

***Traffic Standards and Guidelines***  
1996/97 Survey

**Stop and Give Way Controls  
at Intersections**



**February 1998**



## Survey of Traffic Standards and Guidelines

The Land Transport Safety Authority is a stand-alone authority responsible for promoting safety in Land Transport at reasonable cost. Part of its function defined in statute is to “monitor adherence to safety standards within the land transport system”.

For a number of years the regional engineering sections of the Land Transport Safety Authority have had a programme to survey the implementation of various safety standards by road-controlling authorities.

The purpose of the surveys is to:

- assist and advise road controlling authorities on the implementation of selected traffic standards and guidelines that affect traffic safety;
- measure the uptake of standards and guidelines by road controlling authorities;
- provide a national summary of the uptake and compliance with standards and guidelines and report findings to road controlling authorities and other interested parties; and
- identify changes to improve standards, guidelines or traffic rules.

The surveys are usually carried out in two parts:

- Part 1 uses a questionnaire to look at the systems and procedures a road controlling authority has in place to deliver on the standard.
- Part 2 uses a field survey to measure where possible the actual delivery from the users viewpoint. It essentially provides a snapshot of delivery at the date of the survey.

This report presents the national results of one of those surveys. They have previously been presented to the Traffic Management Workshop.

I hope you find the information of value and can use it to further the interests of road safety in New Zealand.

Please contact the Regional Engineer at the LTSA’s Auckland, Wellington or Christchurch Office if you would like further information or assistance with implementing traffic standards or guidelines.

Joan Smith,  
Group Manager, Regions



## Executive Summary

### Introduction

- This report details the results of surveys of Stop and Give Way controls at intersections in New Zealand carried out by the Land Transport Safety Authority (LTSA) in May/June 1997.
- Interview surveys were conducted at a sample of 31 road controlling authorities (RCA's) to investigate criteria, procedures and programmes used for installing stop and give way controls at intersections.

### Results

#### Legal Obligations

- Staff in many smaller local authorities were not aware of their obligations where the legalisation of intersection controls requires a formal Council resolution.

#### Assessment Criteria

- All RCA's had some criteria for assessing the appropriate type of control at intersections with most saying they used the recognised guidelines from RTS1 and the Signs Manual supplemented with local criteria as necessary.
- Most RCA's said they used the visibility criteria as the dominant factor when considering the type of control.
- No field surveys were carried out to confirm that they had installed the controls as they had stated.
- Concern was expressed by some that there was too much political influence when deciding the appropriate control.
- There still appears to be an attitude prevailing among some staff that a Stop sign is a crash counter measure in itself.

#### Programmes to Install Controls at Intersections

- Most RCA's have programmes to install controls on all crossroads and some have completed this programme.
- Some RCA's have a programme to control all "T" intersections also.

### Road Sign Inventories

- Many RCA's are already using the RAMM database to keep a signs inventory.
- Many others will soon use RAMM or GIS for this purpose.
- The RAMM system was not regularly maintained by some of those who had it running.

### Support for a Review of the Intersection Priority Rules

- A majority of those who expressed an opinion on the intersection priority rules supported a review of the rules with a view to changing the rule for left turn traffic giving way to the right and for traffic at "T" intersections.

### **Recommendations**

- The LTSA should revise RTS1 to include additional criteria for intersection control as noted in Section 4 of this report.
- RTS1 should place more emphasis on a statement to clarify the legal processes required to create a controlled intersection and delegation of this responsibility to staff.
- The LTSA should send a letter to all Local Authorities to remind them of their obligations to formally resolve intersection controls.
- The LTSA should make a review of the intersection priority rules (Regulation 9 of the Traffic Regulations 1976) a high priority.
- All RCA's should use a database for recording signs and keep the database up to date.

## Contents

	Page
Executive Summary	iii
1. Introduction	1
2. Purpose of the Survey	1
3. Methodology	1
4. Results	2
4.1 Authority to Approve Intersection Controls	2
4.2 Guidelines and Criteria to Install Intersection Controls	2
4.3 Adequacy of the Criteria	3
4.4 Additional Criteria Suggested	3
4.5 Programmes for Installing Controls at Crossroads	3
4.6 Programmes for Installing Controls at “T” Intersections	4
4.7 Signs Inventories	4
4.8 Adequacy of the Intersection Priority Rules	5
4.9 Other Comments	5
5. Recommendations	6



## 1. Introduction

This report details the results of surveys of Road Controlling Authorities (RCA's) carried out by the Land Transport Safety Authority (LTSA) in May/June 1997. The surveys investigated:

- how RCA's apply traffic controls at intersections, and
- whether they considered the traffic rules appropriate as they are currently applied.

The standards and guidelines surveyed were:

- RTS1 – Guidelines for the Implementation of Traffic Control at Crossroads.
- Manual of Traffic Signs and Markings – (The "Signs Manual")
- Regulation 9 of the Traffic Regulations 1976.

## 2. Purpose of the Survey

The purpose of the survey was to determine:

- the methods and guidelines used by RCA's to implement traffic control at intersections.
- whether or not there is a need for changes to the guidelines.
- if RCA's were keeping inventories of their intersection controls.
- whether or not there is support for investigating changes to the Traffic Regulations.

## 3. Methodology

A sample of 31 RCA's was chosen for the surveys. The sample was biased towards those RCA's that had not been included in the previous year's LTSA surveys. The sample included 4 regional offices of Transit New Zealand (or their Network Management Consultants) and 27 Territorial Local Authorities (or their Network Management Consultants).

The surveys were conducted with one or two representatives of the RCA. The survey forms were sent to these people in advance to allow them time to research answers if necessary. Interview questions centred on the programmes, procedures and criteria used for implementation of intersection controls.

No field surveys were carried out for this part of the survey.

## 4. Results

### 4.1 Authority to Approve Intersection Controls

Of the Territorial Local Authorities (TLA) surveyed, 22 (81%) stated that they used Council resolutions. Of the remainder, 3 (11%) were not aware of the process and 2 (8%) used a Council bylaw.

Delegated authority to staff was known to exist for 9 (30%) of the RCA respondents, but the level of the staff member to which delegation was passed was not consistent. Those TLA's with delegated authority still used a Council resolution to legalise the controls. For roads intersecting with state highways, Transit New Zealand (TNZ) discuss the issues with the TLA and leave the TLA to legalise the control in their own way.

### 4.2 Guidelines and Criteria to Install Intersection Controls

The criteria reportedly used to determine the type of intersection control to install were:

- Five authorities (16%) stated that they used both RTS1 and the Signs Manual criteria.
- A further 12 authorities (39%) used the Signs Manual only.
- Seven authorities (23%) used RTS1 only.
- Seven authorities (23%) used no recognised criteria for deciding which control to install.

One TLA mentioned that they also use the Austroads guides.

Fifteen RCA's (48%) stated that sight distance criteria from the guidelines and manuals was the main criteria used for installing stop controls.

Criteria used by RCA's additional to, or in place of, the criteria of the Signs and Markings Manual and RTS1 included:

- public requests.
- traffic volumes.
- limited conspicuity of the intersection for approaching drivers.
- crash record.
- political considerations.
- crash study recommendations.

Several RCA's stated that they were reluctant to install Stop controls and would always use Give Ways initially. If the problem they were trying to address continued, they would then change the control to a stop.

#### 4.3 Adequacy of the Criteria

21 (70%) of the RCA's stated that they believed that the criteria they apply for a Stop control are adequate. This included their own additional criteria.

#### 4.4 Additional Criteria Suggested

Additional criteria suggested by the RCA's for determining the appropriate form of control included:

- Ensure all crossroads have a consistent control by not allowing a mixture of Stop and Give Way controls at the same intersection.
- Restrict the use of Stop controls when the only reason for using them is a crash problem (i.e. if they do not meet the visibility criteria).
- Amend the criteria for Stop controls in RTS1 to match that in the Signs Manual.
- Control all "Tee" intersections on major arterial routes to clarify priority.
- Crash history.
- Approach speeds (speed environment).
- Guidance for complex intersections.
- Guidance for exits from large commercial developments.
- Require all intersections to be controlled.

#### 4.5 Programmes for Installing Controls at Crossroads

Programmes for installing controls at crossroads were reported as follows:

- Three of the 4 TNZ offices had programmes for installing controls at all crossroads.
- Seventeen of TLA's (63%) had a formal programme for installing controls at crossroads and many of these have now been completed.
- A further 3 (11%) had a policy of controlling crossroads as the needs and opportunities arise but do not have a formal programme.
- Seven TLA's (26%) had no policy or programme.

The interviewers noted that programmes to install controls at crossroads generally began as a result of a letter sent by the LTSA recommending that all crossroads should be controlled.

Comments were made that some of the low traffic volume crossroads, particularly on unsealed roads, would not be considered for controls unless they showed up as specific problem sites.

#### 4.6 Programmes for Installing Controls at "T" Intersections

Programmes for installing controls at "T" intersections were reported as follows:

- Three of the 4 TNZ offices had programmes for installing controls at all "T" intersections.
- Three TLA's (11%) had a formal programme to control all "T" intersections.
- Seven TLA's (26%) had a policy of controlling "T" intersections where the intersection included a road of arterial status or above (and other intersections are considered on an as needed basis.)
- One TLA (4%) had a policy of controlling all "T" intersections where the intersection included a road of collector status or above.
- Sixteen TLA's (59%) had no programme or policy for controlling all "T" intersections, but one of these had a policy of installing chevrons and advanced warning at all "T" intersections.

The reasons usually given for controlling "T" intersections were to remove the ambiguity and confusion caused by the existing give way rules or the unusual layout of the intersection.

#### 4.7 Signs Inventories

Many of the RCA's interviewed had either two inventory systems or were planning to upgrade to a different system. Hence, the numbers given in this section will not add up to the total number of RCA's.

- Eight (26%) of the RCA's had no inventory. Of those, most were planning to create an asset register within the next 2 years. The new asset register was most likely to be RAMM or GIS based.
- Eighteen (58%) already had an existing signs inventory in RAMM. It was noted that the RAMM inventory had often not been updated for periods of between 1 and 5 years so their use was limited.
- Seven RCA's (23%) also used paper based systems such as route data sheets and maps to record signs.
- Five RCA's (16%) used some other type of electronic database to record signs.
- One RCA used an Eggplant video.

#### 4.8 Adequacy of the Intersection Priority Rules

This question was to determine the degree of support for retaining the existing intersection give way rules and the degree of support for reviewing the rules.

- Five of the respondents (16%) expressed no view either way.
- Eight respondents (26%) supported the existing rules.
- 18 respondents (58%) said they would like to see the rules reviewed.

The most commonly requested items for review were:

- the left turning give way to the right turn rule, and
- traffic on the stem of the “T” intersection should give way to all traffic on the head of the “T”.

#### 4.9 Other Comments

Other relevant comments were:

- Concern expressed about the lane arrangements being inadequate if the give way rules are changed.
- Investigate the possibility of introducing the four – way stop.
- Guidelines needed for intersections where the main road turns a corner at a “T” intersection physically making the stem of the “T” the main road.
- Guidelines needed for “Y” intersections.
- If the present give way rules remain, consider requiring all intersections to be controlled.
- More enforcement is required on Stop signs.
- Some rural authorities are sealing the approaches to intersections so that road markings can be installed with the control sign.
- Limit the number of signs (information signs, etc) at intersections.
- Education is needed to clarify the give way rules currently in force, and even more so if the rules are changed.
- Clarification and education is needed on the position in the lane for vehicles waiting to turn right in rural areas.

## **5. Recommendations**

- The LTSA should revise RTS1 to include additional criteria for intersection control as noted in Section 4 of this report.
- RTS1 should place more emphasis on a statement to clarify the legal processes required to create a controlled intersection and delegation of this responsibility to staff.
- The LTSA should send a letter to all Local Authorities to remind them of their obligations to formally resolve intersection controls.
- The LTSA should make a review of the intersection priority rules (Regulation 9 of the Traffic Regulations 1976) a high priority.
- All RCA's should use a database for recording signs and keep the database up to date.



