 30kph speed limit on The Centre from the intersection with St Mary's Road to a point on Cove Road at the intersection with Insley Street.**
- **A 60kph speed limit on The Braigh from a point 50m south of the Kids 1st Early Childhood Centre to the intersection with State Highway 1.**
- **A 60kph speed limit on Nova Scotia Drive from 260m the intersection with The Centre to the north side of McClean Bridge.**

The above recommendation is set out in the map in Appendix 1 and shown below.

7 Summary of submissions received and recommendations (road by road)

All submissions have been read and considered before recommending new speed limits. Submissions were broken down to comments on individual roads wherever possible. Summary information is provided in the following tables, including:

- Road name
- Current posted speed limit
- Proposed speed limit (as set out in the Statement of Proposal)
- A summary of the feedback received
- Northland Transportation Alliance Road Safety Engineer (Team Lead) comments and recommendations
- Recommended new speed limit

The summarised Northland Transportation Alliance Road Safety Engineer comments, and the resulting recommended speed limit, are made having considered:

- The initial assessment of the road
- Evidence based matters that are required to be considered under Section 4.2(2) of the setting of Speed Limits Rule 2017 and set out in the following Reports as referenced in the Statement of Proposal and published on Council's Website:
 - Regional Speed Limit Reviews Vinegar Hill Road Catchment (Technical Report)
 - Regional Speed Limit Reviews Vinegar Hill Road Catchment (Technical Report)
 - Regional Speed Limit Reviews Waipu Urban Traffic Area, Nova Scotia Drive Catchment (Technical Report)
- Community feedback received during the consultation process
- Additional site visits and assessments undertaken as a result of the community feedback received

Vinegar Hill Road Catchment Area					
Road Name	Current Speed Limit	Proposed Speed Limit	Community Feedback	NTA Road Safety Engineer (Team Lead) comments and recommendations	New Speed Limit
Vinegar Hill Road from Corks Road to the current 50kmph boundary	50kmph	50kmph	There were five submitters in support and one partially in support. It was highlighted that, between Corks Road and Balmoral Road there is Te Kura Kaupapa Maori O Te Rawhiti roa School and a children's play area on the corner of Corks Road and Vinegar Hill Road, the speed limit in this area should be reduced to 40kph or made into a School Zone.	Refer to Section 6.2 of this Report. Te Kura Kaupapa Maori O Te Rawhiti roa School does not meet the requirements of Traffic Notice 37 for a variable school speed zone.	50
Vinegar Hill Road from current 50kmph boundary to a point 800m north of the intersection with Balmoral Road	100kmph	60kmph	There were twelve submitters in support or in partial support and two opposed. Two submitters sought a speed limit of 50kph, two sought 60kph, one sought 70kph and one 80kph. Submitters that supported a 60kph zone were largely in support of a slower overall speed limit for Vinegar Hill Road as a whole, with some submitters seeking, as a minimum, the extension of the 60kph zone to Riversong Corner. Community feedback on Vinegar Hill Road is discussed in more detail in Section 6.2 of this Report.	Refer to Section 6.2 of this Report.	60
Vinegar Hill Road from a point 800m north of Balmoral Road to a point 200m south-east of the intersection with Saleyards Road	100kmph	80kmph	There were 18 submitters in support or in partial support and one opposed. Two submitters sought a speed limit of 60kph, six sought 70kph and four sought 80kph. Community feedback on Vinegar Hill Road is discussed in more detail in Section 6.2 of this Report.	70kph is a speed limit that is discouraged under national guidance unless there is compelling evidence, favouring 60kph or 80kph. Refer to Section 6.2 of this Report.	60
Vinegar Hill Road from a point 200m south-	100kmph	60kmph	Two submitters supported a 60kph speed limit and one was opposed.	Refer to Section 6.2 of this Report.	60

42

			sub-divided which will mean more houses, vehicles, children, bikes and walkers.	Given the recommendations for a 60kph speed limit on Vinegar Hill Road; a 60kph speed limit is appropriate to maintain consistency.	
Lauries Drive	100kmph	60kmph	Two submitters were either in support or in partial support, with one submitter seeking a 50kph speed limit and the other supporting the proposed 60kph limit. One submitter noted that the area can be sub-divided which will mean more houses, vehicles, children, bikes and walkers.	Setting of Speed Limits Guidance only allows for a 50kph speed limit with an urban environment.	60
Logan Cameron Road	100kmph	60kmph	Three submitters were either in support or in partial support, with two submitters seeking a 50kph speed limit and one supporting the proposed 60kph limit. One submitter noted that the area can be sub-divided which will mean more houses, vehicles, children, bikes and walkers.	Setting of Speed Limits Guidance only allows for a 50kph speed limit with an urban environment. Given the recommendations for a 60kph speed limit on Vinegar Hill Road; a 60kph speed limit is appropriate to maintain consistency.	60
Main Road	100kmph	80kmph	Four submitters sought a speed limit of 60kph and one sought a 50kph speed limit. All submitters were supportive of an overall lower speed limit. Main Rd is a no exit rural road servicing residents. It is unmarked and in part unsealed. There is no footpath and residents have to walk on the road to get to their houses. The road gives access to the Glenbervie Forest which attracts cyclists, runners and walkers who all use Main Rd to gain access. Main Road is extensively used by foot, bike and horse traffic.	Setting of Speed Limits Guidance only allows for a 50kph speed limit with an urban environment. Given the recommendations for a 60kph speed limit on Vinegar Hill Road; a 60kph speed limit is appropriate to maintain consistency.	60
Saleyards Road	100kmph	60kmph	Four submitters were either in support or in partial support, with three submitters supporting a 60kph speed limit and one seeking an 80kph limit. One submitter noted that the area is sometimes used like a racetrack and more enforcement would address this issue.	Enforcement is addressed in Section 6.2 of this Report.	60
Jounneaux Road	100kmph	60kmph	No feedback received	Proposed speed limit appropriate.	60

44

			consistency/the intent of the Speed Management Guide.		
Keith Road	100	60	No feedback received	Proposed speed limit appropriate.	60
Mair Road (Beach access) from unsealed Section.	30	30	No feedback received	Proposed speed limit appropriate.	30
Marsden Bay Drive from SH 15A to 50m south of the intersection with Rauiri Drive	100	80	<p>Three submitters either supported or partially supported the proposal. Six submitters opposed the proposal. Submissions opposed were made up of several submissions, signed by the same person.</p> <p>Submitters generally sought a slower speed limit as the road is narrow and heavily utilised by cars towing boats to the nearby boat ramp at Marsden Cove Marina. It was also noted that the road is used by cyclists, boat trailers and Heavy goods Vehicles and there is limited shoulder area.</p> <p>NZTA recommended that Marsden Bay Drive be set at 60kph.</p>	A review of Marsden Bay Drive confirms that a speed limit of 60kph is appropriate. Marsden Bay Drive is a principle access to Marsden Marina, which is a popular boat launching area, increasing the volume of trailers on a narrow road.	60
Marsden Bay Drive from Rauiri Drive to Finch Street.	50	50	Refer to One Tree Point Urban Traffic Area in Section 6.3 of this Report.	<p>Refer to One Tree Point Urban Traffic Area in Section 6.3 of this Report.</p> <p>The further lowering of the speed limit along Marsden Bay Drive to 60kph and reduction of the Urban Traffic Area Speed Limit to 40kph has resulted in the shifting of this speed boundary closer to Rauiri Drive.</p>	40
Marsden Bay Drive from Finch Street to end.	50	50	One submitter sought a 30kph speed limit on Marsden Bay Drive from Finch St to the end. There is a playground that many children use, and families picnic adjacent to the road here. Vehicles do wheelies and stir up the dust in the carpark area and come at great speed down the road toward the play area. (Petition signed by multiple people)	Finch Street is a small access road with an unfenced harbourside park that is popular with families. A slower speed limit along this road is appropriate.	30

46

			<p>that the current speed limit should be retained because there was not much traffic on McCathie Road and few houses.</p> <p>One submitter suggested a 60kph speed limit because the road does not match the definition for an 80kph road (as published in the Statement of Proposal) and there is a lack of proper infrastructure for low speed traffic. Bicycles, scooters and pedestrians have to share the road with cars</p>	<p>at the Ruakaka end of the road, the road is straight.</p> <p>Pedestrian activity on this road is expected to be minimal as there it does not connect pedestrian destinations,</p> <p>80kph is considered an appropriate speed.</p>	
McEwen Road	100	80	<p>One submitter supported and seven submitters opposed the proposal.</p> <p>Submissions opposed were made up of several submissions, signed by the same person and stated that the current speed limit should be retained because McEwen Road is a main thoroughfare.</p> <p>One submitter suggested a 60kph speed limit because the road does not match the definition for an 80kph road (as published in the Statement of Proposal) and there is a lack of proper infrastructure for low speed traffic. Bicycles, scooters and pedestrians have to share the road with cars.</p>	<p>McEwen Road Although there are some residential dwellings on this road, it is largely rural in nature and is a straight alignment. The road incorporates an over bridge across SH15A and there are few intersections.</p> <p>The Marsden Play Centre is located on McEwen Road near the intersection with One Tree Point Road. The Play Centre is well fenced and has an off-road parking bay for pick-up and drop-off. Speed limits associated with the Play Centre is addressed in Section 5 of this Report.</p> <p>80kph speed limit is considered appropriate.</p>	80
One Tree Point Road from 240m south of Pyle Road East (new proposed Urban Traffic Area boundary) to the intersection with State Highway 15A.	100	100	<p>Two submitters either supported or partially supported the proposal and three were opposed.</p> <p>The Automobile Association considered that, given subdivision along the road and significant intersections, a speed limit of 80kph is appropriate.</p> <p>One submitter sought a speed limit of 60kph because the road did not meet the definition of a 100kph road and is unsafe at 60kph on most parts of the road including at Marsden City, Takahiwai</p>	<p>One Tree Point Road provides a key commuter connection between One Tree Point, Ruakaka and Whangarei.</p> <p>The Automobile Association and NZTA submissions that an 80kph speed limit is appropriate is accepted. An 80kph speed limit will provide consistence of speed limits and takes account of the major intersections and the road geometry.</p>	80

			Road / McEwan Road intersections. There are also cow crossings and increasing accessways. NZTA recommended an 80kph speed limit to reflect a Safe and Appropriate Speed,	A 60kph speed limit is not recommended as it would require significant engineering solutions to match the road to the much lower speed limit.	
Peter Snell Drive (By Shopping Centre)	70 and 50	50	One submitter suggested a speed limit of 30kph beside the shopping centre.	Peter Snell Drive is currently 50kph, with an approximately 50m section of 70kph at the intersection of Marsden Point Road. With the reduction of speed limit on Marsden Point Road, this short 70kph will become 50kph. The remainder of Peter Snell Drive is an arterial route and is recommended to remain at 50kph.	50
Pirihi Road	100	60	No feedback received	Proposed speed limit appropriate.	60
Prescott Road from the intersection of State Highway 1 to a point 50m before the end of the seal.	100	80	NZTA recommended 60kph to reflect Safe and Appropriate Speed (refer to NZTA full submission)	Prescott Road is an access road with no exit. The first part of the road is straight and sealed, before winding up the Ruakaka Hills. The carriageway is narrow and there are frequent access points that have little or no visibility. The NZTA submission is accepted.	60
Prescott Road from a point 50m before the end of the seal to the end of the road.	100	60	No feedback received	Proposed speed limit appropriate.	60
Pyle Road East (260m southeast of One Tree Point Road to 600m south of the sharp bend in the road (new Proposed Urban traffic Area Boundary)	50	50	Four submitters supported the proposal, with three submitters suggesting a speed limit of 50kph. Rather than having Pyle Road 50kph and 60kph - just make the entire road 50kph. Dust is an issue. In the past few years, there have been several incidents when drivers have lost control on Hansen's corner, and some vehicles have gone through roadside fences. As the Marsden Cove development progresses, the feeder road from	In response to guidance for urban areas, this section of Pyle Road East, within the new Urban Traffic Area is recommended as 40kph. A 50kph speed limit is not currently available within a rural environment.	40

49

50

51

			trucks use the road daily. There are often accidents that go unreported on this road.		
Ted Erceg Road	100	60	No feedback received	Proposed speed limit appropriate.	60
Te Kamo Street (Beach Access)	50	30	NZTA noted that Te Kamo Street is proposed as 30, but the last length of Tamingi Street, which looks and feels the same, has been left at 50 – the SAAS for all this 40km/h which is recommended and would reflect national consistency/the intent of the Speed Management Guide.	Refer Section 6.3 (Ruakaka Urban Area)	40
Yovich Road	100	60	No feedback received	Proposed speed limit appropriate.	60
Ruakaka Urban Area	50	50	One submitter supported proposed extension to the Urban Traffic Area but suggested lowering the speed limit to 30kph. There is a lack of proper infrastructure. Low-speed traffic (for example bicycles and scooters) and pedestrians share the roads with cars. A lower speed limit is appropriate until shared paths and cycleways have been established.	Refer Section 6.3 (Ruakaka Urban Area)	40
One Tree Point Urban Area			One submitter supported proposed extension to the Urban Traffic Area but suggested lowering the speed limit to 30kph. There is a lack of proper infrastructure. Low-speed traffic (for example bicycles and scooters) and pedestrians share the roads with cars. A lower speed limit is appropriate until shared paths and cycleways have been established.	Refer Section 6.3 (One Tree Point Urban Area)	40
Marsden City	50	50	One submitter supported the proposed Urban Traffic Area but suggested lowering the speed limit to 30kph. There is a lack of proper infrastructure. Low-speed traffic (for example bicycles and scooters) and pedestrians share the roads with cars. A lower speed limit is appropriate until shared paths and cycleways have been established.	Marsden City is currently predominantly a light industrial development with consent for an additional 45 lots for residential purposes. Marsden City has been defined as an Urban Traffic Area.	50

53

54

Waipu Urban Traffic Area

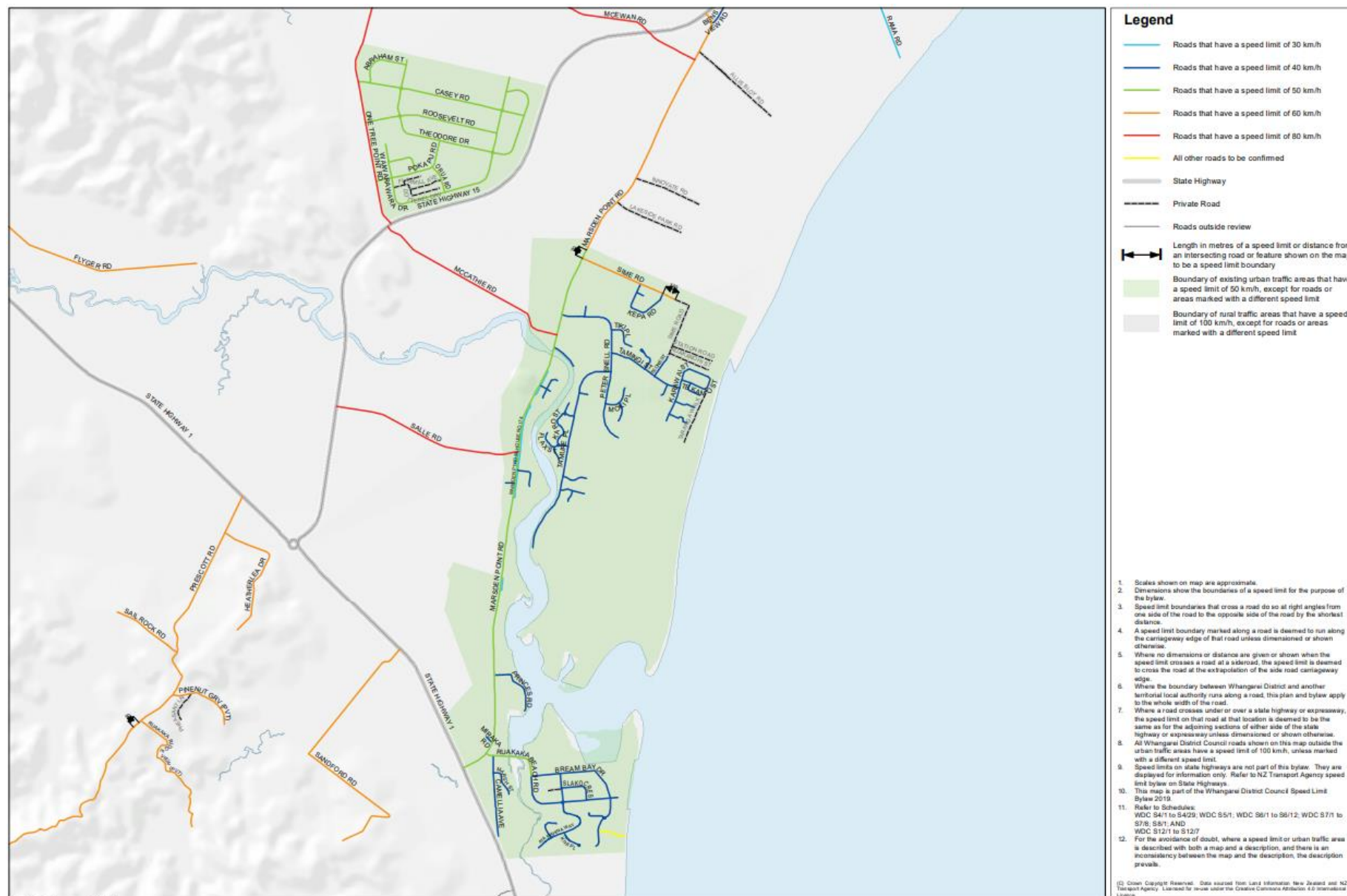
56

			Community feedback on The Centre Road is discussed in more detail in Section 6.4 of this Report.	on Cove Road at the intersection with Insley Street.	
Ferry Road	50	50	No feedback received	Refer to Section 6.4 of this Report and maps in Appendix 1	40

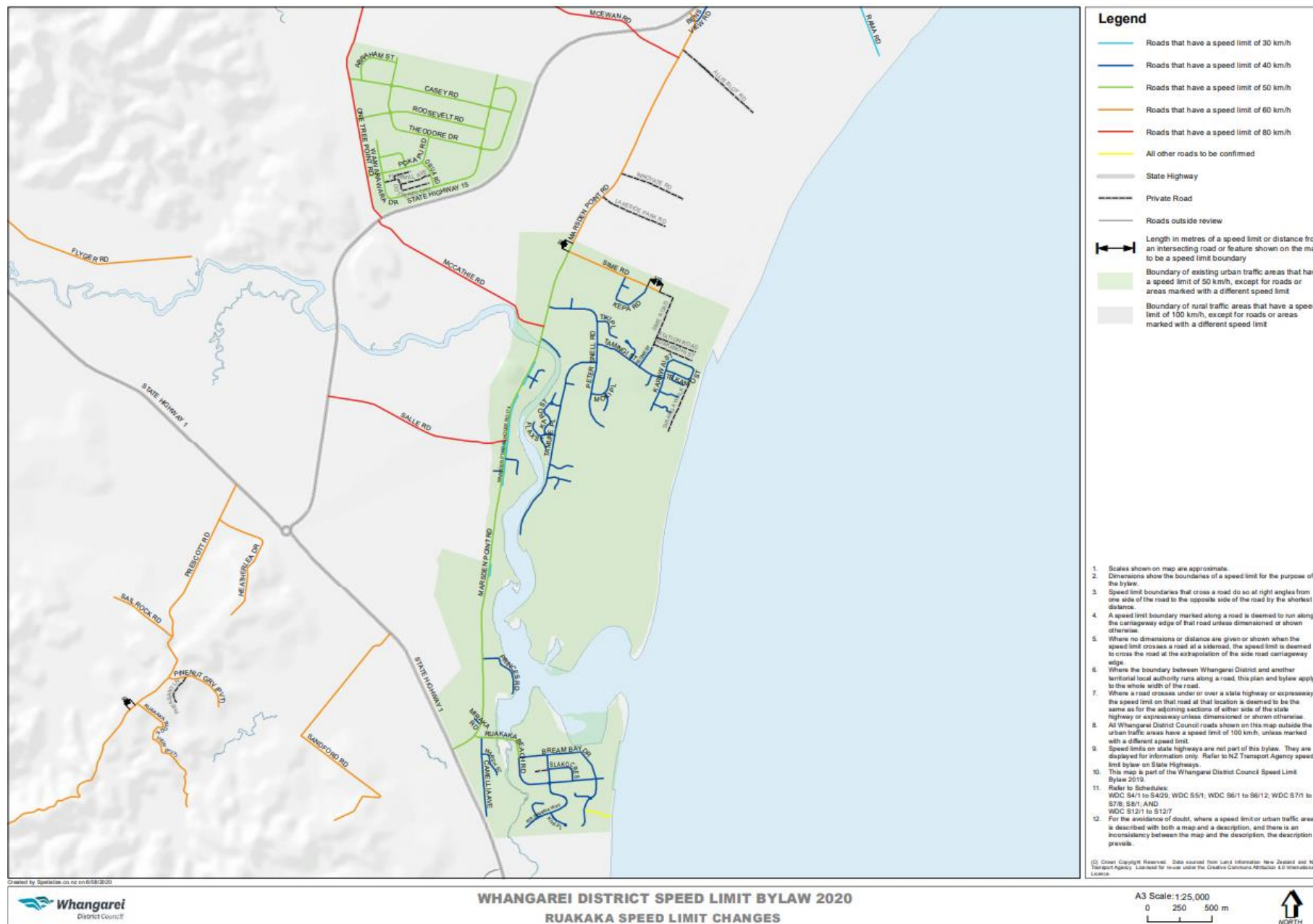
58

Appendix 1: Recommended Urban Traffic Area Maps – Ruakaka, One Tree Point and Waipu

Note: The maps in Appendix 1 set out the recommended extent of Urban Traffic Areas. The Urban Traffic Areas will have a default 40kph speed limit, except where otherwise identified as either 30kph, 50kph or 60kph.



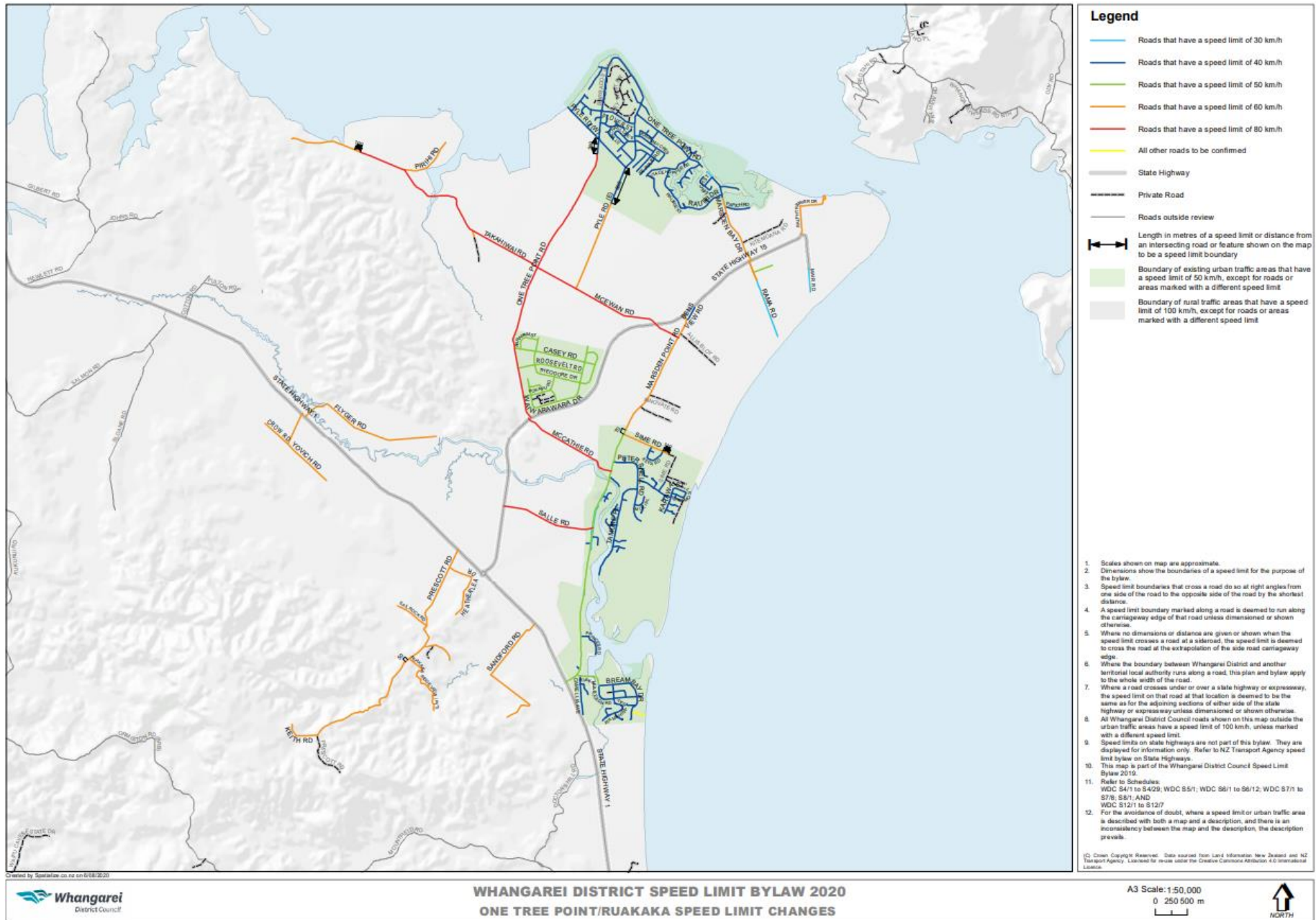
Created by Spatialise.co.nz on 6/26/2020

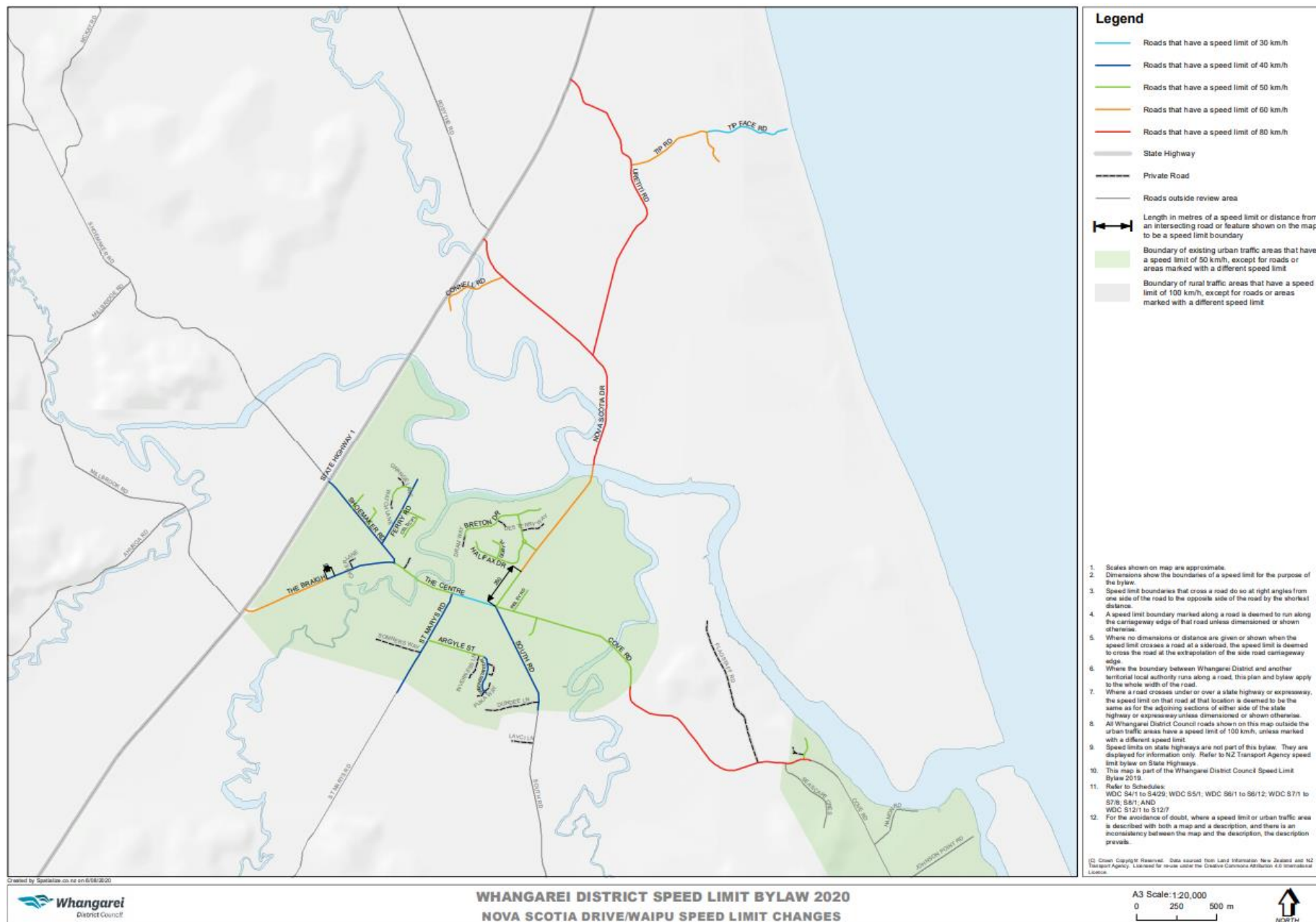


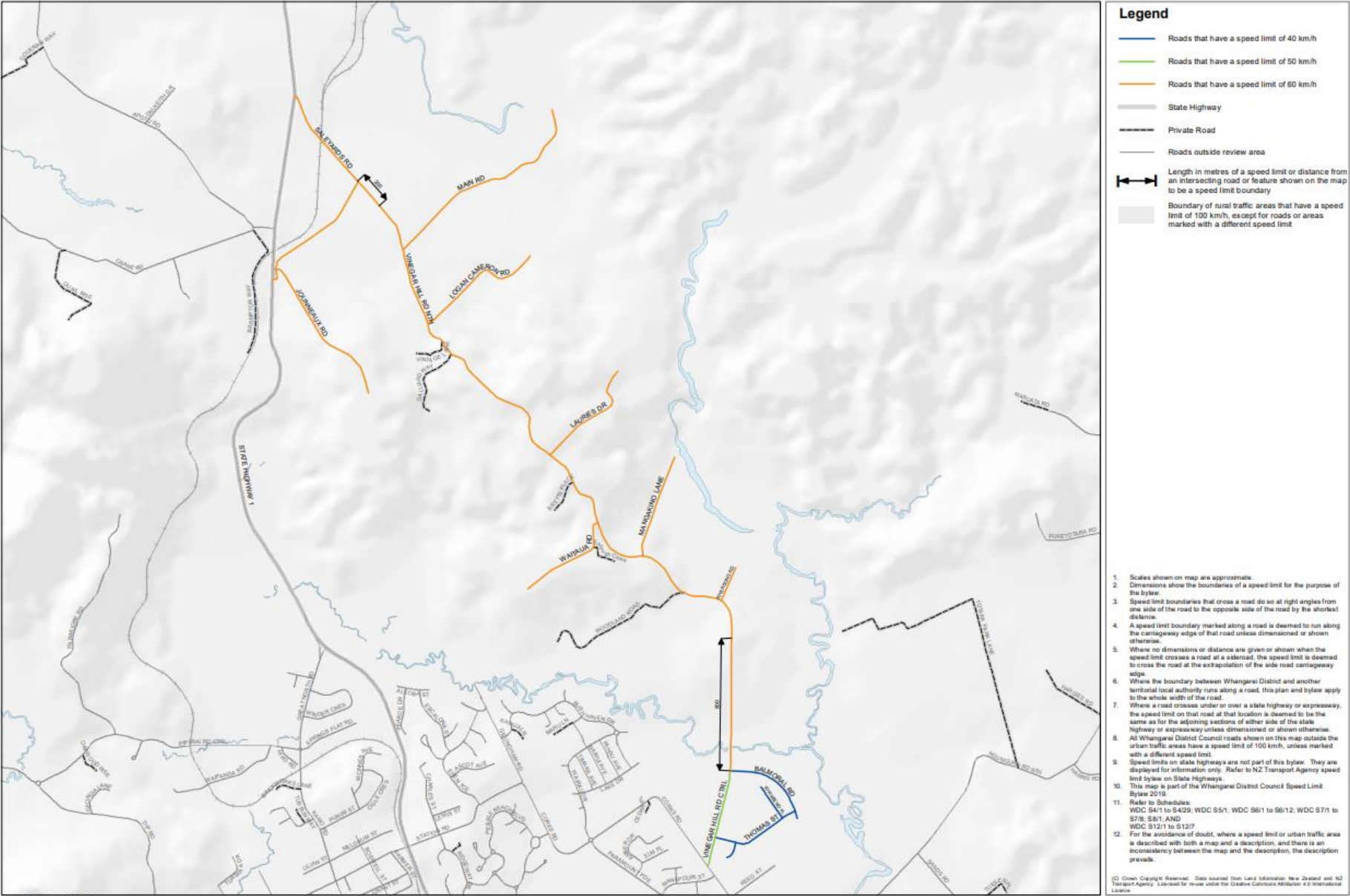
Appendix 2: Recommended Speed Limit Maps

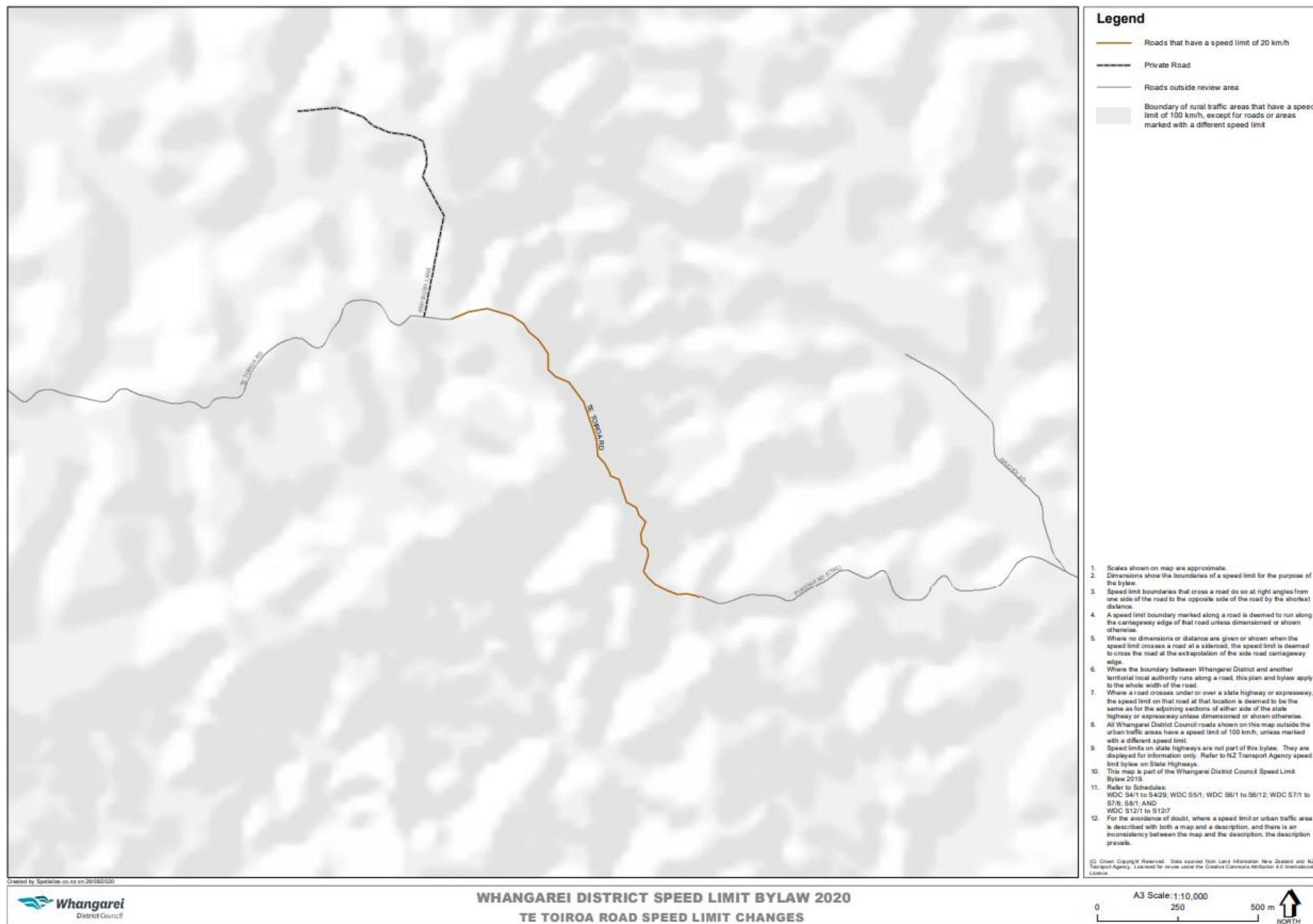
Note: The Speed Limit Maps contained within this Appendix is indicative only. Once Council confirms that recommended speed limits in this Report, the attached maps will be updated utilising RAMM mapping data and incorporated into the overall mapping of the Speed Limits Bylaw 2019. This may result in minor changes to the indicative map in this Report. These changes are expected to be only in the order of meters.

Any minor changes to the map is a result of identifying the optimal position of new signage and the accuracy required by the Setting of Speed Limits Rule 2017.









Appendix 3 – Glossary of Technical Terms

Note: Technical terms have been kept to a minimum in this Report. However, in some cases, submitters have utilised some technical terms and these have been included where the submission is set out verbatim.

Catchment Area	The catchment area incorporates the roads that naturally feed traffic into, or where traffic may directly or indirectly connect with the road of interest, similar to a river catchment area. Considering a catchment area, rather than an individual road can significantly expand the number of roads being considered.
Closed Catchment Area	A Closed Catchment Area is a relatively small and easily defined network of roads that only connect to the road of interest. An example of a Closed Catchment Area is Vinegar Hill Road.
Collective Risk	Collective Risk is a measure of the total number of fatal and serious injury crashes per kilometre over a section of road. Collective risk does not take account of the volume of traffic on the road.
High Benefit	Opportunities where changes to speed management settings will either reduce serious injury or deaths; improve efficiency; or contribute to the public credibility of speed limits.
High Benefit First 5%	A High Benefit area that should be prioritised within the first 5% of roads where a speed management review is to be undertaken.
High Benefit Second 5%	A High Benefit area that should be prioritised within the second 5% of roads where a speed management review is to be undertaken.
Infrastructure Risk Rating (IRR)	A road assessment methodology designed to assess road safety risk based on eight key design and infrastructure features, for example, whether the road is sealed or not, road alignment and geometry and other physical features about the road that impacts on overall road safety. This rating is a measure of potential risk.
Personal Risk	Personal Risk is a measure of the danger to each individual using a road. Personal risk takes into account the traffic volumes on the section of road. In many cases, infrastructure improvements may not be cost effective and other safe system interventions such as safer road use or speeds need to be explored.
Safe and Appropriate Speed (SAAR)	A travel speed that is appropriate for the road function, design, safety and use. It should be noted that the actual safe speed on parts of the road will be dependent on factors such as road condition, specific curves and other site-specific conditions. A lower speed than the overall stated safe speed may be appropriate along stretches of the road.

Appendix 4 – Traffic Note 37 and 56 Variable Speed Limits Outside Schools

Date May 2011

From National Planning Unit, Planning and Investment

Authorisation Glenn Bunting, Network Manager

No. of pages 11

40km/h variable speed limits in school zones - guidelines

1 Purpose

40km/h variable speed limits in school zones have been operating successfully in New Zealand since they were first installed on a trial basis in Christchurch in January 2000. In April 2011 the NZ Transport Agency (NZTA) revised the conditions of approval to give road controlling authorities more flexibility to install these speed limits at both urban and rural schools.

Land Transport Rule: Setting of Speed Limits 2003 requires the NZTA to approve a variable speed limit before a road controlling authority can make a bylaw to set such a speed limit. For 40km/h variable speed limits in school zones, the NZTA has published a revised notice in the *New Zealand Gazette* (the Gazette) which approves those speed limits, sets out appropriate conditions and authorises road controlling authorities to set them. This traffic note provides guidelines to comply with the Gazette notice, based on the results of the trials in Christchurch and subsequent experience with these speed limits. Recommendations for installing variable speed limits at rural schools are also included in this traffic note.

2 Background

Roads outside schools are perceived as dangerous for children. At the time when children are arriving at or leaving school and crossing the road there can be high volumes of traffic, manoeuvring vehicles, parked vehicles obscuring visibility and vehicle speeds often appear too high. Research has shown reducing vehicle speeds to 40km/h or less significantly reduces the level of injury if a child is struck by a vehicle.

In some situations standard traffic control devices and the level of activity outside a school do not result in lower traffic speeds. This is particularly likely where the school is on an arterial or other road where there is a high volume of traffic or high speeds. In these circumstances, installation of a 40km/h variable speed limit in the school zone may be desirable to achieve a lower speed environment.

In many jurisdictions, such as some states in Australia and the United States, school zones with special speed limits are indicated by permanently displayed signs. The major drawback of any permanently displayed sign is the manner in which drivers, many of whom pass the same sign regularly without requiring any action in response to it, tend to ignore or fail to see it.

Disclaimer: The NZ Transport Agency (NZTA) has endeavoured to ensure the material in this document is technically accurate and reflects legal requirements. However, the document does not override governing legislation. The NZTA does not accept liability for any consequences arising from the use of this document. If the user of this document is unsure whether the material is correct, they should make direct reference to the relevant legislation and contact the NZTA.

Variable signs, which are displayed only when relevant, offer a way in which this drawback can be minimised and may actually enhance driver acceptance of any restriction imposed. Variable signs were used for the Christchurch trials and the results of that study are embodied in these guidelines.^{4, 5} In recent years some states in Australia have begun to retro-fit permanently displayed signs with active signs that have flashing lights or electronically displayed speed limits to improve community acceptance and compliance with speed limits in school zones.

3 Objectives of variable speed limits in school zones

Variable speed limits in school zones have the following objectives:

- provide a safer road environment outside schools
- reinforce driver expectations of the likely presence of children
- encourage safe and active travel to school.

One of the objectives of the Christchurch trial was to encourage children to walk or ride to school. A major impediment is parents' concerns about child safety. The trial indicated general parent and school belief the signs provided benefits but any shift in mode of travel by children, if it did occur, was not measurable. This reinforces the view no single initiative is likely to bring about changes of the type sought. A 40km/h variable speed limit in a school zone is unlikely to be effective by itself and must complement other initiatives aimed at enhancing safety for children undertaken at the site by the road controlling authority, the school and other organisations.

4 Warrant

A road controlling authority may set a 40km/h variable speed limit in a school zone under the following conditions:

- (a) there is school-related pedestrian or cycle activity on the road outside the school, which exceeds approximately 50 children crossing the road or entering or leaving vehicles at the roadside, and the traffic on the road outside the school meets at least one of the following conditions:
 - (i) the mean speed of free-running vehicles is greater than 45km/h (measured when the 40km/h variable speed limit is not operating), or
 - (ii) the 85th percentile speed of free-running vehicles is greater than 50km/h (measured when the 40km/h variable speed limit is not operating), or
 - (iii) there have been pedestrian, cycle or speed-related crashes near the school in the previous five years, or
 - (iv) the school-related activity occurs on a main traffic route, or
- (b) there is school-related pedestrian or cycle activity on the road outside the school, with children crossing the road or entering or leaving vehicles at the roadside, and safe and appropriate traffic engineering measures are installed so that the mean operating speed of free-running vehicles on the road outside the school does not exceed 40km/h when the 40km/h variable speed limit is operating.

Evaluations in Christchurch found locations most likely to benefit from a variable speed limit in a school zone are those where there is a high level of school-related activity on the road outside the school and:

- are on arterial routes or multi-lane roads or high speed environments, and
- have on-road, school-related activity at an obscured school frontage (ie where the presence of the school is not immediately obvious to approaching traffic).

5 Best practice guidelines

Factors required for the successful operation of a 40km/h variable speed limit in a school zone are:

- having times of operation coinciding with on-road, school-related activity
- approved advisory signs and regulatory displays that alert motorists they are travelling through a school zone
- appropriate levels of enforcement by the police
- long-term commitment by the principal and Board of Trustees for the correct operation of a 40km/h variable speed limit at their school.

5.1 Times of operation

The Christchurch trials showed variable speed limits in school zones are effective in reducing speeds, but have the support of drivers only if there are children present when they are operating. Therefore, the times they are activated must be tightly controlled to match, as closely as possible, the times children are crossing the road or are gathered on the roadside. These times may vary from school to school and from time to time. An accurate time clock is therefore a necessary component of a variable speed limit in a school zone.

It is preferable that the 'School zone variable' signs are turned on manually by a supervisor approved by the school principal each time they are required. However, it is permissible to programme the system to operate at the standard times on school days only, provided the signs do not operate on holidays and can be switched on or off manually for special events or if they are not required for the maximum period of operation on any particular day. A system that is programmed to operate automatically must include a record of the times the signs are switched on and off each day. Even if the signs operate automatically, the school principal must still appoint a supervisor to oversee the operation on each occasion they are used. The signs may operate for a maximum period of:

- 35 minutes before the start of school until the start of school
- 20 minutes at the end of school commencing no earlier than five minutes before the end of school
- 10 minutes at any other time of day when children cross the road or enter or leave vehicles at the roadside.

Unless the signs are manually turned off earlier, they must turn off automatically when the maximum period has elapsed.

5.2 Length of variable speed limits in school zones

Variable speed limits in school zones should be installed to avoid, as far as possible, side roads with no school frontage. They should be as short as practicable; between 300 metres and 500 metres long.

There may be shorter lengths on no exit roads or minor roads with give way or stop control at the intersection with the school zone, provided the variable speed limit on these roads is adjoining the variable speed limit on the main road outside the school.

5.3 Signs

The signs for variable speed limits in school zones must comply with Land Transport Rule: Traffic Control Devices 2004. Signs with changeable speed limit numerals have been specified by the NZTA in the Gazette' as a condition of setting a variable speed limit in a school zone. The signs required are described below.

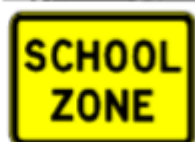
(a) R1-6 'School zone variable' sign:

The R1-6 'School zone variable' sign comprises a variable speed limit sign above a 'School zone' supplementary sign. The R1-2 or R1-2.1 variable speed limit sign displays the 40km/h speed limit only during the period when it applies. At all other times the sign is blank or displays the permanent speed limit. These signs must be installed on the main road passing the school entrance and on any significant road adjoining the school zone.

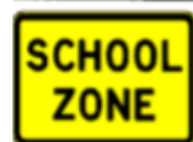
The Gazette notice specifies that at least one variable sign is required at each end of the speed limit on the main road outside the school and on major roads that intersect with the school zone. This condition in the Gazette notice is in accordance with clause 6.1 and subclause 8.4(1) of Land Transport Rule: Setting of Speed Limits 2003 and overrides the general requirement in 8.7(2)(a) to have signs on both sides of the road if the traffic volume exceed 500 vehicles per day. However, there should be at least two of these signs facing traffic entering the variable speed limit on multi-lane roads, if the roadway is more than 15 metres wide or has a permanent speed limit of more than 70km/h.

The two options permitted for variable speed limit signs use different technology.

- R1-2: the speed limit numerals, roundel and background are displayed in the same colours as permanent speed limit signs, namely black, red and white respectively. Mechanical elements are used to display the speed limit and the message is depicted entirely with retro-reflective material.



R1-6 using R1-2



R1-6 using R1-2.1

- R1-2.1: the speed limit numerals are displayed using yellow or white, lit pixels (eg light emitting diodes, fibre optics). The background is black and unlit. For signs that display only the 40km/h variable speed limit and are blank for the rest of the time, the roundel is displayed with red, lit pixels. Alternatively, for signs that display the permanent speed limit at times when the variable speed limit does not apply, the roundel may be displayed with either red, lit pixels or with red retro-reflective material.

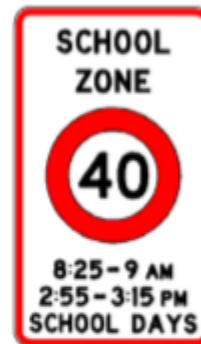
For each of these two variable speed limit signs:

- when not operating, the underlying message on the speed limit sign must not be discernible to approaching drivers, and
- yellow or white lights, of sufficient brightness to draw attention to, but not distract from, the sign nor dazzle, should be fitted in each corner and must operate by flashing in alternate diagonal pairs when the 40km/h variable speed limit is displayed, and
- the 'School zone' supplementary sign, fitted below the variable speed limit sign, must be displayed permanently. The 'School zone' supplementary sign has a black legend and border on a retro-reflective, fluorescent, yellow-green background.

Where the road controlling authority sets a 40km/h variable speed limit that may operate at other than the standard times, all the signs at the beginning of the school zone must be variable signs. This requirement includes all side roads intersecting with the school zone because fixed signs cannot provide accurate times of operation.

(b) R1-6.1 'School zone fixed' sign

The R1-6.1 'School zone fixed' sign has a black legend, red roundel and border on a white background. The roundel, border and background are retro-reflective. The legend showing the time must notify the times during which the 40km/h variable speed limit is in effect and must be specific for each school zone.



Instead of a 'School zone variable' sign a 'School zone fixed' sign may be installed on no exit or minor stop or give way controlled side roads adjoining the school zone. This is based on assumptions that:

- most traffic using such a road will be local and the drivers will be aware of, and responsive to, the school zone operation, or
- the speed of vehicles entering from the side road and passing through the school zone is unlikely to exceed 40km/h.

If these conditions do not apply, R1-6 'School zone variable' signs must be installed on the side road.

Likewise 'School zone variable' signs must be used if the times when the variable speed limit operates are likely to vary because:

- the variable speed limit may operate only at the times specified on a 'School zone fixed' sign; and
- it is not reasonable to expect drivers to read and react to messages longer than the standard operating times displayed on the 'School zone fixed' sign.

(c) R1-7 'School zone ends' sign

At least one R1-7 'School zone ends' sign must be used on each road leaving the school zone. There should be at least two of these signs on multi-lane roads, if the roadway is more than 15 metres wide or has a permanent speed limit of more than 70km/h.

A 'School zone ends' sign comprises a R1-1 speed limit sign above a 'School zone ends' supplementary sign. Both signs are mounted on a white retro-reflective backing board. The 'School zone ends' sign has a black legend and border on a retro-reflective, fluorescent, yellow-green background. The speed limit sign displays the permanent speed limit for the road.

(d) Sign layout

Appendix 1 has a diagram showing a typical layout of signs for a variable speed limit in a school zone.



5.4 Police enforcement

To be effective the variable speed limit in a school zone must be able to be enforced. The length of the zone, visibility of the signs, proof of display and other issues are all matters the Police must take into account in determining whether they are able to proceed with enforcement and subsequent action. It is therefore imperative any variable speed limit considerations involve the District Road Policing Manager of NZ Police.

The necessary enforcement precedents have been set to enable the police to enforce the 40km/h speed limit in school zones.

5.5 School commitment and activity

It is essential there be formal involvement by the school in the decision to introduce a 40km/h variable speed limit in a school zone. The school is often the prime instigator for consideration of a speed limit but they must understand that once installed there are functions the school must carry out for the speed limit to be effectively managed and for it to achieve the desired outcomes.

For example:

- The operation of the 'School zone variable' signs must be supervised by a person authorised by the school principal.
- Any defined school crossing facility for children must have an adult supervisor when it is operating.
- The signs must be activated and deactivated simultaneously (eg by radio signal or hard-wired) with a secure system which is accessible only by means such as a key or swipe card. This applies whether they are switched manually or automatically.
- The principal must agree to keep an accurate log of the occasions and times the 40km/h speed limit is operating unless these times are stored automatically by the equipment and can be retrieved by the road controlling authority. The log is essential for enforcement purposes (to demonstrate not only that the signs were operating at a particular time but, also to show the conditions of operation set out in the speed limit bylaw are being effectively managed). It can also be useful to determine justifiable changes to time or other aspects of the operation of the speed limit.

5.6 Rural schools

Records of crashes involving school-age pedestrians or cyclists in the vicinity of rural schools show that there have been very few injury crashes in recent years. One of the main reasons for the low number of crashes is that very few children walk or cycle to schools in rural areas. Most of the activity outside a rural school is the parking and manoeuvring of vehicles as parents and caregivers drop-off or pick-up their children. The most appropriate safety measure for this type of activity is to provide a set-down and pick-up facility clear of through traffic lanes. Ideally this would be in the school grounds or on a side road with low traffic volume.

Another measure that has proven successful in lowering speeds outside schools is active school warning signs. See *Traffic note 56* for more detail on active warning signs in school zones.

40km/h variable speed limits in school zones were originally intended for installation in urban or semi-urban areas where the permanent speed limit is 70km/h or less. Some Australian states allow school zone speed limits of 60 or 80km/h in areas where the permanent speed limit is over 80km/h. However, allowing a higher variable speed limit in a rural school zone would not provide an appropriate level of safety when considered from a Safe System perspective. The probability of a pedestrian being killed if struck by a car rises rapidly at impact speeds over 30km/h. Having a speed limit of 40km/h relies on there being some speed reduction before impact in a crash involving a car hitting a pedestrian. If the school zone speed limit was higher, impact speeds would be too high, even if there was some speed reduction before impact. So, regardless of the permanent speed limit, the maximum safe speed limit in a school zone is 40km/h.

In areas with a speed limit over 80km/h it is unlikely that motorists will slow to 40km/h within the short length of a school zone. However, there are some examples of 40km/h variable speed limits in rural school zones that operate satisfactorily on roads with a permanent speed limit of 80km/h. This suggests that where the permanent speed limit is higher than 80 km/h it will need to be reduced. This must be done in accordance with Land Transport Rule: Setting of Speed Limits 2003. In situations where the calculated speed limit is higher than 80km/h, it may be desirable to review the speed limit for the surrounding area in accordance with the Safe System Approach for managing safety on rural roads. *Traffic Note 61* provides more information on Safe System rural speed management.

Regardless of the criteria upon which an 80km/h speed limit is justified, it is essential that it operates safely with mean speeds at or below 80km/h. Some of the following measures will probably be necessary to achieve good compliance with a permanent 80km/h speed limit at a rural school:

- Thresholds (see www.nzta.govt.nz/resources/road-traffic-standards/docs/rtss-15.pdf).
- Lane narrowing – (install median or increase shoulder width).
- Textured and or coloured road surface.
- Vertical elements, eg thresholds and planting, but care is necessary to avoid restricting sight lines that might obscure pedestrians in the school zone.
- Speed indicator devices, publicity and education.
- Enforcement.

6 Application

6.1 Implementation

A 40km/h variable speed limit in a school zone can only be implemented by a road controlling authority if:

- the conditions approved by the NZTA in the Gazette¹ are complied with
- consultation is undertaken in accordance with Land Transport Rule: Setting of Speed Limits 2003, and the people consulted are provided with details of the proposed speed limit including changes to the permanent speed limit, times of operation of the variable speed limit, placement of signs and method for controlling the variable signs
- written consent is obtained from the principal of the school concerned (agreeing to operate the school zone in accordance with the operating conditions)
- the speed limit is set by bylaw in accordance with Land Transport Rule: Setting of Speed Limits 2003.

6.2 Monitoring, review or removal of a variable speed limit in a school zone

It is important that a 40km/h variable speed limit that is installed in accordance with condition 5(b) of the Gazette¹ notice is monitored regularly to confirm the conditions of approval are being met (ie the mean speed of traffic in the school zone is no more than 40km/h when the 40km/h speed limit is operating). If traffic is not complying with the speed limit then safety within the school zone will be compromised and the road controlling authority will not be complying with its obligations under Land Transport Rule: Setting of Speed Limits 2003. The risk to children within the zone may be worse than without a variable speed limit, especially if their behaviour is influenced by a misconception that traffic will slow down.

A 40km/h variable speed limit in a school zone must be reviewed by the road controlling authority if:

- there is a change in the road or school environment resulting in the conditions specified by the NZTA in the Gazette¹ not being met, or
- requested to do so, in writing, by the principal of the school or the District Road Policing Manager of the NZ Police, or
- instructed to do so by the NZTA.

A 40km/h variable speed limit in a school zone must be removed by the road controlling authority if:

- the variable speed limit is not operated in accordance with the conditions specified by the NZTA in the Gazette¹, or
- instructed to do so by the NZTA.

Acknowledgement:

The NZ Transport Agency acknowledges the valuable input of the Christchurch City Council through the school zone trial and their assistance with the development of these guidelines.

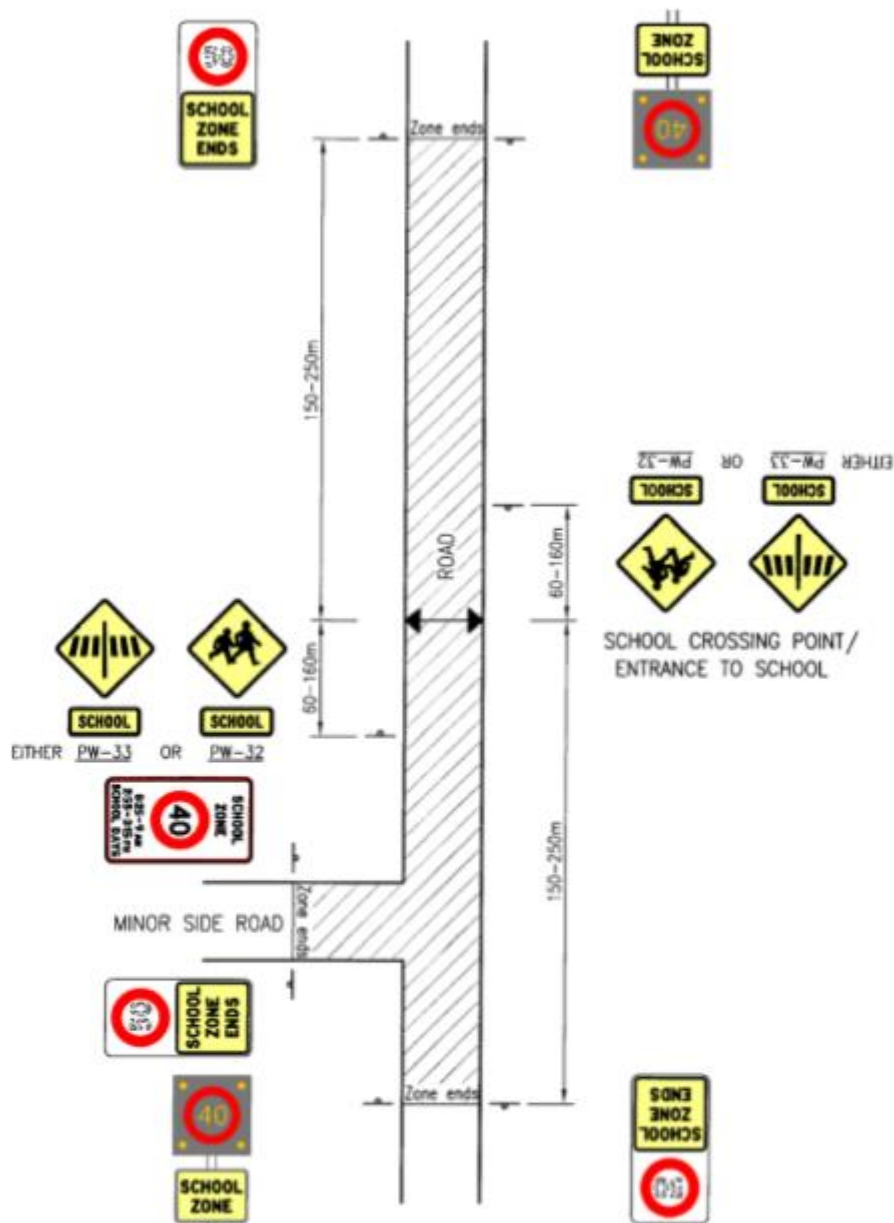
¹ *New Zealand Gazette* dated 21 April 2011, No. 55, page 1284 [see Appendix 2].

² Cottam, Paul. 2001. *Christchurch's 40 km/h part-time school speed zone trial: Community perceptions and attitudes*.

³ Osmer, Wayne. 2001. *The effect on vehicle speeds of electronically-signed part-time speed limits outside schools*.

Both papers were presented at the Road Safety Research, Policing and Education Conference 18-20 November 2001, Melbourne.

Appendix 1: Typical layout - 40km/h variable speed limit in a school zone



In this diagram the sign numbers quoted are those appearing in MOTSAM. These numbers and descriptions are cross-referenced to signs in Land Transport Rule: Traffic Control Devices 2004 (the TCD Rule) as follows:

MOTSAM	Description	TCD Rule
PW-32	Symbol of two children with 'School' supplementary	W16-4 with W16-5.1
PW-33	Symbol of pedestrian crossing with 'School' supplementary	W16-2 with W16-5.1

Appendix 2

Extract from *New Zealand Gazette*, 21/4/2011, No. 55, p. 1284

Variable Speed Limit in School Zones

Pursuant to clause 6.1 of Land Transport Rule: Setting of Speed Limits 2003 and a delegation from the NZ Transport Agency, I, Glenn Bunting, Network Manager, approve variable speed limits in school zones in accordance with the conditions set out in this notice.

Conditions

1. Variable Speed Limit

A road controlling authority may set a speed limit of 40km/h that operates in a school zone during the periods specified in condition 2 of this notice. At all other times, the speed limit is the permanent speed limit for the road.

2. Periods of Operation

The 40km/h speed limit may operate for a maximum period of:

- 35 minutes before the start of school until the start of school;
- 20 minutes at the end of school, beginning no earlier than 5 minutes before the end of school;
- 10 minutes at any other time when children cross the road or enter or leave vehicles at the roadside.

3. Signs

Signs that comply with Land Transport Rule: Traffic Control Devices 2004 must be installed to mark the beginning and end of the variable speed limit in the school zone as follows:

- At least one R1-6 "School zone variable" sign at each end of the variable speed limit on the main road outside the school, facing road users travelling towards the variable speed limit; and
- at least one R1-6 "School zone variable" sign facing road users travelling towards the variable speed limit on each side road that intersects with the school zone, where that side road is a major road; and
- at least one R1-6 "School zone variable" sign or R1-6.1 "School zone fixed" sign facing road users travelling towards the variable speed limit on each side road that intersects with the school zone, where that side road is a no exit road or is a minor road controlled by Give-way or Stop signs at the intersection with the school zone; and
- at least one R1-7 "School zone ends" sign at each end of the variable speed limit on every road, facing road users leaving the variable speed limit.

4. Length of Variable Speed Limit

A variable speed limit in a school zone must be a minimum length of 300 metres, unless this condition is impractical, but should not be longer than 500 metres. The length of variable speed limit on side roads that intersect with the school zone may be shorter than 300 metres.

5. Warrant

A road controlling authority may set a variable speed limit in a school zone that meets the requirements in (a) or (b) as follows:

- There is school-related pedestrian or cycle activity on the road outside the school, which exceeds approximately 50 children crossing the road or entering or leaving vehicles at the roadside, and traffic on the road outside the school meets at least one of the following conditions:
 - the mean speed of free-running vehicles is greater than 45km/h (measured when the 40km/h variable speed limit is not operating); or
 - the 85th percentile speed of free-running vehicles is greater than 50km/h (measured when the 40km/h variable speed limit is not operating); or
 - there have been pedestrian, cycle or speed-related crashes near the school in the previous five years; or
 - the school-related activity in condition 5(a) occurs on a main traffic route; or
- there is school-related pedestrian or cycle activity on the road outside the school, with children crossing the road or entering or leaving vehicles at the roadside and safe and appropriate traffic engineering measures are installed so that the mean operating speed of free-running vehicles on the road outside the school does not exceed 40km/h when the 40km/h variable speed limit is operating.

6. Bylaw

A road controlling authority must set a variable speed limit in a school zone by making a bylaw in accordance with Land Transport Rule: Setting of Speed Limits 2003.

Revocation and Replacement

The notice dated the 31st day of May 2005, and published in the *New Zealand Gazette*, 2 June 2005, No. 86, page 2051, relating to variable speed limits in school zones is hereby revoked and replaced by this notice.

A 40km/h variable speed limit in a school zone that was set in accordance with the conditions of the notice published in the *New Zealand Gazette*, 2 June 2005, No. 86, page 2051, is considered to be set in accordance with the conditions of this notice and remains in force until amended or revoked in accordance with Land Transport Rule: Setting of Speed Limits 2003.

Definition:

School zone means a length of road outside a pre-school, primary school, intermediate school or secondary school.

Signed at Wellington this 19th day of April 2011.

GLENN BUNTING, Network Manager.

na2606

Date	January 2011
From	National Planning Unit, Regional Partnerships and Planning
Authorisation	Glenn Bunting, Network Manager
No. of pages	12

Active school warning signs – Guidelines

1 Purpose

This **Traffic note** provides guidance for road controlling authorities (RCAs) on the use of active school warning signs - that is those warning signs that have an electronic display component which becomes active when children are likely to be present on or near the roadway. It should also be read in conjunction with **Traffic note 37** 40km/h variable speed limits in school zones ⁽¹⁾. Active school warning signs should be implemented in conjunction with other complementary initiatives such as neighbourhood accessibility plans ⁽²⁾, school travel plans (see **School travel plan coordinator's guide** ⁽³⁾) or a local authority travel behaviour change strategy.

Active school zone warning signs were approved by notice in the **NZ Gazette** on 24 July 2008 and subsequently incorporated into the Land Transport Rule: Traffic Control Devices through the 2010 amendment to that rule.

2 Background

In 2004 Land Transport New Zealand (now NZ Transport Agency (NZTA)) approved a trial of active school warning signs in Timaru District and Invercargill City. This initial trial was inconclusive and in 2006 approval was given to extend the trial to sites in Dunedin City.

The Dunedin City trial aimed to assess the effectiveness of these 'active' school warning signs on driver awareness of the risk posed by school activity and any subsequent impact on road user behaviour, including the effect on vehicle speeds. The results demonstrated strong community support for the signs, reduction in speeds at 'high' speed sites and an increase in motorists' awareness of the signs.

Roads around schools are often perceived as dangerous for children due to high traffic speeds, manoeuvring vehicles, parked vehicles and other features which restrict a driver's visibility. Often there can be a mixture of pedestrians, cyclists and drivers using the same road. In particular, the risk at the beginning and end of the school day is seen as much greater than during other periods of the day and there is a need to manage and minimise this risk.

One disadvantage of any permanently displayed sign is drivers tend to ignore it or fail to see it, particularly if they pass the same sign regularly without requiring any action in response to it. Active signs incorporate flashing lights and/or lit (LED) components which are displayed only when relevant. Introduction of these types of signs may heighten the visibility of these signs compared with standard (non-flashing) warning signs thereby enhancing driver awareness of the risk.

Disclaimer: The NZ Transport Agency (NZTA) has endeavoured to ensure the material in this document is technically accurate and reflects legal requirements. However, the document does not override governing legislation. NZTA does not accept liability for any consequences arising from the use of this document. If the user of this document is unsure whether the material is correct, they should make direct reference to the relevant legislation and contact NZTA.

Internationally, flashing lights have been used to give additional emphasis to the warning or instruction given on a sign. In New Zealand the use of these lights has been restricted to variable message signs including those installed on Auckland and Wellington motorways, some roadwork vehicles, variable speed limits in school zones and advance warning of traffic signals. In many situations however, the cost of a full variable message sign cannot be justified.

For this reason the trial of less costly warning signs (rectangular in shape with two yellow orange flashing lights and yellow/green children symbols on a black background) was conducted. The **Dunedin active school warning signs trial: evaluation report**⁽⁴⁾ (the Evaluation report) prepared by Dunedin City Council provides details and sets out the results of the Dunedin City trial. The trial results are embodied within this note.

3 Objectives of active school warning signs in school zones

Active school warning signs on roads near schools are intended to meet the following objectives:

- provide a safer environment outside schools during times of peak school activity
- reinforce driver expectation of the likely presence of children
- reinforce driver awareness of a school where the visibility of the school or its entrance is limited
- encourage active modes of travel (walking and cycling) to school.

School zones are parts of roads near schools which include both:

- (a) the length of roadside used for short-term parking, bus stops, crossing facilities and school entrances etc before and after the hours when the school is in session (called the 'hazard area'), and
- (b) the distance from the warning sign to the hazard area in each direction (which depends of the speed of approaching traffic).

The Dunedin trial attempted to assess whether these types of signs had any effect on increasing driver awareness to school activity on or near the road, including reducing driver reaction time and vehicle stopping distances and speeds. The trial included schools where the average vehicle speed was higher than 45km/h as well as schools located adjacent to congested urban roads. Three types of evaluation measures were used to assess the effect of these signs - vehicle speed surveys, driver awareness and pedestrian delay surveys.

Feedback from the schools has indicated the objective to increase active modes of travel to school has not happened to date. Achieving this objective will most likely require a package of activities.

4 Complementary school travel initiatives

Active school warning signs should be implemented as part of a package including engineering, education and enforcement to reduce speeds and the risk to children around schools.

The active school warning signs could be installed as a component of the following complementary initiatives.

4.1 Neighbourhood accessibility planning

Neighbourhood accessibility plans seek to ensure, at the neighbourhood level, the provision of safe and sustainable transport modes focusing on active and shared modes. Further information can be found on the NZTA website at:

<http://www.nzta.govt.nz/resources/neighbourhood-accessibility-plans/index.html>

4.2 School travel plans

The preparation and implementation of a school travel plan is a process of developing a package of measures to encourage the choice of safe and sustainable transport options for travel to and from school. Further information can be found on the NZTA website at:

<http://www.nzta.govt.nz/resources/school-travel-plan-coordinators-guide/docs/school-travel-plan.pdf>

The NZTA education website will also provide useful resources. This can be found at:

<http://www.education.nzta.govt.nz/home>

4.3 Integrated planning

There is not necessarily a single best option for providing safety for children travelling to and from school. The NZTA's **Integrated planning toolkit** presents a wide range of transport and land use relevant tools, processes and concepts. It encourages linkages and enables the identification of ideas that may not be familiar to the user. The toolkit can be found at:

<http://www.nzta.govt.nz/planning/process/trial-ip-toolkit/>

5 Selection criteria

5.1 Selecting sites and appropriate traffic control devices

Figure 1, based on **Traffic note 37** and the Evaluation report, is a flow chart of recommended selection criteria for the use of traffic control devices at school sites.

In urban areas there are several sign variations that can be used depending on the type of environment, including school activity, crash history and speed profile.

In rural areas, the selection of a suitable sign type can be more limited. The 40km/h variable speed limit is generally not regarded as appropriate in most open road speed areas (that is, where speed limits are greater than 80km/h). However, in these areas active warning signs could be suitable to encourage slower speeds during periods when children are present.

5.2 Area and site-specific treatments

Active school warning signs have the potential to cover an area incorporating a number of schools in addition to a specific school site. Where there are schools in close proximity and where school times vary, RCAs may choose to select an area-wide or route treatment for schools rather than undertake individual school site improvements. In such instances, it may be more appropriate to use active school warning signs rather than 40km/h variable speed limit signs which are more specific to individual schools. If this is the case, it is recommended the RCA plan a sign regime (including times of operation for active signs) for the area covering the different school locations and develop safer routes for children to travel. Further information on this can be obtained from the Evaluation report, neighbourhood accessibility plans and the NZTA website.

5.3 *Prioritising sites*

Once the type of traffic control device has been identified, its appropriateness and clarity within the surrounding environment and proximity to other schools and message systems determined, the site, area or route should be prioritised for implementation. This prioritisation process is managed through local policy based on factors such as traffic volumes, school roll number, ages of school pupils, crash data and speed of through traffic. Further information, including a suggested rating system for finding suitable sites and then prioritising each one, can be found within the Evaluation report.

5.4 *Other signs*

The possible use of active school warning signs must be considered in conjunction with other existing or proposed signs in that area (for example a pedestrian crossing sign). Their use in conjunction with, or within close proximity to, other variable or flashing signs (such as a 40km/h variable speed limit sign) needs to be carefully considered to ensure the intended (combined) message to drivers is consistent and will not be confusing or ineffective.

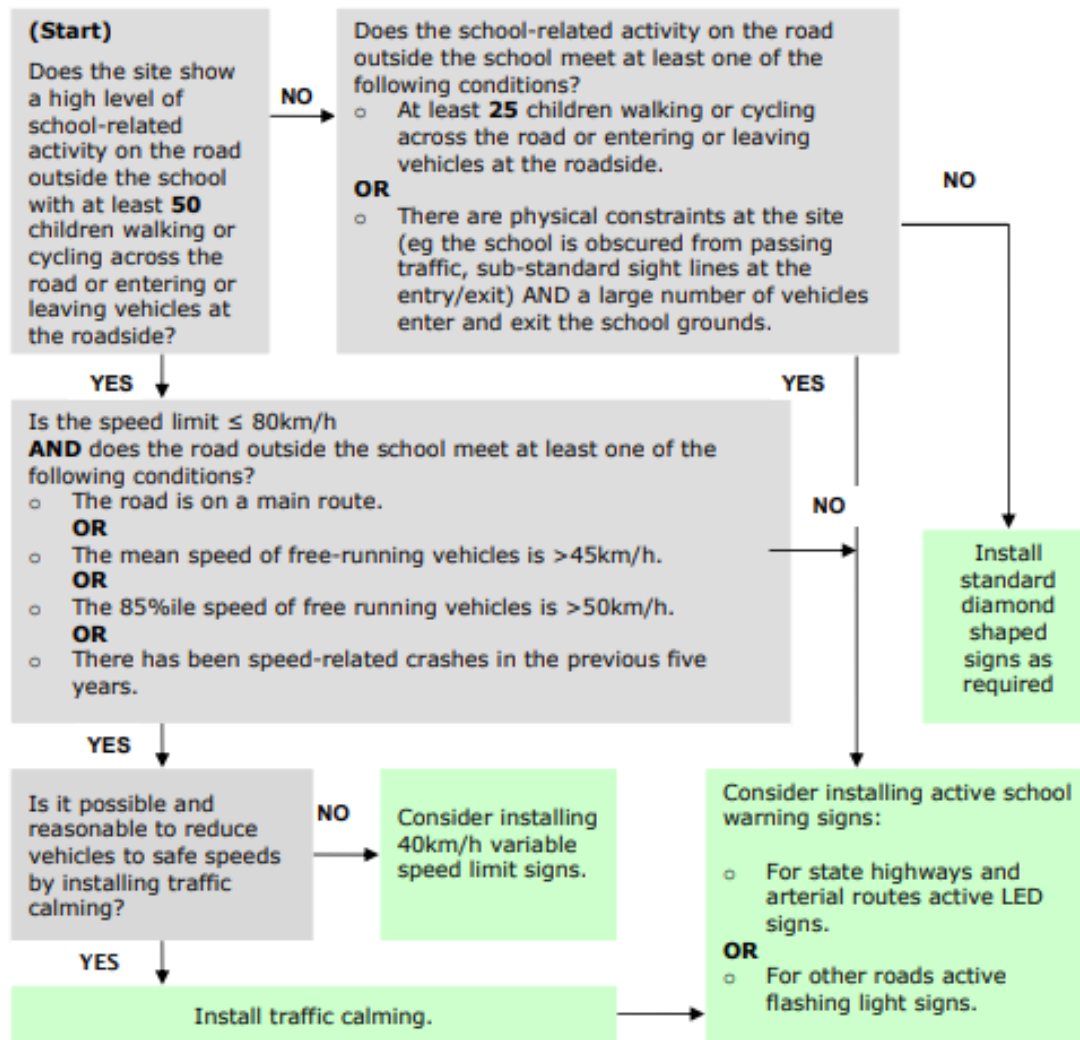


Figure 1: Selection criteria for the appropriate use of traffic control devices near schools

6 Best practice guidelines

Factors required for the successful operation of an active school warning sign are:

- coinciding times of operation with on-road school related activity (see section 6.4)
- good visibility of the signs by motorists
- long-term commitment to their correct use.

6.1 Signs – general principles

Standard reflective diamond shape school warning signs should be installed on all roads where there is an entrance to a school (unless they are replaced by active school warning signs as set out below). The standard sign is depicted in figure 2. Other signs may be used in these locations such as 'school pedestrian crossing' or 'school bus route'.

Active school warning signs should be installed in place of the standard sign where additional awareness of children is considered necessary in and around schools in areas and sites meeting the criteria set out in figure 1



Figure 2: Standard school warning sign

6.2 Active school warning signs

The type of school warning signs used to indicate a school zone should be prioritised by risk using the selection criteria shown at figure 1. Where the RCA determines an active sign is appropriate there are two versions of sign – flashing light and full LED displays.

6.2.1 'Children' symbol and 'school zone' with backing board with two flashing lights (active –flashing light type)

The 'children' symbol and the words 'school zone' depicted in figure 3 are reflectorised, fluorescent yellow-green in colour while the sign has a plain black, unlit background. There are two orange flashing lights located on the top of the sign at each side which light alternately when in use. Outside school hours the board shows the 'children' symbol and the words 'school zone'.



Figure 3: Active – flashing light school warning sign

6.2.2 'Children' symbol and 'school zone' with full LED display (active LED type)

When activated, the 'children' symbol and the words 'school zone' depicted in figure 4 are displayed using light emitting diodes (LEDs) on a black unlit background. Two orange flashing lights (which may be LED) are located in the top left and right corner of the sign. When the sign is activated the two lights are not illuminated unless the RCA has set an appropriate condition which would trigger them to be illuminated. This condition could be that an approaching vehicle is detected (by a radar unit mounted in or beside the sign) exceeding a pre-set speed. The orange lights will then flash alternately for a short period until the vehicle has passed the sign. Such a pre-set speed will depend on the speed limit and the circumstances relating to a particular school.



Figure 4: Active – LED school warning sign

When the symbol and text LEDs are turned off this sign displays a black rectangular panel.

Where the selection criteria (figure 1) suggests the use of an active sign could be appropriate the RCA can consider either option. The 'active – LED' sign may be considered over the 'active – flashing light' sign if the RCA determines the risk is higher. This may be based on traffic volumes, road hierarchy and whether they are part of a set of signs in an area treatment or are site-specific. For example, if an RCA is developing an area treatment, the 'active – LED' signs may be placed on the highest risk road (that is the one with higher vehicle and pedestrian volumes) while the 'active – flashing light' signs might be located on roads with lower risk sites.

For both of the above signs the orange lights must be of sufficient brightness to draw attention to, but not distract from, the sign or dazzle drivers. They must operate by flashing alternatively at a rate of 1 hertz.

Further technical and operational information for these signs is provided in appendix A.

6.2.3 40km/h variable school zone speed limits (see Traffic note 37)

If active school warning signs are proposed near other variable message signs (such as 40km/h variable speed limit signs depicted in figure 5) a careful evaluation of all relevant factors (and options) needs to be undertaken. This is important to avoid the signs' messages being confused or their effectiveness being compromised.



Figure 5: Variable 40km/h speed limit sign

6.2.4 Different (permanent) speed limits near school

If the school is located near roads with different (permanent) speed limits, then a careful evaluation of all the children's routes and options for improvement should be undertaken so that the cost of each option can be established. If a 40km/h variable speed limit is placed over roads with more than one underlying "permanent" speed limit, then (in addition to the 40km/h variable signs) special variable speed limit signs will be needed where the 'permanent' speed limits change. These special signs will be blank when the 40km/h speed limit signs are on but they need to show the 'permanent' speed limit at all other times. Most 40km/h variable speed limits are located on main traffic routes. If the annual average traffic flow on the road is more than 500 vehicles per day, then these signs indicating a change of permanent speed limit must be installed on both the left hand side and on the right hand side (or on a solid median) [see clause 8.1(2)(a) of the Land Transport Rule: Setting of Speed Limits 2003]. If this is the case, then four of these special signs will be needed, possibly placed back to back.

6.2.5 Children on or near the roadway

Both standard diamond shape and active school warning signs could be considered where the RCA considers there are likely to be school children on or near the roadway. Special consideration should be given where children often congregate near a school on sections of road without footpaths or where children gather at a recreation reserve abutting a road which has a speed limit higher than 50km/h. RCAs should also investigate the provision of adequate footpaths and other pedestrian or cyclist facilities in these cases.

6.3 Layout of signs

The active school warning signs should be positioned as illustrated in figure 6.

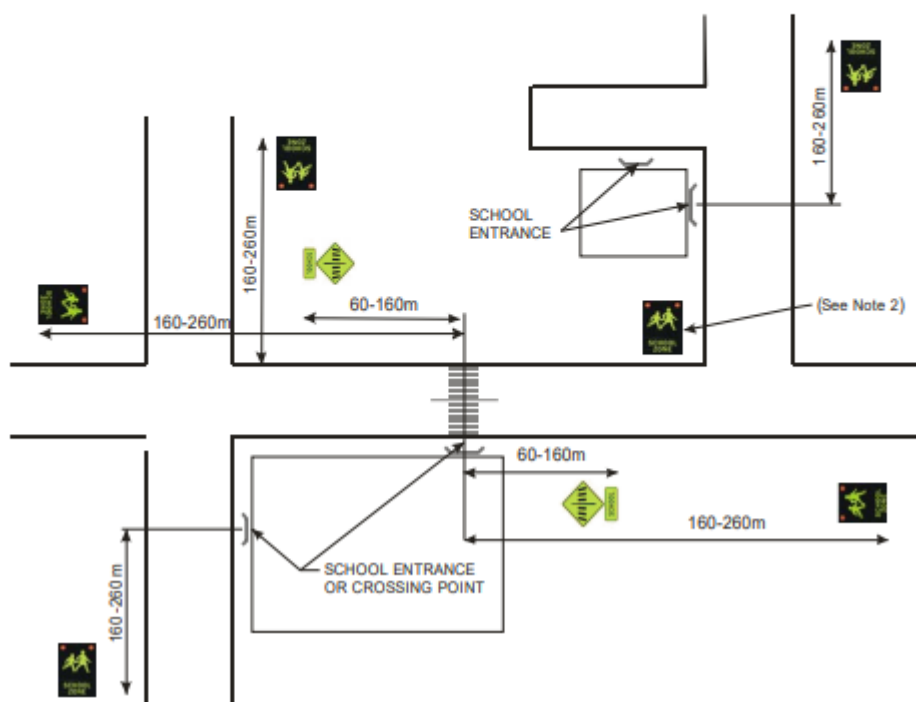


Figure 6: Example of a road and area layout for the use of active warning signs

Note 1: If a formal pedestrian crossing is present (ie a zebra crossing) then a diamond shaped pedestrian crossing warning sign must be installed in addition to the active warning sign. Active warning signs can be installed within 160m-260m from the school entrance or informal crossing point, to give a school zone length of 320 to 520 metres. The length of the school zone will be the sum of:

- (a) the length of roadside used for short term parking, bus stops, crossing facilities and school entrances etc before and after the hours when the school is in session (called the 'hazard area'), and
- (b) the warning sign approach distance from each direction (which depends of the speed of approaching traffic). For higher speeds, the warning sign needs to be located further in advance of the hazard area (see appendix A). If there is a cluster of schools then the school zone could be longer than 520 metres.

Note 2: Where a second school is located on a side road close to the main road junction and is reasonably obvious to drivers who turn from the main road then this active warning sign may not be necessary and could be replaced by a standard diamond shaped reflective sign.

6.4 Times of operation

As previously stated, where signs are used continuously to highlight a particular activity occurring only during short periods of the day, drivers become accustomed to their presence and may not adapt their driving during times of high risk. With this principle in mind, and supported by information provided within the Evaluation report and **Traffic note 37**, it is recommended that the times of operation for active school warning should be as follows:

- Before and after school:
 - 35 minutes before the start of school until the start of school
 - 20 minutes at the end of school, beginning no earlier than 5 minutes before the end of school.
- During times when school activities may create additional risk to children (eg early finish times, school functions) the signs should be active for at least 10 minutes and normally not more than 30 minutes.

Times of operation must be agreed between the school and RCA.

6.5 School commitment and activity

It is essential schools are formally involved in the decision to introduce active warning signs. For these signs to be effective and remain so they must only be switched on when activity relating to the school is occurring on or alongside the road to highlight risk and to achieve the desired outcomes.

Conditions of operation of the active signs should be agreed between the school and RCA and should include the following requirements:

- The signs must only be activated by a person authorised by the school principal.
- The signs must not be used at times of day where there are no children present.

7 Acknowledgements

Dunedin City Council has developed additional notes on the trial and evaluation of active school warning signs, including detailed information on prioritising sites for their use, and technical information on their installation. Road controlling authorities and other parties interested in these types of signs are welcome to approach them seeking a copy of this information.

The NZTA acknowledges the valuable input of Dunedin City Council, Timaru District Council, Invercargill City Council, Auckland City Council and the former Transit New Zealand with regards to both the information supplied and the review of these guidelines.

References

1. NZTA/Land Transport New Zealand, Traffic Note 37, **40km/h variable speed limits in school zones – guidelines.**
2. Dunedin City Council **Dunedin active school warning signs trial: Evaluation report**, October 2007.

Appendix A: Technical and installation information on active school signs

A Locations of signs in relation to the school activity

The active warning signs can be used in addition to permanent 'pedestrian crossing' signs or in place of 'school children' signs. Where a formal pedestrian (zebra) crossing is marked the diamond shaped 'pedestrian crossing' sign must still be placed in its normal position in advance of the crossing. (See figure 2 in section 6.3.)

A school warning sign (either the standard diamond shape reflective or one of the active types) should be located where approaching drivers have an uninterrupted view of it over a distance of at least 120m in rural areas and at least 60m in urban areas. The sign should be erected in advance of the hazard area (which can include the pedestrian crossing point, school entrances, bus stops, and short term roadside 'drop off and pick up' parking) by not less than the distance shown in the following table:

Operating speed	Distance
50km/h	65m
60km/h	80m
70km/h	100m
80km/h	120m
90km/h	140m
100km/h	160m

Where there are several schools in close proximity an area treatment may be more suitable. Specific details on sign placement may be at the discretion of the RCA and can be prioritised with respect to risk and criteria as outlined in section 5.

B Sign specifications

Active – flashing light (with reflective symbol and text)

(minimum size as specified for sign W19-2.2 (with symbol W16-4 'children'))

Shape and size: rectangle 700 x 900mm

Background: black

Symbol: children - 600mm wide x 480mm high
 retroreflective, fluorescent yellow-green

Text: 'SCHOOL ZONE' 100mm high/14mm stroke width
 retroreflective, fluorescent yellow-green

Note: The size of sign used in the trials in Dunedin, Timaru and Invercargill was larger (900mm wide x 1200mm high) and this size can be used in 50km/h areas if considered appropriate. Larger sizes may be used, particularly where the speed limit is above 50km/h or there is a wide or divided carriageway.



Figure A1: Active - flashing light

Active – LED (light emitting diodes)

Shape and size:	rectangle 700 mm wide x 1000 mm high
Background:	black
Symbol:	children - 600mm wide x 480mm high yellow LED
Legend:	'SCHOOL ZONE' yellow LED, letters 160mm high/25mm wide

Note: This is the minimum size as specified in the Gazette notice. Larger sizes may be used, particularly where the speed limit is above 50km/h or there is a wide or divided carriageway.



Figure A2 Active – LED

C Flashing light specifications

The lights should:

- be placed in the top left and right hand corners of the sign
- be coloured orange
- be at least 60 square centimetres each in area
- be set to flash alternately at a rate of 1 hertz, and
- have cowls installed if sun strike is likely to be an issue.

There may be a need to have an indicator light that can be seen from the rear of the sign from the school or crossing point to indicate when the lights are operating.

D Power supply

Options to be considered for supplying power to the active sign units include:

- solar power (which worked well within the trial process) and is generally most suitable for rural areas)
- linking the battery for the sign to an adjacent street light
- run the signs by cable from the school's power supply.

E Installation of the signs

Signs can be attached to power poles so the units have a solid base. Where new support structures have to be erected they should be at least 100mm diameter with a foundation design that will prevent twisting yet remain frangible.

They should be mounted high enough to provide a suitable clearance above the footpath or ground so they are less likely to be tampered with. MOTSAM recommends a clearance of 2.5 metres above footpaths. However if the support pole is located close to the kerb where large vehicles (such as buses) are likely to stop, then a higher mounting height of 4.4 metres or more may be needed so that the sign is not damaged by high vehicles.

Signs should be placed so the driver's view of them is not obscured by vegetation. If necessary, trees located near the roadway should be pruned regularly to maintain the effectiveness of these signs.

At some sites where there is a special need to highlight the presence of the school to drivers, a duplicate active school zone warning sign can be placed on the right hand side of the road or on a solid median.

F Activation of the lights and LED displays

There are different types of activation systems depending on the sign type and operation. These include:

- automatic activation by wireless control. An antenna is placed on the outside of the school building and connected to the control box. Ideally there should be a direct line of sight from the antenna to the receivers (located on the signs) - while this is more effective, it may not be essential. However, at some sites there could be difficulty obtaining reception for the units and care will be needed to place them so this can be achieved. Checks should be made for possible interference from other nearby electronic equipment
- manual activation by hand held remote control units
- activation from a control box by wired connection direct to the signs.

The control box or activation unit should be located at a secure place within the school grounds where only authorised personnel can have access to it.

G Programming systems

If a programming system is used, it needs to allow for any variations to normal school operating hours including holidays and events that may be held at the school outside normal hours. The activation units need to be programmed to allow information to be entered into the system for set school activity times, holidays and daylight saving time changes together with a manual override system to allow for one-off special events.

The times when the signs operate should coincide with the school activity times as agreed in writing by the school and RCA.

A time-out facility should be installed so that the signs automatically switch off after a maximum time (possibly 1 hour for normal use and possibly 30 minutes for one-off events) if the unit has not been manually switched off.

The programming system can be completed by installation of specific software. Further information can be obtained from Dunedin City Council or the sign supplier.

H Maintenance

It is essential that regular checks are made to ensure the active device is working correctly. The RCA needs to ensure that appropriate inspection and maintenance systems are in place as part of its agreement with those authorised to operate the system. The respective maintenance responsibilities of the RCA and the school should be clearly set out in this written agreement.