SM012 State Highway Control Manual
Part 15 - Consolidated Safety Sections

Index

Vision Zero and a Safe System

What is Vision Zero and a Safe System?

Vision Zero for Waka Kotahi means implementing and maintaining "Primary Safe System" infrastructure and speed measures wherever possible, i.e. median barriers, speed management, roundabouts, raised safety platforms. It's acknowledged it may not always be possible to implement a Primary Safe System intervention, however if a primary treatment cannot be achieved then there should be strong justification to support this.

This is a change, as traditionally we've taken an incremental, risk-based approach in determining the most appropriate type of intervention. And those interventions were not always Safe System aligned and generally led to limited, or even poor, safety outcomes (i.e. high-volume roads without median barriers, high volume high speed signalised intersections, at-grade/non separated pedestrian crossings and cycle facilities).

A safe system must be one that is well engineered, maintained and operated.

What role can the engineering sector play?

The responsibility of the road engineering sector is to help take New Zealand toward Vision Zero, a New Zealand where no one is killed or seriously injured on our roads.

The sector will do this by designing, maintaining and operating a forgiving road network that takes human fallibility and vulnerability into account. Under a Safe System we design the whole transport system to protect people from death and serious injury.

Waka Kotahi will do this by embedding the Safe System principles in our policies, guidance, standards and processes. This ensures the way we design, operate and maintain our transport network not only reduces the chance of a crash occurring but also reduces the severity of that crash when it does occur.

Deviation from manuals

The Safe System principles are:

- We promote good choices but plan for mistakes.
- We design for human vulnerability.
- We strengthen all parts of the road transport system.
- We have a shared responsibility.

Examples of how engineers can apply Safe System principles

The Safe System principles can be applied in road and street design, maintenance and operations. In engineering terms, it is about understanding and managing crash forces to within survivable limits.

The Safe System approach requires a change in mindset.

Issue	Traditional approach	Safe System approach
Belief	**Some deaths are inevitable** As long as we were making a good go at improving things, people accepted that some road deaths would still occur, and would be satisfied with some improvement.	**Road deaths are preventable** We know road deaths are preventable. It's not acceptable to accept the status quo. By taking a system approach, and choosing Safe System interventions, we can drastically reduce the level of harm on our roads.
Human error	**Expect perfect human behaviour** Human error was often seen as the excuse for inaction, and effort was focused toward improving driver behaviour rather than infrastructure.	**Plan and design for mistakes, people are fallible and vulnerable** A 'forgiving' transport network is core to the Safe System. Death and serious injury crashes should not occur as a result of driver error. Vehicle and infrastructure/speed improvements should be used to reduce impact forces (should a crash occur) to within human biomechanical tolerances, and therefore reduce the harm.
Responsibility	**Blame the road user** The focus was on driver education to address road user error which consequently lowered the responsibility of system designers.	**System designers and operators are also responsible for creating a Safe System** System designers and operators share the responsibility for safe travel outcomes by accommodating people's errors.
Crash severity addressed	**Total number of crashes** Total crashes (of all severities) was often used to identify problem sites.	**Crashes resulting in death or serious injury** Death and serious injury crashes and/or high-risk crash types should be the starting point in site identification. Minor injury and non-injury crashes may be useful to provide additional information but are not the core focus.

Understanding speed at which deaths and serious injuries (DSI) occur for different crash types	**Biomechanical tolerances known but not core to decision making** Information on biomechanical tolerances was available but was not core to the understanding of how to address risk.	**Biomechanical tolerances core to decision making to eliminate DSI** Biomechanical tolerances are core to the vision of eliminating death and serious injury crashes. We need to understand and be guided by the speed at which DSI occur for different crash types.
Design requirements	**High Benefit Cost Ratios (BCRs) favoured rather than eliminating death and serious injury** Treatment types were often selected based on high BCRs rather than eliminating death and serious injury.	**Must focus on eliminating death and serious injury** It is paramount that new infrastructure assists in eliminating death and serious injuries. This also includes speed management and prioritisation/separation of different transport users travelling in different directions or modes.

Safe System principles in design

Principle	The road system needs to be managed and designed in such a way that impact energy on the human body is: • Firstly avoided - this includes considering the ways in which people respond to road conditions and design roads to minimise opportunities for error. • Secondly managed at tolerable levels, in the event a crash occurs - design a system that is error tolerant – i.e. design that is resilient to human error and will minimise harm when something goes wrong.
Embedding	For the Safe System approach to be fully embedded into New Zealand we need systematic application of these principles in road design, operations and maintenance.
Translation	To translate the Safe System approach into application, the following questions should guide us: • Is it possible to have a head-on crash at a speed greater than 70 km/h? • Is it possible to have an intersection (right-angle) crash at a speed greater than 50 km/h? • Is it possible to have a run-off-road (side impact with a rigid object) crash at a speed greater than 40 km/h? • Is it possible to have a vulnerable person (e.g. pedestrian, cyclist and motorcyclist) crash at a speed greater than 30 km/h?
Outcome	Through implementing the Safe System approach there will be potential reductions of human error and, preventing crashes occurring, the priority is reducing the level of harm (death and serious injuries) when crashes do occur.
Targets	Infrastructure and speed management improvement projects and programmes should address high severity, head-on, run-off-road, intersection (side impact) and vulnerable road user casualties where the appropriate value for money can be achieved.

Markings and Road Furniture

Pavement markings	The legal requirements for pavement markings are described in the Land Transport Rule: Traffic Control Devices 2004, with its amendments. Pavement markings shall be in accordance with the following guidelines: A. *Land Transport Rule: Traffic Control Devices 2004*, with its amendments. B. *Traffic Control Devices Manual* and *Manual of Traffic Signs and Markings with relevant Technical Advice Notes.*
Intersection controls and medians	These should conform with the following guidelines: A. *RTS 1: Guidelines for the Implementation of Traffic Control at Crossroads*, NZTA. B. *Traffic Control Devices Manual Part 5: Traffic Control Devices for General Use – Between Intersections*, NZTA. C. *Guidance on Median and Centreline Treatments to Reduce Head-on Casualties*, Austroads (2016). D. *Austroads Guides*: • *Road Design Part 4A: Signalised and Unsignalised Intersections, 2021* • *Road Design Part 4B: Roundabouts, 2021* • *Guide to Traffic Management Part 10: Transport Control - Types of Devices, 2020*.
Pedestrian crossings	The requirements for pedestrian crossings are contained in the Land Transport Rule: Traffic Control Devices 2004. Note that pedestrian crossings shall not be installed on roads where the speed limit is greater than 50km/h unless approval is obtained from the General Manager, Safety, Health and Environment. Details of pavement markings are specified in the *Traffic Control Devices Manual* and the *Manual of Traffic Signs and Markings Part II: Markings*, NZTA. No stopping lines may need extensions for visibility especially where school patrols operate. Lighting shall be in accordance with AS/NZS 1158.4:2015. New installations shall be constructed only where they meet the warrant requirements set out in the *Traffic Control Devices Manual* and the *Manual of Traffic Signs and Markings*.
Safety barriers and median barriers	These should comply with the following guidelines: AUSTOADS *Guide to Road Design (in particular Part 6), M23 Roadside Safety Barrier Systems* and *AASHTO Roadside Design Guide*
Skid Resistance	The management of skid resistance shall be in accordance with the *Specification for State Highway Skid Resistance*, T10.

Other Statutory Controls

Purpose	Situations often arise where action is required to meet an immediate situation. Provision is made in various regulations for prompt action to be initiated without the need for a bylaw or more formal control measures.
Temporary traffic control	The requirements for temporary traffic control and temporary speed limits are contained in the NZTA manual "Code of Practice for Temporary Traffic Management".
School patrols	Senior Safety Engineers are authorised to grant permission in terms of the Traffic Control Devices Rule 2004 section 8.3(1) to the Board of Trustees of any school to establish a school patrol at any specified existing pedestrian crossing or school crossing point on State highways, subject to agreement by the local Police Youth Education Officer. In terms of the Traffic Control Devices Rule 2004 section 8.4(2), to establish new school crossing points on State highways where the speed limit exceeds 50 km/h must be approved by the Senior Manager Systems Integrity.

Safety Improvements, Monitoring and Reporting Requirements

Introduction	The NZTA has adopted as its policy for improving safety on State highways, the implementation of traffic safety measures to reduce the overall number and severity of crashes by the application of low cost engineering works and also the application of safety principles to improvement and maintenance works.
Guidelines	References for reducing the incidence of crashes are found on page 14.
Crash reduction studies	At least annually, the Managers, System Management shall review the accident situation on their roading network. This will be achieved by means of a regional Safety Management Strategy (SMS) and will involve collecting data, identifying accident situations and deciding on accident study programmes. As a specific measure for implementing the safety improvement policy, crash reduction studies (CRSs) shall be carried out on the State highway system on a five-yearly cycle. Identified black spots are to be investigated annually.
Implementation of improvements	Crash reduction study reports are to be forwarded to the NZTA offices promptly and approved safety projects are to be incorporated in the work programmes as soon as current NZTA guidelines permit. The following are general guides: Land transport programme for State highways: A. Minor safety works should be implemented within 12 months. B. Major safety projects should be programmed in accordance with the requirements of the NZTA's PIKB.
Monitoring	Annual monitoring reports are to be carried out on completed safety projects, resulting from crash reduction studies, for a period of five years. Monitoring reports are to be forwarded to the Design Portfolio Manager.

SCRIM Data Releases

In this Section	This section contains the basis upon which information supplied by the NZTA or its consultants is released and notes to assist with the interpretation of Skid Resistance Data.
Releasing data	When SCRIM data is released to persons other than the NZTA's consultants, the following procedures shall be undertaken: 1. All SCRIM data shall be produced by direct printout from the RAMM database. 2. An appropriate NZTA staff member, working independently of the person producing the data, shall check the data. 3. In addition, SCRIM data shall be released only with the following "Basis of Release of Data" attached under cover of a letter bearing the NZTA letterhead and signed by an appropriate NZTA staff member. 4. No data may be released without an appropriate disclaimer attached to the data. 5. The required documents must be attached to all data released to a person other than NZTA staff or consultants working for the NZTA who have a contractual obligation to comply with the NZTA's policies.

Basis for Release of Data

Information supplied by NZTA or its consultants is released on the following basis:

1. A SCRIM machine is used for the State highway Skid Resistance summary.
2. Older data is recorded as Mean Summer SCRIM coefficient (MSSC). Recently data has also been corrected for between year variations. This data is recorded as Equilibrium SCRIM Coefficient (ESC). This data is prepared for the routine network wide monitoring of the skid resistance of surface aggregate. It provides comparative information. While it gives an indication of areas where surface repairs may be required it is only one of the indicators used for that purpose. Caution must be exercised if attempting to draw other conclusions from the data or using it for other purposes.
3. While every care has been taken in the measurement, recording and retrieval of the information no guarantee can be given as to the accuracy of any of the data.
4. Interpretation of the data requires expert judgement. Persons with appropriate expertise should be engaged to assist with interpretation.

Notes to assist with the interpretation of MSSC data

The New Zealand Transport Strategy has set targets to reduce fatalities and serious injuries from road crashes. An action taken to assist in realising these targets is the provision and maintenance of reasonable levels of skid resistance on the road surface. As a consequence, NZTA endeavours to undertake a skid resistance survey of the State highway network on an annual basis during the summer period (November to March) when skid resistance levels are generally at their lowest. The following is a general outline of the methodology.

- This survey generally involves measurement of wet skid resistance in both wheel paths, for both directions of travel. On multilane roads at least the left-hand lane, (which usually is the location of the lowest skid resistance as it is generally used by heavy vehicles) is surveyed. The data acquired is used to assist with decision making associated with road maintenance management and to evaluate achievement against road condition targets.

- Measurement of the wet skid resistance and other road condition factors of the highway network is made with SCRIM+. SCRIM+ is basically a 10-tonne water tanker carrying sufficient water for about 60 km non-stop self-wetting skid testing and fitted with two skid test wheels, one for each wheelpath plus other equipment to record road shape. The test wheel is a treadless (blank), pneumatic tyre with its own load and suspension system that is angled at 20 to the direction of travel. A controlled jet of water wets the road surface immediately in front of the test wheel, which is free to rotate in its own plane. Therefore, as the vehicle moves forward, the test wheel scuffs in the sideways direction. The ratio of the force developed perpendicular to the plane of rotation (the side force or cornering force) to the load on the test wheel, is measured continuously along a road and stored as a mean value over lengths of 10m. This ratio is known as the sideway-force coefficient (SFC). Road shape features are also measured and stored.
- The conditions of measurement and tyres used do not represent any particular car or truck. However, the SFC data is representative of the wet skid resistance performance of road surfaces and is utilised by NZTA to monitor the skid resistance performance of pavements.
- SFC values of road surfaces change significantly as a result of short-term and long-term variations in weather conditions, temperature measurement speed etc. Correction factors are therefore applied to bring the SFC data to a common basis for comparison purposes. SFC data standardised in this way is termed the (MSSC). MSSC represents the average value of skid resistance (SCRIM) expected during the summer. It is also close to the minimum skid resistance during the year. MSSC data that has been corrected for between year variations is called ESC. ESC data is used by NZTA as input to its *in-house* analysis routines, which have been developed to aid in the identification of sites that could potentially benefit from increased levels of wet skid resistance and assist with programming of future maintenance work. SCRIM data held in the RAMM database by NZTA is released to third parties in MSSC or ESC form only.
- Although MSSC represents a very important factor in determining the level of wet road safety, it is by no means the only one. Other factors considered in making road maintenance management decisions include crash histories, possible temporary pavement contamination, texture depth, rutting and roughness, traffic characteristics, road geometry, and driving difficulty. The safety of a road section is the result of the interaction of many factors. Therefore, NZTA and its network management consultants consider all factors when determining whether or not a road section needs treatment.
- Road surface skid resistance is highly time and season-specific. Caution must be exercised when using ESC data to assess whether or not the road surface might have been a causal factor in a crash as it is unlikely that the time of the survey will coincide with that of the crash. Furthermore, although MSSC values are similar to *locked wheel* coefficient of braking friction values obtained by NZ Police, they are not directly related. As a consequence, processing of MSSC data for use in crash reconstructions or comparisons with Police investigations should only be attempted by experienced personnel who are fully aware of the limitations of measurement methods and conversion procedures.

Lighting

General	With the exception of intersections with physical islands and pedestrian crossings there are no specific requirements for State highways to be lit. The necessity for lighting is normally based on the likelihood of conflict between vehicles, pedestrians or cyclists. Lighting is generally unnecessary outside urban areas, except for motorways, major rural intersections and sections of highway where it is justified to address high night-time crash rates.
Technical standards	New or upgraded state highway lighting installations shall comply with *AS/NZS 1158.1.1:2005 Lighting for roads and public spaces - Vehicular traffic (Category V) lighting – Performance and design requirements.* New or upgraded pedestrian crossings shall comply with *AS/NZS 1158.4:2009 Lighting for roads and public spaces – Lighting of pedestrian crossings.* Installation guidance for traffic route lighting is given in *AS/NZS 1158.1 .2:2010 Lighting for public spaces - Vehicular traffic (Category V) lighting - Guide to design, installation, operation and maintenance.*
Lighting poles	All new lighting poles shall comply with NZTA specification M26. Poles installed in urban or pedestrian frequented areas must not be of slip-base design. Guidance about types of poles suitable for use in various areas is given in NZTA specification M26.
New lighting installation	The need for new light installations will generally be determined by project evaluation criteria specified in Chapter 2 Section 2.3 of NZTA's *Economic Evaluation Manual Volume 1*.
Pedestrian Crossings	All pedestrian crossings on State highways must be kept illuminated during the hours of darkness and must be provided with either operating Belisha Beacons or 400mm diameter (min.) fluorescent reflectorised discs fitted to poles at each end.
Flag lighting	Flag lighting is intended to indicate the presence of a minor intersection or important access particularly in rural areas. The installation shall normally consist of no more than 2 lanterns. Capital costs can be a SH or TLA responsibility. The annual costs of flag lighting on State highways in rural areas are a State highway cost. Specific approval can be given by Managers, System Management for flag lighting on State highway road reserves requested by a private developer or lighting for a private development required by regional office to mitigate adverse effects on the State highway. This usually only occurs in rural areas. Capital and annual costs are the responsibility of the developer.
Motorway lighting	Capital and annual costs are a State highway responsibility. Other sections of State highway which are fully access controlled may also qualify, with the National Manager Maintenance and Operations' approval.
Ambiguities	Any installation not clearly covered by policy shall have the specific approval of the GMTS.

Schedule of SH operational lighting	A schedule of all light installations that are an annual State highway operational responsibility shall be kept by the System Managers.
Maintenance	The maintenance of highway lighting shall be in accordance with the Network Operations Contract standard specification.

Traffic Signals and Traffic Signs

Introduction	This section specifies the requirements for off-carriageway traffic aids.
Legal requirements	All traffic control devices when installed must comply with the *Land Transport Rule: Traffic Control Devices 2004* and its amendments.
Traffic signal technical standards	Guidance on the design and maintenance of traffic signal installations is contained in the following: 1. *Land Transport Rule: Traffic Control Devices 2004*. 2. *Traffic Signals, A Guide to the Design of Traffic Signal Installations,* AUSTROADS. 3.
Traffic signal funding	All traffic signals installation and operational costs at a State highway intersection or a State highway motorway ramp terminal are a State highway charge. A TLA may install approved signals as part of its subsidised works programme where programming priorities do not permit State highway funding. Operational costs will in this case be funded by the State highway.
Traffic signs	1. The description and use of all traffic signs is contained in the *Land Transport Rule: Traffic Control Devices 2004* with its amendments and gazette notices. 2. Graphics of traffic signs are shown in the NZTA *Traffic Control Devices Manual.* 3. All traffic signs, delegations and procedures shall comply with the NZTA *Manual of Traffic Signs and Markings* and/or the NZTA *Traffic Control Devices Manual*. 4. Signs advising a speed restriction shall be placed within 20 metres of the gazetted positions. 5. All permanent warning and information signs shall display a NZTA logo as illustrated in the *Part 2, Consolidated Miscellaneous Sections* page 11.
White Crosses at Fatal Accident Sites	White crosses may be erected at fatal accident sites subject to the proposed design and location being approved by the appropriate Manager System Management. Note that enforcement of this should be handled delicately. Pages 17 to 19 contain the guideline for the erection, maintenance and removal of white crosses.
Road Safety Billboards	Road safety billboards may be erected on State highway road reserve subject to the graphics being agreed by the Lead Advisor Safety and the location and timing being approved by the System Manager. It is expected that campaigns utilising road safety billboards will be either national campaigns or local-area campaigns involving the NZTA's road safety partners. Pages 20 to 22 contain the guideline for the installation, maintenance and removal of road safety billboards on State highways.

Crash Prevention and Safety Audits

General	This section provides the references for guidance on crash reduction and prevention.
Policy	Safety Audit: Road safety audit procedures for projects (Transport Agency May 2013). Crash Reduction: Transit/MOT (now NZTA) Policy Guidelines for Traffic Accident Reduction and Prevention 1990.
Procedures	Safety Audit: See section above. Crash Reduction: Transit/MOT Accident Investigation Procedures 1991. Guidance on crash reduction studies is available in (AUSTROADS) Guide to Engineering Practice Part 4: Treatment of Crash Locations
Monitoring	Monitoring of safety audits is not a requirement but System Managers should ensure that all recommendations are responded to and approved actions completed.
Traffic Accident Investigation Commission	At the discretion of the Chief Commissioner, the Traffic Accident Investigation Commission (TAIC) may decide to conduct an investigation into road crashes. The NZTA will, upon request, provide any information it holds which is relevant to the investigation. The TAIC will provide the NZTA with a copy of its draft report prior to circulation to interested parties. All of the NZTA's communications with the TAIC are to be authorised by the Chief Executive.

Traffic Control Device Trials

Definition	Traffic control devices are all signs, signals, markings, and devices placed on, over, or adjacent to a road to regulate, warn, or guide traffic.
Purpose	This section describes the approval process for the trial of non-standard traffic control devices. See also Traffic Note 10.
Application	Unless otherwise authorised according to the procedures in the three clauses below, all traffic control devices must comply with the relevant standards, criteria, and guidelines listed in the online *Register of Standards and Guidelines for Land Transport*.
Procedure for initiating a trial	All requests for traffic control device trials on State highways must be sent to the Lead Advisor Safety. Requests for trials must be submitted by a System Manager or with his/her approval. The request must include: 1. Outline of the issues 2. Development background. 3. Technical analysis 4. Impacts and risks 5. Safety and efficiency gains 6. Consultation 7. Proposed assessment. A full description of all these points is contained in Traffic Note 10. Formal approval of all traffic control device trials rests with the Senior Manager Systems Integrity in accordance with the Traffic Control Devices Rule 2004 section 3.4(1). Approvals of trials must then publicly be notified in a Gazette notice. Six monthly progress reports for the duration of the trial and a copy of the final results of the trial must be submitted punctually to the Lead Advisor Safety who will copy them to the Senior Manager Systems Integrity.

Responsibilities of the Lead Safety Adviser, Roads and Roadsides, for trials

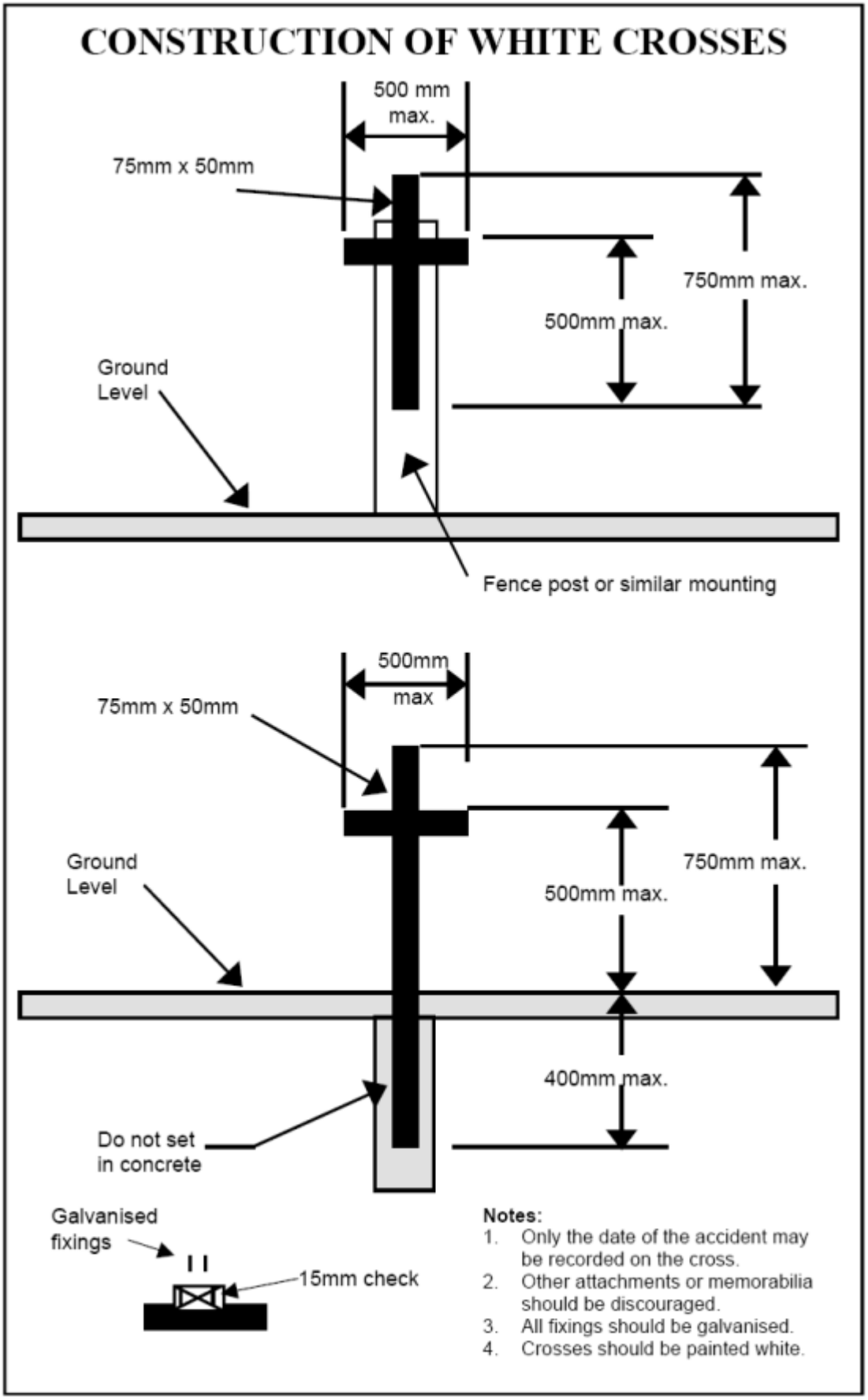
The Lead Advisor Safety is responsible for:

1. consulting with other sections within the NZTA, including Legal Counsel, as appropriate for all proposed trials.
2. submitting proposed trials to the Senior Manager Systems Integrity or appropriate delegate for authorisation. Note that normally, the agreement of the Traffic Control Devices Steering Group will be necessary prior to authorisation.
3. notifying such authorisation along with any conditions imposed to the originator of the request for the trial.
4. submitting a copy of the final results of the trial to all System Managers.
5. ensuring all trials are registered in a central database and progress is tracked through to completion. The Lead Advisor Safety is responsible for the database.
6. distributing a copy of the database and its updates to all System Managers.
7. ensuring all necessary approvals are obtained from the Regulatory Group, NZTA.
8. ensuring the results of all trials are considered and a decision is made on whether existing NZTA policy should be amended.
9. notifying the originator of the request to trial, and the Lead Adviser Asset Management, of the decision made in point (2) above.
10. amending, as necessary, NZTA policy for traffic control devices and communication of the decisions.

Guideline for White Crosses

In this Section	This section contains the guideline for the erection, maintenance and removal of white crosses at fatal accident sites on State highways.
Background	In recent years a number of individuals and service groups have wished to erect white crosses at fatal accident sites on State highways. This document has been prepared to act as a guideline for NZTA offices responding to requests for crosses to mark fatal accident sites. The guideline applies to requests to install new crosses. Existing crosses may remain.
Role of crosses	White crosses identify to the public, locations where fatal accidents have occurred in recent years and serve as a positive road safety reminder.
Erection of crosses	The following requirements should be met in order to erect white crosses at a fatal accident site: • There should be one cross only erected at a fatal accident site. • Due to the concerns for the safety of people visiting accident sites in potentially hazardous locations, crosses are not encouraged as a memorial to those who have been killed in a road accident. Attachments or messages on the crosses are discouraged. • Crosses may be erected on rural State highways other than motorways or motorway on and off ramps. • Crosses should not be erected where remedial works have been undertaken at the site or if the character of the road has been altered so as to substantially change the circumstances that led to the accident. • Crosses that are to be erected on the road reserve should be mounted on, or as close as practical to the fence line. In special circumstances e.g. in mountainous terrain NZ Transport Agency may approve other locations. • If crosses are to be erected on private property or on the fence line bounding the road reserve, consultation should be undertaken (by the applicant) with the owner of the land affected. • The local office of NZ Transport Agency must be notified of the exact location of each cross so that road maintenance staff do not disturb them.
Road safety for applicants	When installing crosses, individuals should not put themselves in dangerous situations. When working on the road they should be reminded to: • park in safe locations will away from moving traffic; and • wear bright coloured or reflective clothing; and • check for the location of public services - underground power, telephone cables etc.
Recommended construction of crosses	Crosses should be constructed of suitably treated timber components with a cross section not exceeding 75 mm x 50 mm. Galvanised fixings are recommended for all cross joinery. The crosses should be painted white and to a standard that will maintain colour and appearance when exposed to the weather for a minimum of 5 years. Other materials or finishes may be used with NZ Transport Agency's consent. Reflective materials are

	not permitted on crosses. Crosses should be constructed within the dimensions given below and as shown in Appendix A. Maximum timber cross section = 75 mm x 50 mm Maximum length of cross = 750 mm Maximum width of cross = 500 mm Recommended depth below ground level (if appropriate) = 400 mm Cross bar should be mounted at two thirds the height of the stake. Crosses are not to be set in concrete. The name of the deceased and the date of the accident should be marked on the cross to aid in the recording and, if necessary, removal process. Other attachments or messages are discouraged.
Maintenance of crosses	Any individual or group that erects a cross is responsible for maintaining, and undertaking any repairs deemed necessary to maintain a tidy appearance of that cross.
Removal of crosses	The individual or group that erects a cross is responsible for the removal of the cross when the purpose of the cross has been fulfilled. NZ Transport Agency may have a cross removed or relocated if: • the cross falls into a state of disrepair; and • the cross is erected in such a position or location that could cause, contribute or worsen any possible accident; or • the cross is located in a position within the road reserve which will impede normal maintenance or construction works; and • the highway in the immediate area is reconstructed such as to substantially change the circumstances that led to the accident.
Enquiries	Further enquires may be addressed to the local office of the NZ Transport Agency.


CONSTRUCTION OF WHITE CROSSES
500 mm max.
75mm x 50mm
750mm max.
500mm max.
Ground Level
Fence post or similar mounting
500mm max
75mm x 50mm
Ground Level
750mm max.
500mm max.
400mm max.
Do not set in concrete
Galvanised fixings
15mm check
Notes:
1. Only the date of the accident may be recorded on the cross.
2. Other attachments or memorabilia should be discouraged.
3. All fixings should be galvanised.
4. Crosses should be painted white.

Guidelines for the Installation, Maintenance and Removal of Road Safety Billboards on State highways

In this Section	This section contains the guideline for the installation, maintenance and removal of road safety billboards on State highways.
Background	This document serves as a guideline for New Zealand Transport Agency (NZTA) offices responding to requests and managing billboards on State highways. It must be read in conjunction with the *NZ Transport Agency (Signs on State Highways) Bylaw 2010* published NZ Gazette 15 July 2010, No 83, page 2284. It applies to all requests to install or re-install road safety billboards for both short and long term applications. This guideline does not apply to road safety messages conveyed by any Variable Message Sign. Refer to National Operating Policy for NZTA Variable Message Signs – 1 July 2010.
Role of Billboards	Billboards can be an effective component of road safety campaigns. They must contain only an easily understood message of text, and optionally graphics, specifically aimed at promoting a road safety message to road users.
Criteria	The following criteria shall be met in order to install billboards within the State highway road reserve: • Applicants, both internal and external, must submit written proposals to NZTA Transport Services safety staff for any billboard initiative; • Billboard themes shall relate to recognised road safety issues relevant to the specific section of State highway on which they are installed, either as part of a nation-wide campaign or as part of a locally managed initiative; • Billboards may generally only be installed on rural State highways where the speed limit is greater than 70 kilometres an hour and located not closer than 5 metres from the edge of the carriageway; • Billboards will not be permitted on motorways or expressways, however, in some instances they may be approved on motorway ramps. Billboards on motorway ramps shall not be easily visible to drivers using the main motorway through-lanes; • While many sites may be identified as suitable for the installation of road safety billboards, and may be used from time to time, nominally only 6 sites within any one territorial local authority area may be utilised at any one time. Where a TLA area is very large, as a general guideline approval may be granted for up to 6 billboard sites for every 100 kilometres of State highway. All sites must be approved by the Lead Advisor Safety; • Billboards shall be erected on straight sections of State highway where the sight distance on the approach to the sign shall preferably be at least 250 metres, but not less than 200 metres. The signs shall be located on the left hand side of the highway, facing oncoming traffic. All location criteria shall be in accordance with the *Traffic Control Devices Manual*; • Billboards shall be located preferably 500 metres and definitely no closer than 200 metres from any official traffic sign, other sign or billboard (either on road reserve or on private property) or an intersection.

- Competent, professional personnel shall install billboards in the State highway road reserve. Temporary traffic control shall be in accordance with the *Code of Practice for Temporary Traffic Management* (COPTTM);
- All billboards shall be mounted on two white frangible poles in accordance with the relevant parts of P24 Specification for the Design, Manufacture, Installation and Maintenance of Permanent Traffic Signs which now incorporates the Road Safety Manufacturers Association (RSMA) "Compliance Standard for Traffic Signs" as a single, suitable guide of good practice. Diagonal bracing of the support poles is not permitted;
- All billboards shall comply with
  - the NZ Transport Agency (Signs on State Highways) Bylaw 2010,
  - relevant sections of the Land Transport Rule: Traffic Control Devices 2004 (TCD Rule),
  - the Traffic Control Devices Manual Part 3: Advertising Signs (to be published late 2010), and
- Any relevant TLA requirements.

Sign Design

The following design criteria will be applied to all applications for billboards:

- billboards shall not conflict with the colour or style, nor risk being confused with, official traffic signs as described in the TCD Rule or with traffic or railway signals;
- they shall generally have panel dimensions of approximately 2.4 metres (m) wide by 1.2 m high (the long axis can be either horizontal or vertical), but shall not exceed 6 m in width or 3m in height;
- to be effective, billboards must have messages that are relevant, concise and easy to read. Generally, a maximum of 6 words or symbols, with a maximum of 40 characters shall be permitted;
- the minimum letter height shall be in accordance with the following table:

Minimum Capital Letter Heights		
Operating Speed (km/h)	Lettering Height (mm)	
	Main Message	Main Message
60	150	75
70	175	90
80	200	100
95	250	125
115	300	150

- commercial advertising or sponsorship logos are not permitted, however, the logo of the campaign promoter (i.e. Government Department, local authority or road safety organisation) may be approved for inclusion on the sign face;
- all billboards shall display the name and telephone number of the managing

	organisation on the back face of the sign panel. The maximum size of the names shall be 200 mm wide by 150 mm high; • reflective sign sheeting material, internal or external illumination, or flashing lights are not permitted on billboards; • billboards shall not display dynamic or changing message sets or moving elements.
Campaign Duration	There are two types of billboards – temporary (short term) and permanent. The maximum duration of a short-term billboard campaign should be between two and three months. For billboards to obtain maximum impact, sites should not be used for at least two months between campaigns (to avoid overuse of the site or overexposure). When considering applications, the NZTA will take into account the timing and location of potentially competing nation-wide or regional campaigns.
Maintenance	The organisation that initiates the erection of a billboard is responsible for arranging the installation and maintenance of the billboard, in liaison with the relevant NZTA office. Any billboard that is damaged or vandalised must be repaired or removed within 48 hours of the damage occurring.
Billboard Removal	Apart from permanent billboard installations, those billboards installed for a specific road safety campaign shall be removed promptly at the end of the agreed campaign period.
Evaluation	Within three months after the conclusion of a campaign, an evaluation report shall be forwarded to the relevant NZTA regional safety staff.
Management	Each NZTA regional office shall maintain a formal database relating to billboards on State highways.