

NZTA Policy Update IPENZ Conference

Glenn Bunting (Network Manager)

March 2012



New Zealand Government

Give Way Rule changes

Land Transport (Road User) Amendment Rule 2011

- Changes to the give way rules come into force 25 March
- Information sheet sent to RCAs covering communications and engineering advice attached to handout

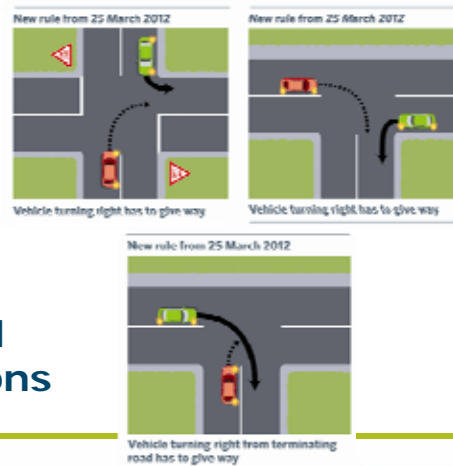


New Zealand Government

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Changes on 25 March 2012

- **Left-turn versus right-turn rule**
- **Uncontrolled T-intersections**



Traffic Control Devices

TCD Steering Group November meeting agenda items included:

- Extension of rural wide centreline trials
- Rural variable 60/70 km/h school speed limits
- RIAWS (Rural Intersection Active Warning Sign) trials
- Auckland City bus lanes trial
- Review of cycle signs and markings
- Safer Speed Areas signs and markings
- **Opportunities for local RCAs with all these**

Safe Speeds - 3 Objectives

1. *People will increasingly understand what travelling at safe speeds means*
2. *Travel speeds will reflect a balance between road safety and economic productivity*
3. *Increasingly speed limits will be intuitive and reflect the use and function of roads*

Safer Speed Demonstration Areas

Review of Speed Management Framework

- Traffic Note 61 published
- Introducing demonstration '**safer speed areas**' in urban and rural environments
- **Demonstration areas sought from local RCAs**



Safety Guide Suite

1. Motorcycling Safety Guide

- Project reference group includes 9 RCA reps, MOTO councillor, ACC and NZTA
- Public consultation Dec/Jan
- Final version due March/April 2012

2. High Risk Rural Road Guide

3. High Risk Intersection Guide

Network Operating Framework

- Developed by AustRoads
- Provides a 'One Network' approach linking strategy to operations
- Requires collaboration
- Based on agreed road user hierarchy
- Enables priority to be defined by mode and time of day

National Road Classification System

- Jointly owned and sponsored by local government and NZTA
- Provides connection between State Highway Classification System and NZS4404
- Discussion document under development for endorsement by sector

Walking and Cycling

- Developing education and promotional programme including:
 - Cyclist skills instructor training
 - Road user group training workshops
 - National “share the road” campaign
- Walking and cycling ‘Model Communities’
- NZ Cycle Trail ‘Great Rides’ and ‘Network Expansion Rides’

NZTA Planning Reviews

- Transport planning
- Project development and delivery
- Professional services
- Maintenance and operations
 - State Highway network
 - through the Road Maintenance Taskforce

Performance Measurement

- 'Smartmoves' website being replaced on 'Transport Data' page on NZTA website
- New draft guide for RCAs on how to use 'Transport Data' to inform investment in road maintenance

Thank you

Questions?

NZTA Policy Update – IPENZ Conference

March 2012

Network Optimisation

Land Transport (Road User) Amendment Rule 2011

The Land Transport (Road User) Amendment Rule 2011 was signed by the Minister in September. Changes in the Rule include:

- Changes to the give way rules (both right turn and T-intersection) – come into effect 5am Sunday 25 March 2012 – go to <http://www.giveway.govt.nz>
- Use of B signals for cycle, mopeds and motorcycles
- Confirming road user responsibilities around school buses, including with flashing lights

Attached to this update is an information sheet for RCAs on the messaging strategy associated with the change to the give way rules. Included are some useful technical engineering information from NZTA's Highways and Network Operations team regarding ensuring safety at intersections through the change.

Traffic Control Devices Rule

The **Traffic Control Devices (TCD)** Amendment Rule came into effect from 1 April 2011. Significant proposals relating to parking were included, and Part 7 (formerly part 13) of the TCD Manual 'Parking control' is in the process of being amended to take account of the changes

Other changes in the rule see inclusion of successfully trialled traffic control devices;

- Countdown pedestrian signals
- Flashing yellow studs at pedestrian crossings
- Self explaining roundabouts
- Nearside pedestrian traffic signal displays

Traffic Notes

Traffic Notes provide road controlling authorities and traffic practitioners with information, guidance or details requirements (of traffic law in particular) on aspects of their activities managing traffic. Individuals can register their interest in receiving advice of updates and information on how this can be done can be found on the NZTA website at <http://www.nzta.govt.nz/resources/traffic-notes/traffic-notes.html>.

Standards and Guidelines

Reviewing and replacing MOTSAM (Manual of Traffic Signs and Markings) with the **TCD Manual** is managed by the Traffic Control Devices Steering Group. The **Traffic Control Devices Manual Parts 1, 2, 3 & 8, 9, 10** are located in the Register of network standards and guidelines on the NZTA web site. As noted above Part 7 is currently undergoing revision. Other parts will be developed over the next 2 years.

Register of network standards and guidelines and linked Process manual

The latest spreadsheet version of network standards, specifications and guidelines are accessed on NZTA's website at the following link:<http://www.nzta.govt.nz/resources/nzta-register-network-standards-guidelines/index.html>

The linked Process manual provides a fit-for-purpose process for managing additions, changes and variations to documents in the Register.

[:http://www.nzta.govt.nz/resources/process-manual-network-standards-guidelines/index.html](http://www.nzta.govt.nz/resources/process-manual-network-standards-guidelines/index.html)

The following documents have recently been added to the Register:

1/ Investment, State Highway and Local Status Guidelines

- a/ Performance Based Specification for Bituminous Reseals and
- b/ 17 Changes to Performance Based Specification for Reseals
- c/ Guide to assessing road-traffic noise using NZS 6806
- d/ P25 Pilot Specification for Calcined Bauxite Specification and P25 Notes

2/ NZTA Technical Memos for Road safety TM – 2000 to TM – 2007 included as Other Reference documents

- Tech Memo TM-2000 Frequently Asked Questions - Barriers & Terminals
- Tech Memo TM-2001 Safety Barrier Test Level and Length of Need
- Tech Memo TM-2002 Lapping of W-Beam guardrail
- Tech Memo TM-2003 Nesting of W-Beam and Thrie-Beam guardrail
- Tech Memo TM-2004 Buried in Backslope Anchor
- Tech Memo TM-2005 Weak barrier post backfill
- Tech Memo TM-2006 Slip base sign support installation
- Tech Memo TM-2007 M19 3-Bolt Shear base lighting column installation and maintenance

3/ An Archive Status section is now included in the Register

For further information contact Bill Greenwood 03 964 2876 bill.greenwood@nzta.govt.nz

Traffic Control Device (TCD) Trials

Traffic Note 14 details TCD trials and is available on the web. Current approved trials include:

- **Wide rural centreline marking**, currently there are 8 sites marked across NZ. Two further sites are planned, 1 in Waikato and 1 in Hawkes Bay. Monitoring to date has shown that the Wide Centreline has increased the lateral separation between vehicles by an average of 0.6m, and there has been no significant change in speed at the trial sites.
- **40km/h Advisory School Zone Signs**, Selwyn District. A new advisory warning sign design is being trialled outside 9 rural schools in Selwyn District.
- **Variable 60/70 km/h school zone speed limits**, the trial is for variable 70km/h in 100km/h, or variable 60km/h in 80km/h. There are five pilot schools on State Highways (Hamilton, Coromandel, Hastings, Wanganui, Palmerston North). We have recently visited the pilot schools, and are currently consulting on changing the speed limits bylaw. We are aiming to install the electronic signs in June. I've recently invited all Councils to take part in the trial, and so far I've had interest from Auckland, Matamata, Wanganui and Invercargill.

The TCD Steering Group, which considers applications and advises the NZTA on the possible acceptance of the trials, met in November. Agenda items for that meeting included:

- TCD Manual Part 7 - Parking Control (final draft for publication)
- TCD Manual Part 9 - Level Crossings (draft for public consultation)
- Extension of wide centreline trial
- Variable 60/70 km/h school zone speed limits (trial application)
- Rural Intersection Active Warning Sign (RIAWS) project (trial application)
- Auckland City Bus lanes (trial application)
- NZ cycle trail logo and symbol on traffic signs
- Review of cycle signs and markings
- Safer Speed Areas signs and markings

The next meeting of the TCD Steering Group is scheduled for 30 May 2012.

Review of Speed Management Framework

Evaluation of rural speed zones trial has been undertaken by ARRB in Australia, and results of that assessment are now published in **Traffic Note 61**. Traffic Note 61 also provides information on the first steps for reviewing the New Zealand speed management framework, which will lead towards a Safe System approach for setting speed limits. This review may culminate in changes to the Setting Speed Limits Rule.

Traffic Note 61 also introduces the concept of 'safer speed' demonstration areas, to help us better understand how lower speed limits over wider rural areas can be achieved and accepted by the public. *Safer Journeys* states "*Safety would be improved if we could reduce operating speeds to match the standard of the existing network*". RCAs interested in being part of both **rural and urban 'safer speed area' demonstration projects** are encouraged to contact their NZTA regional office engineering staff.

Two new brochures on speed limits have been published on NZTA's website: (<http://ww2.nzta.govt.nz/resources/speed-limits/community-consultation/index.html>). Titled "Speed Limits – how you can be involved" and "Safe speeds around schools", the brochures have been developed at the Minister's request to assist MPs and the communities they represent understand the process of speed limit setting, the responsibilities of NZTA and local authorities, and how communities can influence decisions on speed limits.

The next meeting of the Safe Speed Management Steering Group is scheduled for 31 May 2012.

Level crossings

The Opus contracted surveys of the approximately 1600 public crossings some with road controlling authorities are completed and analysis has commenced. Initial evident is that reduction in 'risk scores' at many level crossings could be achieved with relatively low-cost treatment options. Once the analysis of the ALCAM data is completed by KiwiRail access to the data by RCAs will be progressed.

The Level Crossing Working Group meet on 29th March to consider the following items;

- 1/ Minor changes to TCD Part 9 Railway Crossings
- 2/ Roll out of the ALCAM surveys and ALCAM future
- 3/ Railway crossing access agreements

For further information contact Bill Greenwood 03 964 2876 bill.greenwood@nzta.govt.nz

Safety Guide suite

The NZTA has been working with sector partners to develop a suite of three guides which will help progress Safer Journeys interventions.

1. Motorcycling Safety Guide

One of the Safer Journeys actions in the safe roads and roadsides priority is to develop policies and treatment programmes to address safety risks along high-risk motorcycling routes, as well as implement targeted safety treatments along a high-risk, popular motorcycle route. The end-product from the project will be a Safety Guide to provide road designers and policy makers with best practice guidance to identify, target and address key safety issues associated with motorcycles on New Zealand roadways.

A "Sector Reference Group" (SRG) made up of representatives from the NZTA, ACC, MOTO-NZ, and road controlling authorities, as nominated from the RCA Forum, has been established to guide the development of the Safety Guide. Opus has been engaged to develop the Guide, with an expected completion in March/April 2012.

A draft version of the guide was released for public engagement for a total of eight weeks over December 2011 and January 2012. A total of 100 responses were received. Response to the public input is being developed and will influence the content of the next version of the Guide.

A related pilot project on a high-risk motorcycling route in the Coromandel region, looking at a section of State Highways 2, 25 and 25a, is underway and will run through 2011 and 2012. A series of interventions are being developed for the route, informed by the Safe System approach. Some non-traditional interventions that had been identified during the pilot project are being explored such as the provision of improved cell phone coverage and emergency response helicopter landing pads along the route.

The project team has recently begun the investigation and design phase shortly. Subject to funding, interventions will be implemented on the roads starting in mid-2012. The Hamilton regional office is managing this project.

In partnership with Auckland Transport, an urban pilot project is planned on high-risk urban routes in the Auckland region in mid-2012.

2. High risk rural road guide (HRRRG)

This document is now published and on the NZTA website at <http://www.nzta.govt.nz/consultation/high-risk-rural-roads-guide/>
Contact Tim Hughes (03) 9642843 tim.hughes@nzta.govt.nz

3. High risk intersection guide

The consultation version of this guide is imminent.
Contact Tim Hughes (03) 9642843 tim.hughes@nzta.govt.nz

Network Operating Framework

The P&I Network Optimisation Team is helping to progress the Austroads developed Network Operating Framework into New Zealand. The framework has strong links with the Transport Planning Review that has recently been launched, as well as a number of other NZTA initiatives and strategies currently under development.

The Network Operating Planning Framework is a tool that helps to provide a 'whole-of-network' approach to our planning processes that provides a clear link between strategic planning and activity management planning. It requires collaboration among all network stakeholders to develop an outcomes-focused operating plan for the network that enables an understanding of the trade-offs associated with both the day-to-day operation of the network and with proposed changes to the network.

The framework is comprised of three core elements:

- **An agreed road user hierarchy** – to identify the priority of each transport mode by route, place and time-of-day, and to establish the principles that informs the management and operation of the network;
- **Network operating plans** – to identify the way that transport demands across the network should be managed; and
- **Operating performance** – to enable the performance of the network to be assessed against specific operating objectives, and to identify gaps in network performance.

Currently P&I is working on developing this framework with NZTA's Highway Network Operations and Strategy and Performance Groups, as well as with a number of AOs from across New Zealand. Draft guidelines are being developed and which will be further informed by pilot projects (TBD) that will test the framework in practical terms. Current thinking is that guidelines will be rolled out to the sector in conjunction for the 2015-2018 NLTP period.

National Road Classification System

A National Road Classification System (NRCS) jointly owned and sponsored by local government and NZTA is currently being developed.

The purpose of this project is to classify the function and role of New Zealand roads with respect to place and links, in order to understand how they balance road users' needs.

- Road users include freight transport, cyclists, public transport, pedestrians, and motorists
- User needs include bus lanes, cycling lanes, pedestrian crossings, and journey time reliability and safety

The National road classification system has been developed to join up the State highway classification system with NZ Standard 4404 Part 3 Roads, to address the road networks that connect state highways and local authority roads.

The National road classification system aims to deliver on the priorities in the Safer Journeys strategy and help the land transport sector plan and deliver multi-modal transport choices and integrated transport outcomes.

The system also provides benchmarking of road user service levels to make the most of investment in land transport, to contribute to a thriving New Zealand.

Consultation with the sector on what a NRCS might look like and the benefits it would deliver will coincide with consultation on the state highway classification levels of service. A sector supported NRCS is expected to be available in July 2012.

For further information contact Bill Greenwood 03 964 2876 bill.greenwood@nzta.govt.nz

Walking and Cycling

The Inaugural walking and cycle conference 2 walk & cycle was held late February in Hastings. It was well attended and received by over 200 delegates. Four NZTA staff gave presentations ranging from NZTA's role in walking & cycling's contribution to NZ's Transport system to the integration with PT to a discussion on NZ school resources which help to create safer journeys for children.

The Cycling Advocates' Network (CAN) and BikeNZ are well into the final phase of the two year **education and promotional programme** focusing on delivering a safer environment for cycling, and delivering on 3 key areas:

- a. **Cyclist skills instructor training** - Instructor courses have now been held throughout the country, with two more scheduled before June. The NZQA unit standards process with Skills Active is now nearing completion.
- b. **Road user group workshops** - scheduled NZ Bus workshops are all progressing well with good feedback. Truck workshops continue to be hard to organise and the key learning is they need a range of different delivery formats to meet each organisations needs.
- c. **"Share the road" campaign** - continuing to gather information focusing on road cyclists/commuter drivers & Bus driver/commuter cyclist and working with behaviour change model to create empathy & understanding of all road users.

New Plymouth and Hastings District councils have submitted their 3 year programmes into the RLTP process for the next 3 year NLTP period. For next 3 year NLTP period we are looking at the opportunity to continue our investment in New Plymouth and Hastings and also receiving integrated packages of activity that demonstrate Model Community attributes from other locations. More info here; <http://www.nzta.govt.nz/planning/process/model-communities.html>

The NZTA is supporting and assisting in MED in delivering the NZ Cycle Trail (NZCT) 'Great Rides' project. Three more network expansion rides have now been approved. The Molesworth Muster Trail, Golden Downs Trail and Rainbow Valley Trail are all located at the top of the South Island. The Otago Central Rail Trail will officially become a 'Great Ride' on 14 March after meeting all the criteria.

The network rides will link the 'Great Rides' network with urban centres using safer quiet, scenic roads and existing cycle paths. More in info on the NZCT here; <http://www.nzcycletrail.com/>

Road Safety Action Planning

RSAPing is being refreshed to:

- encourage attention on Safer Journeys high priorities and communities at risk focus areas; and
- take the Safe System approach (see Safe System leaflet <http://www.nzta.govt.nz/resources/safe-system-leaflet/docs/leaflet.pdf>) and

specifically prompting attendees at the RSAPing meetings to look at all options for improving the system.

NZTA regions have available a (draft) RSAPing template as an example of a safe system approach to RSAPing. The key focus is improving the outcomes from this key engagement and coordination process. The template includes a set of performance measures against each Safer Journeys priority area, aligning with the safe system approach, to help describe "what good looks like" and inform the development of interventions.

A review of current RSAPing practice is currently underway, and a framework outlining best practice, together with information on monitoring, evaluation and reporting for RSAPing for the next 2012/15 NLTP period, is intended to be out for discussion late March/early April.

Intelligent Speed Adaptation (ISA) Research Programme

The NZTA has developed a Research Programme that aims to investigate the issues associated with the deployment of ISA in a New Zealand context. Research on this programme has begun and will be ongoing throughout 2011 and half of 2012.

Contact Fergus Tate (04) 9646496 fergus.tate@nzta.govt.nz

Integrated Planning

Development of the Planning and Investment Knowledge base

The bulk of the content from the Planning Policy and Funding Manual and Planning Policy Manual has been migrated into the online "Planning and Investment Knowledge Base. The Knowledge base is intended to provide a comprehensive source of information in relation to transport planning, the transport funding system and integrated planning. Workshops have been held around the country, as the knowledge base is rolled out, in a series of stages. The Planning and Investment Knowledge Base is available on the NZTA website at the following link: <http://www.nzta.govt.nz/resources/planning-and-investment-knowledge-base/>

NZTA Reviews

Transport Planning through to Maintenance

NZTA is proactively planning for the future by working to improve its business across all areas. All good businesses look to innovate, and at present there are particular opportunity drivers for this work including fiscal constraints and potential changes to legislation and local government as signalled by the Government.

Of particular relevance are reviews we have been undertaking in the following areas:

- Transport planning
- Project development and delivery
- Professional services
- Maintenance and operations – both the State Highway network and through the Road Maintenance Taskforce.

These reviews show that while we are performing well, there is room to do better. We are starting to clarify proposed actions that will help shape our business and where and how we invest.

Key themes from all of these include:

- **Sector collaboration is critical to success** of delivering one network approach – great opportunities to work together with partners from whole supply chain
- **Outcomes focus** –there is an opportunity to be more outcomes focused. Our business improvement programme is taking us in that direction. Eg. whole of life continuum from business case approach to planning and project development to being clear what is the outcome being delivered from our maintenance and operations investment
- **Smart client** – opportunity for NZTA and the sector to take more of a smart client role and that this will mean commitment to raising capability together
- **Time to implement and tools** – the business improvements will require concerted change effort over time and will need to be supported by improved tools and practice from contract models to new innovative tools like the Network Operating Framework.

More detail of these reviews will be emerging over the next couple of months, including the report from the Road Maintenance Task Force in April.

Performance Measurement

NZTA's Smartmovez Website

Smartmovez is being replaced. Access to the data is now possible through the brand-new "Transport Data" page on the NZTA website. Other information on Smartmovez is now available in other parts of the NZTA website or through the Knowledge Base. This approach is part of NZTA's initiatives to rationalize and centralize information and have 'one source of truth'. The original Smartmovez website will continue to work for a while, but will ultimately be replaced by a redirection link to the NZTA website page.

Road Maintenance Investment Guide

In recent years NZTA has been making more and more data available over the web, focussed on transport sector decision-makers. Recently the NZTA's Planning and Investment Managers (PIMs) suggested that guidelines be produced specifically to show how to use that data for investment in road maintenance. After just a few short weeks of development, a printable Guide for local authority road networks has reached a workable draft stage. It is now available from within the Road Network Trends Wizard (accessible through the new Transport Data page on the NZTA website). This is allowing testing and refinement in consultation with the PIMs. It also allows discussion about whether this information will be of value to our Road Controlling Authority partners.

Glenn Bunting
Network Manager

Give way rule 2012



NZ TRANSPORT AGENCY
WAKA KOTAHI

information sheet

To: Road controlling authorities

Date: November/December 2011

No. of pages: 7

Changes to the give way rules in 2012

At 5am on Sunday 25 March 2012, two of the give-way rules are changing. This has been made possible by the signing of the Road User Rule Amendment 2011.

There are two give way rules that will be changing.

Change 1: The left turn versus right turn rule

From 5am on 25 March 2012, this new rule will require all traffic turning right to give way to a vehicle coming from the opposite direction and turning left. This only applies at cross roads, T-intersections and driveways where:

- both vehicles are facing each other with no signs or signals (neither vehicle is controlled)
- both vehicles are facing give way signs
- both vehicles are facing stop signs
- both vehicles are facing green traffic signals

Example facing no sign or signal:



Change 2: At uncontrolled T-intersections ('uncontrolled' means when there are no signs or signals to tell you what to do)

At an uncontrolled T-intersection, all traffic from a terminating road (bottom of the T) will have to give way to all traffic on a continuing road (top of the T). This will bring it into line with T-intersections where there are Stop or Give Way signs on the terminating road.



This rule change will also apply to uncontrolled driveways, such as at a supermarket or hospital. From 5am on 25 March 2012 the traffic exiting the driveway will need to give way to all traffic on the road.

All vehicles entering or exiting a driveway must continue to give way to pedestrians on a footpath, or cyclists and pedestrians on a cycle path or shared path. Drivers should not pull out to block the footpath in front of pedestrians and cyclists.

Communicating the changes

As mentioned in earlier updates, a public awareness campaign will be run in the month leading up to the date of the actual change on 25 March 2012, with national advertising starting 10 days before the change. This late February start date is necessary to avoid public confusion and minimise the risk of people starting to use the new rules too early.

The NZ Transport Agency (NZTA) is developing the public information campaign material ready for use in 2012. To ensure clarity and consistency of message across the country and avoid public confusion, the NZTA is very keen for the campaign material it develops to be used by all organisations involved in road safety. To help ensure this happens, all campaign material will be readily available online for councils (and other key stakeholders) to use.

We anticipate this resource material will be ready in early February 2012 with an embargo until late February. It will include digital versions of the following, which can be downloaded for use: images of the new rules (similar to Road Code format), technical wording, posters, leaflets and translated leaflets. We will be in touch again closer to the time once this material is finalised.

The NZTA has been asked by some to use the give way change campaign as an opportunity to reinforce other road rules. To ensure the messages around the give way change campaign are not diluted, the public information campaign should be focused only on the specific changes to the give way rules.

The web page www.giveway.govt.nz will continue to be updated with information and resources for the public as we move towards implementation. It was last updated on 22 November.

Engineering reviews

The NZTA is currently working through what these changes will mean for the state highway network. From our experience to date, the following outlines some factors that local road controlling authorities (RCAs) may wish to consider in advance of the rule changes taking effect. This information is an update to the information supplied to RCAs in October.

We suggest RCAs identify locations where the changes will have implications for road markings, signal timings or intersection layout. Intersections that currently cause difficulties, or which may cause issues when the give way rules change, need to be identified in advance.

Plans should be underway, or soon be in place, to observe activity at any potentially problematic intersections so any issues can be identified quickly, and remedial action taken as soon as possible where necessary. This should be either before the rule changes or immediately after should the need arise.

With some intersections a 'wait and see' policy might be suitable and any minor issues can be sorted out when they start to eventuate. However, waiting for a pattern of issues raised by the public about a site to develop, then undertaking an investigation, and then developing and implementing a suitable solution could result in a delay of many months. Taking the time to identify potential problems will allow RCAs to be ready to act quickly.

The AA is offering to help, so if you wish to make use of their people to suggest or identify intersections to monitor, please contact your local AA branch.

It is important to note that the change to the give way rule will not affect existing signs or road markings at intersections. Signs and markings provide important safety benefits for road users by highlighting intersections, particularly at night and during poor weather.

Potential issues to consider

There are potentially two issues to consider. The first involves capacity and queuing issues, particularly for right turning traffic that must now give way to both through and left turn traffic. The second relates to potential confusion particularly around larger junctions.

1. Capacity

Capacity issues are most likely to occur where:

- right turn movements are currently approaching capacity, and regular right turn queuing occurs
- signalised intersections involve a filter right turn
- intersections have high left turn volumes
- right turns are opposed by shared through and left turn lanes.

In dense urban networks, it is likely that the rule change could require changes to traffic signal timings, possible changes in phasing (dedicated right turn phases), or changes in queue length.

Most dense urban networks run some form of traffic model. It is a relatively simple task to change the give way rule in these models. The models should be run for the peak period.

- Run the current year and existing rule.
- Switch to the new rule and run.

- Identify those intersections where the volumes will change by more than say 15% (equivalent to five years growth at 3%) and identify any increases in queue lengths.
- Re optimise the traffic signals (most models will do this so it will not be a manual exercise) and report as above.

The output from this process is likely to be:

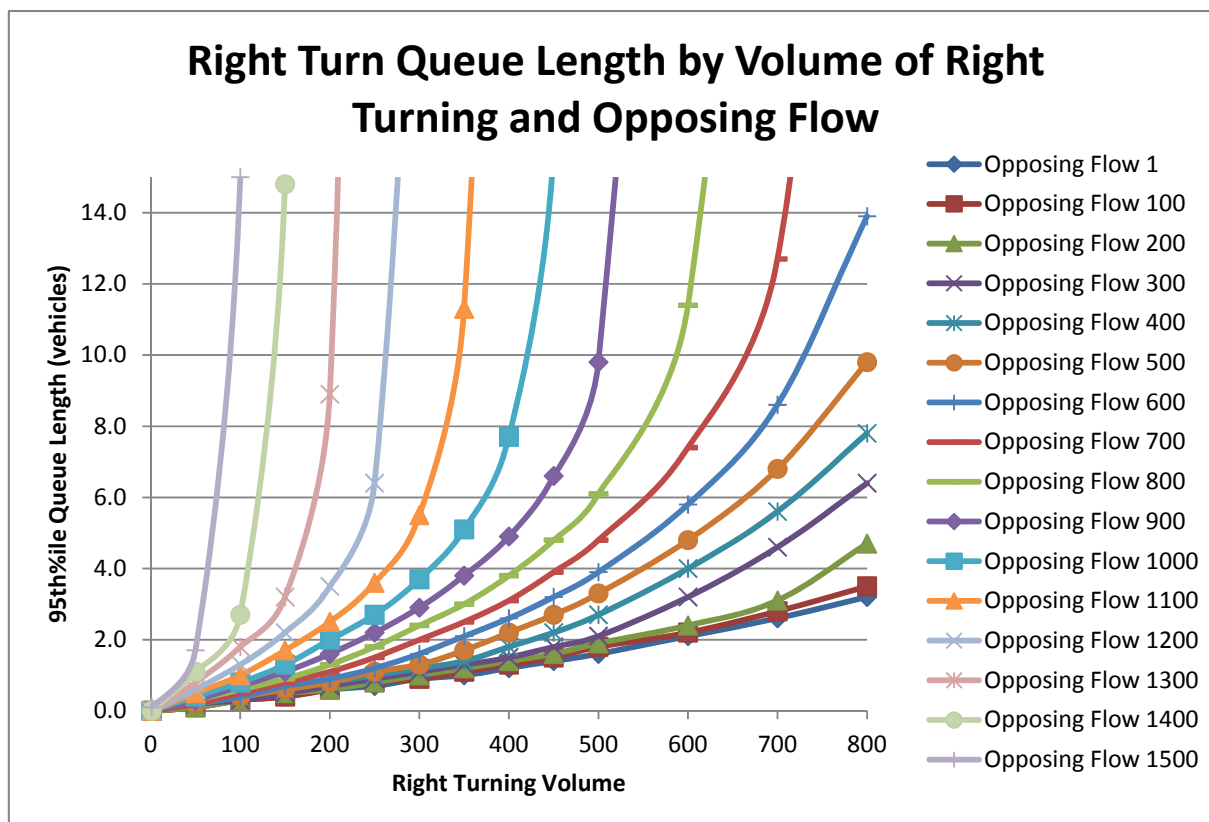
- a list of intersections that are worth keeping an eye on following the change over
- a list of potential signal timing changes that may be implemented should an issue develop.

In the case of rural road networks and urban networks without the benefit of traffic models, the following graph can be used to gain an indication of whether increases in right turn queues are a possibility.

In general we are looking at roads carrying more than around 1200 vehicles per hour which, assuming 12% traffic in the peak hour, means roads carrying more than 10,000 AADT, and with high levels of turning traffic (both left and right). Examples could include side roads leading to schools, where pupils are dropped off and collected at particular times, or large employer with common start times.

It is possible to use the figure below to establish whether further investigation of right turn queuing could be required.

The approach is relatively simple. Estimate the peak right turn volume and the opposing through traffic and look up the expected 95th percentile queue length. Now add the opposing left turn volume that right turn vehicles must give way to and reassess.



This is a simple screening tool to help identify situations you might want to investigate in greater detail.

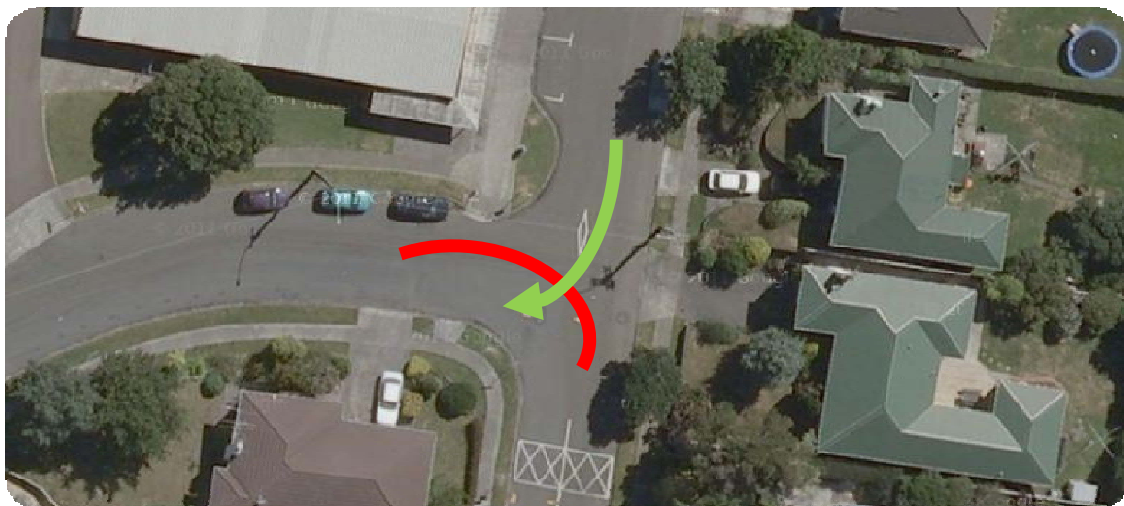
For example: A primary and secondary school are located on Side Road. In the morning peak 300 northbound vehicles turn right into Side Road. A further 400 southbound vehicles turn left into Side Road while 700 vehicles continue straight through the intersection.

In the before case the 300 right turners give way to 700 straight through vehicles and a 95th percentile queue is around two vehicles.

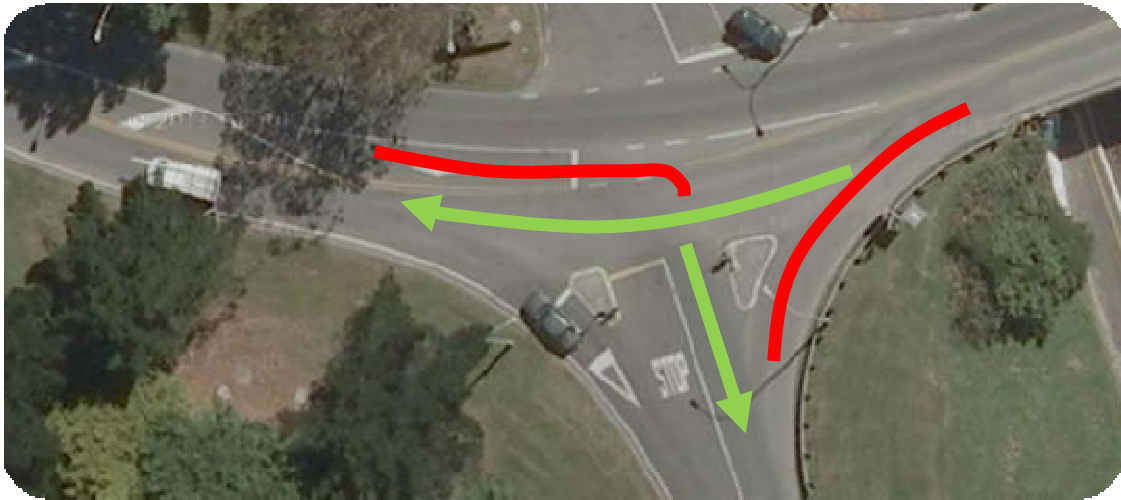
Under the new rule the 300 right turning vehicles will give way to 1100 left turn and straight through vehicles. The max queue is expected to more than double. This being the case a more detailed investigation may be warranted.

2. Confusion around larger junctions

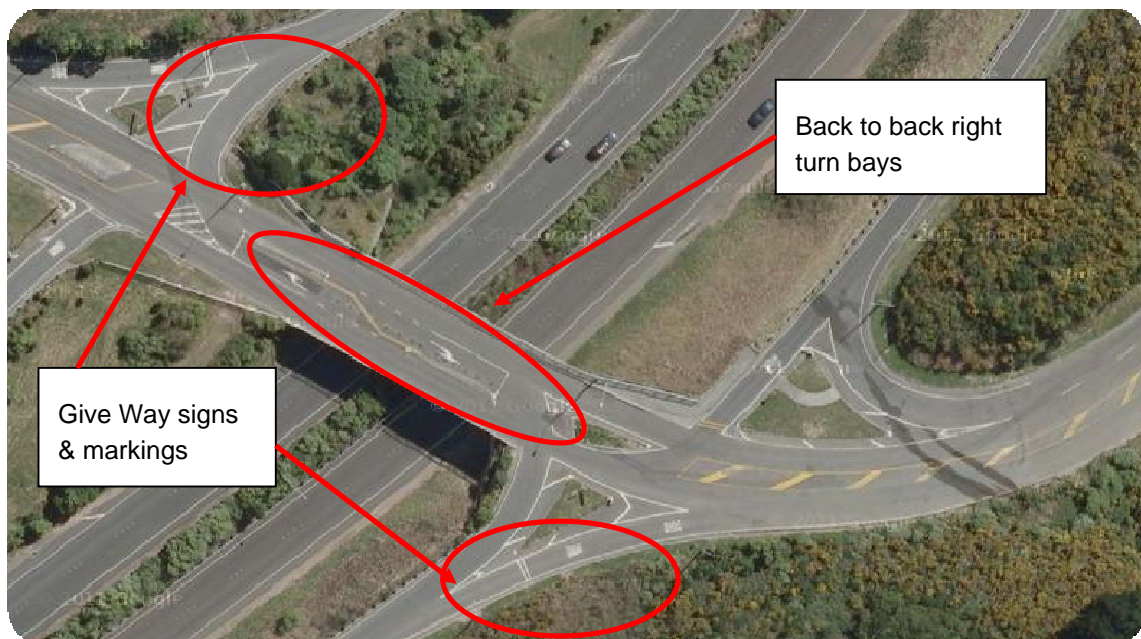
The key area of potential confusion relates to intersection layout and what constitutes an intersection. The rule itself is couched in terms of continuing roads and terminating roads, based upon the projection (promulgation) of kerb lines. The location of the intersection is quite clear in the figure below and the rule is easy to apply.

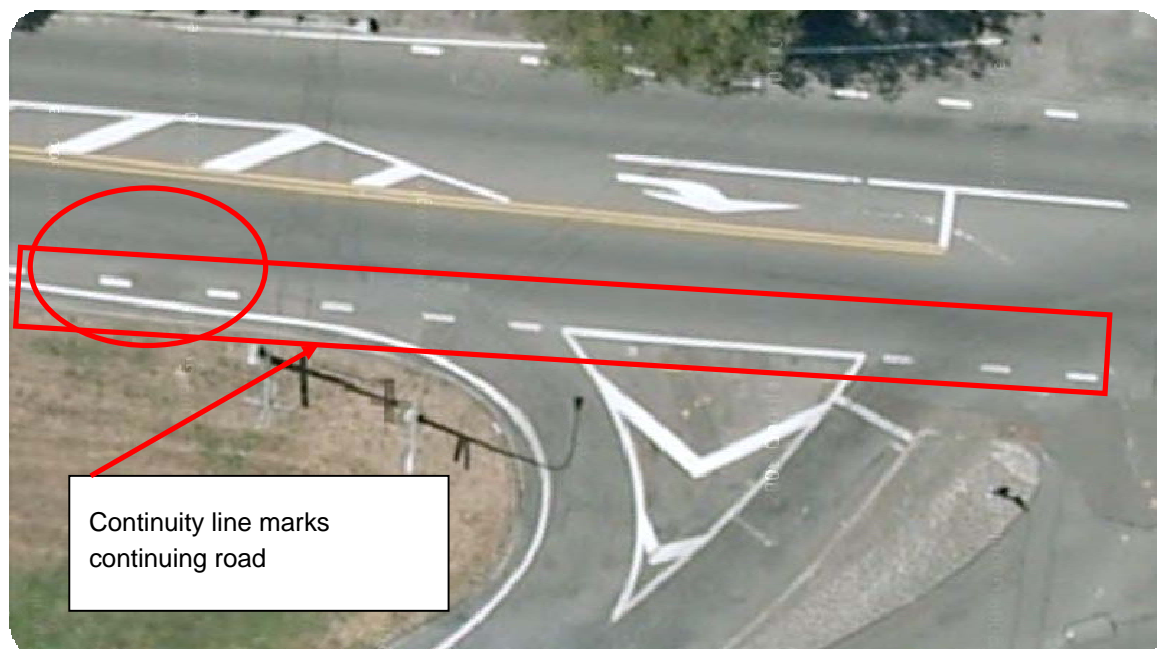


However, in theory the intersection below could be two intersections, although such subtleties may well be lost on the general public.



To minimise the potential for such confusion the expected behaviour should be reinforced. Options include Give Way signs and markings and/or use of continuity lines to clearly indicate which is the continuing road. Note this will also assist in addressing possible capacity issues related to back to back right turn bays, all of which should be checked.





For more information, please contact your usual NZTA representative.

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