

South Waikato District Council

Speed Management Plan

Technical Assessments

April 2023

DRAFT



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1. Purpose of this document

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

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

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

This document sets out the technical assessment undertaken on each of the roads identified for review in 2022.

1.1 2022 Speed Management Reviews

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

- School and marae locations
- Town Centres
- Roads of concern

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

1.2 Signs and roadmarking

Speed limit signs must be installed within 20m of the identified speed limit location. To support the management of vehicle speeds in these areas and provide a sense of place some general threshold treatments have been developed to assist with cost estimating. Typical layouts are provided in Appendix A.

Each location will require site specific design but is unlikely to vary significantly to provide a degree of consistency for drivers as they travel throughout the district.

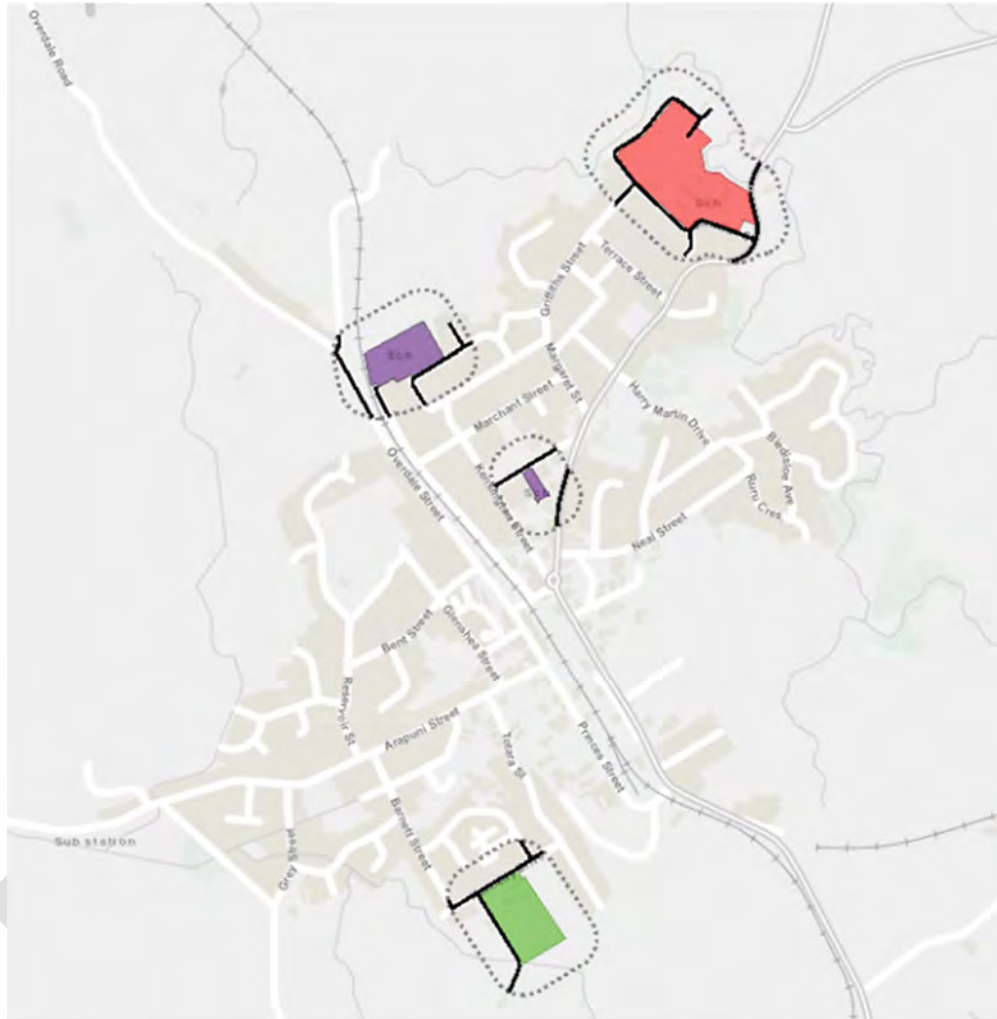
Other supporting infrastructure improvements have been identified for each location as required and the installation of these will be dependent on the funding available for these types of works.

2. Putaruru Township

2.1 Schools

There are four schools in Putaruru for which the speed limit needs to be lowered in the vicinity of to assist with safety and accessibility as shown in Figure 31.

Figure 1 Putaruru Schools



2.1.1 Putaruru College

Vehicle and pedestrian access to Putaruru College is primarily from Junction Street with access to the sports grounds from Riverview Street and Pearce Street. A footpath is provided on the southern side of Junction Street only, with footpaths on both sides of Riverview Street. Pedestrian access is also available from State Highway 1 via a walkway to Porritt Place, however there are no crossing points on either Junction Street or Riverview Street. No cycle facilities are provided in the area.

Figure 2 Putaruru College



Safety and speed information from MegaMaps shows the following.

Junction Street

<i>Posted speed limit</i>	50km/hr	<i>AM Peak mean speed</i>	27km/hr
<i>Safe and Appropriate Speed</i>	30km/hr	<i>PM Peak mean speed</i>	22km/hr

Riverview Street

<i>Posted speed limit</i>	50km/hr	<i>AM Peak mean speed</i>	28km/hr
<i>Safe and Appropriate Speed</i>	30km/hr	<i>PM Peak mean speed</i>	27km/hr

Peace Street

<i>Posted speed limit</i>	50km/hr	<i>AM Peak mean speed</i>	30km/hr
<i>Safe and Appropriate Speed</i>	30km/hr	<i>PM Peak mean speed</i>	30km/hr

Junction Street, Riverview Street and Peace Street are all local urban roads that provide access to Putaruru College on the northern side and residential properties on the southern side of the roads.

Griffiths Street is the main side road off Riverview Street and provides access into the residential area to the south which is bounded by farmland to the west, State Highway 1 to the east and the North Island Main Trunk railway line to the south.

Recommendation

The following changes are recommended in the vicinity of Putaruru College:

- Install a 30km/hr permanent speed limit for Junction Street, Riverview Street, Peace Street and Porritt Place.
- Install school threshold style treatment on Junction Street at the intersection with State Highway 1.
- Install permanent speed limit signs on Griffiths Street on the approach to Riverview Street.
- Consider installing pedestrian crossing facilities on Junction Street and Riverview Street.

2.1.2 Te Wharekura o Te Kaokaoroa o Patetere School

Vehicle and pedestrian access to Te Wharekura o Te Kaokaoroa o Patetere School is primarily from Charles Crescent with an alternative access from the end of Buckland Street. There are no crossing or cycle facilities provided in the area.

Figure 3 Te Wharekura o Te Kaokaoroa o Patetere



Safety and speed information from MegaMaps shows the following.

Charles Crescent and adjacent roads

<i>Posted speed limit</i>	50km/hr	<i>AM Peak mean speed</i>	26km/hr
<i>Safe and Appropriate Speed</i>	30km/hr	<i>PM Peak mean speed</i>	27km/hr

Charles Crescent is a local urban road with a 50km/hr speed limit that loops off Clothier Street with two side roads, Anne Place and Elizabeth Street.

Recommendation

The following changes are recommended in the vicinity of Te Wharekura o Te Kaokaoroa o Patetere School:

- Install a permanent 30km/hr speed limit on Charles Crescent between 100m north of Clothier Street and Anna Place.
- Install school threshold style treatment at the change in speed limit points on Charles Crescent.
- Consider installing a raised crossing point on Charles Crescent in the vicinity of the school entrance.

2.1.3 St Mary’s Catholic School

Vehicle and pedestrian access to St Mary’s Catholic School is from MacKenzie Street with a crossing point approximately 130m east of Kensington Street. The school is split by the road with the school playground and sports field on the northern side and the school buildings on the southern side of MacKenzie Street. There are no cycle facilities provided in the area.

Figure 4 St Mary’s Catholic School



Safety and speed information from MegaMaps shows the following.

MacKenzie Street

<i>Posted speed limit</i>	50km/hr	<i>AM Peak mean speed</i>	22km/hr
<i>Safe and Appropriate Speed</i>	30km/hr	<i>PM Peak mean speed</i>	28km/hr

Mackenzie Street is local urban road with a 50km/hr speed limit runs between State Highway 1 and Kensington Street. Due to the short length of the street any change to the speed limit should encompass the full length of the street.

The existing crossing point should be upgraded to a raised pedestrian crossing to improve the safety for all users.

Figure 5 Existing crossing on Mackenzie Street



Recommendation

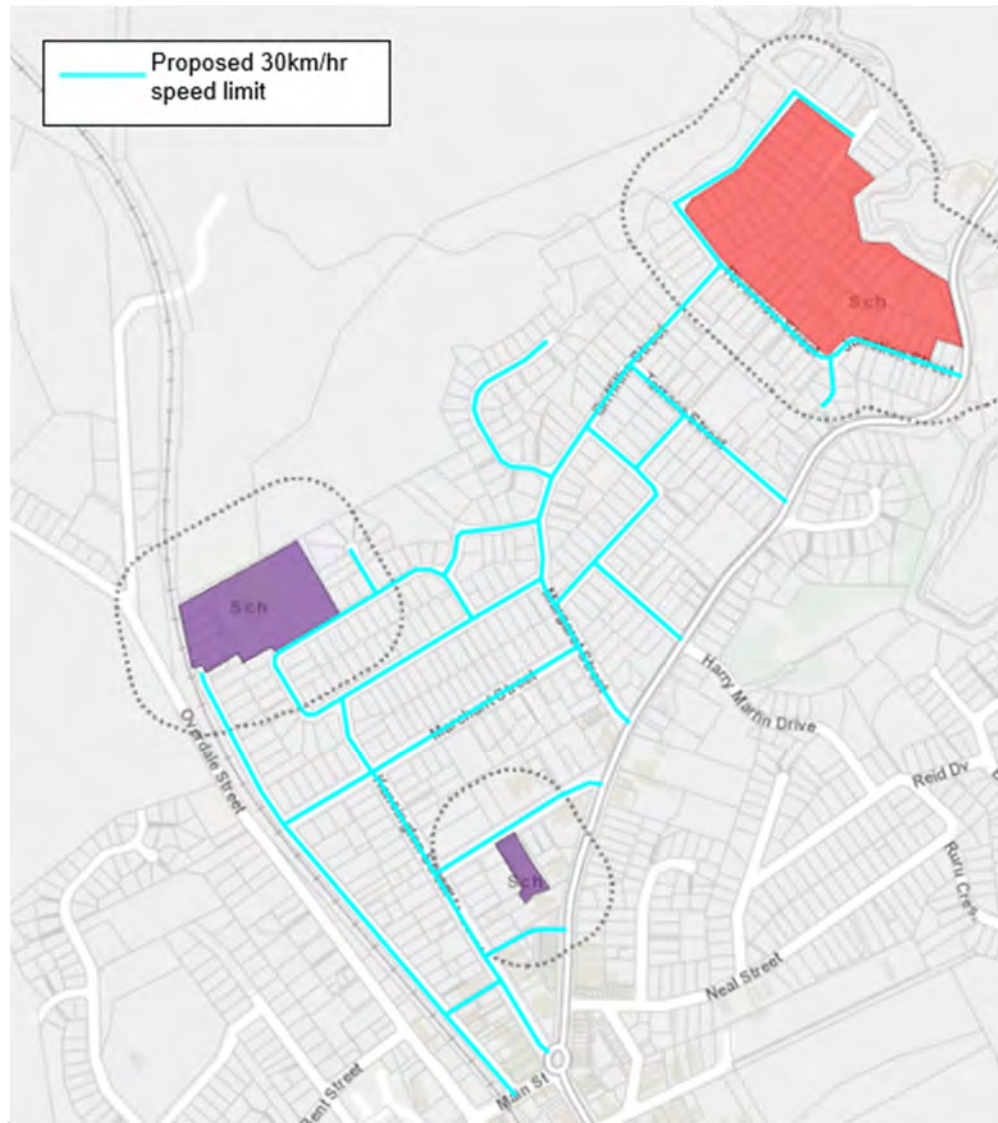
The following changes are recommended in the vicinity of St Mary's Catholic School:

- Install a permanent 30km/hr speed limit on the full length of MacKenzie Street.
- Install school threshold style treatment at the change in speed limit points on Mackenzie Street.
- Upgrade the existing crossing point on MacKenzie Street to a raised pedestrian crossing.

2.1.4 Alternative treatment for Putaruru College, Te Wharekura o Te Kaokaoroa o Patetere School and St Mary's Catholic School

Due to the close proximity of Putaruru College, Te Wharekura o Te Kaokaoroa o Patetere School and St Mary's Catholic School to each other and the likelihood that students will be walking and/or cycling throughout the adjacent residential area consideration should be given to creating a 30km/hr residential area encompassing the whole area as shown in Figure 6.

Figure 6 Possible 30km/hr residential area



Recommendation

The following changes are recommended in the vicinity of Putaruru College, Te Wharekura o Te Kaokaoroa o Patetere School and St Mary's Catholic School and the surrounding residential area in Putaruru:

- Install a permanent 30 km/hr speed limit on the full length of the following roads:
 - Anne Place
 - Buckland Street
 - Central Street
 - Charles Crescent
 - Clothier Street
 - Elizabeth Street
 - Griffith Street
 - High Street (Putaruru)
 - Junction Street

- Kensington Street (Putaruru)
 - Mackenzie Street
 - Marchant Street
 - Margaret Street (Putaruru)
 - Meadow Street
 - Peace Street
 - Philip Street (Putaruru)
 - Pit Street
 - Prospect Street
 - Riverview Street
 - Terrace Street
 - View Street.
- Install threshold style treatments at the change in speed limit points off State Highway 1 (x8).

2.1.5 Putaruru Primary School

Vehicle and pedestrian access to Putaruru Primary School is from Kennedy Drive with a patrolled zebra crossing located approximately 60m east of Matai Crescent. There are no cycle facilities provided in the area.

Figure 7 Putaruru Primary School



Safety and speed information from MegaMaps shows the following.

Kennedy Drive

<i>Posted speed limit</i>	50km/hr	<i>AM Peak mean speed</i>	24km/hr
<i>Safe and Appropriate Speed</i>	30km/hr	<i>PM Peak mean speed</i>	31km/hr

Kennedy Drive is a local urban road with a 50km/hr speed limit that runs between Totara Street and Barnett Street with two side roads. Access to a park and a playcentre are also off Kennedy Drive, while sports grounds are located off Nola Street. Due to the short length of Kennedy Drive any change to the speed limit should encompass the full length of the street.

The existing crossing point should be upgraded to a raised pedestrian crossing to improve the safety for all users.

Recommendation

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

- Install a permanent 30km/hr speed limit on the full length of Kennedy Drive and Nola Street.
- Install school threshold style treatment at the change in speed limit points on Kennedy Drive east of Barnett Street and west of Totara Street.
- Install speed limit signage on the Barnett Street and Matai Crescent approaches to Kennedy Drive.
- Upgrade the existing crossing point on Kennedy Drive to a raised pedestrian crossing.

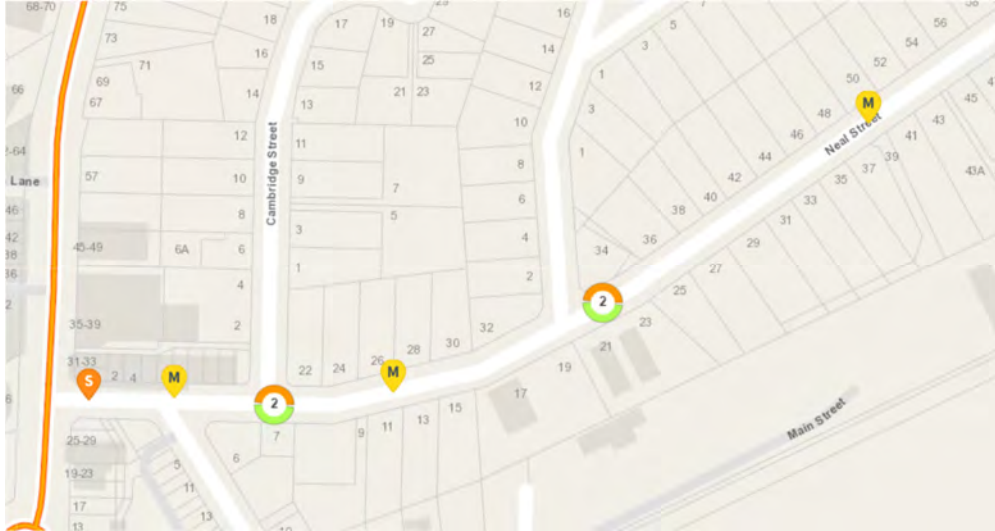
2.2 Town Centre - Putaruru

Putaruru Town Centre is split by State Highway 1 with commercial areas on both sides of the road. Due to this any changes to the speed limit in this area will need to be coordinated with Waka Kotahi.

2.2.1 Neal Street

Neal Street is a collector road that runs off State Highway 1 and provides access to a small commercial/industrial area as well as into a larger residential area to the east of Anderson Street. There have been three serious, three minor and two non-injury crashes reported in the 10 year period 2012 to 2021. Three of the crashes involved pedestrians, one involved a cyclist.

Figure 8 Neal Street crashes



Safety and speed information from MegaMaps shows the following.

Neal Street

<i>Posted speed limit</i>	50km/hr	<i>Mean Free Flow Speed</i>	42.23km/hr
<i>Safe and Appropriate Speed</i>	40km/hr	<i>Infrastructure Risk Rating</i>	Low Medium

Due to the high number of pedestrians and vehicle manoeuvring movements, a lower speed limit would assist with managing the risks in this area. The side roads of Cambridge Street, Commerce Steet and Market Street should also be included to provide a coherent treatment for users.

Consideration should be given to lowering the speed limit in the residential area to the west of Cambridge Street as well.

Figure 9 Neal Street proposed changes



Recommendation

The following changes are recommended for Neal Street:

- Install a permanent 30km/hr speed limit the full length of the following roads: Cambridge Street, Commerce Street, Commerce Lane and Market Street.
- Install a permanent 30km/hr speed limit on the following section of road:
 - Neal Street – State Highway 1 to Anderson Street
- Install threshold style treatments on Neal Street at the intersection with State Highway 1 and west of Anderson Street.
- Install permanent speed limit signs on Market Street on the approach to State Highway 1.

3. Putaruru surrounds

3.1 School

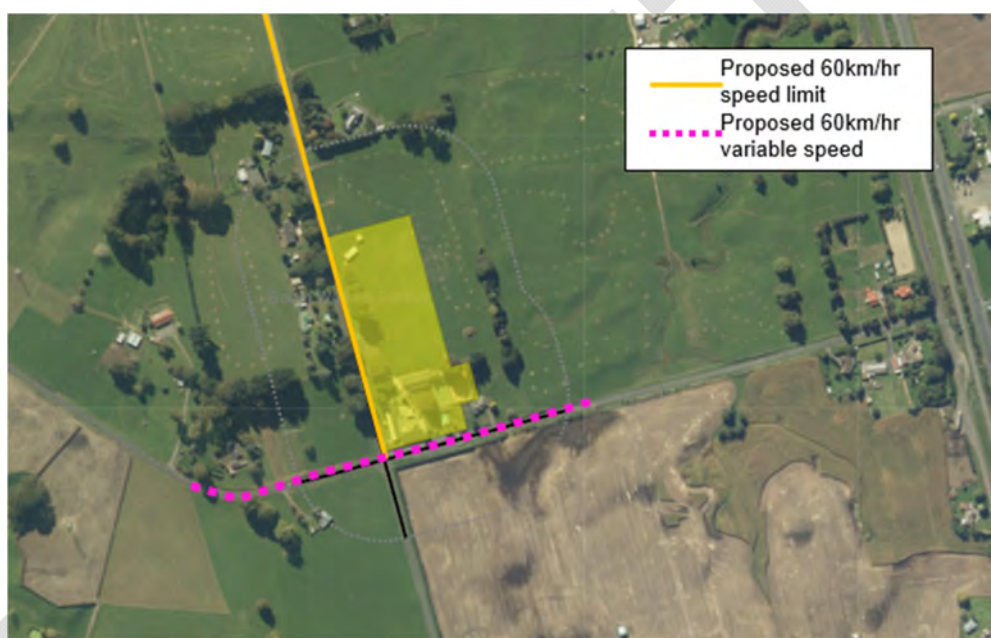
There are two rural schools in the surrounds of Putaruru for which the speed limit needs to be lowered in the vicinity of to assist with improved accessibility.

3.1.1 Lichfield School

The main vehicle and pedestrian access to Lichfield School is from Lichfield Road with a secondary access and parking area off Kells Lane. The school is located in a rural environment with no pedestrian or cycle facilities provided in the area. All students arrive and depart by bus or car.

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

Figure 10 Lichfield School



Safety and speed information from MegaMaps shows the following.

Lichfield Road

<i>Posted speed limit</i>	100km/hr	<i>AM Peak mean speed</i>	54km/hr
<i>Safe and Appropriate Speed</i>	60km/hr	<i>PM Peak mean speed</i>	53km/hr

Kells Lane

<i>Posted speed limit</i>	100km/hr	<i>AM Peak mean speed</i>	34km/hr
<i>Safe and Appropriate Speed</i>	60km/hr	<i>PM Peak mean speed</i>	36km/hr

Lichfield School is located on the corner of the intersection of Kells Lane and Lichfield Road. Given the rural location and the limited amount of activity on Lichfield Road in the vicinity of the school it is recommended that a variable speed limit be installed on Lichfield Road. In addition,

and due to the higher number of driveways and the no exit nature of the section of Kells Lane adjacent to the school it is recommended that a permanent speed limit be applied for this section of Kells Lane.

Recommendation

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

- Install a variable 60km/hr speed limit on Lichfield Road from 220m west of Kells Lane to 280m east of Kells Lane
- Install a permanent 60km/hr speed limit on Kells Lane from Lichfield Road to its end.
- Install variable school threshold style treatment at the change in speed limit points on Lichfield Road.

3.1.2 Te Waotu School

Vehicle and pedestrian access to Te Waotu School is from Waotu Road. The school is located in a rural environment with no pedestrian or cycle facilities provided in the area. All students arrive and depart by bus or car.

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

Figure 11 Te Waotu School



Safety and speed information from MegaMaps shows the following.

Waotu Road

<i>Posted speed limit</i>	100km/hr	<i>AM Peak mean speed</i>	47km/hr
<i>Safe and Appropriate Speed</i>	60km/hr	<i>PM Peak mean speed</i>	47km/hr

Te Waotu School is located within close proximity of the intersection with Lake Arapuni Road and Wiltsdown Road. Due to the rural location and the presence of other activities in the vicinity it is recommended that a permanent speed limit be installed in the area.

Recommendation

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

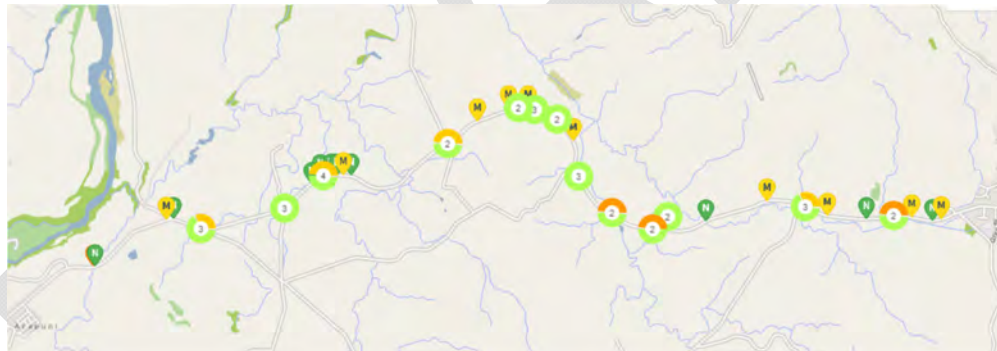
- Install a permanent 60km/hr speed limit on the following sections of road:
 - Waotu Road from Lake Arapuni Road to 330m north of Lake Arapuni Road
 - Lake Arapuni Road – 150m west of Waotu Road to Waotu Road
 - Wiltsdown Road – Waotu Road to 150m east of Waotu Road.
- Install school threshold style treatment at the change in speed limit points on Waotu Road, Lake Arapuni Road and Wiltsdown Road

3.2 Other roads

3.2.1 Arapuni Road

Arapuni Road is an arterial road that runs between Putaruru and Arapuni and the open road is 11km long. There have been four serious, fifteen minor and thirty-five non-injury crashes reported in the 10 year period 2012 to 2021. Inappropriate speed was identified in seventeen instances with the majority of crashes being single vehicle loss of control crashes.

Figure 12 Arapuni Road crashes



This road was also identified for review as Mangakaretu marae is located at 279 Arapuni Road.

Figure 13 Mangakaretu marae



Safety and speed information from MegaMaps shows the following.

Arapuni Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	85.95km/hr
<i>Safe and Appropriate Speed</i>	80km/hr	<i>Infrastructure Risk Rating</i>	Medium

Megamaps has identified this route as a High Benefit Road. These roads have strong safety benefits associated with lowering the speed limit to align with the safe and appropriate speed (SAAS) however the operating speeds are higher than the SAAS and therefore compliance could be an issue. Engineering improvements can be considered to support a higher speed limit if desired.

Due to the significance of the route in the wider roading network as a connecting route between districts a programme of improvement works should be developed to reduce the risk to users. As the majority of crashes are loss of control single vehicle crashes, treatments such as edgeline and centreline ATP should be installed. Shoulder widening and barriers should also be installed at appropriate locations. Due to the alignment of the road being a mix of straights and curves the existing curve warning signage should also be reviewed and upgraded as necessary to ensure that drivers are receiving appropriate and correct information.

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

The location of Mangakaretu marae is currently not identified and advance and directional signage should be installed to show the location of the marae ¹.

Recommendation

The following changes are recommended for Arapuni Road:

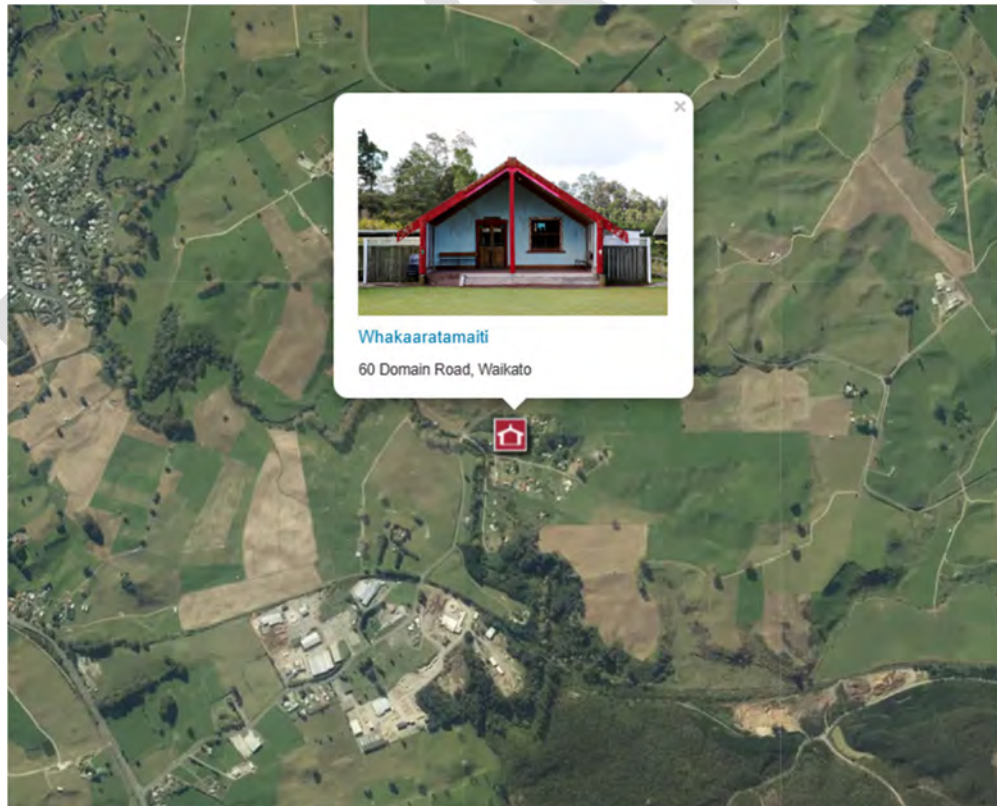
- Install edgeline and centreline ATP along the full length of the road.
- Undertake shoulder widening and barrier treatments in appropriate locations.
- Review existing signage and upgrade as necessary.
- Install advance and directional marae signage for Mangakaretu marae on both approaches to the marae

Any change to the speed limit on Arapuni Road will need to be considered as part of a wider strategy for the rural roading network.

3.2.2 Domain Road

Domain Road is a local road that runs between State Highway 1 and Harris Road and is 2660m long. This road was identified for review as Whakaaratamaiti marae is located at 60 Domain Road.

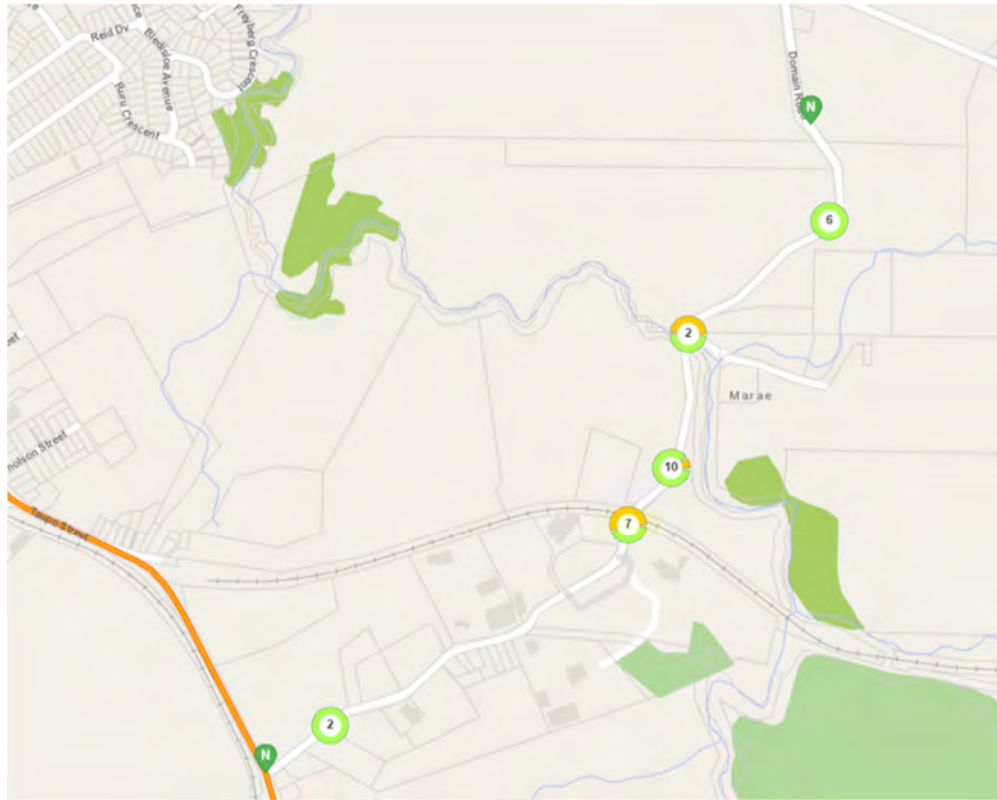
Figure 14 Whakaaratamaiti marae



¹ [Cultural marae sign | Waka Kotahi NZ Transport Agency \(nzta.govt.nz\)](https://www.nzta.govt.nz/cultural-marae-sign/)

There have been six minor and twenty-three non-injury crashes reported in the 10 year period 2012 to 2021. Inappropriate speed was identified in fourteen instances with the majority of crashes being single vehicle loss of control crashes.

Figure 15 Domain Road crashes



Safety and speed information from MegaMaps shows the following.

Domain Road

<i>Posted speed limit</i>	80km/hr	<i>Mean Free Flow Speed</i>	63km/hr
<i>Safe and Appropriate Speed</i>	80km/hr	<i>Infrastructure Risk Rating</i>	Low Medium

There is limited interaction between the marae and the road, however there are a number of commercial and residential properties in the first 1.8km of the road and a lower speed limit is considered to be appropriate. The majority of crashes have occurred in the section of the road from the east of the development and the marae indicating that drivers are not “reading” the road correctly.

The location of Whakaaratamaiti marae is currently not identified with only old advance fingerboard signs positioned at each end of the road. Updated advance and directional signage should be installed on Whakaaratamaiti Road to show the location of the marae.

Recommendation

The following changes are recommended for Domain Road:

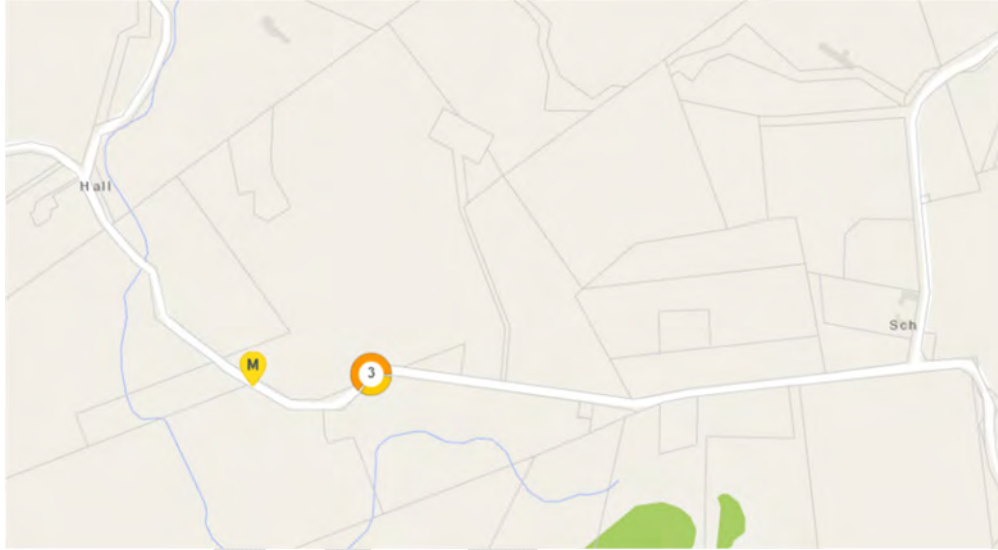
- Extend the edgelines on both sides of the road from the existing to RP 1800.
- Install edge marker posts from on both sides of the road from the old railway line to Harris Road.

- Install advance and directional marae signage for Whakaaratamaiti marae on both approaches to the marae.

3.2.3 Lake Arapuni Road

Lake Arapuni Road is local rural road that runs from Huihuitaha Road in the north to Waotu Road in the south and is 14km long. The only serious and minor injury crashes reported in the 10 year period 2012 to 2021 on this road have occurred between Huihuitaha Road (south) and Waotu Road. There were a range of factors including distraction, fatigue and speed.

Figure 16 Lake Arapuni Road crashes



This road was also identified for review as Matiti Pa marae is located at 1195 Lake Arapuni Road.

Figure 17 Matiti Pa marae



Safety and speed information from MegaMaps shows the following.

Lake Arapuni Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	59.29km/hr
<i>Safe and Appropriate Speed</i>	60km/hr	<i>Infrastructure Risk Rating</i>	Medium

The crashes are located within an isolated section of road which indicates that drivers are not adjusting to these out of context curves. To improve safety through the area the curves should be checked for the need for advisory signage and that they be installed as required.

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

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

Recommendation

The following changes are recommended for Lake Arapuni Road:

- Install curve advisory signage on the section of Lake Arapuni Road between Huihuitaha Road (south) and Waotu Road as required.
- Install advance and directional marae signage for Matiti Pa marae on all approaches to the marae.

Any change to the speed limit on Lake Arapuni Road will need to be considered as part of a wider strategy for the rural roading network.

3.2.4 Ngatira Road

Ngatira Road is a local road that runs off State Highway 1 and is 11km long. This road was identified for review as Ngatira marae is located at 956 Ngatira Road.

Figure 18 Ngatira marae



Safety and speed information from MegaMaps shows the following.

Ngatira Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	63km/hr
<i>Safe and Appropriate Speed</i>	80km/hr	<i>Infrastructure Risk Rating</i>	Low Medium

The marae is located at the end of sealed section of the road. Consideration should be given to reducing the speed limit from where the road environment changes south of the railway crossing (RP9350) to the end of the road. This would include the 300m sealed section in front of the marae and the full length of the unsealed portion of the road.

The location of Ngatira marae is currently not identified with only an old advance fingerboard sign positioned at the intersection with State Highway 1. Updated advance and directional signage should be installed on Ngatira Road to show the location of the marae

Recommendation

The following changes are recommended for Ngatira Road:

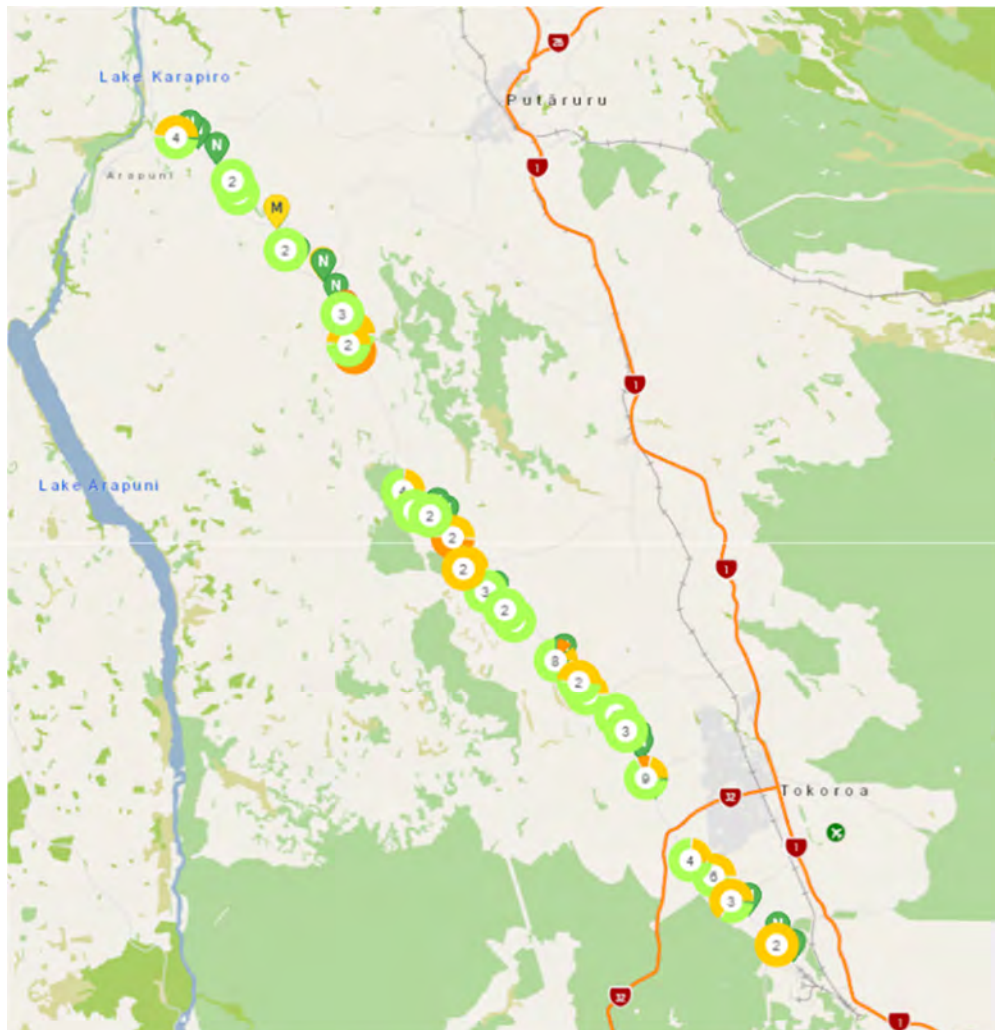
- Lower the speed limit to 60km/hr between RP9350 and the end of the road.
- Install permanent speed limit signs at RP9350.
- Install advance and directional marae signage for Ngatira marae.

3.2.5 Old Taupo Road

Old Taupo Road is a collector road that runs between Kinleith and Arapuni. The section between Kinleith and State Highway 32 is 5km long, the remaining section to Arapuni is 27km long. There have been 109 reported crashes in the 10 year period 2012 to 2021 with seven serious, twenty-five minor and seventy-seven non-injury crashes. Inappropriate speed was

identified in twenty-three instances with the majority of crashes being single vehicle (90%) and loss of control crashes on bends (86%).

Figure 19 Old Taupo Road crashes



The road environment is different either side of the intersection with State Highway 32, with the road to the north is curved and winding, the section south to Kinleith is straight.

Safety and speed information from MegaMaps shows the following.

Old Taupo Road – Arapuni Road to Waotu Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	82.22km/hr
<i>Safe and Appropriate Speed</i>	80km/hr	<i>Infrastructure Risk Rating</i>	Medium

Old Taupo Road –Waotu Road to Wiltstown Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	77.24km/hr
<i>Safe and Appropriate Speed</i>	60km/hr	<i>Infrastructure Risk Rating</i>	Medium

Old Taupo Road – Wiltsdown Road to State Highway 32

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	83.27km/hr
<i>Safe and Appropriate Speed</i>	80km/hr	<i>Infrastructure Risk Rating</i>	Medium

Old Taupo Road – State Highway 32 to Kinleith Mill

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	68.47km/hr
<i>Safe and Appropriate Speed</i>	80km/hr	<i>Infrastructure Risk Rating</i>	Medium

Old Taupo Road in conjunction with Horahora Road is used as an alternative route to State Highway 1 with a number of side roads that provide connections to Tokoroa, Lichfield and Putaruru.

Due to the significance of the route as a spine road within the wider roading network and as an alternative route to State Highway 1 a programme of improvement works should be developed to reduce the risk to users. As the majority of crashes are loss of control single vehicle crashes, treatments such as edgeline and centreline ATP should be installed. Shoulder widening and barriers should also be installed at appropriate locations. As the alignment of the road is a mix of straights and curves and the majority of crashes have occurred on curves the existing curve warning signage should also be reviewed and upgraded as necessary to ensure that drivers are receiving appropriate and correct information.

Recommendation

The following changes are recommended for Old Taupo Road:

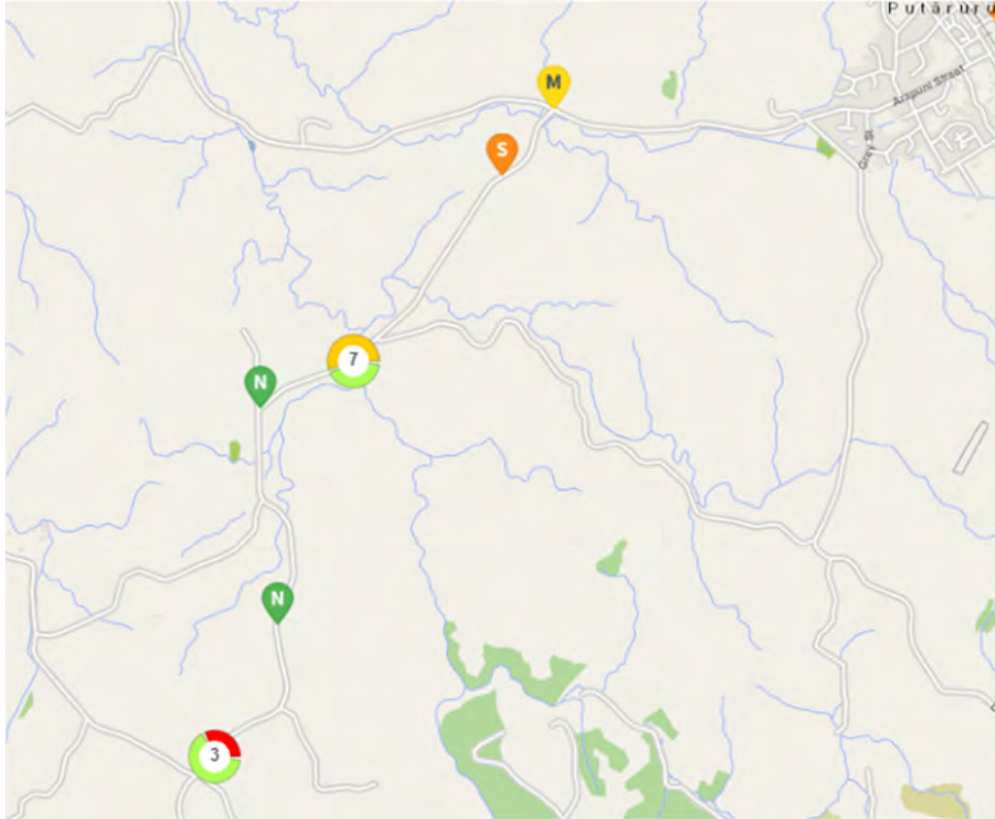
- Install edgeline and centreline ATP along the full length of the road.
- Undertake shoulder widening and barrier treatments in appropriate locations.
- Review existing curve warning signage and upgrade as necessary.

Any change to the speed limit on Old Taupo Road will need to be considered as part of a wider strategy for the rural roading network.

3.2.6 Waotu Road

Waotu Road is collector rural road that runs from Arapuni Road in the north to Wiltsdown Road in the south and is 13km long. The only fatal and serious crashes reported in the 10 year period 2012 to 2021 on this road have occurred between Arapuni Road and Old Taupo Road. The fatal crash involved an American tourist travelling on the wrong side of the road, while the serious crash was an inexperienced driver who lost control in the wet.

Figure 20 Waotu Road crashes



The cluster of crashes near Dukeson Road indicates that there is an issue with the out of context curves in this area.

Safety and speed information from MegaMaps shows the following.

Waotu Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	64.05km/hr
<i>Safe and Appropriate Speed</i>	60km/hr	<i>Infrastructure Risk Rating</i>	Medium

The majority of crashes are loss of control single vehicle crashes with fatigue being a factor, treatments such as edgeline and centreline ATP should be installed. The cluster of crashes located within an isolated section of the road indicates that drivers are not adjusting to these out of context curves. To improve safety through the area the curves should be checked for the need for advisory signage and that they be installed as required.

Any change to the speed limit would need to be considered as part of a wider strategy for rural roads within the district.

Recommendation

The following changes are recommended for Waotu Road:

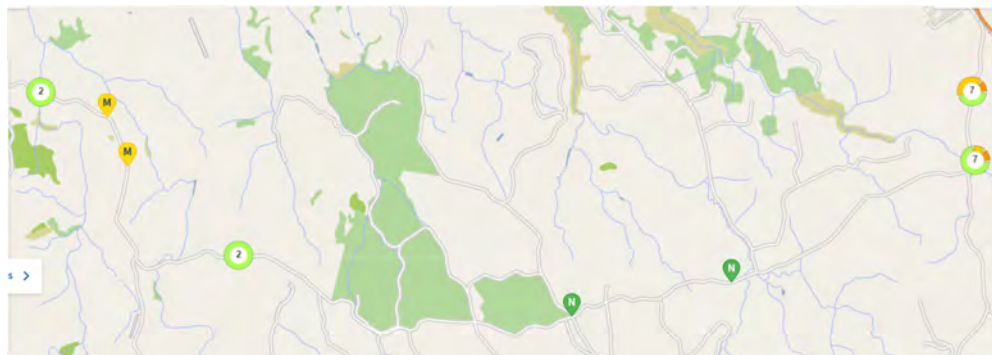
- Install edgeline and centreline ATP on the section of Waotu Road between Arapuni Road and Old Taupo Road.
- Install curve advisory signage on the section of Waotu Road between Arapuni Road and Old Taupo Road as required.

Any change to the speed limit on Waotu Road will need to be considered as part of a wider strategy for the rural roading network.

3.2.7 Wiltsdown Road

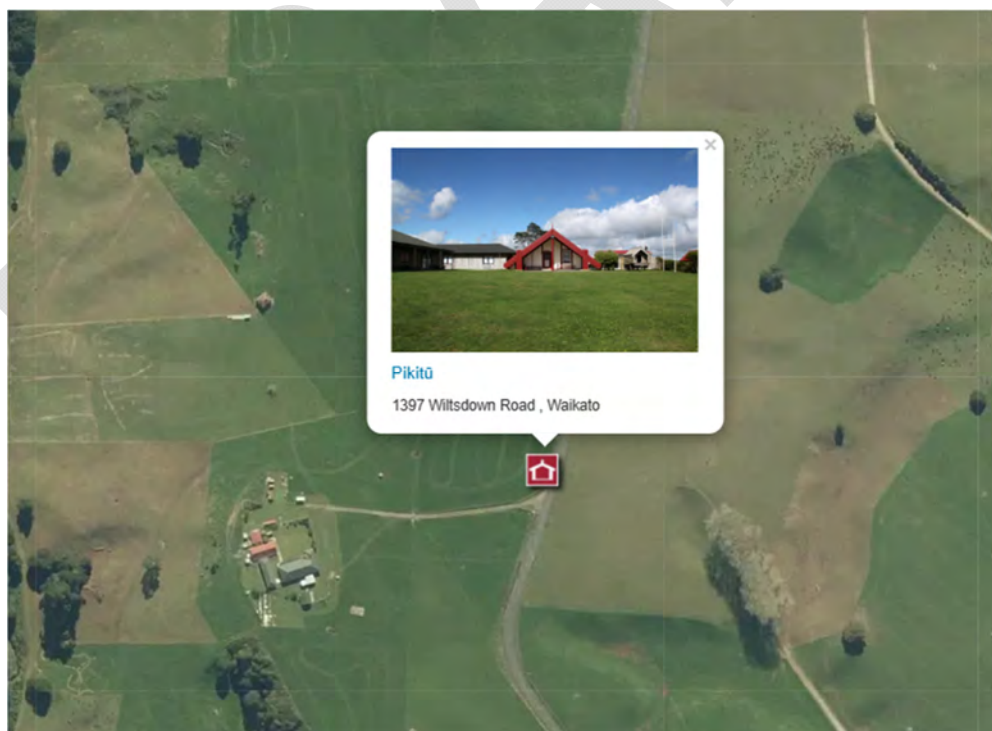
Wiltsdown Road is collector rural road that runs west/east from State Highway 1 to Waotu Road and is 17km long. There have been two serious, six minor and fourteen non-injury crashes reported in the 10 year period 2012 to 2021 with the majority of crashes occurring in the first 2km of the road. Inappropriate speed was identified in seven instances with the majority of crashes being single vehicle and loss of control on bend crashes. Nineteen of the crashes occurred in overcast or dark conditions.

Figure 21 Wiltsdown Road crashes



This road was also identified for review as Pikitū marae is located at 1397 Wiltsdown Road.

Figure 22 Pikitū marae



Safety and speed information from MegaMaps shows the following.

Wiltsdown Road – State Highway 1 to Paraonui Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	60.03km/hr
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<i>Safe and Appropriate Speed</i>	60km/hr	<i>Infrastructure Risk Rating</i>	Medium High
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Wiltsdown Road –Paraonui Road to Waotu Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	60.58km/hr
<i>Safe and Appropriate Speed</i>	80km/hr	<i>Infrastructure Risk Rating</i>	Medium

As the majority of crashes are loss of control single vehicle crashes occurring in overcast or dark conditions treatments such as edgeline and centreline ATP should be installed.

The cluster of crashes located within the first 2km of the road indicates that drivers are not adjusting to in the change of environment from the State Highway. To improve safety through the area the curves should be checked for the need for advisory signage and that they be installed as required.

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

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

Recommendation

The following changes are recommended for Wiltsdown Road:

- Install edgeline and centreline ATP on the full length of Wiltsdown Road.
- Install curve advisory signage on the section of Wiltsdown Road between State Highway 1 and Paraonui Road as required.
- Install advance and directional marae signage for Pikitu marae on both approaches to the marae

Any change to the speed limit on Wiltsdown Road will need to be considered as part of a wider strategy for the rural roading network.

4. Tirau Township

4.1 Schools

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

4.1.1 Tirau Primary School

The main vehicle and pedestrian access to Tirau Primary School is from State Highways 1 and 27 with a crossing point on State Highway 1 approximately 170m south of State Highway 27. There are no cycle facilities provided in the area.

Figure 23 Tirau Primary School



Safety and speed information from MegaMaps shows the following.

South Waikato District Council has no jurisdiction on a State Highway, speed management on State Highways 1 and 27 is the responsibility of Waka Kotahi.

4.2 Town Centre - Tirau

Tirau Town Centre is split by State Highway 1 with commercial areas on both sides of the road. Any changes to the speed limit in this area will need to be coordinated with Waka Kotahi.

4.3 Other roads

4.3.1 Tapapa Road

Tapapa Road is a local road that runs between State Highway 28 and State Highway 5 parallel to State Highway 5 that is 5km long. This road was identified for review as Tapapa marae is located at 95-101 Tapapa Road.

Figure 24 Tapapa marae



Safety and speed information from MegaMaps shows the following.

Tapapa Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	65km/hr
<i>Safe and Appropriate Speed</i>	80km/hr	<i>Infrastructure Risk Rating</i>	Medium

There is limited interaction between the marae and the road and no crashes have been reported along this route, however due to the very narrow road width (5.8 – 3.9m) a lower speed limit is considered to be appropriate. Due to the constrained nature of the road any changes to the speed limit in this area will have no effect on a wider strategy for speed limits on rural roads across the district.

The location of Tapapa marae is currently not identified with only old advance fingerboard signs positioned at each end of the road. Updated advance and directional signage should be installed on Tapapa Road to show the location of the marae.

Recommendation

The following changes are recommended for Tapapa Road:

- Lower the speed limit to 80km/hr for the full length of Tapapa Road.
- Install permanent speed limit signs at each end of Tapapa Road.
- Install advance and directional marae signage for Tapapa marae on both approaches to the marae and at the intersections with State Highways 28 and 5.

5. Tirau surrounds

5.1 Schools

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

5.1.1 Kuranui Primary School

Vehicle and pedestrian access to Kuranui School is from Waiomou Road. The school is located in a rural environment with no pedestrian or cycle facilities provided in the area. All students arrive and depart by bus or car.

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

Figure 25 Kuranui Primary School



Safety and speed information from MegaMaps shows the following.

Waiomou Road

<i>Posted speed limit</i>	100km/hr	<i>AM Peak mean speed</i>	70km/hr
<i>Safe and Appropriate Speed</i>	60km/hr	<i>PM Peak mean speed</i>	68km/hr

Due to the rural location and the limited amount of activity on Waiomou Road in the vicinity of the school it is recommended that a variable speed limit be installed on Waiomou Road.

Recommendation

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

- Install a variable 60km/hr speed limit on Waiomou Road from 370m east of State Highway 28 to 860m east of State Highway 28.
- Install variable school threshold style treatment at the change in speed limit points on Waiomou Road.

5.2 Other Roads

5.2.1 Horahora Road

Horahora Road is an arterial road that runs between State Highway 1 at Piarere and Arapuni and is 13km long. There have been five serious, three minor and seventeen non-injury crashes reported in the 10 year period 2012 to 2021. Inappropriate speed was identified in only two instances with the majority of crashes being single vehicle loss of control on bend crashes.

Figure 26 Horahora Road crashes



Safety and speed information from MegaMaps shows the following.

Horahora Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	59.8km/hr
<i>Safe and Appropriate Speed</i>	60km/hr	<i>Infrastructure Risk Rating</i>	Medium High

Horahora Road in combination with Old Taupo Road is used as an alternative route to State Highway 1 and has an off-road cycle path (Waikato River Trails) between Pokaiwhenua Bridge carpark (RP4350) and the access to Little Waipa Reserve (RP9500).

The route is significant in the wider roading network as an alternative route and a programme of improvement works should be developed to reduce the risk to users. The majority of crashes are loss of control single vehicle crashes, treatments such as edgeline and centreline ATP should be installed. Shoulder widening and barriers should also be installed at appropriate locations. The alignment of the road is a mix of straights and curves, therefore the existing curve warning signage should also be reviewed and upgraded as necessary to ensure that drivers are receiving appropriate and correct information.

There is a section of development approximately 2km south of State Highway 1, with a number of residential and business properties in this area. The southern end of this area is marked by the Pokaiwhenua Bridge and the carpark which is used by the Waikato River Trail. Due to the change in development level and increased conflicts from turning movements in this area a lower speed limit is considered to be appropriate. The reduction in speed limit to 80km/hr should extend from RP 2090 to RP 4500.

The section of road between RP 12210 and Arapuni Road is out of context with the rest of road being narrow and windy. Due to the significant difference in environment a lower speed limit is considered appropriate in this area.

Figure 27 Horahora Road proposed speed limit changes



Recommendation

The following changes are recommended for Horahora Road:

- Lower the speed limit to 80km/hr between RP2090 and 4500 and between RP12210 and Arapuni Road.
- Install threshold style treatments at the change in speed limit locations.
- Install no overtaking lines between RP2090 and 4500.
- Install edgeline and centreline ATP along the full length of the road.
- Undertake shoulder widening and barrier treatments in appropriate locations.

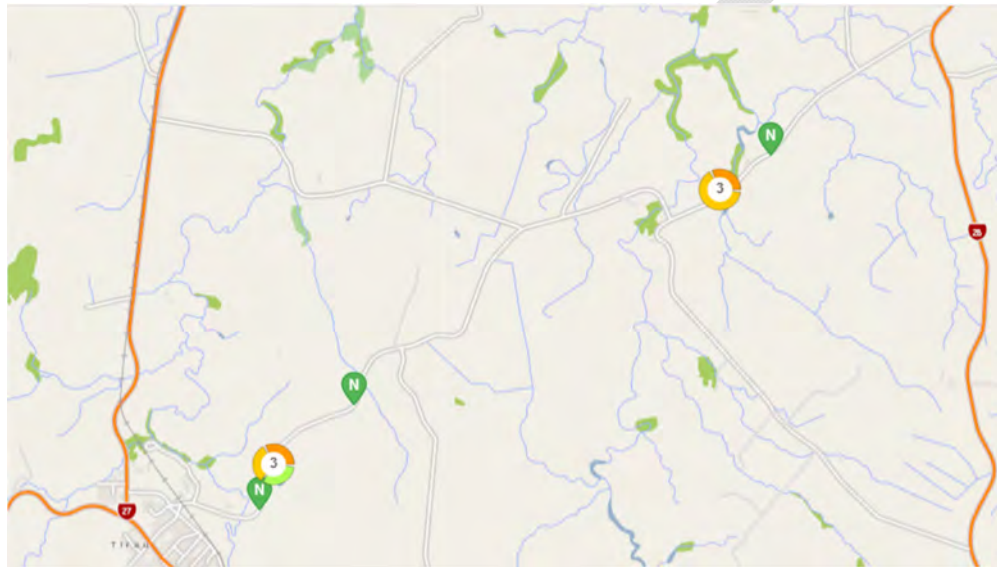
- Review curve warning existing signage and upgrade as necessary.

Further changes to the speed limit on Horahora Road will need to be considered as part of a wider strategy for the rural roading network.

5.2.2 Okoroire Road

Okoroire Road is a collector road that runs between State Highway 28 and Tirau and is 8km long. There have been two serious, three minor and four non-injury crashes reported in the 10 year period 2012 to 2021. There are a range of crash types and cause factors however inappropriate speed was not identified as a contributing factor in any of the crashes.

Figure 28 Okoroire Road crashes



Safety and speed information from MegaMaps shows the following.

Okoroire Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	77.11km/hr
<i>Safe and Appropriate Speed</i>	80km/hr	<i>Infrastructure Risk Rating</i>	Medium

Due to the primarily straight alignment of this road and the side roads any change to the speed limit is likely to result in poor compliance.

Recommendation

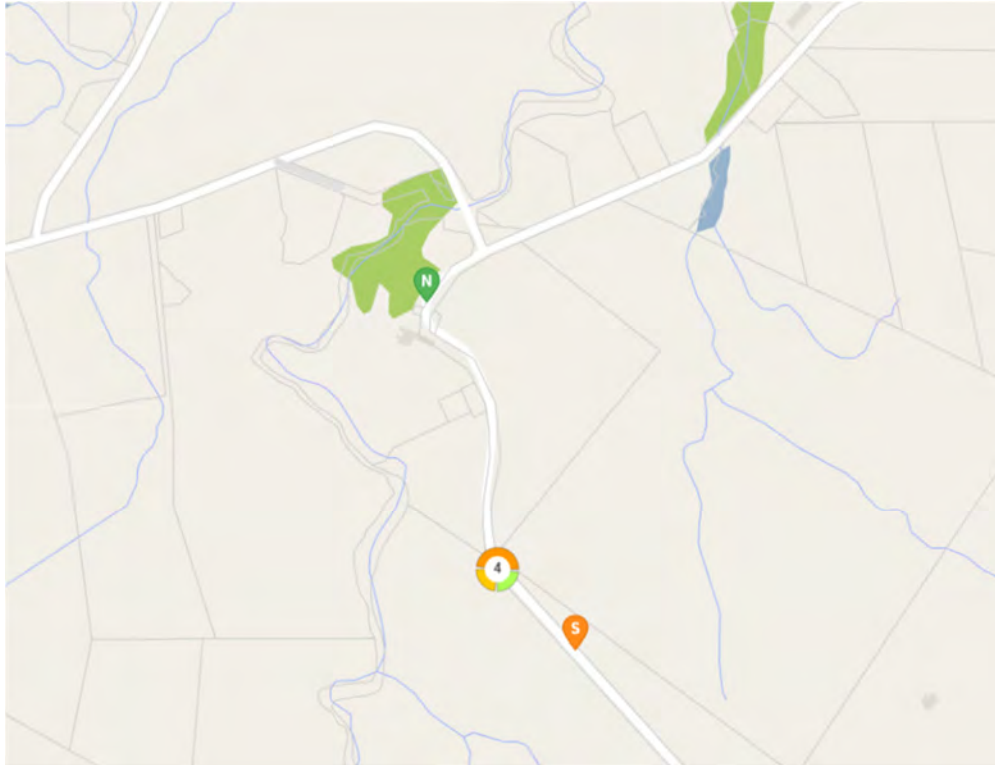
No changes are recommended for Okoroire Road at this time. Any change to the speed limit on Okoroire Road will need to be considered as part of a wider strategy for the rural roading network.

5.2.3 Sommerville Road

Sommerville Road is a rural access road that runs between State Highway 28 and Okoroire Road and is 4km long. There have been three serious, one minor and three non-injury crashes reported in the 10 year period 2012 to 2021. Six of the crashes have occurred within a 200m

section of road. Inexperience and inappropriate speed were identified as the most common contributing factors in the crashes.

Figure 29 Somerville Road crashes



Safety and speed information from MegaMaps shows the following.

Sommerville Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	58.59km/hr – 83.24km/hr
<i>Safe and Appropriate Speed</i>	80km/hr	<i>Infrastructure Risk Rating</i>	Medium

The first 800m of Somerville Road is a different environment with a series of tight curves compared to the straight alignment of either the adjacent section of Somerville Road or the preceding section of Okoroire Road.

Consideration should be given to lowering the speed limit for the 800m section from Okoroire Road to 800m south of Okoroire Road due to the presence of pedestrians and turning movements associated with the Okoroire Hotel, camp ground and golf course.

Figure 30 Sommerville Road proposed speed limit changes



As the remaining section of the road has a primarily straight alignment and the side roads are of a similar nature any change to the speed limit in these areas is likely to result in poor compliance.

Recommendation

The following changes are recommended for Sommerville Road:

- Lower the speed limit to 60km/hr between Okoroire Road and RP800.
- Install threshold style treatments at the change in speed limit locations.

Further changes to the speed limit on Sommerville Road will need to be considered as part of a wider strategy for the rural roading network.

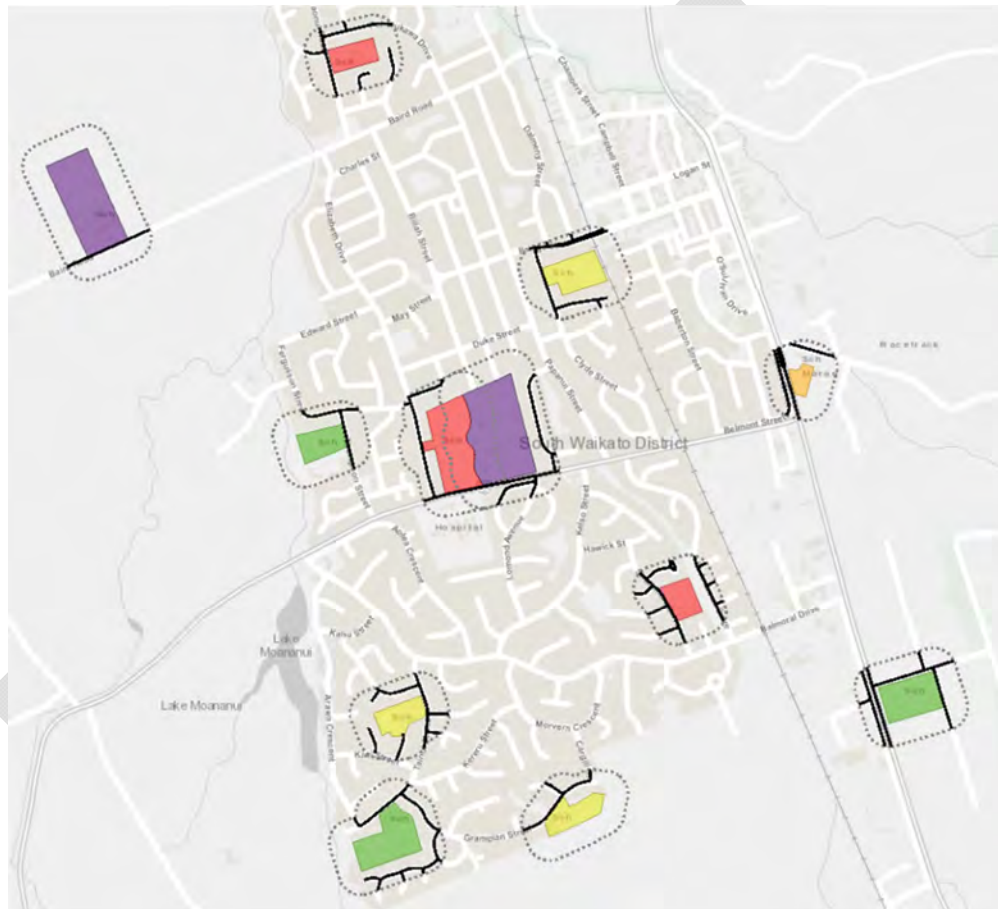
6. Tokoroa Township

Tokoroa is the largest settlement in South Waikato with the majority of the town located to the west of State Highway 1. The town centre is located to the north of the settlement with a large industrial area to the south. The residential area is split by State Highway 32 separating it into north and south sections.

6.1 Schools

There are thirteen schools in Tokoroa for which the speed limit needs to be lowered in the vicinity of to assist with safety and accessibility. Seven are located north of State Highway 32 with four to the south and two located to the east of State Highway 1 as shown in Figure 31.

Figure 31 Tokoroa Schools



6.1.1 Tokoroa North School

Vehicle and pedestrian access to Tokoroa North School is primarily from Paraonui Road with a patrolled zebra crossing located approximately 70m south of Tasman Drive. There are additional pedestrian accesses off Puriri Place and Kowhai Place. No cycle facilities are provided in the area.

Figure 32 Tokoroa North School



Safety and speed information from MegaMaps shows the following.

Paraonui Road

<i>Posted speed limit</i>	50km/hr	<i>AM Peak mean speed</i>	41km/hr
<i>Safe and Appropriate Speed</i>	50km/hr	<i>PM Peak mean speed</i>	41km/hr

Puriri Place and Kowhai Place

<i>Posted speed limit</i>	50km/hr	<i>AM Peak mean speed</i>	18km/hr
<i>Safe and Appropriate Speed</i>	30km/hr	<i>PM Peak mean speed</i>	18km/hr

Paraonui Road is an urban collector road with a 50km/hr speed limit that provides access to the residential area north of Baird Road and also serves as an alternative route to State Highway 1.

Puriri Place and Kowhai Place are access roads connected by Totara Road to Paraonui Road and Baird Road.

Recommendation

The following changes are recommended in the vicinity of Tokoroa North School:

- Install a 30km/hr variable speed limit on Paraonui Road from 70m north of Totara Street to Pohutukawa Drive.
- Install a permanent 30km/hr speed limit on Totara Street, Puriri Place and Kowhai Place.
- Install variable school threshold style treatment at the change in speed limit points on Paraonui Road.

- Install permanent speed limit signs on Totara Street at the intersections with Paraonui Road and Baird Road.
- Upgrade the existing patrolled zebra crossing into a raised platform.

6.1.2 Forest View High School

Forest View High School is located off Baird Road approximately 1.1km from the edge of development in Tokoroa. Vehicle and pedestrian access to Forest View High School is from Baird Road and a footpath is provided on the northern side of the road only, edgelines are marked on both sides of the road.

Figure 33 Forest View High School



Safety and speed information from MegaMaps shows the following.

Baird Road

<i>Posted speed limit</i>	50km/hr	<i>AM Peak mean speed</i>	52km/hr
<i>Safe and Appropriate Speed</i>	50km/hr	<i>PM Peak mean speed</i>	52km/hr

Baird Road is an urban collector road with a 50km/hr speed limit that changes to 100km/hr 180m west of the school. The road provides connection between Old Taupo Road and Tokoroa and is a parallel route to State Highway 32.

A review of the crash data shows that there have been two serious crashes within the 50km/hr section of Baird Road and a third serious crash at the intersection with Old Taupo Road, within the last 5 years. Factors involved in the two urban crashes included speed, alcohol and anti-social behaviour. Half of the crashes along the route have been intersection crashes while the remainder are a mix of loss of control and random crash types.

Vehicle speed data shows that there is poor compliance with the existing speed limit with a free flow speed being 55km/hr, this is potentially due to the lack of any definitive change in environment. To provide a better alignment of speed with environment it is suggested that the speed limits on the section of Baird Road between the existing 50km/hr and Old Taupo Road be changed and additional engineering treatments be implemented to support the speed limits.

Recommendation

The following changes are recommended in the vicinity of Forest View High School:

- Install a 30km/hr variable speed limit on Baird Road from 800m west of Elizabeth Drive to 800m east of Old Taupo Road.
- Install variable school threshold style treatment at the change in speed limit points on Baird Road.
- Lower the speed limit to 80km/hr on Baird Road from Old Taupo Road to the existing 50km/hr speed limit.
- Install permanent speed limit signs on Baird Road at the intersection with Old Taupo Road
- Create a threshold treatment at the 80/50 speed limit change on Baird Road.
- Mark cycle symbols on the section of Baird Road between the school and Elizabeth Drive (*check – not showing on google*)

6.1.3 Tokoroa Central School

The only vehicle and pedestrian access to Tokoroa Central School is from Clyde Street with a kea crossing located approximately 140m south of Bridge Street. No cycle facilities are provided in the area.

Figure 34 Tokoroa Central School



Safety and speed information from MegaMaps shows the following.

Clyde Street

<i>Posted speed limit</i>	50km/hr	<i>AM Peak mean speed</i>	30km/hr
<i>Safe and Appropriate Speed</i>	30km/hr	<i>PM Peak mean speed</i>	31km/hr

Clyde Street is an urban collector road with a 50km/hr speed limit that provides access to the residential area south of Bridge Street. A raised platform has been installed on the approach to Bridge Street to assist with speed management in the area.

Recommendation

The following changes are recommended in the vicinity of Tokoroa Central School:

- Install a permanent 30km/hr speed limit on Clyde Street between Bridge Street and Tay Street.
- Install school threshold style treatment at the change in speed limit points on Clyde Street.
- Consider replacing the existing kea crossing with a patrolled zebra crossing on a raised platform.

6.1.4 David Henry School

The only vehicle and pedestrian access to David Henry School is from Thompson Street. There are no crossing or cycle facilities provided in the area.

Figure 35 David Henry School



Safety and speed information from MegaMaps shows the following.

Thompson Street and adjacent roads

<i>Posted speed limit</i>	50km/hr	<i>AM Peak mean speed</i>	31km/hr
<i>Safe and Appropriate Speed</i>	30km/hr	<i>PM Peak mean speed</i>	32km/hr

Thompson Street is a local urban road with a 50km/hr speed limit that provides connection between State Highway 32 and Fergusson Street and access to the adjacent residential areas.

A review of the crash data shows that there have been two serious crashes within the last 5 years. One crash involved a speeding vehicle failing to stop at the Fergusson Street

intersection and the other was a mechanical fault where the throttle cable stuck open resulted on the bike hitting a through vehicle.

To discourage drivers from using Thompson Street as a through route a residential 40km/hr speed limit should be considered for the full length of Thompson Street. For consistency the speed limit should also need be lowered on Lancaster Crescent, York Place, Victoria Place, Maple Place, Oak Place, Kent Street and George Place.

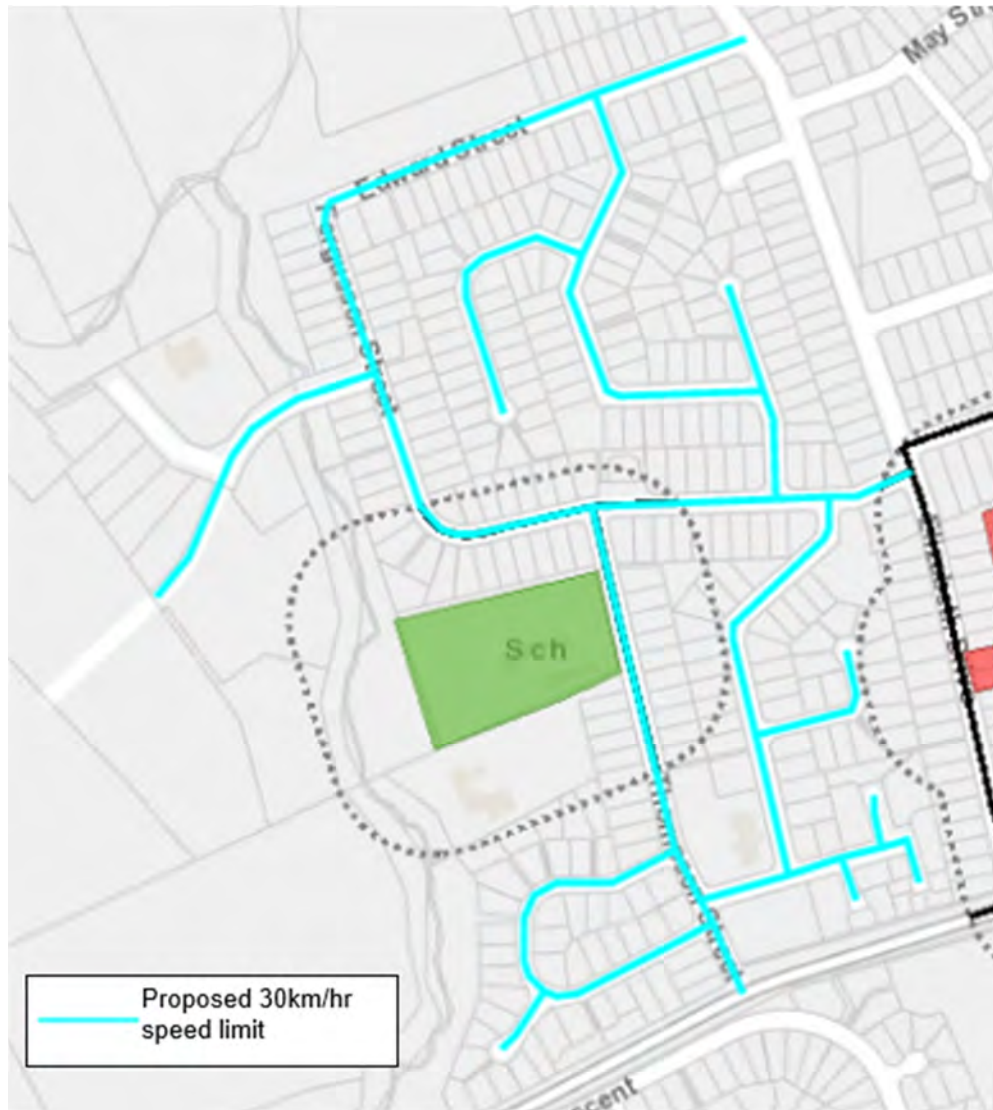
Fergusson Street provides access to David Henry School from the north. There have been three serious, one minor and six non-injury crashes reported on Fergusson Street in the 10 year period 2012 to 2021. The crashes involved a variety of movements and contributing factors with no common factors. As this area is also a contained residential area consideration should be given to lowering the speed limit to 30km/hr on Edward Street, Princess Beatrix Avenue, Windsor Place, Mountbatten Place and Edinburgh Street and all side roads.

Recommendation

The following changes are recommended in the vicinity of David Henry School:

- Install a permanent 30km/hr speed limit on Thompson Street between 60m north of Lancaster Crescent (North) and Fergusson Street.
- Install school threshold style treatment at the change in speed limit points on Thompson Street.
- Consider installing a raised crossing point on Thompson Street in the vicinity of the school entrance.
- Consider creating a 30km/hr residential area encompassing the full length of Thompson Street, Lancaster Crescent, York Place, Victoria Place, Maple Place, Oak Place, Kent Street, George Place, Edward Street, Princess Beatrix Avenue, Windsor Place, Mountbatten Place and Edinburgh Street.

Figure 36 Possible 30km/hr residential area around David Henry School



6.1.5 Tokoroa Intermediate School and Tokoroa High School

Vehicle and pedestrian access to Tokoroa Intermediate School is from Elizabeth Drive and the private access road off Billah Street which separates Tokoroa Intermediate and Tokoroa High Schools. Tokoroa High School and the Pa Harakeke Teen Parent Unit is also accessed from State Highway 32. The Pa Harakeke Teen Parent Unit is located within the Tokoroa High School site.

A patrolled zebra crossing is located approximately 260m north of State Highway 32. No cycle facilities are provided in the area.

Figure 37 Tokoroa Intermediate School and Tokoroa High School



Safety and speed information from MegaMaps shows the following.

Elizabeth Drive

<i>Posted speed limit</i>	50km/hr	<i>AM Peak mean speed</i>	40km/hr
<i>Safe and Appropriate Speed</i>	50km/hr	<i>PM Peak mean speed</i>	39km/hr

Baillah Street

<i>Posted speed limit</i>	50km/hr	<i>AM Peak mean speed</i>	29km/hr
<i>Safe and Appropriate Speed</i>	30km/hr	<i>PM Peak mean speed</i>	29km/hr

Elizabeth Drive is an urban collector road with a 50km/hr speed limit that provides connection between State Highway 32 and Baird Road and access to the adjacent residential areas. The section of Baillah Street under review is a dead end residential street with access to the Tokoroa Intermediate and Tokoroa High Schools at the end.

Recommendation

The following changes are recommended in the vicinity of Tokoroa Intermediate and Tokoroa High Schools:

- Install a 30km/hr variable speed limit on Elizabeth Drive from 50m south of Fergusson Street to 100m north of State Highway 32.
- Install variable school threshold style treatment at the change in speed limit points on Elizabeth Drive.
- Install a permanent 30km/hr speed limit on the section of Baillah Street between Duke Street and its end.
- Install permanent speed limit signs on the Baillah Street approach to Duke Street.
- Upgrade the existing patrolled zebra crossing onto a raised platform.

South Waikato District Council has no jurisdiction on a State Highway, speed management in this area is the responsibility of Waka Kotahi.

6.1.6 Strathmore School

The only vehicle and main pedestrian access to Strathmore School is from Strathmore Drive with a patrolled zebra crossing located 30m south of Lauriston Place. A kea crossing is located on St Andrews Drive connecting to the pedestrian access at the rear of the school. There are no cycle facilities provided in the area.

Figure 38 Strathmore School



Safety and speed information from MegaMaps shows the following.

Strathmore Drive

<i>Posted speed limit</i>	50km/hr	<i>AM Peak mean speed</i>	25km/hr
<i>Safe and Appropriate Speed</i>	30km/hr	<i>PM Peak mean speed</i>	31km/hr

St Andrews Drive

<i>Posted speed limit</i>	50km/hr	<i>AM Peak mean speed</i>	42km/hr
<i>Safe and Appropriate Speed</i>	30km/hr	<i>PM Peak mean speed</i>	42km/hr

Strathmore Drive is an urban local road with a 50km/hr speed limit that provides connection between Balmoral Drive and Hawick Street and access to a number of residential cul-de-sacs.

To discourage drivers from using Strathmore Drive as a through route a residential 30km/hr speed limit should be considered for the full length of Strathmore Road and the adjacent cul-de-sacs of Dunbar Place, Dunkeld Place, Alloa Place, Lauriston Street and Kenmore Place.

St Andrews Drive is an urban collector road that connects Balmoral Drive to State Highway 32. Due to the presence of the kea crossing for Strathmore School a 30km/hr speed limit should be in operation when the kea crossing is operating.

Recommendation

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

- Install a permanent 30km/hr speed limit on the full length of Strathmore Drive, Dunbar Place, Dunkeld Place, Alloa Place, Lauriston Street and Kenmore Place
- Install permanent speed limit signs at each end of Strathmore Drive.
- Upgrade the existing patrolled zebra crossing onto a raised platform.
- Install a 30km/hr variable speed limit on St Andrews Drive from Montrose Place to 40m north of Kinross Place.
- Install variable school threshold style treatment at the change in speed limit points on St Andrews Drive.
- Consider replacing the existing kea crossing on St Andrews Drive with a patrolled zebra crossing on a raised platform.

6.1.7 TKKM o Te Hiringa, Tainui Full Primary and Cargill Open Plan Schools

TKKM o Te Hiringa, Tainui Full Primary and Cargill Open Plan Schools are located within close proximity of each other south of Balmoral Drive. The only vehicle and pedestrian accesses to TKKM o Te Hiringa and Tainui Full Primary School is from Tainui Street with Cargill Open Plan School accessed from Grampian Street.

Figure 39 TKKM o Te Hiringa, Tainui Full Primary and Cargill Open Plan Schools



There are three patrolled zebra crossings located in the area:

1. Tainui Street 20m south of Ngatuku Place for access to TKKM o Te Hiringa
2. Grampian Street (east) to the west of Tainui Street for Tainui Full Primary School
3. Grampian Street (east) 30m west of Waipuna Place for Cargill Open Plan School

There are no cycle facilities provided in the area.

Safety and speed information from MegaMaps shows the following.

Tainui Street – outside TKKM o Te Hiringa

<i>Posted speed limit</i>	50km/hr	<i>AM Peak mean speed</i>	31km/hr
<i>Safe and Appropriate Speed</i>	30km/hr	<i>PM Peak mean speed</i>	36km/hr

Tainui Street – outside Tainui Full Primary School

<i>Posted speed limit</i>	50km/hr	<i>AM Peak mean speed</i>	24km/hr
<i>Safe and Appropriate Speed</i>	30km/hr	<i>PM Peak mean speed</i>	25km/hr

Grampian Street (east) – outside Cargill Open Plan School

<i>Posted speed limit</i>	50km/hr	<i>AM Peak mean speed</i>	32km/hr
<i>Safe and Appropriate Speed</i>	30km/hr	<i>PM Peak mean speed</i>	32km/hr

Tainui Street and Grampian Street (east) are urban collector roads with a 50km/hr speed limit that provides connection off Balmoral Drive into a number of residential cul-de-sacs. Free flow

speeds on these collector roads is between 36 and 46km/hr, with the cul-de-sacs having mean travel speeds of 20km/hr.

Applying 30km/hr speed limits to only the area in the vicinity of the school frontages would result in five speed limit changes along the length of Tainui Street with approx. 150m between the sections of 30km/hr.

The area is bounded by Balmoral Drive to the north and there are no other exits a single speed limit could be applied across the neighbourhood. This would reduce confusion to drivers and allow for safer use of the area by pedestrians and cyclists by being enforce irrespective of the time of day.

Figure 40 Possible lower speed limit area



There have been thirty-three reported crashes in this area in the 10 year period 2012 to 2021. Travel speed was indicated as being a factor in ten instances. There has been one fatal crash on Kereru Street (2015) and two serious crashes on Arawa Crescent (2020 and 2021). The fatal crash involved a car pulling out in front of a motorcyclists while both of the serious crashes were loss of control type crashes.

Figure 41 Crashes 2012 – 2021



To reduce the risk to users irrespective of where and when they are using this network a 30km/hr speed limit is proposed. This will need to be supported by engineering works on the collector routes to assist with lowering the mean travel speeds on these routes.

Recommendation

The following changes are recommended in the vicinity of TKKM o Te Hiringa, Tainui Full Primary and Cargill Open Plan Schools:

- Install a permanent 30km/hr speed limit on the full length of all roads to the south of Balmoral Drive between State Highway 32 and the railway line. Roads include: Aberfoyle Place, Arawa Crescent, Arran Place, Benalder Crescent, Benmohr Place, Cargill Street, Glendevon Place, Grampian Street (east), Grampian Street (south), Kahu Street, Kaka Crescent, Kereru Street, Kiwi Street, Koreke Place, Korimako Place, Koropio Place, Kotuku Place, Kuku Place, Matata Place, Moa Place, Morvern Crescent, Ngatuku Place, Pateke Place, Piopio Place, Poaka Place, Pukeko Place, Ruru Place, Tainui Street, Takahe Place, Tarapunga Place, Tararua Place, Tieke Place, Toroa Place, Waianiwa Place, Waiiti Place, Waikato Place, Waimate Crescent, Waimea Place, Waipapa Street, Waipuna Place, Wairakei Place, Wairoa Place, Waitangi Place and Waitara Place.
- Install permanent speed limit signs Arawa Crescent, Kahu Street, Tainui Street, Kotuku Place, Morvern Crescent (east and west), Arran Place, Grampian Street (east) and Benalder Crescent (east and west) at their intersection with Balmoral Drive.
- Install school threshold treatments on Tainui Street on the approaches to TKKM o Te Hiringa and Tainui Full Primary school and on Grampian Street (east) either side of Cargill Open Plan School.
- Upgrade the existing three patrolled zebra crossings onto raised platforms. Consider relocating the crossing on Grampian Street (east) closer to the reserve for better connectivity.

- Install a raised platform on Tainui Street south of Balmoral Drive.
- Consider installing multiple pedestrian crossing facilities (side or central islands) on Arawa Crescent at various locations to provide pedestrian connection to the reserve area and assist with speed management.

6.1.8 Bishop Edward Gaines Catholic School

The only vehicle and pedestrian access to Bishop Edward Gaines Catholic School is from Mossop Road. There are no pedestrian or cycle facilities provided in the area.

Figure 42 Bishop Edward Gaines Catholic School



Safety and speed information from MegaMaps shows the following.

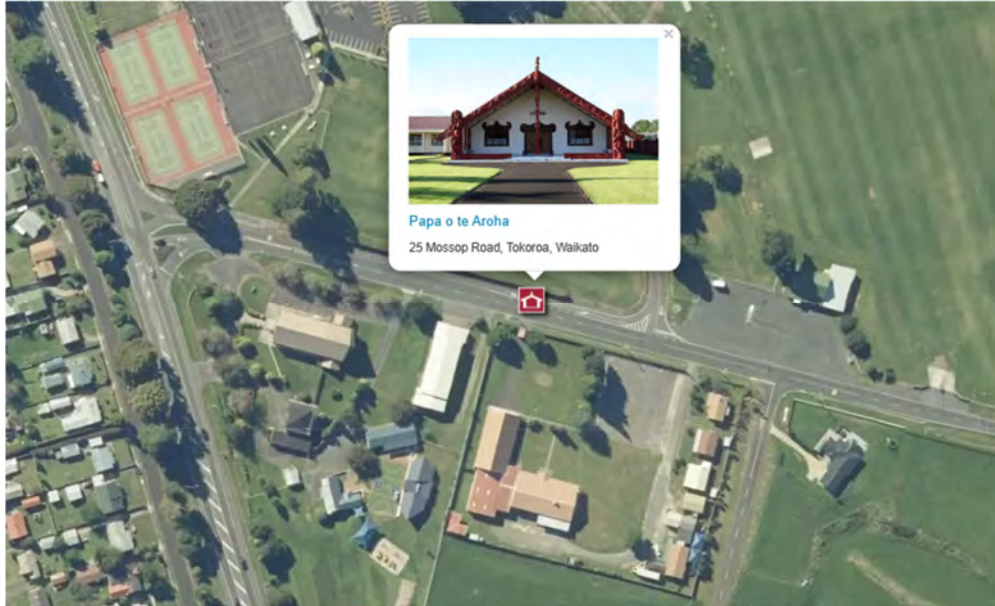
Mossop Road

<i>Posted speed limit</i>	60km/hr	<i>AM Peak mean speed</i>	36km/hr
<i>Safe and Appropriate Speed</i>	50km/hr	<i>PM Peak mean speed</i>	38km/hr

Mossop Road is a collector road with a 60km/hr speed limit for the first 450m after which the speed limit increases to 80km/hr for 650m before changing to an open road speed limit.

The first 450m of Mossop Road provides access to a church, school, Papa o te Aroha marae, an events centre and sports grounds as well as the side road of Pellikan Place.

Figure 43 Papa o te Aroha marae



When there is an activity or multiple activities in the area it can get very busy, an example of the resulting parking is shown below.

Figure 44 Parking on Mossop Road



Due to the number of driveways and the increase in traffic using Pellikan Place once the extension to Dumfries Road is completed a flush median should be installed to provide separation between turning and through traffic. A footpath should also be provided on the southern side of the road to provide access to the adjacent properties as well as Pellikan Place with a connection provided across Mossop Road near the intersection with State Highway 1.

The location of Papa o te Aroha marae is currently not identified and advance and directional signage should be installed to show the location of the marae.

Recommendation

The following changes are recommended in the vicinity of Bishop Edward Gaines Catholic School:

- Install a permanent 30km/hr speed limit on Mossop Road from State Highway 1 to 150m east of Pelliken Place.
- Install permanent speed limit signs on Mossop Road at the intersection with State Highway 1.
- Install school threshold style treatment at the change in speed limit 150m east of Pelliken Place.
- Install a footpath on the southern side of Mossop Road between State Highway 1 and Pelliken Place.
- Install a raised platform on Mossop Road east of the access to the Catholic Church to provide for pedestrian connection and as a speed management treatment.
- Reconfigure the road layout to provide for a flush median on Mossop Road between State Highway 1 and the threshold 150m east of Pelliken Place.
- Install advance and directional marae signage for Papa o te Aroha marae on both approaches to the marae

6.1.9 Amisfield School

The only vehicle and pedestrian access to Amisfield School is from Moffat Road. The footpath on the southern side of Moffat Road connects to a pedestrian crossing point on State Highway 1. There are no cycle facilities provided in the area.

Figure 45 Amisfield School



Safety and speed information from MegaMaps shows the following.

Moffat Road

<i>Posted speed limit</i>	50km/hr	<i>AM Peak mean speed</i>	30km/hr
<i>Safe and Appropriate Speed</i>	40km/hr	<i>PM Peak mean speed</i>	32km/hr

Moffat Road is an urban local road with a 50km/hr speed limit that provides access to a small rural residential area as well as the Tokoroa Airport.

There is an existing variable speed limit on State Highway 1 of 60km/hr, any changes to the speed limit in the vicinity of the school will need to be coordinated with Waka Kotahi.

Recommendation

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

- Install a permanent 30km/hr speed limit on Moffat Road from State Highway 1 to Lochmaben Road.
- Install permanent speed limit signs on Moffat Road at the intersections with State Highway 1, Dumfries Road and west of Lochmaben Road.
- Install a raised platform on Moffat Road west of Dumfries Road in the vicinity of the pedestrian access from the school to provide for pedestrian connection and as a speed management treatment.

6.2 Town Centre - Tokoroa

Tokoroa Town Centre has number of features that manage vehicle speeds in the area with mean speeds less than 30km/hr. To align driver expectation of what is an appropriate speed with the desired environment it is recommended that a 30km/hr speed limit be applied in the area shown in blue below.

Figure 46 Tokoroa Town Centre



Safety and speed information from MegaMaps shows the following.

Town Centre roads

The information below is an average of the data across all the roads identified above.

<i>Posted speed limit</i>	50km/hr	<i>Mean Free Flow Speed</i>	24km/hr
<i>Safe and Appropriate Speed</i>	30km/hr	<i>Infrastructure Risk Rating</i>	Medium

A review of the crash data shows that there have been four serious crashes in the area with two on Bridge Street and two on Swanson Street, within the last 10 years. Two of the crashes involved pedestrians while the other two were turning movement crashes. The introduction of a lower speed limit in the area will reduce the risk and the severity of these types of crashes.

Recommendation

The following changes are recommended in the vicinity of Tokoroa Town Centre:

- Install a permanent 30km/hr speed limit the full length of the following roads: Bonaly Street, Bonaly Lane, Leith Lane, Leith Place, Logan Street, Logan Lane, O'Sullivan Drive, Rosebery Lane, Rosebery Street, and Swanston Street.
- Install a permanent 30km/hr speed limit the following sections of road:
 - Bridge Street – State Highway 1 to Campbell Street
 - Campbell Street – Logan Street to Bridge Street
 - Mannering Street – Logan Street to Bridge Street
 - Roslin Street – Swanston Street to O'Sullivan Drive
 - Torphin Crescent – Roslin Street to O'Sullivan Drive
- Install permanent speed limit signs on; Commerce Street, Mannering Street and Campbell Street approaches to Logan Street; Bridge Lane and Dreghorn Place approaches to Mannering Street and the Torphin Crescent approach to O'Sullivan Drive.
- Install a town centre threshold treatment on Bridge Street at Campbell Street and on Logan Street, Bridge Street and Swanston Street adjacent to their intersection with State Highway 1.

6.3 Other roads

6.3.1 Dalmeny Street

There have been one fatal, one serious, one minor and five non-injury crashes reported on Dalmeny Street in the 10 year period 2012 to 2021. The fatal crash involved a pedestrian being hit in the dark, while the serious crash resulted from a speeding motorcyclist losing control. The remainder of the crashes involved a variety of movements and contributing factors.

Safety and speed information from MegaMaps shows the following.

Dalmeny Street

<i>Posted speed limit</i>	50km/hr	<i>Mean Free Flow Speed</i>	37.57km/hr
<i>Safe and Appropriate Speed</i>	40km/hr	<i>Infrastructure Risk Rating</i>	Medium

Dalmeny Street has three side roads, two of which provide alternative access to either Bridge Street or Baird Road. Any changes to the speed limit in the area would need to include these side roads. Consideration should be given to reducing the speed limit in this area to 40km/hr if supported by the community.

Recommendation

No changes are recommended for Dalmeny Street at this time. Any change to the speed limit will be driven by changes within the wider roading network.

6.3.2 Papanui Road

There have been thirty-nine crashes reported on Papanui Street with three serious, ten minor and twenty-six non-injury crashes in the 10 year period 2012 to 2021. Of the serious crashes two were loss of control crashes that occurred within 50m north of the Bridge Street intersection while the third was 100m north of State Highway 32. All of these crashes involved fatigue and/or distraction.

Safety and speed information from MegaMaps shows the following.

Papanui Road (North)

<i>Posted speed limit</i>	50km/hr	<i>Mean Free Flow Speed</i>	44.91km/hr
<i>Safe and Appropriate Speed</i>	40km/hr	<i>Infrastructure Risk Rating</i>	Low Medium

Papanui Road (South)

<i>Posted speed limit</i>	50km/hr	<i>Mean Free Flow Speed</i>	42.55km/hr
<i>Safe and Appropriate Speed</i>	40km/hr	<i>Infrastructure Risk Rating</i>	Low Medium

Papanui Road is a bus route with buses passing through every hour between 9am and 3pm. The safe and appropriate speed of 40km/hr is inconsistent with the secondary collector function of the road.

Due to the high number of crashes in the vicinity of the Bridge Street roundabout consideration should be given to investigating additional safety improvements in this area.

Recommendation

No changes are recommended for Papanui Road at this time however consideration should be given to additional safety improvements at the Bridge Road/Papanui Road intersection.

6.3.3 Pellikan Road / Dumfries Road

Pellikan Road has recently been connected to Dumfries Road creating a connection between Mossop Road and Moffat Road. Pellikan Road currently has a speed limit of 60km/hr while the speed limit on Dumfries Road is 50km/hr.

Figure 47 Pellikan Road / Dumfries Road extension



Safety and speed information from MegaMaps shows the following.

Pellikan Road

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

Dumfries Road

<i>Posted speed limit</i>	50km/hr	<i>Mean Free Flow Speed</i>	31km/hr
<i>Safe and Appropriate Speed</i>	60km/hr	<i>Infrastructure Risk Rating</i>	Low

Both roads are access roads that provide access to the adjacent residential properties and the Tokoroa Cemetery.

Figure 48 On street parking on Dumfries Road



As Dumfries Road has the lower speed limit, the speed limit on Pellikan Road should be lowered to match and provide consistency to drivers.

Recommendation

The following changes are recommended for Pellikan Road and Dumfries Road:

- Install a permanent 50km/hr speed limit on Pellikan Road and the extension of Dumfries Road.

- Install permanent speed limit signs on Pellikan Road at the intersection with Mossop Road.
- Install pedestrian crossing points either side of the cemetery to provide defined crossing points between the on-street parking and the cemetery. Alternatively switch the on-street parking to the access from the eastern side of the road and use the change in road alignment to create a traffic calming feature.
- Monitor vehicle speeds and investigate other speed management features as required.

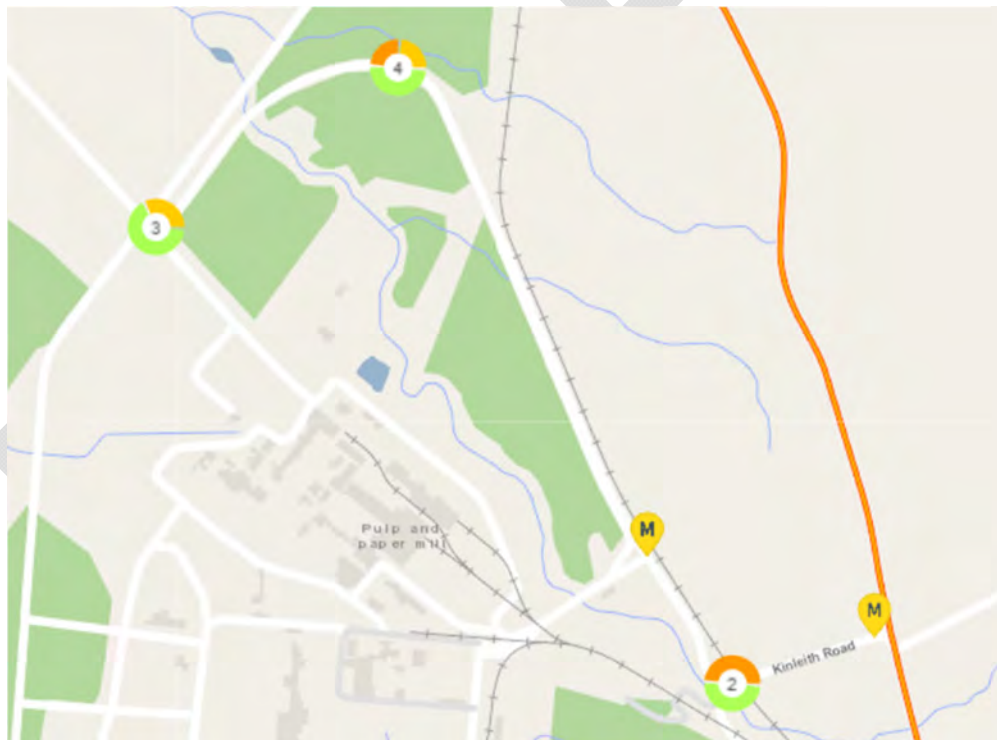
7. Tokoroa surrounds

7.1 Other roads

7.1.1 Kinleith Road

Kinleith Road is a collector road that runs between State Highway 1 and Old Taupo Road around the Kinleith Paper Mill and is 3km long. There have been two serious, four minor and five non-injury crashes reported in the 10 year period 2012 to 2021. The most common factor in the crashes was fatigue with drivers falling asleep.

Figure 49 Kinleith Road crashes



Safety and speed information from MegaMaps shows the following.

Kinleith Road

<i>Posted speed limit</i>	100km/hr	<i>Mean Free Flow Speed</i>	47.41km/hr
<i>Safe and Appropriate Speed</i>	80km/hr	<i>Infrastructure Risk Rating</i>	Medium

As this route can be used as an alternative route to state highway a programme of improvement works should be developed to reduce the risk to users. The majority of crashes are loss of control single vehicle crashes with fatigue being a factor, treatments such as edgeline and centreline ATP should be installed.

Due to the number of hazards in the section of Kinleith Road from State Highway 1 to the Mill entrance the speed limit in this area should be lowered.

Figure 50 Kinleith Road proposed speed limit change



Recommendation

The following changes are recommended for Kinleith Road:

- Lower the speed limit to 80km/hr for the section of Kinleith Road from State Highway 1 to Mill entrance.
- Install threshold style treatments at the change in speed limit locations.
- Install edgeline and centreline ATP along the full length of the road.

Further changes to the speed limit on Kinleith Road will need to be considered as part of a wider strategy for the rural roading network.

8. Summary

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

Report Section	School / Road Name	Recommendations
2.1.1	Putaruru College	<p>Install a 30km/hr permanent speed limit Junction Street, Riverview Street, Peace Street and Porritt Place.</p> <p>Install school threshold style treatment on Junction Street at the intersection with State Highway 1.</p> <p>Install permanent speed limit signs on Griffiths Street on the approach to Riverview Street.</p> <p>Consider installing pedestrian crossing facilities on Junction Street and Riverview Street.</p>
2.1.2	Te Wharekura o Te Kaokaoroa o Patetere School	<p>Install a permanent 30km/hr speed limit on Charles Crescent between 100m north of Clothier Street and Anna Place.</p> <p>Install school threshold style treatment at the change in speed limit points on Charles Crescent.</p> <p>Consider installing a raised crossing point on Charles Crescent in the vicinity of the school entrance.</p>
2.1.3	St Mary's Catholic School	<p>Install a permanent 30km/hr speed limit on the full length of MacKenzie Street.</p> <p>Install school threshold style treatment at the change in speed limit points on Mackenzie Street.</p> <p>Upgrade the existing crossing point on Mackenzie Street to a raised pedestrian crossing.</p>
2.1.4	Putaruru schools - alternative treatment	<p>Create a 30km/hr residential area encompassing Putaruru College, Te Wharekura o Te Kaokaoroa o Patetere School and St Mary's Catholic Schools and the surrounding residential area in Putaruru.</p> <p>Install a permanent 30 km/hr speed limit on the full length of the following roads: Anne Place, Buckland Street, Central Street, Charles Crescent, Clothier Street, Elizabeth Street, Griffith Street, High Street (Putaruru), Junction Street, Kensington Street (Putaruru), Mackenzie Street, Marchant Street, Margaret Street (Putaruru), Meadow Street, Peace Street, Philip Street (Putaruru), Pit Street, Prospect Street, Riverview Street, Terrace Street, View Street.</p>

Report Section	School / Road Name	Recommendations
		Install permanent speed limit signs on Central Street, Junction Street, Kensington Street (Putaruru), Mackenzie Street, Margaret Street (Putaruru), and Terrace Street approaches to State Highway 1.
2.1.5	Putaruru Primary School	<p>Install a permanent 30km/hr speed limit on the full length of Kennedy Drive and Nola Street.</p> <p>Install school threshold style treatment at the change in speed limit points on Kennedy Drive east of Barnett Street and west of Totara Street.</p> <p>Install speed limit signage on the Barnett Street and Matai Crescent approaches to Kennedy Drive.</p> <p>Upgrade the existing crossing point on Kennedy Drive to a raised pedestrian crossing.</p>
2.2.1	Neal Street	<p>Install a permanent 30km/hr speed limit the full length of the following roads: Cambridge Street, Commerce Street, Commerce Lane and Market Lane.</p> <p>Install a permanent 30km/hr speed limit on Neal Street between State Highway 1 and Anderson Street</p> <p>Install threshold style treatments on Neal Street at the intersection with State Highway 1 and west of Anderson Street.</p> <p>Install permanent speed limit signs on Market Street on the approach to State Highway 1.</p>
3.1.1	Lichfield School	<p>Install a variable 60km/hr speed limit on Lichfield Road from 220m west of Kells Lane to 280m east of Kells Lane</p> <p>Install a permanent 60km/hr speed limit on Kells Lane from Lichfield Road to its end.</p> <p>Install a variable school threshold style treatment at the change in speed limit points on Mackenzie Street.</p>
3.1.2	Te Waotu School	<p>Install a permanent 60km/hr speed limit on the following sections of road:</p> <ul style="list-style-type: none"> o Waotu Road from Lake Arapuni Road to 330m north of Lake Arapuni Road o Lake Arapuni Road – 150m west of Waotu Road to Waotu Road o Wiltsdown Road – Waotu Road to 150m east of Waotu Road. <p>Install school threshold style treatment at the change in speed limit points on Waotu Road, Lake Arapuni Road and</p>

Report Section	School / Road Name	Recommendations
		Wiltsdown Road
3.2.1	Arapuni Road	<p>Install edgeline and centreline ATP along the full length of the road.</p> <p>Undertake shoulder widening and barrier treatments in appropriate locations.</p> <p>Review existing signage and upgrade as necessary.</p> <p>Install advance and directional marae signage for Mangakaretu marae on both approaches to the marae.</p>
3.2.2	Domain Road	<p>Extend the edgelines on both sides of the road from the existing to RP 1800.</p> <p>Install edge marker posts from on both sides of the road from the old railway line to Harris Road.</p> <p>Install advance and directional marae signage for Whakaaratamaiti marae on both approaches to the marae.</p>
3.2.3	Lake Arapuni Road	<p>Install curve advisory signage on the section of Lake Arapuni Road between Huihuitaha Road (south) and Waotu Road as required.</p> <p>Install advance and directional marae signage for Matiti Pa marae on all approaches to the marae.</p>
3.2.4	Ngatira Road	<p>Lower the speed limit to 60km/hr between RP9350 and the end of the road.</p> <p>Install permanent speed limit signs at RP9350</p> <p>Install advance and directional marae signage for Ngatira marae.</p>
3.2.5	Old Taupo Road	<p>Install edgeline and centreline ATP along the full length of the road.</p> <p>Undertake shoulder widening and barrier treatments in appropriate locations.</p> <p>Review existing curve warning signage and upgrade as necessary.</p>
3.2.6	Waotu Road	<p>Install edgeline and centreline ATP on the section of Waotu Road between Arapuni Road and Old Taupo Road.</p> <p>Install curve advisory signage on the section of Waotu Road between Arapuni Road and Old Taupo Road as required.</p>

Report Section	School / Road Name	Recommendations
3.2.7	Wiltstown Road	<p>Install edgeline and centreline ATP on the full length of Wiltstown Road.</p> <p>Install curve advisory signage on the section of Wiltstown Road between State Highway 1 and Paraonui Road as required.</p> <p>Install advance and directional marae signage for Pikitu marae on both approaches to the marae</p>
4.1.1	Tirau Primary School	<p>South Waikato District Council has no jurisdiction on a State Highway, speed management on State Highways 1 and 27 is the responsibility of Waka Kotahi.</p>
4.3.1	Tapapa Road	<p>Lower the speed limit to 80km/hr for the full length of Tapapa Road.</p> <p>Install permanent speed limit signs at each end of Tapapa Road.</p> <p>Install advance and directional marae signage for Tapapa marae on both approaches to the marae and at the intersections with State Highways 28 and 5.</p>
5.1.1	Kuranui School	<p>Install a variable 60km/hr speed limit on Waiomou Road from 370m east of State Highway 28 to 860m east of State Highway 28.</p> <p>Install school threshold style treatment at the change in speed limit points on Waiomou Road.</p>
5.2.1	Horahora Road	<p>Lower the speed limit to 80km/hr between RP2090 and 4500.</p> <p>Install threshold style treatments at the change in speed limit locations.</p> <p>Install no overtaking lines between RP2090 and 4500.</p> <p>Install edgeline and centreline ATP along the full length of the road.</p> <p>Undertake shoulder widening and barrier treatments in appropriate locations.</p> <p>Review curve warning existing signage and upgrade as necessary.</p>
5.2.2	Okoroire Road	<p>No changes are recommended for Okoroire Road at this time</p>

Report Section	School / Road Name	Recommendations
5.2.3	Sommerville Road	<p>Lower the speed limit to 60km/hr between Okororie Road and RP800.</p> <p>Install threshold style treatments at the change in speed limit locations.</p>
6.1.1	Tokoroa North School	<p>Install a 30km/hr variable speed limit on Paraonui Road from 70m north of Totara Street to Pohutukawa Drive.</p> <p>Install a permanent 30km/hr speed limit on Totara Street, Puriri Place and Kowhai Place.</p> <p>Install variable school threshold style treatment at the change in speed limit points on Paraonui Road.</p> <p>Install permanent speed limit signs on Totara Street at the intersections with Paraonui Road and Baird Road.</p> <p>Upgrade the existing patrolled zebra crossing onto a raised platform.</p>
6.1.2	Forest View High School	<p>Install a 30km/hr variable speed limit on Baird Road from 800m west of Elizabeth Drive to 800m east of Old Taupo Road.</p> <p>Install variable school threshold style treatment at the change in speed limit points on Baird Road.</p> <p>Lower the speed limit to 80km/hr on Baird Road from Old Taupo Road to the existing 50km/hr speed limit.</p> <p>Install permanent speed limit signs on Baird Road at the intersection with Old Taupo Road</p> <p>Create a threshold treatment at the 80/50 speed limit change on Baird Road.</p> <p>Mark cycle symbols on the section of Baird Road between the school and Elizabeth Drive</p>
6.1.3	Tokoroa Central School	<p>Install a permanent 30km/hr speed limit on Clyde Street between Bridge Street and Tay Street.</p> <p>Install school threshold style treatment at the change in speed limit points on Clyde Street.</p> <p>Consider replacing the existing kea crossing with a patrolled zebra crossing on a raised platform.</p>

Report Section	School / Road Name	Recommendations
6.1.4	David Henry School	<p>Install a permanent 30km/hr speed limit on Thompson Street between 60m north of Lancaster Crescent (North) and Fergusson Street.</p> <p>Install school threshold style treatment at the change in speed limit points on Thompson Street.</p> <p>Consider installing a raised crossing point on Thompson Street in the vicinity of the school entrance.</p> <p>Consider creating a 30km/hr residential area encompassing the full length of Fergusson Street, Thompson Street, Lancaster Crescent, York Place, Victoria Place, Maple Place, Oak Place, Kent Street, George Place, Edward Street, Princess Beatrix Avenue, Windsor Place, Mountbatten Place and Edinburgh Street.</p> <p>Install permanent speed limit signs on Thompson Street approach to State Highway 32, and Edward Street and Fergusson Street approaches to Elizabeth Drive.</p>
6.1.5	Tokoroa Intermediate School, Tokoroa High School and Pa Harakeke Teen Parent Unit	<p>Install a 30km/hr variable speed limit on Elizabeth Drive from 50m south of Fergusson Street to 100m north of State Highway 32.</p> <p>Install variable school threshold style treatment at the change in speed limit points on Elizabeth Drive.</p> <p>Install a permanent 30km/hr speed limit on the section of Baillah Street between Duke Street and its end.</p> <p>Install permanent speed limit signs on the Baillah Street approach to Duke Street.</p> <p>Upgrade the existing patrolled zebra crossing onto a raised platform.</p>
6.1.6	Strathmore School	<p>Install a permanent 30km/hr speed limit on the full length of Strathmore Drive, Dunbar Place, Dunkeld Place, Alloa Place, Lauriston Street and Kenmore Place</p> <p>Install permanent speed limit signs at each end of Strathmore Drive.</p> <p>Upgrade the existing patrolled zebra crossing onto a raised platform.</p> <p>Install a 30km/hr variable speed limit on St Andrews Drive from Montrose Place to 40m north of Kinross Place.</p> <p>Install variable school threshold style treatment at the change in speed limit points on St Andrews Drive.</p> <p>Consider replacing the existing kea crossing on St Andrews Drive with a patrolled zebra crossing on a raised</p>

Report Section	School / Road Name	Recommendations
		platform.
6.1.7	TKKM o Te Hiringa, Tainui Full Primary and Cargill Open Plan Schools	<p>Install a permanent 30km/hr speed limit on the full length of all roads to the south of Balmoral Drive between State Highway 32 and the railway line. Roads include: Aberfoyle Place, Arawa Crescent, Arran Place, Benalder Crescent, Benmohr Place, Cargill Street, Glendevon Place, Grampian Street (east), Grampian Street (south), Kahu Street, Kaka Crescent, Kereru Street, Kiwi Street, Koreke Place, Korimako Place, Koropio Place, Kotuku Place, Kuku Place, Matata Place, Moa Place, Morvern Crescent, Ngatuku Place, Pateke Place, Piopio Place, Poaka Place, Pukeko Place, Ruru Place, Tainui Street, Takaha Place, Tarapunga Place, Tararua Place, Tieke Place, Toroa Place, Waianiwa Place, Waiiti Place, Waikato Place, Waimate Crescent, Waimea Place, Waipapa Street, Waipuna Place, Wairakei Place, Wairoa Place, Waitangi Place and Waitara Place.</p> <p>Install permanent speed limit signs Arawa Crescent, Kahu Street, Tainui Street, Kotuku Place, Morven Crescent (east and west), Arran Place, Grampian Street (east) and Benalder Crescent (east and west) at their intersection with Balmoral Drive.</p> <p>Install school threshold style treatments on Tainui Street on the approaches to TKKM o Te Hiringa and Tainui Full Primary school and on Grampian Street (east) either side of Cargill Open Plan School.</p> <p>Upgrade the existing three patrolled zebra crossings onto raised platforms. Consider relocating the crossing on Grampian Street (east) closer to the reserve for better connectivity.</p> <p>Install a raised platform on Tainui Street south of Balmoral Drive.</p> <p>Consider installing multiple pedestrian crossing facilities (side or central islands) on Arawa Crescent at various locations to provide pedestrian connection to the reserve area and assist with speed management.</p>
6.1.8	Bishop Edward Gaines Catholic School	<p>Install a permanent 30km/hr speed limit on Mossop Road from State Highway 1 to 150m east of Pelliken Place.</p> <p>Install permanent speed limit signs on Mossop Road at the intersection with State Highway 1.</p>

Report Section	School / Road Name	Recommendations
		<p>Install school threshold style treatment at the change in speed limit 150m east of Pelliken Place.</p> <p>Install a footpath on the southern side of Mossop Road between State Highway 1 and Pelliken Place.</p> <p>Install a raised platform on Mossop Road east of the access to the Catholic Church to provide for pedestrian connection and as a speed management treatment.</p> <p>Reconfigure the road layout to provide for a flush median on Mossop Road between State Highway 1 and the threshold 150m east of Pelliken Place.</p> <p>Install advance and directional marae signage for Papa o te Aroha marae on both approaches to the marae</p>
6.1.9	Amisfield School	<p>Install a permanent 30km/hr speed limit on Moffat Road from State Highway 1 to Lochmaben Road.</p> <p>Install school threshold style treatment on Moffat Road east of the intersection with State Highway 1</p> <p>Install permanent speed limit signs on Moffat Road at the intersections with Dumfries Road and west of Lochmaben Road.</p> <p>Install a raised platform on Moffat Road west of Dumfries Road in the vicinity of the pedestrian access from the school to provide for pedestrian connection and as a speed management treatment.</p>
6.2	Tokoroa	<p>Install a permanent 30km/hr speed limit the full length of the following roads: Bonaly Street, Bonaly Lane, Leith Lane, Leith Place, Logan Street, Logan Lane, O'Sullivan Drive, Rosebery Lane, Rosebery Street, and Swanston Street.</p> <p>Install a permanent 30km/hr speed limit the following sections of road:</p> <ul style="list-style-type: none"> o Bridge Street – State Highway 1 to Campbell Street o Campbell Street – Logan Street to Bridge Street o Mannering Street – Logan Street to Bridge Street o Roslin Street – Swanston Street to O'Sullivan Drive o Torphin Crescent – Roslin Street to O'Sullivan Drive

Report Section	School / Road Name	Recommendations
		<p>Install permanent speed limit signs on; Commerce Street, Mannering Street and Campbell Street approaches to Logan Street; Bridge Lane and Dreghorn Place approaches to Mannering Street; and O'Sullivan Drive and Roslin Street approaches to Swanston Street.</p> <p>Install a town centre threshold treatment on Bridge Street at Campbell Street and on Logan Street, Bridge Street and Swanston Street adjacent to their intersection with State Highway 1.</p>
6.3.1	Dalmeny Street	No changes are recommended for Dalmeny Street at this time
6.3.2	Papanui Street	No changes are recommended for Papanui Road at this time however consideration should be given to additional safety improvements at the Bridge Road/Papanui Road intersection.
6.3.3	Pellikan Road / Dumfries Road	<p>Install a permanent 50km/hr speed limit on Pellikan Road and the extension of Dumfries Road.</p> <p>Install permanent speed limit signs on Pellikan Road at the intersection with Mossop Road.</p> <p>Install pedestrian crossing points either side of the cemetery to provide defined crossing points between the on-street parking and the cemetery. Alternatively switch the on-street parking to the access from the eastern side of the road and use the change in road alignment to create a traffic calming feature.</p> <p>Monitor vehicle speeds and investigate other speed management features as required.</p>
7.1.1	Kinleith Road	<p>Lower the speed limit to 80km/hr for the section of Kinleith Road from State Highway 1 to the mill entrance.</p> <p>Install threshold style treatments at the change in speed limit locations.</p> <p>Install edgeline and centreline ATP along the full length of the road.</p>

Appendices

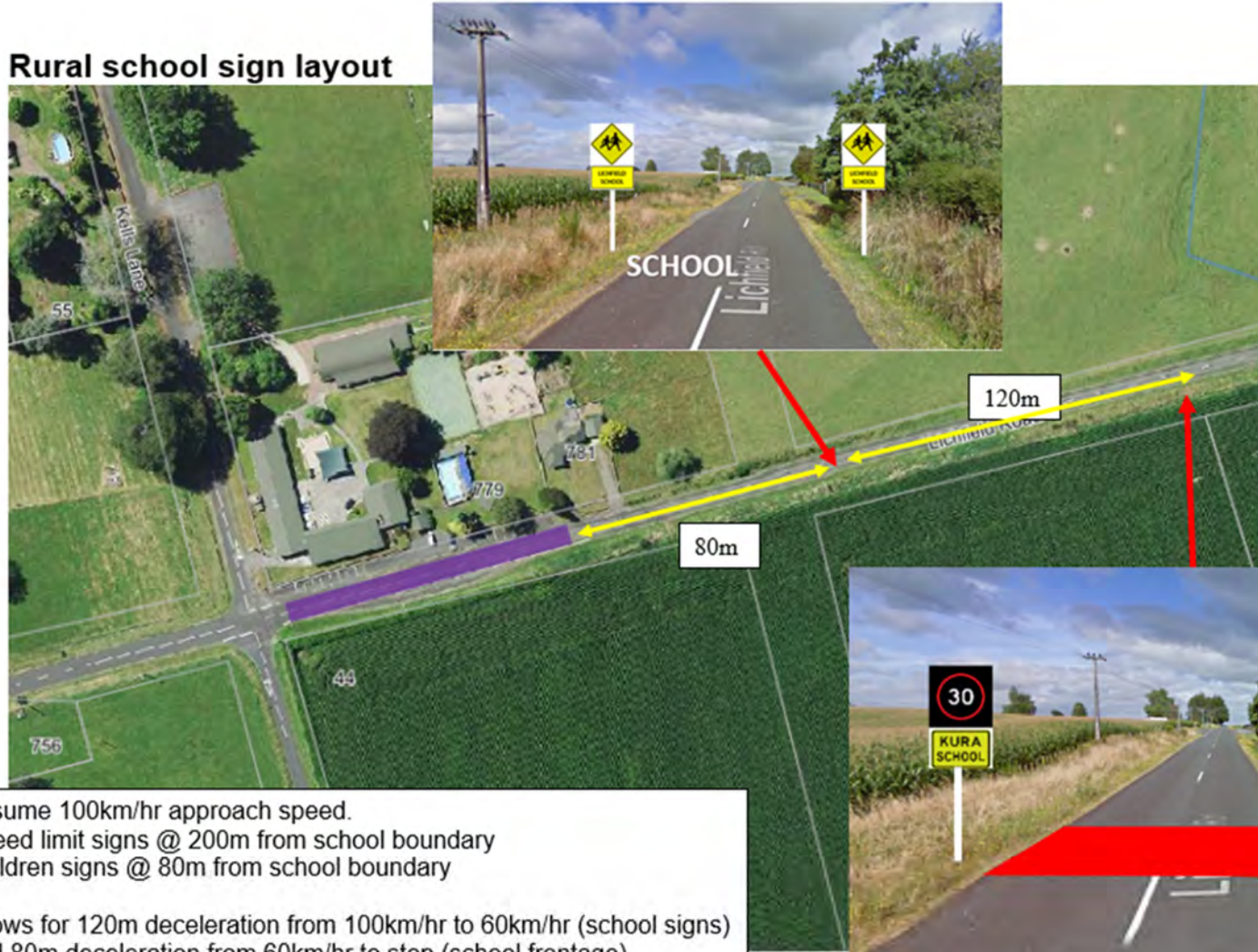


Appendix A – Example threshold layouts

Settlement thresholds



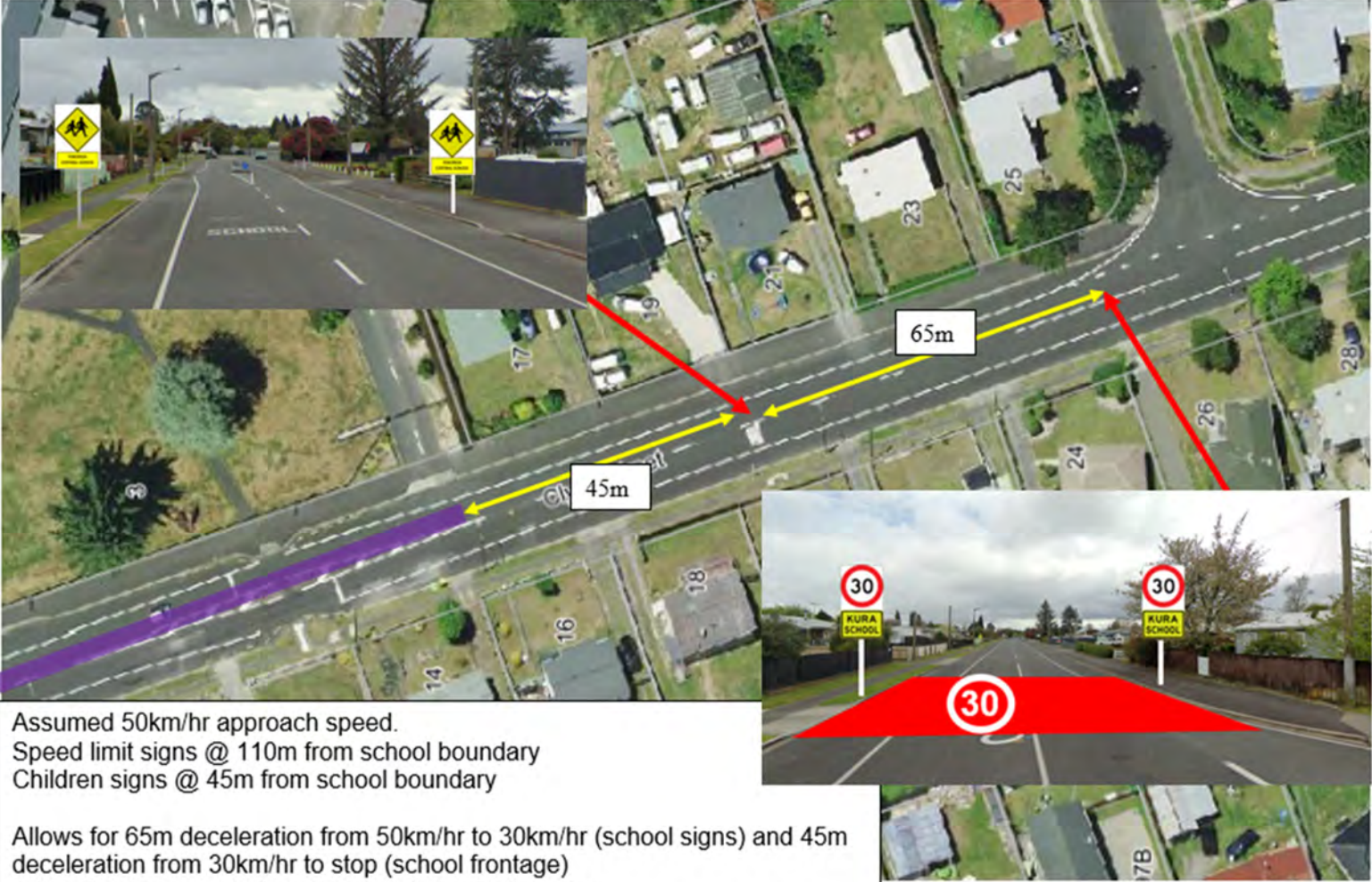
Rural school sign layout



Assume 100km/hr approach speed.
Speed limit signs @ 200m from school boundary
Children signs @ 80m from school boundary

Allows for 120m deceleration from 100km/hr to 60km/hr (school signs)
and 80m deceleration from 60km/hr to stop (school frontage)
Add school name supplementary plate to children sign.

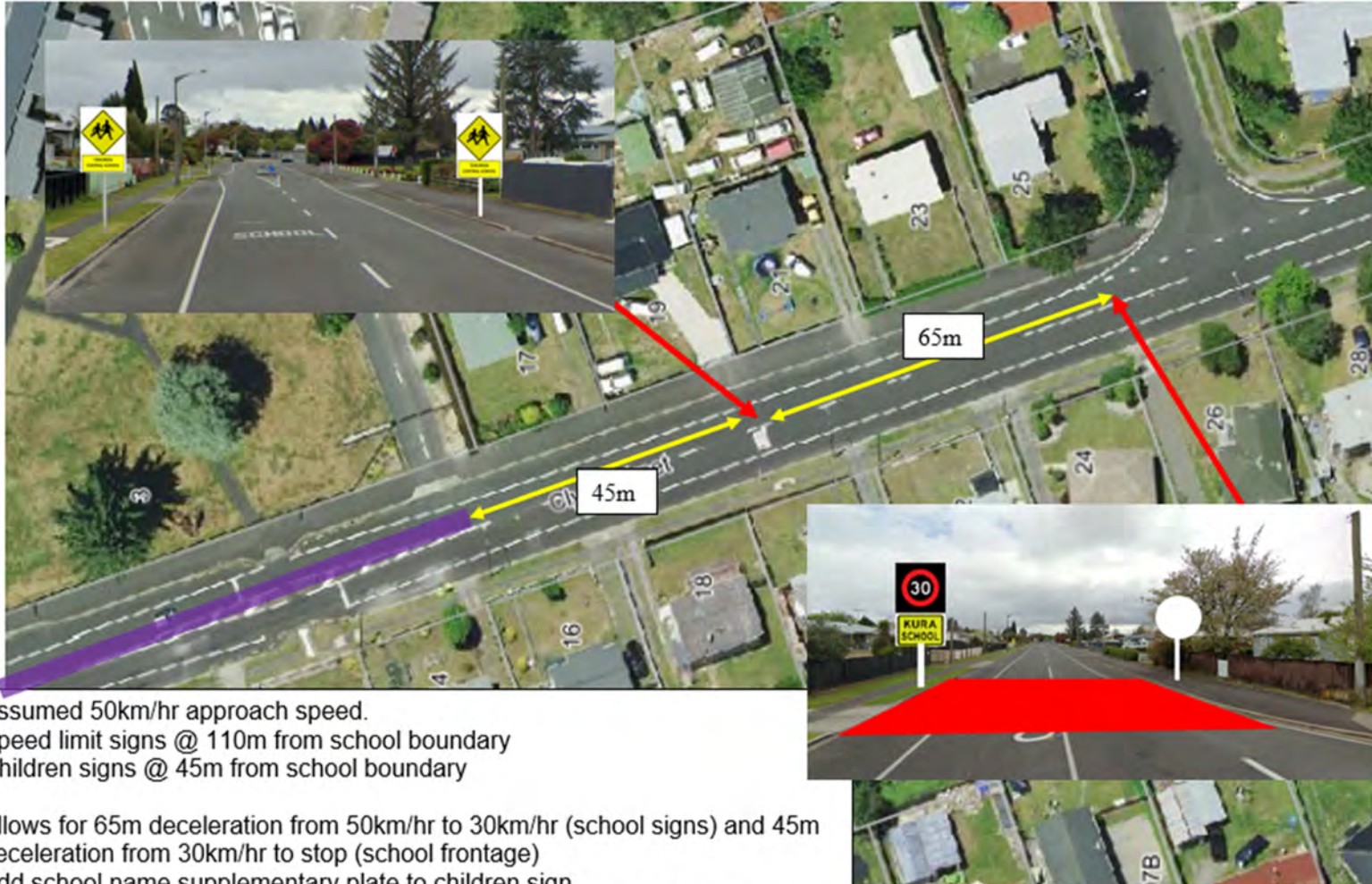
Urban school – permanent speed sign layout



Assumed 50km/hr approach speed.
 Speed limit signs @ 110m from school boundary
 Children signs @ 45m from school boundary

Allows for 65m deceleration from 50km/hr to 30km/hr (school signs) and 45m deceleration from 30km/hr to stop (school frontage)
 Add school name supplementary plate to children sign.
 If there is a zebra crossing present, use crossing sign in place of children sign.

Urban school – variable speed sign layout



Assumed 50km/hr approach speed.

Speed limit signs @ 110m from school boundary

Children signs @ 45m from school boundary

Allows for 65m deceleration from 50km/hr to 30km/hr (school signs) and 45m deceleration from 30km/hr to stop (school frontage)

Add school name supplementary plate to children sign.

If there is a zebra crossing present, use crossing sign in place of children sign.

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