Agenda

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Ordinary meeting of the

Selwyn District Road Safety Sub-Committee

To be held in

Executive Meeting Room 1

Selwyn District Council Headquarters

2 Norman Kirk Drive, Rolleston

On Monday 20 November 2017

Commencing at 9.30 am

SELWYN DISTRICT ROAD SAFETY SUBCOMMITTEE TO BE HELD
IN MEETING ROOM 1
AT THE SELWYN DISTRICT COUNCIL HEADQUARTERS
ROLLESTON ON MONDAY 20 NOVEMBER 2017
COMMENCING AT 9:30 AM

A G E N D A

COMMITTEE

Councillors Mrs N Reid (Chairperson), Mr B Mugford, Acting Canterbury Regional Road Policing Manager P Dean (NZ Police), Mr D Boyce (NZ Trucking Association), Ms J Dickinson (New Zealand Transport Agency)

SDC SUPPORT STAFF

Mrs N Tinning (Road Safety Co-ordinator), Mrs S Hautler (School Road Safety Co-ordinator), Mr A Mazey (Asset Manager Transportation), Mr M Chamberlain (Roading Engineer), Mrs J Harkerss (Secretary)

1. APOLOGIES

2. CONFIRMATION OF MINUTES

Minutes of an Ordinary Meeting of the Selwyn District Road Safety Subcommittee held on 25 September 2017.
(Pages 1 - 4)

Recommendation:

"That the minutes of the ordinary meeting of the Selwyn District Road Safety Subcommittee held on 25 September 2017 be confirmed."

3. CORRESPONDENCE

4. MATTERS ARISING FROM THE MINUTES

5. CHAIRS REPORT
(Pages 5 - 9)

6. JOINT ROAD SAFETY CO-ORDINATORS REPORT

7. PARTNER REPORTS:
NZTA, NZ TRUCKING ASSN, NZ POLICE
- current issues and forthcoming road safety programmes

8. MEETING SCHEDULE
(Pages 10 - 11)

9. REGIONAL ROAD SAFETY WORKING GROUP DRAFT NOTES
(Pages 12 - 15)

10. SPEED LIMIT REVIEW

11. LTP ROAD SAFETY PROJECTS / BUDGET

12. ACTIVE STOP AHEAD SIGN TRIAL - FINAL REPORT
(Pages 16 - 41)

13. SELWYN ROAD SAFETY INTERSECTIONS CAMPAIGN

14. GENERAL BUSINESS

MINUTES OF THE
SELWYN DISTRICT ROAD SAFETY SUBCOMMITTEE
HELD IN EXECUTIVE MEETING ROOM ONE
AT THE SELWYN DISTRICT COUNCIL HEADQUARTERS ROLLESTON
ON MONDAY 25 SEPTEMBER 2017
COMMENCED AT 9.30 AM

1. COMMITTEE

Councillor N Reid (Chairperson), Mr D Boyce (NZ Trucking Assn) and Ms J Dickinson (NZ Transport Agency).

2. IN ATTENDANCE

Mr D Ward (Chief Executive), Mrs N Tinning (SDC Road Safety Coordinator), Mrs S Hautler (SDC School Road Safety Co-ordinator), Mr M Chamberlain (SDC Asset Engineer, Transportation), Mr B Wong (SDC Transportation Asset Planner), Councillor M Alexander, Mrs J Gallagher (Malvern Community Board Chair) and Mrs J Harkerss (Secretary).

3. APOLOGIES

Councillor B Mugford

5. CONFIRMATION OF MINUTES

Minutes of the ordinary meeting of the Selwyn District Road Safety Subcommittee held in the Selwyn District Council Headquarters, Rolleston on Monday 26 June 2017

Moved – Mrs J Dickinson /Seconded – Mr D Boyce
'That the minutes of the ordinary Meeting of the Selwyn District Road Safety Subcommittee held on Monday 26 June 2017 be taken as read.'

CARRIED

6. MATTERS ARISING FROM MINUTES 26 JUNE 2017

Nil

7. CHAIRS REPORT

Referring to her report Councillor Reid noted that ACC have been removed from the Terms of Reference as they currently do not have the personnel to fill this position. They can be included at a later date.

The Chief Executive Officer acknowledged the work that the partners and SDC are doing as there is rarely an issue on a weekly basis that road safety is not mentioned.

The CEO asked the partners to elaborate on the first and fourth bullet points under section 2 of the Chairs Report.

- NZ Trucking reported that they are present to collaborate with people who are working towards the same goal. Their focus is on launching the road safety truck. In the past two weeks there have been 2000 people through it.
- NZTA reported that they are part of this committee to improve safety outcomes. Noting that we will get better outcomes if we work together and share data. They are working on Roading Projects, advertising and negotiating with the Police on national policing projects over the next three years.

Councillor Alexander asked if the committee has a role in discussing community concerns. Yes it does as per the Terms of Reference - bullet point 1 under purpose.

SDC focus for the next three months:

- Drive Phone Free - (25 September to 17 October)
- Fatigue – (18 October to 19 November)
- Drink Driving - (20 November to 7 January 2018)
- 20K Either Way – (16 October to 10 November)
- Ongoing planning for Summer Active Transport Campaign and Cycle Skills Pilot.

CEO questioned how information is shared about damaged roads.

- NZ Trucking Association advised that they mainly deal with State Highways so are not so good at reporting issues on rural roads.
- SDC Asset Engineer advised that Council does not get many calls from trucking companies. SDC does communicate with Fonterra in regard to upcoming work programmed. NZ Trucking would like to be included in this.

CEO mentioned that on a personal note he has experienced issues with agricultural vehicles and their rights on the roads.

- NZTA advised that there are not a lot of crashes reported with these types of vehicles.
- SDC – these types of vehicles don't seem to be an issue although we do have problems with the larger vehicles damaging guard rails and the like.

What are NZTA and NZ Trucking Association expectations of SDC:

- NZ Trucking Association – If SDC have any issues please advise them so that they are aware.
- NZTA – Prepared to be a contact at NZTA if SDC have any concerns or issues.

Rakaia Gorge visibility:

- SDC – This is State Highway 77. NZTA have a minor improvement project and they are waiting for funding before progressing this.
- NZTA – Have $300,000 to 1M next year for minor improvements that don't need a business case.

How does SDC decide on minor improvements?

- Focus on feedback from Councillors, service requests etc.

- Adjoining land owners are spoken to with the majority agreeing to the improvements.

Crash Data is sourced from NZTA Communities at Risk Register. There is a trend with over 75 year olds being involved in crashes with rural intersections being of major concern.

Mature Drivers

- SDC contracts Age Concern to deliver mature driver programmes to those who want to continue driving. Due to limited public transport in our district these courses are useful in giving these drivers the confidence that they need to continue.

The topography of the district lends to intersection crashes in Selwyn.

Reactive flashing stop warning signs:

- No fatal crashes since the start of the trial.
- A perception survey is being undertaken this week in conjunction with the Police.

Driver Licence:

- There is a focus from Local Government that rural children need a licence to get from A to B as there is no public transport.
- Rolleston College is working through a policy on students driving.

It was noted that the SDC Road Safety profile needs to be increased. This is being undertaken at present and is being used more on printed material.

8. BUDGET / FINANCIALS

As per the Chairs Report.

Moved – Councillor Reid / Seconded - Ms J Dickinson
'That the Selwyn District Road Safety Sub-Committee receives the Chairs Report for information.'

CARRIED

9. ROAD SAFETY CO-ORDINATORS REPORT

The Road Safety Co-ordinators presented their report on the programmed campaigns and activities for the period September to December.

Selwyn Road Safety will have a presence at the Selwyn Motor Fest day on Sunday 26 November possibly focusing on drink driving. Due to the inability to spend a lot of time with individuals there will need to be quite a bit of promotional material to hand out.

The Drink Driving campaign will be run in conjunction with other Canterbury Regional Councils. This is promoted through licensed premises including sports clubs. NZTA will be conducting a national campaign leading up to Christmas.

NZTA to provide a schedule of campaigns for this financial year.

10. PARTNER REPORTS

Verbal feedback throughout meeting

11. MEETING SCHEDULE

Two monthly meetings have been proposed with the theme of the next meeting being:

1. rural intersections and
2. how we measure the effectiveness of the campaigns we are doing.

Moved – Councillor Reid/Seconded – Mr D Boyce
'That the reports be received.'

CARRIED

12. GENERAL BUSINESS

As there was no presence at the meeting from the Police the secretary to email Inspector Cooper requesting a contact person for the Road Safety Co-ordinators to deal directly with in regard to campaigns and any assistance required.

Meeting closed 11.18am

DATE OF NEXT MEETING

Monday 20 November 2017
Monday 29 January 2018
Monday 26 March 2018
Monday 28 May 2018
Monday 23 July 2018
Monday 24 September 2018
Monday 26 November 2018

_____ _____

Chairperson Date

REPORT

TO:	Selwyn District Road Safety Committee
FOR:	Meeting – 20 November 2017
FROM:	Chair, Selwyn District Road Safety Committee
DATE:	14 November 2017
SUBJECT:	**CHAIR'S REPORT**

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1. RECOMMENDATION

'That the Selwyn District Road Safety Committee receives the Chair's Report, for information.'

2. THEME FOR THIS MEETING

In response to the discussion about the Communities at Risk Register ratings at the last meeting, we were in agreement with this meeting's theme of rural intersections.

3. ROAD SAFETY RELATED EVENTS

Asia-Pacific Cycling Congress was held in Christchurch on 17 to 20 October which I attended. Many interesting speakers which included presentations on making roundabouts safer for cyclists, KiwiRail's work at designing safer rail crossings for pedestrians and cyclists, and Christchurch's programme of separated cycleways. A number of presentations have been loaded onto the congress website and are available for download http://www.apcc2017.com/apcc17/programme

Our Road Safety Co-ordinators will talk about other events which included the Selwyn District Road Patrollers Pool Party held on Saturday 11 November at the Selwyn Aquatic Centre. Also the Selwyn Motorfest which is being held in Rolleston on Sunday 26 November for which SDC Road Safety team will be in attendance.

4. PLANNING THE WAY FORWARD

This was included in our last road safety committee meeting. We had a great discussion about the Communities of Risk Register findings which, unfortunately meant we did not have sufficient time to discuss the responses received to my June email by each of the partner agencies.

To refresh your minds, we were planning how to chart our way forward so I posed the following questions and asked for comments.

- Why are we here?
- What do we want to measure?
- What information do we want to receive?
- How will we measure our success?

Therefore I would like to carry it across to this meeting to discuss if time is available.

The following responses were received:

Why are we here?	**NZ Trucking Association**
	The committee should have a purpose statement that covers its intentions. Including: • Aim to influence road safety outcomes in the Selwyn District. • Consult and collaborate with road user sector groups and specialist advisors. • Promote education and enforcement. • Support safer road design improvements. • Support road safety initiatives. • Provide a road safety leadership role within the community. • Contribute to and support regional and national road safety strategies. • Provide a conduit for networking and information sharing. • Raise public awareness.
	New Zealand Police
	• What do we want to do - to reduce fatalities and serious crashes on the Selwyn Road network. • What do we do: o Share our data o Establish hot spots o Share our resources o Collectively problem solve • How - Through a tasking and coordination process where we hold each other accountable for the tasks we agree to undertake
	Selwyn District Council
	• To provide information on recent activities, campaigns, advertising etc. • To receive guidance and information from our partners • To discuss future coordination and collaboration with our partners • Maintain Road Safety profile and awareness

What do we want to measure?	**NZ Trucking Association**
	Before we can measure we need to have baseline data that relates to an agreed action plan. The action plan should reflect key road safety priorities, including: • Intersections • Road design • Crashes • Vulnerable Road Users • Drink / Drug Driving • Education
	Selwyn District Council
	• That we are working to the agreed Road Safety Action Plan • Delivery of planned, consistent, coordinated road safety measures throughout the District • Measure by Community feedback and participation in activities and campaigns • LTP measures are: • Road Safety: The change from the previous financial year in the number of fatalities and serious injury crashes on the local road network, expressed as a number (Progressively reducing number of fatal and serious crashes). • The proportion of residents rating the performance rating of promotion of road safety in the Resident Survey as good or very good (≥55%). • The proportion of residents rating the performance rating of making district roads and intersections safer in the Resident Survey as good or very good (≥40%).

What information do we want to receive?	**NZ Trucking Association**
	• Good quality data and information that supports the key road safety priorities included in the action plan. • Information on new road safety initiatives. • Feedback on existing road safety programs from other communities.
	Selwyn District Council

	Along with valuable input into the RSAP:
	• From NZTA
	  ○ Advertising information/collateral in advance to have the ability to coordinate piggyback campaigns.
	  ○ Further data/demographics/breakdown on 'high strategic priority' communities identified in the Communities at Risk Register.
	• From NZ Police
	  ○ Campaigns/target projects locally and nationally
	• From ACC
	  ○ Campaigns/target projects locally and nationally

How will we measure success?	**NZ Trucking Association**
	• This is always a hard one, how can you guarantee that the measures that have been put in place have delivered the result that you are looking for, and there wasn't other factors involved?

	• But then equally what would have happened if you did nothing? • We can certainly measure data, and this will certainly measure any developing trends which can then be used to focus our attention. • Regular surveying of a portion of the districts population can measure knowledge, understanding and perceptions of road safety issues. • We need to be flexible, if something is clearly not working, then we shouldn't be shy about trying a new approach.
	Selwyn District Council
	• Delivery of programmed campaigns and activities in a timely and coordinated manner. • Programme feedback forms. • Community participation and feedback.
	New Zealand Police
	• The data required to inform all of this is the crash stats etc. from NZTA. The analysis of it hasn't changed from the last Intel Report we produced some months ago. • I wonder if there is an opportunity to bring in the Geo Lab team from Canterbury University to assist?
	NZTA
	NZTA has requested the following information (for the Selwyn area) from their analytics team as a starting point for developing an evidence base to assist in prioritising effort and investment. **DATA HAS BEEN PROVIDED AND GRAPHED** • Number of Death & Serious Injury crashes over the last 10 years • Map of locations of these crashes • Data on age and licence status of those involved • Data on vehicles involved • Data on contributing factors in these crashes

(a) *Additional is NZTA "Communities of Risk Register 2017"*
NZTA ranking of personal risk shows that Selwyn features highly in the following areas:

- Rural intersections where we rate second highest district in the country
- Older road users (those aged 75 years and older) we rate third highest in the country
- All intersections where we rank sixth.

Rankings for all areas are shown through in the following table:

Category	2015		2017			
	Rank	Fatal & Serious Crashes /100MVKT	Rank	Fatal & Serious Crashes /100MVKT	Rank Change	Change in Fatal and Serious Crashes/ 100MVKT
LOCAL BODY all deaths & serious casualties	**48**	6	**41**	6	**Declining**	**0**
YOUNG DRIVERS of light vehicles aged 16-24yrs	**49**	18	**44**	17	**Declining**	**-1**
ALCOHOL & DRUGS	**48**	1	**45**	1	**Declining**	**0**
SPEED too fast for conditions	**45**	1	**56**	1	**Improving**	**0**
URBAN INTERSECTIONS	**51**	2	**63**	1	**Improving**	**-1**
RURAL INTERSECTIONS	**5**	2	**2**	3	**Declining**	**1**
ALL INTERSECTIONS	**9**	2	**6**	3	**Declining**	**1**
RURAL ROADS loss of control & head-on	**50**	4	**53**	3	**Similar**	**-1**
MOTORCYCLISTS	**46**	106	**61**	78	**Improving**	**-28**
CYCLISTS (DSI/Mhrs)	**59**	1	**61**	1	**Similar**	**0**
PEDESTRIANS (DSI/Mhrs)	**58**	1	**64**	0	**Similar**	**-1**
DISTRACTION	**41**	1	**49**	0	**Improving**	**-1**
FATIGUE	**25**	1	**41**	1	**Improving**	**0**
OLDER ROAD USERS person aged 75year+	**4**	15	**3**	16	**Declining**	**1**
RESTRAINT USE	**65**	0	**65**	0	**Similar**	**0**

(b) Data collection and use

With a substantial amount of raw data available to the District Road Safety Committee from a variety of sources, it is crucial for the Committee to discuss the data that we have access to and spend some time discussing the following:

- What information are we producing/receiving?
- How are we using the data?
- How does it align with our Road Safety Action Plan?

Councillor Nicole Reid
Chair, Selwyn District Road Safety Committee

REPORT

TO:	Selwyn District Road Safety Committee
FOR:	Meeting – 20 November 2017
FROM:	Chief Executive
DATE:	14 November 2017
SUBJECT:	**ADOPTION OF THE AMENDED SELWYN DISTRICT ROAD SAFETY COMMITTEE MEETING SCHEDULE FOR 2018**

RECOMMENDATION

'That the Property Committee adopt the amended Selwyn District Road Safety Committee meeting schedule for 2018.'

1. PURPOSE

At its last meeting on 25 September 2017, the Selwyn District Road Safety Committee adopted a meeting schedule for remainder of 2017 and for the 2018 year.

Since this meeting took place, staff were requested to facilitate a change of all Council-related meetings to Wednesdays. The proposed meeting dates contained within this report reflect this request.

The purpose of adopting this amended meeting schedule is to ensure that the requirements of the Selwyn District Road Safety Committee work programme are met, and to facilitate diary management regarding meeting commitments.

2. PROPOSAL

The proposed amendments to the meeting schedule reflect the request to move meetings from Monday to Wednesday. It is now proposed that meetings will move to the ***third Wednesday*** of every second month.

It should be noted that no meeting is scheduled for April 2018 due to Council's recess period. Extraordinary meetings will be called as required.

The proposed meetings schedule from February 2018 through to December 2018 is shown below. All meetings will commence at 10.00am unless advised otherwise:

- Wednesday 21st February 2018
- Wednesday 20th June 2018
- Wednesday 15th August 2018
- Wednesday 17th September 2018
- Wednesday 12th December 2018

Any changes to the schedule, once adopted, will be advertised publicly via Council Call.

3. AFFECTED PARTIES

Prior to adoption of the schedule of the Council at its meeting of 8 November 2017, the Chair of the Selwyn District Road Safety Committee consulted members of the Committee.

4. OPTIONS

The Selwyn District Road Safety Committee is required to adopt a meeting schedule, and can chose from the following two options at today's meeting:

(a) adopt the amended meeting schedule through to the end of 2018; or

(b) suggest an alternative meeting schedule.

It is the recommendation of staff for the Selwyn District Road Safety Committee to adopt the amended schedule for 2018 at today's meeting.

David Ward
CHIEF EXECUTIVE

Regional Road Safety Working Group – draft notes

Date: Wednesday 1 November 2017

Time: 10.00am – 12:00 noon

Venue: Environment Canterbury, 200 Tuam Street

Attendees: Mayor David Ayers (Chair); David Edge (HDC); Phil Dean (Police); Thomas McNaughton (CCC); Stephen Wright (CCC); Andrew Dixon (TDC), Daniel Naude (TDC); Jeremy Lambert (ADC); Kathy Graham (WDC); Ngaire Tinnings (SDC); Lorraine Johns (ECan); Darren Fidler (ECan).

Apologies: Jenny Dickinson (NZTA), Geoff Rhodes (ADC), Andrew Mazey (SDC), Ken Stevenson (WCD), Al Stewart (Police).

The meeting commenced at 10.05am

Summary of actions

Meeting	Action	Who	Status
1 November 2017	Confirm meeting dates for 2018	Environment Canterbury	
1 November 2017	Revise Terms of Reference and continue work on practical actions for RRSWG	Environment Canterbury, all	
11 May 2017	The Group will revisit finalisation of the Road Safety Implementation Plan following the completion of work on the review of the Regional Land Transport Plan	All	On hold
2 February 2017	Environment Canterbury to coordinate an investigation into the potential to engage a consultant to work with the Group and draft an intersection business plan for the region	Environment Canterbury	On hold until further statistical information is gathered and analysed about road safety data
2 February 2017	Environment Canterbury to schedule a future Road Safety Working Group review into the Group's role	Environment Canterbury	On hold until after decisions on review of the Regional Land Transport Plan

1. Welcome, introductions, apologies

Mayor David Ayers opened the meeting. Apologies were noted.

2. Minutes of the previous meeting

The Minutes of the meeting held 3 August 2017 were confirmed.

3. Regional Transport Scorecard, Darren Fidler

Darren Fidler outlined progress on the development and implementation of the Regional Transport Scorecard. The Scorecard will be used for monitoring progress against RLTP outcomes and objectives.

In terms of the guiding principles behind how it was put together, it involved collating predominantly publicly available information from central and local government (including CTOC data), as this will be a publicly available dashboard. Darren indicated he went back to root source data to understand how it was processed, and confirm that there would be ongoing data collection. The Scorecard will be updated quarterly, though some measurements are not updated that frequently. It is intended there be consistency with what other agencies are producing.

In the future other sources of data might become available – for example as ONRC is updated. The Household Travel Survey has some limitations, so looking at other potential sources in the future will be important.

No targets have been developed yet.

The Group discussed the Scorecard and the role of the group in road safety reporting. It was noted that each measure in the Scorecard was imperative to road safety outcomes.

There was interest in obtaining the Scorecard data broken down to territorial authority level.

4. Update on mode shift research, Darren Fidler

Darren Fidler provided an update on the mode shift research. Darren noted that 75% of freight travels within Canterbury on shorter distance trips. Therefore, long-distance freight mode shift is restricted to 25% of freight.

A question was asked about the size of Canterbury (so intra-regional freight can travel a long way). Central government focuses on inter-regional data collection and intra-regional data is not well canvassed (e-roads have 30/40% coverage). We need to get a better understanding of intra-regional origin/destination of freight (this was proposed in the Stantec report which looked into data gaps).

Darren also noted that environmental impacts and other externalities are not priced in properly, so the optimal mode split for New Zealand as a whole is going to be different from what individual freight movers see. Getting finer level origin-destination data for Canterbury is a crucial next step, as well as considering how best to incentivise people to make the right choices.

A question was raised as to the resilience of rail given it is single track. It was noted that this is also a question of designated versus non-designated corridors.

5. Presentation and discussion on regional and local crash data, Daniel Naude

Daniel Naude presented on regional and local crash data, covering the frequency of crashes, Canterbury road casualty trends, and crash factors.

The following points were discussed:

- The Group was concerned that the trend is moving back up.
- It was agreed that Canterbury-wide, cornering is the most significant issue.
- The Group discussed the importance of education. People still make mistakes – but some people are making poor choice and others are not good at learning. Engineering aims to reduce the impact of mistakes/poor choices.
- A question was raised about the impact of drugs.
- NZTA and ACC have been doing some joint research on age of cars.

Phil Dean then outlined work by police on data analysis for Canterbury and the Selwyn District to inform action plans. Phil noted that the data mixes place, behaviour and car type because it is designed for enforcement purposes.

6. Discussion of purpose of RRSWG

The Group discussed what they saw RRSWG as achieving:

- Inform the RLTP and the ongoing work of the RTC – RRSWG's primary job is to make sure road safety is in front of the RTC
- What happens on the ground is up to each territorial authority
- There is value in RRSWG inputting into ongoing development of plans – eg the Christchurch Road Safety Plan. RRSWG is the best cross-agency group for getting input, and is an opportunity for a regular session on individual priorities and challenging each other
- A standing item should be the implementation of the plan
- RRSWG could promote co-ordination – everyone is analysing data and coming up with plans separately
- We do not have a good data base so it is a good opportunity to share and contribute funding to get surveys done in the region – eg base data, communities attitudes
- RRSWG should track data and undertaking monitoring and evaluation.

AP: Revise Terms of Reference and continue work on practical actions for RRSWG

7. Regional Land Transport Plan update

Lorraine Johns outlined proposed changes to the significance policy and updated the group on the proposed consultation process.

8. Any other business

Futures meetings will be advised once the RTC meeting dates are confirmed.

AP: Confirm meeting dates for 2018

The meeting closed at 12 noon.

Active Stop Ahead Warning Sign Trial

Final Report

October 2017

Contents

Appendices

1. Rationale and Background

Intersection crashes accounted for 38% of all injury crashes on New Zealand roads between 2006 and 2010. In Selwyn District from 2009 to 2013 there were 484 intersection crashes reported. Of these 7 were fatal, 60 were serious injury, 155 were minor injury and 262 were non injury.

In 2010 a scoping study (Mackie 2010) began to understand various intersections ITS based systems to see whether there was the potential for these systems in New Zealand. As a result of this study a Rural Intersection Advanced Warning System (RIAWS) is being trialled at various sites around the country.

Although the RIAWS is proving to be effective their cost is prohibitive for use at lower volume local authority intersections. For this reason a simpler lower cost warning sign was proposed for trial.

The proposed sign includes two LED lights on each side of the stop ahead 200 m advance warning sign. The lights are activated by radar installed on the sign which detect approaching vehicles approximately 150 m from the sign. The lights flash alternately to alert the driver. The lights and radar are powered by a solar panel on top of the sign.

The proposal was presented to NZTA and a trial was approved as per Gazette No. 123.

The approved locations in Selwyn District were:

- Hamptons Road at the intersection with Shands Road
- Hoskyns Road at the intersection with Sandy Knolls Road
- Maddisons Road at the intersection with Weedons Ross Road
- West Melton Road at the intersection with Hoskyns Road

Signs were installed on Maddisons Rd and West Melton Rd in June and July 2016 and the information in this report is for these two sites only.

Signs were later installed on Hamptons Rd approach to Shands Rd but no data collection or analysis has been done at this site which will be reconstructed to a roundabout as part of upgrades associated with the Christchurch Southern Motorway. Signs were not installed on Hoskyns Rd at Sandy Knolls Rd because the intersection was reconstructed with the priority changing from Sandy Knolls Rd to Hoskyns Rd to better match the traffic volumes.

2. Intervention Logic

2.1 Outcome

Safer Road Users.

2.2 Goal

To increase the observance of Stop controls.

2.3 Objective

Installation of Stop Ahead warning signs with LED lights on the Stop control approaches of Maddisons Rd at Weedons Ross Rd and West Melton Rd at Hoskyns Rd to improve awareness of the Stop control.

2.4 Strategies

- Solar Bright to develop the signs and Fulton Hogan to manufacture the signs.
- Preinstallation speed surveys/traffic counts on each of the approaches to the intersections using RAMM consultant as part of traffic counting regime.
- Installation of signs for a two year period by Fulton Hogan.
- Inform the community of the sign installation.
- Undertake surveys at different times – speed surveys, traffic counts – pre and post installation.
- Undertake perception surveys of road users.

3. Technical Analysis Pre-Installation

3.1 Traffic Counts

Road	Location	ADT	Date
Maddisons Rd	East approach to Weedons Ross Rd	2306	November 2015
Maddisons Rd	West approach to Weedons Ross Rd	2205	November 2015
West Melton Rd	East approach to Hoskyns Rd	1276	November 2015
West Melton Rd	West approach to Hoskyns Rd	489	November 2015

3.2 85th Percentile Speed Recorded at 150m from Intersection

Road	Location	Speed	Date
Maddisons Rd	East approach to Weedons Ross Rd	87.5	November 2015
Maddisons Rd	West approach to Weedons Ross Rd	83.5	November 2015
West Melton Rd	East approach to Hoskyns Rd	84.2	November 2015
West Melton Rd	West approach to Hoskyns Rd	84.6	November 2015

4. Impacts and Risk Assessment

The active Stop Ahead warning signs replace the existing static warning signs. Therefore there should only be a positive impact with drivers being provided with additional warning of the Stop control ahead.

There may be a distraction with the flashing lights but as they are associated with a warning sign and the lights draw driver's attention to this the distraction should be minimal.

With the signs being larger than standard signs and the solar panels having an increased height the risk during installation is increased when working under or near power lines. The signs are attached to aluminium poles inserted in ground sockets. As these are only able to be placed vertically in the socket the location under overhead power lines needs to be assessed to ensure the required clearance both during installation and when the sign is in place. The location near or under power lines needs to be consulted with the electricity network owner - in this instance Orion.

Below is a table that projects the outcomes that were sought, including assumptions and recognised risks that will have to be mitigated.

4.1 Project the Outcomes

	Assumptions	Risks
Ultimate Outcomes • Safer Road Users • Safer Roads, Road Sides and Intersections • Safer Speeds • Safer Vehicles (Selwyn Road Safety Strategy to 2020)		
Outcome Safer Road Users	With drivers being more aware of the Stop control there will be slower speeds approaching the control and increased compliance resulting in less serious injuries and deaths.	There may be an expectation that the signs will be at the approaches to all intersections.
Intermediate Outcome Risk of road deaths from drivers not stopping at a Stop control is reduced.	With the warning signs activated by approaching vehicles all drivers will be aware of the Stop control ahead.	

4.2 Expected Safety and Efficiency Gains

The trial signs will have little negative effect on other road users. They will raise driver awareness of the Stop control ahead which should result in better compliance with the Stop control.

There are no efficiency gains with these signs as the focus is about safety and reduced likelihood and severity of intersection crashes. The better observance of the Stop control and more time at a complete stop to judge when to safely proceed through the intersection.

4.3 Benefits

- Reduced likelihood of crashes at rural intersections.
- Reduced social costs with reduced numbers of crashes.
- Improved road safety for all road users.
- Benefit of integrating and implementing a key principle of the Safe System approach.

5. Assessment/Evaluation Method

5.1 Evaluation – Quantitative and Qualitative

Prior to installation

- Speed surveys of vehicles on all approaches to the intersection.
- Metro counter used – speed information and traffic count.

Post installation

- Repeat of the speed surveys as above after installation.
- Collect crash data and a record of enforcement activity (NZTA CAS information and Police enforcement information).
- Questionnaire surveys for road users.
- Note operational issues with the signs and any repairs necessary.
- Record actual costs of the installation and maintenance of the signs.

6. Pre-Installation Marketing and Surveying

6.1 Social Marketing

Articles in local newspapers, Council Call and the SDC website were used to advise the Selwyn community that the trial had been approved and the signs were to be installed.

6.2 Speed Surveys

The speed surveys were undertaken in November 2015 prior to installing the signs. The raw data of the pre-installation speed survey is attached in Appendix B.

7. Post-Installation Marketing and Surveying

The signs were installed in both locations during June and July 2016. No marketing was done about the signs post installation so that drivers were not influenced by the marketing.

7.1 Mock Checkpoints

In October 2017 the Police carried out mock checkpoints on Maddisons Rd at the Weedons Ross Rd, Maddisons Rd intersection. All drivers stopped at the checkpoint were asked five questions by Council staff and invited to make comment on the signs. A summary of the results is attached as Appendix C.

The checkpoints were only held on Maddisons Rd because of the higher traffic volumes. The first check point took place for an hour from 9am to 10am on the east approach to Weedons Ross Rd and the second for an hour from 2pm and 3pm on the west approach to Weedons Ross Rd.

7.2 Traffic Count and Speed Surveys

The post installation speed surveys were undertaken in February 2017. The raw data is attached in Appendix B.

It is interesting that there was an increase in speeds on all four approaches. There has been no further analysis of this result.

Road	Location	Pre ADT	Post ADT	% Change
Maddisons Rd	East approach to Weedons Ross Rd	2306	2878	+24%
Maddisons Rd	West approach to Weedons Ross Rd	2205	2896	+31%
West Melton Rd	East approach to Hoskyns Rd	1276	1402	+10%
West Melton Rd	West approach to Hoskyns Rd	489	503	+3%

Road	Location	Pre Speed	Post Speed	% Change
Maddisons Rd	East approach to Weedons Ross Rd	87.5	87.5	0%
Maddisons Rd	West approach to Weedons Ross Rd	83.5	88.2	+6%
West Melton Rd	East approach to Hoskyns Rd	84.2	90.4	+7%
West Melton Rd	West approach to Hoskyns Rd	84.6	87.1	+3%

8. Checkpoint and Perception Surveys

8.1 Questions

Questions asked at the checkpoint and perception surveys are:

Do you travel on Maddisons Road often?
Yes/No

Did you notice the flashing Stop Ahead warning sign?
Yes/No

Do you regularly get alerted by the warning sign?
Yes/No

Does it make you more aware of the Stop control and encourage you to stop at the intersection?
Yes/No

Are they a positive addition to warning signs at intersections?
Yes/No

Drivers were also asked for brief comments.

The user perception surveys were carried out for an hour in the morning and afternoon as part of a mock checkpoint. A total of 68 drivers were stopped and asked the five questions. All but one of those questioned thought the signs were a positive addition to warning signs at intersections.

The results of the surveys are attached as Appendix C.

9. Issues, Observations and Summary of Trial

There was a delay in the sign installation mainly from a manufacturing point of view.

There was an issue with the location under power lines on an approach at both intersections with the requirement to maintain clearance during installation and the final setup. The mounting system was redesigned for these poles with them being were fixed to base plates that are hinged with pins, and then bolted to the base. This eliminates the need to lift the poles so the clearance during installation is complied with. The location under power lines does need to consider the clearance of the final installation and get the approval of the power company.

The sign on the west approach of Maddisons Rd to Weedons Ross Rd was hit by an out of control (stolen and recklessly driven) vehicle. Other than this incident the signs have operated without issue during the trial.

The installation and marketing has been a joint effort between the Selwyn District Council, the project instigator and sponsor (AMI). There has been little marketing of the signs since installation mainly because we wanted to get the drivers' perceptions of them without any influence.

There has been positive anecdotal feedback about the sign from road users. The local Police spent time parked near the Weedons Ross Rd, Maddisons Rd intersection and observed almost complete compliance with the Stop control. They were parked to not be visible to vehicles approaching the Stop control.

There has also been anecdotal feedback that some drivers still do not stop at the intersection. There have been no reported crashes since the signs have been installed which is the biggest positive from the trial. A printout of crashes at the intersections is attached as Appendix D.

The cost of installation is not fully known because the signs supply and installation was carried out as a sponsorship of the trial. The estimated cost of supply of the sign, posts and ground sockets and installation is $6,000 per sign.

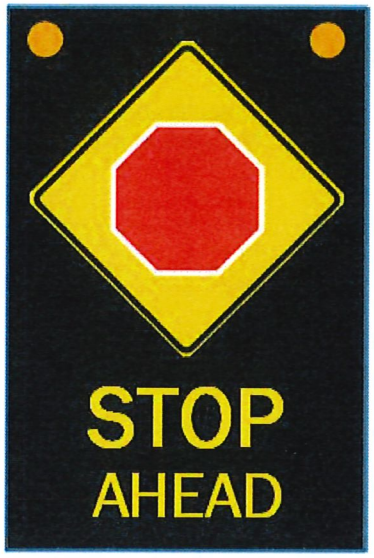
10. Recommendations

The history of crashes for the trial sites has them predominantly during the day so the design of the sign does need to ensure that they provide the additional warning in the daylight. This means the LED lights need to stand out during the day without being too bright in the dark. Having the lights adjusting for the different times of the day would be beneficial.

The signs installed for the trial will remain in place. With the no reported crashes during the trial period and the positive response from road users it is recommended that the signs be approved for installation.

Appendix A

NEW ZEALAND GAZETTE, No. 123 — 12 NOVEMBER 2015



Active stop ahead sign

Schedule 3—Location

The locations approved for this trial are:

Road Controlling Authority	Location
Selwyn District Council	Hamptons Road at the intersection with Shands Road.
Selwyn District Council	Hoskyns Road at the intersection with Sandy Knolls Road.
Selwyn District Council	Maddisons Road at the intersection with Weedons Ross Road.
Selwyn District Council	West Melton Road at the intersection with Hoskyns Road.
Southland District Council	Two Chain Road at the intersection with Riversdale-Waikaia Road.

Schedule 4—Period of trial

The trial may begin after the publication of this notice and, unless terminated earlier, must end by 30 October 2017.

Schedule 5—Conditions and evaluation

a. An evaluation must be undertaken as outlined in Selwyn District Council's trial application of 9 March 2015 and include:
   i. Measurement of drivers' compliance with the stop signs before and after the active stop ahead signs are installed;
   ii. analysis of vehicle speed and volume on the approaches to the intersection before and after the active stop ahead signs are installed;
   iii. assessment of drivers' awareness and understanding of the active stop ahead signs;
   iv. a study of crashes that occur at the intersection before and after the active stop ahead signs are installed;
   v. a description of any operational problems with the signs during the trial and how they were resolved; and
   vi. an assessment of cost and benefits of the signs and activation system as trialled and any recommendations to improve the signs or their operation;

b. a missing, damaged or malfunctioning sign must be repaired or replaced as soon as possible during the trial.

An interim evaluation report must be sent to me by 30 November 2016 and a final report by 1 February 2018.

Signed at Wellington this 10th day of November 2015.

GLENN BUNTING, Network Manager.

2015-au6658

Active Stop Ahead Sign Trial

Pursuant to subclause 3.4(1) of Land Transport Rule: Traffic Control Devices 2004 ("the Rule") and a delegation from the NZ Transport Agency, I, Glenn Bunting, Network Manager, authorise the installation and maintenance of active stop ahead signs:

a. for the purpose described in Schedule 1;
b. in the form and layout set out in Schedule 2;
c. at the locations stated in Schedule 3;
d. for the period specified in Schedule 4; and
e. subject to the conditions and an evaluation outlined in Schedule 5.

The active stop ahead signs may be installed for the purpose of evaluating their use and the trial will be called the "active stop ahead sign trial".

Schedule 1—Purpose of trial

The purpose of the trial is to:

a. enable the installation of active stop ahead signs as an alternative to the W10-1 and W10-1.1 stop ahead warning sign combination as specified in Schedule 1 of the Rule;
b. evaluate the effectiveness and safety of active stop ahead signs;
c. assess drivers' understanding and response to active stop ahead signs; and
d. measure drivers' behaviour at intersections controlled by stop signs which have active stop ahead signs installed in advance of the intersection.

Schedule 2—Form and layout of active stop ahead signs

The signs must conform to the following description:

Symbolic warning - Active flashing light (Stop Ahead)			
The lights in the top corners of the sign are illuminated and flash alternately when a vehicle is detected approaching the sign			
Shape and size	Rectangle 1200 x 1800mm		
Background	Black		
Border	None		
Legend	**Description**	**Colour**	**Size**
	Lights in the left and right top corners flash alternately	Orange (lit)	100mm diameter
	W10-1 sign	As for W10-1 sign	750 x 750mm diamond
	"STOP"	Yellow (R)	200/31
	"AHEAD"	Yellow (R)	150/23

Note: The dimensions, descriptions and terms used to describe the sign in this notice conform to the opening notes in Schedule 1 of the Rule.

Example:

Appendix B

Filter time:	11:00 Thursday, 19 November 2015 => 11:00 Thursday, 26 November 2015
Included classes:	1, 2, 3, 4, 5
Speed range:	10 - 160 km/h.
Direction:	North, East, South, West (bound)
Separation:	All - (Headway)
Name:	1 RATA
Scheme:	Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Units:	Metric (meter, kilometer, m/s, km/h, kg, tonne)
In profile:	Vehicles = 16144 / 16868 (95.71%)

Speed Statistics by Hour

SpeedStatHour-7530

Site:	S337ASP.1.0NS
Description:	**Maddisons Rd 150M from intersection <100> OS# STARTS @ WILD RD**
Filter time:	11:00 Thursday, 19 November 2015 => 11:00 Thursday, 26 November 2015
Scheme:	Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Filter:	Cls(1 2 3 4 5) Dir(NESW) Sp(10,160) Headway(>0)

Vehicles = 16144
Posted speed limit = 100 km/h, Exceeding = 246 (1.52%), Mean Exceeding = 105.40 km/h
Maximum = 132.8 km/h, Minimum = 12.6 km/h, Mean = 75.7 km/h
85% Speed = 87.5 km/h, 95% Speed = 94.3 km/h, Median = 76.3 km/h
20 km/h Pace = 67 - 87, Number in Pace = 10247 (63.47%)
Variance = 164.04, Standard Deviation = 12.81 km/h

Time			Min	Max	Mean	Median	85%	95%	>PS	L
									100 k	m/h
0	21	0.1%	52.2	99.4	77	78.1	90	93.6	0	0.0%
100	11	0.1%	69.8	92.7	79.7	78.1	82.1	91.4	0	0.0%
200	17	0.1%	57.5	87.3	70.1	68.4	82.8	87.1	0	0.0%
300	12	0.1%	57.5	118	76.8	70.2	84.2	102.6	2	16.7%
400	35	0.2%	52.4	112.1	76.2	71.6	96.1	98.3	1	2.9%
500	252	1.6%	19.5	110.5	74.9	76.7	86.8	93.2	3	1.2%
600	792	4.9%	21.5	126.4	79.7	80.3	92.2	99	34	4.3%
700	1481	9.2%	25.1	115.3	77.2	77.4	87.1	93.6	25	1.7%
800	1339	8.3%	18.1	105.1	74.5	76	86.4	92.5	10	0.7%
900	697	4.3%	17.9	105.9	72.6	74.2	86.4	93.2	6	0.9%
1000	720	4.5%	15	116	73	73.4	86.8	95	10	1.4%
1100	753	4.7%	17.7	115.6	72	73.8	85.7	92.5	6	0.8%
1200	793	4.9%	21.1	109.6	73.4	74.9	87.8	93.6	8	1.0%
1300	838	5.2%	20.2	114.7	74.3	75.2	87.8	94	13	1.6%
1400	1005	6.2%	12.6	112.4	75.4	76	87.8	94.3	16	1.6%
1500	1399	8.7%	21.7	111.7	74.8	75.2	86	93.2	8	0.6%
1600	1958	12.1%	17.6	132.8	75.7	76	86.4	92.5	25	1.3%
1700	2004	12.4%	16.7	129.4	77.9	78.5	87.8	94	21	1.0%
1800	862	5.3%	26.4	129.1	79.3	79.9	90.7	96.1	17	2.0%
1900	451	2.8%	23.3	115.1	77.1	78.8	90	97.6	17	3.8%
2000	285	1.8%	26.8	117.9	77.1	77.4	92.9	99	13	4.6%
2100	204	1.3%	29.7	103.2	73.6	74.2	84.6	90.7	2	1.0%
2200	146	0.9%	47.8	117.4	78.5	77	88.9	97.2	6	4.1%
2300	69	0.4%	46.6	116.2	76.7	75.6	88.2	93.6	3	4.3%
----	16144	100.0%	12.6	132.8	75.7	76.3	87.5	94.3	246	1.5%

Filter time: 11:00 Thursday, 19 November 2015 => 11:00 Thursday, 26 November 2015
Included classes: 1, 2, 3, 4, 5
Speed range: 10 - 160 km/h.
Direction: North, East, South, West (bound)
Separation: All - (Headway)
Name: 1 RATA
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Units: Metric (meter, kilometer, m/s, km/h, kg, tonne)
In profile: Vehicles = 15436 / 16240 (95.05%)

Speed Statistics by Hour

SpeedStatHour-7530
Site: S337BSP.1.0NS
Description: **Maddisons Rd 150M from intersection <100> OS# STARTS @ WEEDONS ROSS RD**
Filter time: 11:00 Thursday, 19 November 2015 => 11:00 Thursday, 26 November 2015
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Filter: Cls(1 2 3 4 5) Dir(NESW) Sp(10,160) Headway(>0)

Vehicles = 15436
Posted speed limit = 100 km/h, Exceeding = 107 (0.69%), Mean Exceeding = 105.10 km/h
Maximum = 131.1 km/h, Minimum = 16.1 km/h, Mean = 71.8 km/h
85% Speed = 83.5 km/h, 95% Speed = 90.7 km/h, Median = 71.6 km/h
20 km/h Pace = 63 - 83, Number in Pace = 9847 (63.79%)
Variance = 140.66, Standard Deviation = 11.86 km/h

Time			Min	Max	Mean	Median	85%	95%	>PSL	
									100 km/	h
0	22	0.1%	52.4	92.1	72.2	69.1	85.7	88.9	0	0.0%
100	13	0.1%	56.4	101.1	73.5	72.4	81.4	83.5	1	7.7%
200	16	0.1%	52.6	89.1	67.3	65.2	73.8	80.3	0	0.0%
300	17	0.1%	45	95.8	71.8	71.6	81.7	88.6	0	0.0%
400	29	0.2%	53	88	73	74.9	83.9	87.1	0	0.0%
500	240	1.6%	33	103.4	70.8	69.8	84.6	92.2	3	1.3%
600	714	4.6%	37.5	119.4	73	72.4	85.3	93.6	13	1.8%
700	1412	9.1%	17.2	107.9	74.4	74.2	87.1	93.6	13	0.9%
800	1271	8.2%	24.7	122.2	72.1	72	84.6	90.4	10	0.8%
900	639	4.1%	33.3	108.2	70.8	70.2	83.9	90.7	7	1.1%
1000	667	4.3%	25.8	108.9	70.5	70.6	83.2	90.7	6	0.9%
1100	703	4.6%	16.4	119.5	70.2	70.6	83.2	90.7	7	1.0%
1200	765	5.0%	21.3	104.5	69.6	69.5	82.8	89.6	4	0.5%
1300	763	4.9%	23.4	110	71.2	70.6	84.2	91.1	8	1.0%
1400	985	6.4%	19.6	121.4	70.9	71.3	83.2	90	2	0.2%
1500	1387	9.0%	20.1	117.5	71.5	71.6	82.4	90.4	8	0.6%
1600	1933	12.5%	23.6	117.1	71.8	71.3	82.4	88.6	5	0.3%
1700	1957	12.7%	20	117.2	72.6	72	83.2	89.6	11	0.6%
1800	832	5.4%	25.2	120.9	73.2	72.4	82.8	90.7	4	0.5%
1900	395	2.6%	16.1	99.3	71.6	71.3	82.8	89.6	0	0.0%
2000	272	1.8%	29.9	106.4	71.3	70.6	82.1	90	1	0.4%
2100	204	1.3%	29.7	97.2	68.5	68.4	79.2	86.8	0	0.0%
2200	133	0.9%	45.7	131.1	70.6	68.8	79.6	92.2	3	2.3%
2300	67	0.4%	48.1	104.2	69.4	68	76	83.2	1	1.5%
----	15436	100.00%	16.1	131.1	71.8	71.6	83.5	90.7	107	0.7%

Filter time: 0:00 Friday, 27 November 2015 => 0:00 Friday, 4 December 2015
Included classes: 1, 2, 3, 4, 5
Speed range: 10 - 160 km/h.
Direction: North, East, South, West (bound)
Separation: All - (Headway)
Name: 1 RATA
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Units: Metric (meter, kilometer, m/s, km/h, kg, tonne)
In profile: Vehicles = 8932 / 18922 (47.20%)

Speed Statistics by Hour

SpeedStatHour-7530
Site: S349BSP.1.0NS
Description: **West Melton Rd 150M from intersection <100> OS# STARTS @ HOSKYNS RD**
Filter time: 0:00 Friday, 27 November 2015 => 0:00 Friday, 4 December 2015
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Filter: Cls(1 2 3 4 5) Dir(NESW) Sp(10,160) Headway(>0)

Vehicles = 8932
Posted speed limit = 100 km/h, Exceeding = 67 (0.75%), Mean Exceeding = 104.99 km/h
Maximum = 150.9 km/h, Minimum = 14.9 km/h, Mean = 72.8 km/h
85% Speed = 84.2 km/h, 95% Speed = 90.7 km/h, Median = 73.1 km/h
20 km/h Pace = 63 - 83, Number in Pace = 5758 (64.46%)
Variance = 142.57, Standard Deviation = 11.94 km/h

Time			Min	Max	Mean	Median	85%	95%	>PSL	
									100 km/	h
0	25	0.3%	35.6	100	69.4	69.5	78.1	92.9	0	0.0%
100	9	0.1%	64.5	77.8	73	73.4	76.7	77.8	0	0.0%
200	6	0.1%	52.5	87.2	67.3	65.2	70.9	87.1	0	0.0%
300	8	0.1%	65.2	84.4	75.2	73.8	83.9	84.2	0	0.0%
400	15	0.2%	39.1	102	75.9	76.3	90.4	92.9	1	6.7%
500	45	0.5%	35.1	103.9	72.6	70.9	82.8	93.2	2	4.4%
600	258	2.9%	20.5	101.4	72.4	73.4	85.3	90.7	2	0.8%
700	598	6.7%	35.2	100.2	73.1	73.4	84.2	90.7	1	0.2%
800	688	7.7%	26.8	108.1	73.2	73.8	85	90.7	6	0.9%
900	551	6.2%	19.1	112.1	72.7	73.4	86	91.4	4	0.7%
1000	553	6.2%	23.4	107.7	72.3	73.1	82.8	90.4	5	0.9%
1100	576	6.4%	17.3	116.9	71	70.6	82.1	88.2	4	0.7%
1200	553	6.2%	34.8	103.3	72.2	72	82.8	89.3	3	0.5%
1300	541	6.1%	29	108.3	71.7	72.4	83.9	89.3	3	0.6%
1400	613	6.9%	18.9	112.4	71.7	71.6	83.2	91.4	4	0.7%
1500	720	8.1%	36	107.2	73.8	74.2	85.7	91.8	2	0.3%
1600	829	9.3%	24.1	106	73.5	72.7	85.3	92.5	9	1.1%
1700	920	10.3%	26.1	133.7	74.1	74.2	84.6	91.1	10	1.1%
1800	577	6.5%	22.3	150.9	74.2	74.2	83.9	90.7	5	0.9%
1900	340	3.8%	33.7	101.3	74.4	74.5	86.8	92.5	2	0.6%
2000	253	2.8%	36.7	97.5	72	72	82.8	87.5	0	0.0%
2100	147	1.6%	14.9	106.9	69.6	69.8	80.6	88.2	2	1.4%
2200	81	0.9%	33.6	101.3	70.8	69.8	79.2	86.4	2	2.5%
2300	26	0.3%	57.9	89.3	71.9	72.7	79.9	85.7	0	0.0%
----	8932	100.0%	14.9	150.9	72.8	73.1	84.2	90.7	67	0.8%

Filter time: 0:00 Friday, 27 November 2015 => 0:00 Friday, 4 December 2015
Included classes: 1, 2, 3, 4, 5
Speed range: 10 - 160 km/h.
Direction: North, East, South, West (bound)
Separation: All - (Headway)
Name: 1 RATA
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Units: Metric (meter, kilometer, m/s, km/h, kg, tonne)
In profile: Vehicles = 3424 / 3870 (88.48%)

Speed Statistics by Hour

SpeedStatHour-7530
Site: S349ASP.1.0NS
Description: **West Melton Rd 150M from intersection <100> OS# STARTS @ ROSSENDALE RD**
Filter time: 0:00 Friday, 27 November 2015 => 0:00 Friday, 4 December 2015
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Filter: Cls(1 2 3 4 5) Dir(NESW) Sp(10,160) Headway(>0)

Vehicles = 3424
Posted speed limit = 100 km/h, Exceeding = 49 (1.43%), Mean Exceeding = 104.79 km/h
Maximum = 126.1 km/h, Minimum = 13.0 km/h, Mean = 70.5 km/h
85% Speed = 84.6 km/h, 95% Speed = 92.2 km/h, Median = 71.3 km/h
20 km/h Pace = 65 - 85, Number in Pace = 1894 (55.32%)
Variance = 212.49, Standard Deviation = 14.58 km/h

Time			Min	Max	Mean	Median	85%	95%	>PS	L
									100 k	m/h
0	9	0.3%	61.4	107	78	75.6	88.2	106.9	1	11.1%
100	7	0.2%	55	85.2	72.6	73.8	78.8	85	0	0.0%
200	3	0.1%	66.1	77.7	70.5	67.7	77.4	77.4	0	0.0%
300	9	0.3%	62.1	86.2	69.9	64.4	84.2	86	0	0.0%
400	10	0.3%	39.2	92.7	71.6	71.6	85	92.5	0	0.0%
500	40	1.2%	45.9	91	66.5	63	79.2	86.8	0	0.0%
600	161	4.7%	23.3	110.5	74.4	74.5	86	91.4	3	1.9%
700	318	9.3%	22.1	106.7	73.7	73.1	86.8	94.3	4	1.3%
800	285	8.3%	21.1	100.9	71	71.6	85	91.1	2	0.7%
900	203	5.9%	22.3	98.2	67.1	68.8	81	86.4	0	0.0%
1000	183	5.3%	16.5	108.1	69.6	70.9	85.3	92.9	4	2.2%
1100	190	5.5%	17.9	110.7	69.8	70.2	85	91.4	2	1.1%
1200	185	5.4%	20.6	105.1	68.4	69.8	82.1	88.9	2	1.1%
1300	225	6.6%	13	108.3	69.2	69.5	83.2	92.9	6	2.7%
1400	216	6.3%	20.7	109.5	71.1	70.6	86	94	3	1.4%
1500	250	7.3%	27.7	104.6	71.9	73.1	84.6	90	5	2.0%
1600	306	8.9%	21.7	110.8	72.9	73.4	85	93.2	7	2.3%
1700	328	9.6%	21.5	111.9	72.5	73.1	83.9	91.8	7	2.1%
1800	194	5.7%	19	99.6	65.4	67.3	85	92.9	0	0.0%
1900	109	3.2%	22.9	109.1	70.9	72	85.3	93.2	2	1.8%
2000	72	2.1%	22	126.1	67.7	70.6	85	89.3	1	1.4%
2100	59	1.7%	23.3	88.5	62.3	66.6	77.4	79.6	0	0.0%
2200	46	1.3%	24	83.9	65.9	67.7	77.4	81.7	0	0.0%
2300	16	0.5%	37.5	94.6	70.5	70.9	83.5	93.6	0	0.0%
----	3424	100.0%	13	126.1	70.5	71.3	84.6	92.2	49	1.4%

Filter time: 0:00 Thursday, 9 February 2017 => 0:00 Thursday, 16 February 2017
Included classes: 1, 2, 3, 4, 5, 14
Speed range: 10 - 160 km/h.
Direction: **ALL**
Separation: All - (Headway)
Name: 1 WeeklyVehicles
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Units: Metric (meter, kilometer, m/s, km/h, kg, tonne)
In profile: Vehicles = 20151 / 23363 (86.25%)

Speed Statistics by Hour

SpeedStatHour-9135
Site: S337ASP.1.0NS
Description: **Maddisons Rd 150M from intersection <100> @ 4.135** Alston Rd end
Filter time: 0:00 Thursday, 9 February 2017 => 0:00 Thursday, 16 February 2017
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Filter: Cls(1 2 3 4 5 14) Dir(NESW) Sp(10,160) Headway(>0)

Vehicles = 20151
Posted speed limit = 100 km/h, Exceeding = 291 (1.44%), Mean Exceeding = 104.29 km/h
Maximum = 130.9 km/h, Minimum = 10.6 km/h, Mean = 76.1 km/h
85% Speed = 87.5 km/h, 95% Speed = 93.6 km/h, Median = 77.4 km/h
20 km/h Pace = 68 - 88, Number in Pace = 13540 (67.19%)
Variance = 170.18, Standard Deviation = 13.05 km/h

Time	Bin		Min	Max	Mean	Median	85%	95%	>PSL 100 km/h	
0	40	0.20%	35.1	94.8	75.4	77.8	87.5	90	0	0.00%
100	23	0.10%	19.2	95.7	76.4	82.1	88.2	92.9	0	0.00%
200	17	0.10%	64.6	100.7	76.4	76.3	83.5	91.8	1	5.90%
300	21	0.10%	44.5	97.3	75.3	77.8	87.8	96.5	0	0.00%
400	42	0.20%	53.6	99.7	77.6	78.8	92.9	97.6	0	0.00%
500	334	1.70%	19.4	112.8	80.3	79.6	91.4	96.1	13	3.90%
600	1050	5.20%	26.5	115.9	78.1	78.5	88.6	94.7	18	1.70%
700	2002	9.90%	23.9	116.2	78.5	78.5	87.5	93.6	31	1.50%
800	1719	8.50%	22.9	106.8	74.9	76.7	85.3	91.1	9	0.50%
900	974	4.80%	15.5	114.5	75.5	76.3	86.8	93.6	16	1.60%
1000	898	4.50%	19.7	110.3	74.2	74.9	85.3	92.9	14	1.60%
1100	951	4.70%	20.5	117.9	73.3	74.9	86.4	92.9	9	0.90%
1200	975	4.80%	10.6	117.6	72.3	74.9	86.4	92.9	14	1.40%
1300	950	4.70%	14.1	111.4	75.5	76.3	88.2	95	21	2.20%
1400	1182	5.90%	21.2	120.4	75.5	76.7	86.8	92.9	14	1.20%
1500	1667	8.30%	11.6	130.9	76.3	76.7	87.1	93.6	16	1.00%
1600	2324	11.50%	21.8	116.8	76.3	77.4	87.1	92.9	24	1.00%
1700	2531	12.60%	16.3	123.7	76.5	78.5	86.8	92.5	25	1.00%
1800	1145	5.70%	18.8	115.8	77.2	80.3	90.4	96.5	30	2.60%
1900	563	2.80%	15.3	110	79	80.6	91.4	97.9	17	3.00%
2000	334	1.70%	19.3	124	75.4	77.8	90.4	97.2	10	3.00%
2100	225	1.10%	23.5	106.6	73.5	75.2	85	93.6	4	1.80%
2200	120	0.60%	24.4	111.4	73.3	74.9	85.7	95	3	2.50%
2300	64	0.30%	47.9	102.1	76.2	75.6	87.5	92.5	2	3.10%
----	20151	100.00%	10.6	130.9	76.1	77.4	87.5	93.6	291	1.40%

Filter time: 0:00 Thursday, 9 February 2017 => 0:00 Thursday, 16 February 2017
Included classes: 1, 2, 3, 4, 5, 14
Speed range: 10 - 160 km/h.
Direction: **ALL**
Separation: All - (Headway)
Name: 1 WeeklyVehicles
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Units: Metric (meter, kilometer, m/s, km/h, kg, tonne)
In profile: Vehicles = 20274 / 23742 (85.39%)

Speed Statistics by Hour

SpeedStatHour-9135
Site: S337BSP.1.0NS
Description: **Maddisons Rd 150M from intersection <100> @ 4.548** Hoskyns Rd end
Filter time: 0:00 Thursday, 9 February 2017 => 0:00 Thursday, 16 February 2017
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Filter: Cls(1 2 3 4 5 14) Dir(NESW) Sp(10,160) Headway(>0)

Vehicles = 20274
Posted speed limit = 100 km/h, Exceeding = 363 (1.79%), Mean Exceeding = 105.22 km/h
Maximum = 139.4 km/h, Minimum = 11.5 km/h, Mean = 77.8 km/h
85% Speed = 88.2 km/h, 95% Speed = 94.7 km/h, Median = 78.5 km/h
20 km/h Pace = 68 - 88, Number in Pace = 13803 (68.08%)
Variance = 132.13, Standard Deviation = 11.49 km/h

Time	Bin		Min	Max	Mean	Median	85%	95%	>PSL	
									100 km/h	
0	36	0.20%	56.7	110.6	76.2	70.9	89.3	103	3	8.30%
100	21	0.10%	51.3	113.1	86.4	82.8	105.8	110.5	8	38.10%
200	12	0.10%	49.2	104.9	70.6	67.3	86.4	96.8	1	8.30%
300	24	0.10%	46.5	89.6	71.5	76.3	81.7	89.3	0	0.00%
400	42	0.20%	40.9	120.8	74.6	73.4	90	100.8	3	7.10%
500	339	1.70%	36.5	128.4	77.9	79.2	87.8	92.9	7	2.10%
600	1072	5.30%	16.4	124.2	78.9	78.8	89.6	95.8	27	2.50%
700	1952	9.60%	23.2	117.7	78.8	79.2	88.9	95.4	43	2.20%
800	1659	8.20%	22.2	112.8	77.9	79.6	89.3	95.8	30	1.80%
900	983	4.80%	30.8	125.8	76.1	77	88.2	93.6	12	1.20%
1000	884	4.40%	22.4	128.3	75.3	75.6	87.5	94.3	12	1.40%
1100	959	4.70%	11.5	109.4	75.3	76	86.8	92.9	7	0.70%
1200	969	4.80%	26.5	113.9	75.5	76.3	87.5	94	14	1.40%
1300	979	4.80%	24.2	129	75.9	77	87.8	94.7	16	1.60%
1400	1154	5.70%	21.8	115.5	76.9	77.8	87.8	93.6	11	1.00%
1500	1726	8.50%	17.4	139.4	77.1	77.4	87.1	93.2	28	1.60%
1600	2429	12.00%	26.3	126.2	78.7	79.2	87.8	94	39	1.60%
1700	2538	12.50%	17.2	114.4	79.3	79.6	88.2	94.7	42	1.70%
1800	1164	5.70%	21.3	117.1	80.1	79.9	90	96.1	33	2.80%
1900	580	2.90%	20.6	114.4	79.5	79.9	89.6	94.7	10	1.70%
2000	348	1.70%	28.3	105.6	78.5	77.8	88.6	95.8	8	2.30%
2100	230	1.10%	25.4	104.1	76.1	76.3	87.1	94	6	2.60%
2200	113	0.60%	34.2	110.8	73.6	72.7	83.2	90.4	2	1.80%
2300	61	0.30%	38.3	104.9	75.5	76.7	86.8	91.8	1	1.60%
----	20274	100.00%	11.5	139.4	77.8	78.5	88.2	94.7	363	1.80%

Filter time: 0:00 Thursday, 9 February 2017 => 0:00 Thursday, 16 February 2017
Included classes: 1, 2, 3, 4, 5, 14
Speed range: 10 - 160 km/h.
Direction: **ALL**
Separation: All - (Headway)
Name: 1 WeeklyVehicles
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Units: Metric (meter, kilometer, m/s, km/h, kg, tonne)
In profile: Vehicles = 9817 / 11365 (86.38%)

Speed Statistics by Hour

SpeedStatHour-9135
Site: S349BSP.1.0NS
Description: **West Melton Rd 150M from intersection <100> @ 1.824** Newtons Rd end
Filter time: 0:00 Thursday, 9 February 2017 => 0:00 Thursday, 16 February 2017
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Filter: Cls(1 2 3 4 5 14) Dir(NESW) Sp(10,160) Headway(>0)

Vehicles = 9817
Posted speed limit = 100 km/h, Exceeding = 293 (2.98%), Mean Exceeding = 104.95 km/h
Maximum = 131.1 km/h, Minimum = 12.9 km/h, Mean = 78.4 km/h
85% Speed = 90.4 km/h, 95% Speed = 97.2 km/h, Median = 78.5 km/h
20 km/h Pace = 69 - 89, Number in Pace = 6134 (62.48%)
Variance = 148.19, Standard Deviation = 12.17 km/h

Time	Bin		Min	Max	Mean	Median	85%	95%	>PSL 100 km/h	
0	18	0.20%	52.9	91.4	74.7	73.1	82.4	90.7	0	0.00%
100	12	0.10%	58.8	98.2	77.2	70.2	95.4	95.4	0	0.00%
200	5	0.10%	65.9	110.3	85.3	76	97.9	110.2	1	20.00%
300	9	0.10%	42	104.5	78	76.3	96.1	104.4	1	11.10%
400	10	0.10%	37.6	100.3	73.7	75.6	90.4	100.1	1	10.00%
500	70	0.70%	45.9	101.6	73.1	74.9	82.4	88.9	1	1.40%
600	283	2.90%	26.5	128.7	76.8	75.2	88.6	95.8	8	2.80%
700	700	7.10%	26.2	112.6	78.9	78.8	91.1	95.4	20	2.90%
800	727	7.40%	12.9	114.2	77.8	78.5	89.3	95.8	10	1.40%
900	620	6.30%	21.3	114	78	78.5	90	96.1	13	2.10%
1000	617	6.30%	20.3	110	77.3	78.1	88.6	97.6	17	2.80%
1100	597	6.10%	27.9	121.8	77	77.4	88.6	95.4	15	2.50%
1200	581	5.90%	31.3	113	77	77	89.6	96.1	13	2.20%
1300	608	6.20%	22.9	110.7	76.6	76.3	88.9	95.8	17	2.80%
1400	650	6.60%	38.5	117	78.1	77.8	90.7	97.2	20	3.10%
1500	777	7.90%	37.6	115.8	77.6	77.8	89.6	95.8	16	2.10%
1600	938	9.60%	20.5	117	78.2	78.1	90.4	97.2	27	2.90%
1700	921	9.40%	21.9	116.8	80.5	80.6	92.5	98.3	35	3.80%
1800	673	6.90%	22.4	131.1	81.6	81	92.9	100.4	41	6.10%
1900	448	4.60%	45.3	115.8	81.4	81	92.2	99	16	3.60%
2000	294	3.00%	51.8	126	80.2	78.8	92.2	97.9	14	4.80%
2100	162	1.70%	36.1	108.8	77.3	77.4	87.8	95.8	4	2.50%
2200	68	0.70%	36.8	106.4	78.1	77.8	91.1	98.6	3	4.40%
2300	29	0.30%	50.1	98.3	77.7	76.7	88.6	93.6	0	0.00%
----	9817	100.00%	12.9	131.1	78.4	78.5	90.4	97.2	293	3.00%

Filter time: 0:00 Thursday, 9 February 2017 => 0:00 Thursday, 16 February 2017
Included classes: 1, 2, 3, 4, 5, 14
Speed range: 10 - 160 km/h.
Direction: **ALL**
Separation: All - (Headway)
Name: 1 WeeklyVehicles
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Units: Metric (meter, kilometer, m/s, km/h, kg, tonne)
In profile: Vehicles = 3526 / 4077 (86.49%)

Speed Statistics by Hour

SpeedStatHour-9135
Site: S349ASP.1.0NS
Description: **West Melton Rd 150M from intersection <100> @1.420** Railway Rd end
Filter time: 0:00 Thursday, 9 February 2017 => 0:00 Thursday, 16 February 2017
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Filter: Cls(1 2 3 4 5 14) Dir(NESW) Sp(10,160) Headway(>0)

Vehicles = 3526
Posted speed limit = 100 km/h, Exceeding = 53 (1.50%), Mean Exceeding = 105.31 km/h
Maximum = 118.2 km/h, Minimum = 15.5 km/h, Mean = 74.7 km/h
85% Speed = 87.1 km/h, 95% Speed = 94.0 km/h, Median = 76.0 km/h
20 km/h Pace = 67 - 87, Number in Pace = 2132 (60.47%)
Variance = 186.24, Standard Deviation = 13.65 km/h

Time	Bin		Min	Max	Mean	Median	85%	95%	>PSL	
									100 km/h	
0	6	0.20%	63.7	106.6	74.2	66.6	71.3	106.6	1	16.70%
100	8	0.20%	53.6	92.8	69.8	65.5	76	92.5	0	0.00%
200	6	0.20%	62.3	87.3	73.6	72.4	79.2	87.1	0	0.00%
300	4	0.10%	46.8	86.3	69.6	70.6	74.5	86	0	0.00%
400	7	0.20%	64.4	88.8	73.8	70.6	85.7	88.6	0	0.00%
500	35	1.00%	33.3	116	76.8	78.8	93.6	96.5	2	5.70%
600	176	5.00%	34.1	95.8	72.6	75.2	85.7	91.1	0	0.00%
700	308	8.70%	16	108.8	76.8	78.1	88.6	95	6	1.90%
800	251	7.10%	21.9	110.8	73.4	74.9	86.4	93.6	6	2.40%
900	197	5.60%	24.3	113.6	73.8	74.5	85.7	90	2	1.00%
1000	215	6.10%	15.5	104	73.3	75.6	86	95.8	4	1.90%
1100	199	5.60%	47.6	104.2	76	76.7	87.5	93.6	3	1.50%
1200	188	5.30%	31.8	107.3	74.4	76.3	87.1	95.4	6	3.20%
1300	208	5.90%	34.9	107.5	73.3	72.7	85.3	93.2	1	0.50%
1400	221	6.30%	15.5	113.2	72	74.2	85	92.2	3	1.40%
1500	279	7.90%	27.8	105.2	74.1	75.6	86.8	92.9	2	0.70%
1600	350	9.90%	17.3	108.7	74.3	75.6	87.1	94	2	0.60%
1700	331	9.40%	32.1	107.2	77.1	77.8	87.1	92.9	5	1.50%
1800	221	6.30%	30	110.7	76.6	77	89.3	95.4	3	1.40%
1900	122	3.50%	42.5	112.1	77.9	77	89.3	99	6	4.90%
2000	83	2.40%	33.4	118.2	75	76.7	86	93.2	1	1.20%
2100	64	1.80%	16.4	98.1	71.7	75.2	83.9	90.7	0	0.00%
2200	30	0.90%	39.2	95.8	74.7	75.6	83.5	93.2	0	0.00%
2300	17	0.50%	51.3	89.4	76.1	77.8	84.6	86.4	0	0.00%
----	3526	100.00%	15.5	118.2	74.7	76	87.1	94	53	1.50%

Filter time: 0:00 Friday, 27 November 2015 => 0:00 Friday, 4 December 2015
Included classes 1, 2, 3, 4, 5
Speed range: 10 - 160 km/h.
Direction: North, East, South, West (bound)
Separation: All - (Headway)
Name: 1 RATA
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Units: Metric (meter, kilometer, m/s, km/h, kg, tonne)
In profile: Vehicles = 13448 / 15141 (88.82%)

Speed Statistics by Hour

SpeedStatHour-7530
Site: S93ASP.1.0NS
Description: **Weedons Ross Rd 150M from intersection <100> OS# STARTS @ McCLELLAND RD**
Filter time: 0:00 Friday, 27 November 2015 => 0:00 Friday, 4 December 2015
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Filter: Cls(1 2 3 4 5) Dir(NESW) Sp(10,160) Headway(>0)

Vehicles = 13448
Posted speed limit = 100 km/h, Exceeding = 1032 (7.67%), Mean Exceeding = 105.53 km/h
Maximum = 157.1 km/h, Minimum = 12.7 km/h, Mean = 80.9 km/h
85% Speed = 95.8 km/h, 95% Speed = 102.2 km/h, Median = 81.4 km/h
20 km/h Pace = 74 - 94, Number in Pace = 6823 (50.74%)
Variance = 211.16, Standard Deviation = 14.53 km/h

Time Bin			Min	Max	Mean	Median	85%	95%		PSL
									100	km/h
0	60	0.4%	56.4	120.9	86.3	87.5	98.3	110.5	7	11.7%
100	19	0.1%	59.4	120.8	92.7	91.8	104.4	115.6	7	36.8%
200	14	0.1%	78.2	111	93.1	90.4	107.3	108.4	4	28.6%
300	28	0.2%	61.8	108.4	80.3	76.3	96.5	105.8	2	7.1%
400	26	0.2%	49.9	118.3	79.7	76.7	90	116.6	3	11.5%
500	114	0.8%	42.3	138.2	88.7	90.7	100.4	105.8	23	20.2%
600	377	2.8%	46.7	157.1	90.4	91.8	101.5	109.8	78	20.7%
700	856	6.4%	43	116.3	84.5	85.3	97.2	103.7	84	9.8%
800	1141	8.5%	16.9	140.1	72.2	71.3	86.8	96.5	30	2.6%
900	852	6.3%	20.4	116.7	77.4	78.1	91.1	97.6	28	3.3%
1000	807	6.0%	21.5	147.1	78.2	78.5	92.2	99	33	4.1%
1100	819	6.1%	12.7	119.5	79.3	79.2	93.2	99.4	39	4.8%
1200	789	5.9%	37.4	114.8	80.6	81	95.4	101.5	60	7.6%
1300	849	6.3%	29.7	130.2	80.1	81	93.6	100.4	52	6.1%
1400	987	7.3%	31.6	112.9	74.9	74.9	90.7	97.9	31	3.1%
1500	1225	9.1%	31.2	127.9	75.1	75.2	90.7	98.3	48	3.9%
1600	1137	8.5%	24.6	117.5	82.9	83.5	95.4	101.9	86	7.6%
1700	1202	8.9%	26.9	124.7	84.9	86	96.5	103	105	8.7%
1800	782	5.8%	33.6	121.8	87.3	88.6	99	104	102	13.0%
1900	497	3.7%	34.2	122.2	88.9	90	100.1	106.6	78	15.7%
2000	339	2.5%	51.2	117.3	88.2	89.3	99	104	42	12.4%
2100	281	2.1%	43.8	118.6	88	88.6	100.1	106.2	44	15.7%
2200	161	1.2%	46	154.7	86.5	87.1	100.8	108	28	17.4%
2300	86	0.6%	44	126.6	87.5	86.8	103.7	113	18	20.9%
----	13448	100.0%	12.7	157.1	80.9	81.4	95.8	102.2	1032	7.7%

Filter time: 11:00 Thursday, 19 November 2015 => 11:00 Thursday, 26 November 2015
Included classes: 1, 2, 3, 4, 5
Speed range: 10 - 160 km/h.
Direction: North, East, South, West (bound)
Separation: All - (Headway)
Name: 1 RATA
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Units: Metric (meter, kilometer, m/s, km/h, kg, tonne)
In profile: Vehicles = 13392 / 13967 (95.88%)

Speed Statistics by Hour

SpeedStatHour-7530
Site: S93BSP.1.0NS
Description: **Weedons Ross Rd 150M from intersection <100> OS# STARTS @ MADDISONS RD**
Filter time: 11:00 Thursday, 19 November 2015 => 11:00 Thursday, 26 November 2015
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Filter: Cls(1 2 3 4 5) Dir(NESW) Sp(10,160) Headway(>0)

Vehicles = 13392
Posted speed limit = 100 km/h, Exceeding = 1481 (11.06%), Mean Exceeding = 105.63 km/h
Maximum = 152.3 km/h, Minimum = 14.2 km/h, Mean = 83.7 km/h
85% Speed = 97.9 km/h, 95% Speed = 104.0 km/h, Median = 85.3 km/h
20 km/h Pace = 77 - 97, Number in Pace = 7242 (54.08%)
Variance = 219.15, Standard Deviation = 14.80 km/h

Time		B	Min	Max	Mean	Median	85%	95%	>P	SL
									100	km/h
0	31	0.2%	54.9	123.8	91	90.4	106.2	114.8	8	25.8%
100	14	0.1%	60.3	138.2	89.9	90.4	97.9	104.8	2	14.3%
200	7	0.1%	76.9	109.8	94.9	94.3	105.8	109.4	2	28.6%
300	7	0.1%	50.2	97.2	70.7	71.3	82.4	97.2	0	0.0%
400	21	0.2%	47.6	121.5	84	82.4	106.2	118.1	7	33.3%
500	87	0.6%	32.5	136.9	89.5	91.4	103.3	115.2	18	20.7%
600	335	2.5%	37	128.1	86.2	88.2	101.9	108.7	64	19.1%
700	900	6.7%	33.3	145.6	83.5	83.9	97.9	103.7	96	10.7%
800	982	7.3%	19.2	122.3	82.5	83.5	96.1	103.3	88	9.0%
900	831	6.2%	14.2	133.4	82.5	83.9	95.8	102.2	70	8.4%
1000	843	6.3%	14.8	132.2	83.2	85	96.8	103	73	8.7%
1100	873	6.5%	24	143.9	83.1	85.3	97.2	103.3	90	10.3%
1200	878	6.6%	18.1	117.2	82.6	83.2	96.1	103.7	79	9.0%
1300	830	6.2%	30.1	136.3	83.7	85.7	98.3	104	95	11.4%
1400	973	7.3%	24.2	136.2	81.4	82.8	95.4	103	77	7.9%
1500	1085	8.1%	14.7	126.5	82.9	83.9	97.2	103	118	10.9%
1600	1275	9.5%	17.5	123.2	83.2	84.6	96.5	101.9	105	8.2%
1700	1233	9.2%	18.8	141.3	83.6	86	96.5	102.6	112	9.1%
1800	749	5.6%	33.6	129.7	87.4	89.3	101.2	106.6	133	17.8%
1900	554	4.1%	36.3	149.9	85.7	88.2	99.7	105.5	83	15.0%
2000	364	2.7%	40.1	132.2	87.6	90.4	101.2	108.4	71	19.5%
2100	301	2.2%	37.5	152.3	83.5	83.5	97.6	102.2	28	9.3%
2200	144	1.1%	48.6	145.2	91.5	93.2	104	117.4	41	28.5%
2300	75	0.6%	52.2	128.5	90.2	89.3	104.4	114.8	21	28.0%
----	13392	100.0%	14.2	152.3	83.7	85.3	97.9	104	1481	11.1%

Filter time:	0:00 Friday, 27 November 2015 => 0:00 Friday, 4 December 2015
Included classes:	1, 2, 3, 4, 5
Speed range:	10 - 160 km/h.
Direction:	North, East, South, West (bound)
Separation:	All - (Headway)
Name:	1 RATA
Scheme:	Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Units:	Metric (meter, kilometer, m/s, km/h, kg, tonne)
In profile:	Vehicles = 16894 / 25741 (65.63%)

Speed Statistics by Hour

SpeedStatHour-7530

Site:	S325ASP.1.0NS
Description:	**Hoskyns Rd 150M from intersection <100> OS# STARTS @ KNIGHTS RD**
Filter time:	0:00 Friday, 27 November 2015 => 0:00 Friday, 4 December 2015
Scheme:	Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Filter:	Cls(1 2 3 4 5) Dir(NESW) Sp(10,160) Headway(>0)

Vehicles = 16894
Posted speed limit = 100 km/h, Exceeding = 1790 (10.60%), Mean Exceeding = 105.44 km/h
Maximum = 155.7 km/h, Minimum = 14.1 km/h, Mean = 81.5 km/h
85% Speed = 97.6 km/h, 95% Speed = 103.7 km/h, Median = 83.2 km/h
20 km/h Pace = 77 - 97, Number in Pace = 7927 (46.92%)
Variance = 252.12, Standard Deviation = 15.88 km/h

Time			Min	Max	Mean	Median	85%	95%	>P	SL
									100	km/h
0	47	0.3%	49.7	11250%	86.1	85.3	100.8	109.1	10	21.3%
100	23	0.1%	52.2	126.5	97.3	100.8	116.6	123.1	12	52.2%
200	17	0.1%	53	103.5	91.5	99	101.5	103	8	47.1%
300	17	0.1%	47.7	155.7	92.7	96.1	100.4	105.8	5	29.4%
400	23	0.1%	53.8	131.3	94.9	97.6	115.6	125.6	11	47.8%
500	144	0.9%	46.7	143.9	87.4	88.9	101.5	108.7	27	18.8%
600	411	2.4%	37.1	127.1	86.4	90	103.3	107.6	99	24.1%
700	968	5.7%	22.6	139.8	81.5	84.6	97.2	102.6	90	9.3%
800	1184	7.0%	19.8	131.2	79.7	81.7	95.8	102.2	103	8.7%
900	1055	6.2%	37.7	131.9	80.1	82.1	95.8	101.9	81	7.7%
1000	1087	6.4%	17.1	122.9	78.7	80.6	95	101.9	87	8.0%
1100	1066	6.3%	21.7	131.3	79.7	81.4	95.8	101.5	74	6.9%
1200	1018	6.0%	14.1	135.9	80.8	82.1	95.8	102.2	80	7.9%
1300	1021	6.0%	20.1	127.8	80.9	82.4	97.2	103	104	10.2%
1400	1229	7.3%	26.7	129	80.5	82.1	96.8	102.2	105	8.5%
1500	1368	8.1%	22.8	119.4	80.7	82.1	96.5	102.6	127	9.3%
1600	1518	9.0%	24.7	132.1	82.3	83.2	97.6	103.7	160	10.5%
1700	1702	10.1%	28.8	136.7	81.8	82.4	97.9	104.4	200	11.8%
1800	1168	6.9%	32	145.7	83.3	85.3	98.6	104.8	141	12.1%
1900	710	4.2%	23.1	153.2	84.2	85.3	99.7	106.6	100	14.1%
2000	500	3.0%	21.8	129.3	80.5	81.7	97.6	104.4	60	12.0%
2100	355	2.1%	24.3	122.9	84	86.4	100.4	106.9	61	17.2%
2200	169	1.0%	42.2	132.4	85	86.8	99.7	108	24	14.2%
2300	94	0.6%	38	124.7	89.8	92.5	104.4	112.7	21	22.3%
----	16894	100.0%	14.1	155.7	81.5	83.2	97.6	103.7	1790	10.6%

Filter time: 0:00 Friday, 27 November 2015 => 0:00 Friday, 4 December 2015
Included classes: 1, 2, 3, 4, 5
Speed range: 10 - 160 km/h.
Direction: North, East, South, West (bound)
Separation: All - (Headway)
Name: 1 RATA
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Units: Metric (meter, kilometer, m/s, km/h, kg, tonne)
In profile: Vehicles = 9734 / 21587 (45.09%)

Speed Statistics by Hour

SpeedStatHour-7530
Site: S325BSP.1.0NS
Description: **Hoskyns Rd 150M from intersection <100> OS# STARTS @ WEST MELTON RD**
Filter time: 0:00 Friday, 27 November 2015 => 0:00 Friday, 4 December 2015
Scheme: Vehicle classification (TNZ 1999B Aggregate (0 1 2 3 4 4 4 4 5 5 5 5 5 5 14))
Filter: Cls(1 2 3 4 5) Dir(NESW) Sp(10,160) Headway(>0)

Vehicles = 9734
Posted speed limit = 100 km/h, Exceeding = 1888 (19.40%), Mean Exceeding = 105.51 km/h
Maximum = 153.9 km/h, Minimum = 10.6 km/h, Mean = 89.1 km/h
85% Speed = 101.2 km/h, 95% Speed = 106.9 km/h, Median = 91.8 km/h
20 km/h Pace = 83 - 103, Number in Pace = 6340 (65.13%)
Variance = 227.11, Standard Deviation = 15.07 km/h

Time			Min	Max	Mean	Median	85%	95%	>P	SL
									100	km/h
0	35	0.4%	59.1	110	90.9	88.9	101.5	105.5	12	34.3%
100	23	0.2%	41.5	136.6	90.2	97.6	114.5	118.8	8	34.8%
200	17	0.2%	32.6	108.7	89.1	99.4	104.4	108	8	47.1%
300	18	0.2%	46.5	153.9	95.8	95.4	103.7	110.9	5	27.8%
400	19	0.2%	57.9	123.9	98.5	99	115.2	119.9	9	47.4%
500	122	1.3%	45.4	137.3	90.2	91.8	103	113	27	22.1%
600	302	3.1%	20.8	129.8	94.3	96.5	106.2	113	112	37.1%
700	567	5.8%	18.7	140	91.1	94.3	102.2	106.9	131	23.1%
800	607	6.2%	25.4	130.3	88.9	91.4	100.4	106.6	112	18.5%
900	583	6.0%	18.6	121.7	87.6	90	100.4	104.4	103	17.7%
1000	572	5.9%	10.6	127.1	87.1	89.6	99.7	104.4	84	14.7%
1100	567	5.8%	13	129.7	87.9	90	99.7	105.5	86	15.2%
1200	585	6.0%	14	131.2	87.8	90	100.1	106.9	95	16.2%
1300	633	6.5%	17	124.4	88.4	91.1	100.8	106.9	114	18.0%
1400	741	7.6%	14.5	124.9	87	90.4	99.7	104.4	108	14.6%
1500	825	8.5%	26.4	114.8	88	90.4	100.1	105.8	133	16.1%
1600	885	9.1%	24.3	128.8	88.8	91.4	100.4	105.5	150	16.9%
1700	898	9.2%	18.8	129.3	89.9	92.9	101.2	106.2	179	19.9%
1800	629	6.5%	34.1	141	91.3	93.6	101.9	106.9	138	21.9%
1900	390	4.0%	25.6	149.6	91.9	94	104	108.7	105	26.9%
2000	274	2.8%	25.7	124.1	89.1	90.4	101.9	109.8	58	21.2%
2100	244	2.5%	31.2	120.6	90.1	91.1	102.2	108.7	53	21.7%
2200	110	1.1%	23.5	130.2	92.1	93.2	103	112.3	26	23.6%
2300	88	0.9%	23.5	125.1	90.5	94.3	105.5	113.4	32	36.4%
----	9734	100.0%	10.6	153.9	89.1	91.8	101.2	106.9	1888	19.4%

	Selwyn District Council - Intersection Flashing Warning Sign Survey - Maddison Road (east of Weedons Ross Road) 9.00am - 10.00am											
	28/09/2017	Do you travel Maddisons Road often?		Did you notice the flashing intersection warning sign today?		Do you regularly get alerted by the warning sign?		Does it make you more aware of the stop control and encourage you to stop at the intersection?		Are they a positive addition to warning signs at intersections?		Brief Comments
	Truck/Car	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
1	C	✓		✓		✓		✓		✓		Great- one of the main intersections that need it.
2	C	✓		✓		✓		✓		✓		Makes you slow sooner
3	C	✓		✓			✓	✓		✓		Know the road well so stop anyway
4	T	✓		✓		✓		✓		✓		no additional comment
5	C	✓		✓		✓		✓		✓		Need more
6	C	✓		✓		✓		✓		✓		Really good
7	C	✓		✓		✓		✓		✓		Fabulous - should be more especially where stop signs are hard to see
8	C	✓		✓		✓		✓		✓		Fantastic in fog. Really visible on the foggy days we have had this winter. Can see them for miles.
9	C	✓		✓			✓	✓		✓		I am already aware of these intersections but they will help others spot them
10	C	✓		✓		✓		✓		✓		Son Killed on Shands Road near Golden Mile so I think they are fantastic.
11	C	✓		✓		✓		✓		✓		no additional comment
12	C	✓			✓		✓	✓		✓		Don't notice them during the day but do at night, give you a good guage of distance
13	T	✓		✓		✓		✓		✓		Narrow road, drivers should slow down
14	C	✓		✓			✓		✓	✓		I am already aware so doesn't make me more aware
15	C	✓		✓		✓		✓		✓		Need more or in advance or rumble strips as well.
16	C	✓		✓		✓		✓		✓		Noticed 1 or 2 around. They are good.
17	C	✓		✓		✓		✓		✓		Road is too narrow and busy, trucks are over the centre line.
18	C	✓			✓		✓		✓	✓		I ususally do but didn't today, maybe Ive got used to them.
19	C	✓		✓		✓			✓	✓		Read about them in the local paper, put in by a cop. Real good idea.
20	C	✓		✓		✓		✓		✓		Good.
21	C	✓		✓		✓		✓		✓		Makes it safer.
22	C	✓		✓		✓		✓		✓		Good.
23	C	✓		✓				✓		✓		Great awareness
24	C	✓			✓	✓		✓		✓		Night time particularly
25	C	✓		✓		✓		✓		✓		More Police enforcement on this road.
26	T	✓		✓		✓		✓		✓		
27	C	✓		✓		✓		✓		✓		More of these signs
28	C	✓		✓		✓		✓		✓		Night time particularly
29	C	✓			✓	✓		✓		✓		Loose effect if too many
30	C	✓			✓	✓		✓		✓		Great on busy intersections
31	C	✓		✓		✓		✓		✓		
32	C	✓		✓		✓		✓		✓		Need to be back further
33	T	✓		✓		✓		✓		✓		Great awareness
34	C	✓			✓	✓		✓		✓		Night time particularly
35	C	✓		✓		✓		✓		✓		More of these signs
36	C	✓		✓		✓		✓		✓		
37	C	✓		✓		✓		✓		✓		Night time particularly
38	C	✓		✓		✓		✓		✓		
39	C	✓		✓		✓		✓		✓		
40	C	✓		✓		✓		✓		✓		
	4 trucks			85%		87.50%		92.50%		100%		20 positive comment, 6 good in dark/fog, 8 no comment

	Selwyn District Council - Intersection Flashing Warning Sign Survey - Maddison Road (west of Weedons Ross Road) 2.00pm -3.00pm											
	28/09/2017	Do you travel Maddisons Road often?		Did you notice the flashing intersection warning sign today?		Do you regularly get alerted by the warning sign?		Does it make you more aware of the stop control and encourage you to stop at the intersection?		Are they a positive addition to warning signs at intersections?		Brief Comments
	Truck/Car	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
1	C	✓		✓		✓		✓		✓		Need more of them along SH1, very useful morning and night
2	C	✓		✓		✓		✓		✓		No additional comment
3	C		✓		✓		n/a		✓		✓	Unaware of what they were for
4	C	✓		✓		✓		✓		✓		Brilliant, drove through this intersection 2 years ago before xmas and could have died.
5	C	✓		✓		✓		✓		✓		Great in the dark
6	C		✓	✓		✓		✓		✓		First time and they were great.
7	C	✓			✓	✓		✓		✓		Cant see the stop signs as they are too far left and covered/shaded by the shelter belts
8	C	✓		✓		✓		✓		✓		No additional comment
9	T		✓		✓		n/a		✓	✓		Caught his eye but didn't know what they were for
10	C	✓		✓		✓		✓		✓		No additional comment
11	C	✓		✓		✓		✓		✓		Makes a difference in sunstrike
12	C	✓		✓		✓		✓		✓		Good in the mornings
13	C	✓		✓		✓		✓		✓		No additional comment
14	C	✓		✓		✓		✓		✓		Good at night
15	C	✓		✓		✓		✓		✓		No additional comment
16	C	✓		✓		✓		✓		✓		Good in the dark/rural
17	C	✓		✓		✓		✓		✓		Good on rural roads
18	C	✓			✓	✓		✓		✓		Some people don't see them
19	C	✓		✓		✓		✓		✓		No additional comment
20	C		✓	✓		n/a		✓		✓		No additional comment
21	C	✓		✓		✓		✓		✓		Need more of them
22	C	✓		✓		✓		✓		✓		No additional comment
23	C	✓		✓		✓		✓		✓		Need more of them
24	C		✓		✓	✓		✓		✓		Good at night, need to be bigger
25	C	✓		✓		✓		✓		✓		No additional comment
26	C	✓		✓		✓		✓		✓		White arrows are really good on the ground
27	C	✓		✓		✓		✓		✓		Need more of them
28	C	✓		✓		✓		✓		✓		Much better with them
	1 truck			82%		90%		93%		96%		11 Positive comment, 4 good in the dark, 9 no additional comment

Last 5 Years

Appendix D

First Street	Distance	D I R	Second street or landmark	Crash Number	Date DD/MM/YYYY	Day DDD	Time HHMM	Description of Events	Crash Factors (ENV = Environmental factors)	Road	Natural Light	Weather	Junction	Cntrl	Tot Inj F A T	S E R	M I N
WEEDONS ROSS ROAD		I	MADDISONS ROAD	201321501	25/03/2013	Mon	1540	SUV1 EBD on MADDISONS ROAD hit SUV2 crossing at right angle from right	SUV1 did not stop at stop sign	Dry	Bright	Fine	X Type Junction	Stop Sign			1
MADDISONS ROAD	400	E	WEEDONS ROSS ROAD	201356166	20/11/2013	Wed	0910	VAN1 EBD on MADDISONS ROAD lost control; went off road to left	VAN1 load not well secured or moved	Dry	Bright	Fine	Unknown	Nil			
MADDISONS ROAD		I	WEEDONS ROSS ROAD	201416160	01/10/2014	Wed	1041	SUV1 NBD on WEEDONS ROSS ROAD hit CAR2 crossing at right angle from right	SUV1 Suddenly Braked CAR2 did not stop at stop sign, inattentive, overseas/migrant driver failed to adjust to NZ road rules and road conditions	Dry	Overcast	Fine	X Type Junction	Stop Sign		1	2
WEEDONS ROSS ROAD		I	MADDISONS ROAD	201510831	20/01/2015	Tue	1648	CAR1 NBD on WEEDONS ROSS ROAD hit TRUCK2 crossing at right angle from right	TRUCK2 Failed to give way At a priority traffic control, inattentive	Dry	Overcast	Fine	X Type Junction	Stop Sign		1	1
MADDISONS ROAD	500	N	WEEDONS ROSS ROAD	201534496	15/05/2015	Fri	1500	CAR1 NBD on MADDISONS ROAD lost control; went off road to left, CAR1 hit Fence, Tree	CAR1 lost control, Sudden Illness	Wet	Overcast	Light Rain	Unknown	N/A			
MADDISONS ROAD		I	WEEDONS ROSS ROAD	201539801	29/05/2015	Fri	0700	TRUCK1 EBD on MADDISONS ROAD lost control; went off road to right, TRUCK1 hit Fence, Post Or Pole	TRUCK1 too fast on straight	Ice/ Snow	Bright	Unknow	X Type Junction	Stop Sign			
MADDISONS ROAD		I	WEEDONS ROSS ROAD	201514611	29/05/2015	Fri	0732	TRUCK1 NBD on WEEDONS ROSS ROAD hit CAR2 crossing at right angle from right	CAR2 did not stop at stop sign, attention diverted	Dry	Bright	Fine	X Type Junction	Stop Sign			1
WEEDONS ROSS ROAD		I	MADDISONS ROAD	201552710	08/12/2015	Tue	1410	TRUCK1 SBD on WEEDONS ROSS ROAD overtaking hit CAR2 turning right	TRUCK1 overtaking at an intersection, misjudged intentions of another party	Dry	Bright	Fine	X Type Junction	Stop Sign			
WEEDONS ROSS ROAD		I	MADDISONS ROAD	201611845	29/02/2016	Mon	0659	CAR1 EBD on WEEDONS ROSS ROAD hit CAR2 crossing at right angle from right, CAR2 hit Post Or Pole	CAR2 Failed to give way At a priority traffic control, Did not check / notice another party	Dry	Overcast	Fine	X Type Junction	Stop Sign		1	1
WEEDONS ROSS ROAD		I	MADDISONS ROAD	201636175	15/03/2016	Tue	0800	CAR1 WBD on WEEDONS ROSS ROAD hit rear of CAR2 turning right from centre line	CAR1 failed to notice car slowing	Wet	Overcast	Light Rain	X Type Junction	Stop Sign			
MADDISONS ROAD		I	WEEDONS ROSS ROAD	201612019	27/03/2016	Sun	1052	CAR1 SBD on WEEDONS ROSS ROAD hit SUV2 crossing at right angle from right	SUV2 did not stop at stop sign, attention diverted by passengers, Did not check / notice another party	Dry	Bright	Fine	X Type Junction	Stop Sign		1	2

Last 5 years.

First Street	Distance	C I R	Second street or landmark	Crash Number	Date DD/MM/YYYY	Day	Time HHMM	Description of Events	Crash Factors (ENV = Environmental factors)	Road	Natural Light	Weather	Junction	Cntrl	Tot Inj F A T	S E R	M I N
HOSKYNS ROAD		I	WEST MELTON ROAD	201446744	27/10/2014	Mon	1630	SUV1 SBD on HOSKYNS ROAD hit CAR2 crossing at right angle from right	CAR2 Failed to give way At a priority traffic control, Did not check / notice another party	Dry	Bright	Fine	X Type Junction	Stop Sign			
HOSKYNS ROAD		I	WEST MELTON ROAD	201223560	19/12/2012	Wed	0740	SUV2 turning right hit by oncoming CAR1 WBD on HOSKYNS ROAD	SUV2 failed to give way when turning to non-turning traffic	Dry	Bright	Fine	X Type Junction	Stop Sign		1	