

Safety Management Systems Standards and Guidelines Assessment, 2006

Final Report

Prepared for

Land Transport New Zealand

By

Mike Jackett

Jackett Consulting

June 2006

SMS Standards & Guidelines Assessment Project

TABLE OF CONTENTS

1	INTRODUCTION	4
2	UPDATE OF REFERENCED DOCUMENTS.....	4
2.1	Existing referenced documents	4
2.2	Transfund Standards and Guidelines Manual.....	6
3	DATABASE CONSTRUCTION	7
3.1	Safety Management System Templates.....	7
3.2	Subject areas	8
3.3	References to Standards.....	8
3.4	Database Structure	9
4	INTERVIEW SURVEY	10
4.1	Introduction	10
4.2	Survey Method	10
4.2.1	Road Controlling Authorities	10
4.2.2	Interview.....	10
4.3	Interview Results.....	11
4.4	Gaps in National Standards and Guidelines	12
4.4.1	Road Signage	12
4.4.2	Roadmarking.....	13
4.4.3	Intersection Controls (inc Signals & RailX)	13
4.4.4	Delineation	13
4.4.5	Road Lighting.....	13
4.4.6	Speed Limits	14
4.4.7	Parking (inc. bus stops)	14
4.4.8	Temporary traffic management.....	15
4.4.9	Vehicle operations (inc. OD/OW loads)	15
4.4.10	Road Closures (inc. events management)	15
4.4.11	Detritus, sweeping and vegetation control.....	16
4.4.12	Traffic calming.....	16
4.4.13	Pedestrian crossings.....	16
4.4.14	Pedestrian facilities	17
4.4.15	Cycle facilities	17
4.4.16	Traffic counting programme	17
4.4.17	Public services and consultation.....	17
4.4.18	Emergency response	17
4.4.19	Accident notification system	17
4.4.20	Hazard registers and safety databases	18
4.4.21	Safety inspections.....	18
4.4.22	Crash reduction studies and data analysis	18
4.4.23	Safety audits	18
4.4.24	Annual plan and strategic plan process.....	18
4.4.25	Road network planning	19

SMS Standards & Guidelines Assessment Project

4.4.26	Road safety plans and strategies	19
4.4.27	Land use planning and controls.....	19
4.4.28	Landscaping.....	19
4.4.29	Drains, catchpits and sumps.....	20
4.4.30	Bridges and culverts	20
4.4.31	Stock crossings and underpasses	20
4.4.32	Road construction & design (inc barriers).....	20
4.4.33	Carriageway pavements	20
4.4.34	Carriageway surface and friction	21
4.4.35	Kerb and channel (inc vehicle crossings)	21
4.4.36	Slips and retaining structures	21
4.4.37	Asset creation, development and management	21
4.4.38	Utilities and road reserve	21
4.5	Themes.....	22
4.6	Innovations	22
4.7	Key Standards	23
5	UPDATES TO DOCUMENTS.....	23
5.1	Update to Table 3 H.....	23
5.2	Update to the Transfund Standards & Guidelines Manual	24
5.3	Recommendations	24
6	SUMMARY	24
7	GLOSSARY OF ABBREVIATIONS	26
	APPENDIX 1: CURRENT AND UPDATED REFERENCES	27
	APPENDIX 2: TRANSFUND STANDARDS AND GUIDELINES MANUAL... 33	
	Structure of topics:	33
	Documents:	35
	APPENDIX 3: LIST OF RCA COMMENTS	39
	APPENDIX 4: SUMMARY OF THEMES	48
	APPENDIX 5: NEW 2006 TABLE 3 H.....	51

SMS Standards & Guidelines Assessment Project

1 Introduction

This report covers stages one and two of a project to review the standards and guidelines used by New Zealand road controlling authorities.

Stage one provides a database of the legislation, standards and guidelines referenced in twenty selected safety management systems. It also provides an update of the standard references given in Table 3 H of the document "Guidelines for developing and implementing a SMS for road controlling authorities", November, 2005.

Stage two involved an interview survey with staff from twenty road controlling authorities to identify deficiencies in national standards and guidelines. The interview also addressed gaps in the list of standards and guidelines arising from the work in stage one on Table 3 H.

2 Update of referenced documents

2.1 Existing referenced documents

In the manual, "Guidelines for developing a Safety Management System for Road Controlling Authorities", 2005, is Table 3 H - a table of possible reference documents for use in Safety Management Systems. These documents are organised by four headings;

- Legislation,
- Commonly used guidelines,
- Additional standards/guidelines, and
- Examples of local policies.

In all there are 494 references in Table 3 H, 166 of these are unique national standards, guidelines or legislation.

Updating a document involved;

- Identifying the owner of the document
- Identifying the relevant web page or other document likely to contain information on the latest edition.
- Visiting the web page or other document, identifying the referenced document and noting any changes either to its name or year of publication.

Where a document could not be identified on an official site, follow up action has been taken to check its status and to see if an alternative is available. Recommended action on the documents that could not be identified is shown in Table 1.

The updating process changed over 50% (91 of 166) references in Table 3 H but the majority of these were due to the adoption of a more uniform system of references. Only about 10% were due to new or updated standards.

A listing of the current documents in Table 3 H and a proposed 2006 update is given in Appendix 1. (Note: The proposed "New Table 3 H" given in Appendix 5 includes these updates and also changes to the documents referenced.)

SMS Standards & Guidelines Assessment Project

Table 1: A list of documents referenced in Table 3 H but not located on an official web site. Recommendations for review and replacement with a current document (if out of date), updating or maintaining the reference are indicated.

Title	Organisation	RCA Refs	Recommendation
Guide to the Design of Road Surface Drainage, NAASRA	Austrroads	2	Review & replace
Safety Barriers: Consideration for the revision of safety barriers on Rural Roads, NAASRA	Austrroads	3	Review & replace
NZ Road Safety Plan Guidelines, 2004, LTSA	Land Transport	1	Review & replace
Accident Investigation System Manual, LTSA	Land Transport	2	Update - CAS instructions are now part of the CAS package
Guide to Cycle Facilities, NRB/UTC	Land Transport	1	Review & replace
TR 11: Recommended Practice for Pedestrian Crossings	TNZ	13	Maintain but review after LTNZ Pedestrian guide is published
"A Guide on Estimating AADT and Traffic Growth, and a Traffic Count Monitoring Programme Basis", Transit New Zealand	TNZ	0	Updated to Transfund Research Report 202, 2000
Guidelines for Planting for Road Safety (1991), TNZ	TNZ	14	Update to similar reference to "Guidelines for highway landscaping, TNZ, 2002"
New Zealand Cycle Design Guide, Draft, 2003, TNZ	TNZ	2	See Cycle Network and Route Planning Guide, LTSA, 2004
RRU Bulletin 79 - Guidelines for Selection, Design and Construction of Thin Flexible Bituminous Surfacing in NZ	TNZ	3	Review & replace
SCRIM Deficiency Report, User Guidelines, TNZ 1998	TNZ	1	Review & replace
TNZ handbook "Working on the Road"	TNZ	4	Referenced by 4 RCAs sometimes in conjunction with CoPTTM. Still suggest reference CoPTTM only
Transit NZ Planning for a safe and efficient highway network (1994)	TNZ	1	Review & replace
Transit NZ Stock Underpass Procedures Manual 2001	TNZ	0	These procedures can be found in Transit NZ "State Highway Control Manual"

SMS Standards & Guidelines Assessment Project

2.2 Transfund Standards and Guidelines Manual

The 42 documents referenced in the Transfund Standards and Guidelines Manual are rated either as a “standard” and become a condition of funding or as a “guideline” and are recommended as being representative of good practice. Since the last revision of the manual was in 1998 the document is now somewhat dated and would benefit from both a structural overhaul and a reference update.

All but two of the documents in the Standards and Guidelines manual are included in the SMS Guidelines, Table 3 H. A list of the Standards and Guidelines standards is shown in Table 2.

Table 2: List of standards referenced in the Transfund, Standards and Guidelines Manual.

Document Name	Status
* Evaluation Procedures for Alternatives to Roothing; Transfund New Zealand, 1997	Standard
* Manual of Competitive Pricing Procedures, Volume 1: Physical Works and Professional Services; Transfund New Zealand, 1997	Standard
Manual of Competitive Pricing Procedures Volume 2: Passenger Transport; Transit New Zealand, 1995	Standard
Programme and Funding Manual; Transfund New Zealand, 1996	Standard
Project Evaluation Manual Transfund New Zealand, 1997	Standard
Road Condition Rating and Roughness Manual; Transfund New Zealand, 1997	Standard
Accident Investigation Procedures; Transit New Zealand/Ministry of Transport, 1991	Guideline
Advertising Signs and Road Safety: Design and Location Guidelines; Transit New Zealand/Land Transport Safety Authority, 1993	Guideline
Bituminous Sealing Manual; Transit New Zealand, 1993	Guideline
Bridge Manual	Guideline
Code of Practice for Road Lighting; NZS 6701, 1983	Guideline
Code of Practice for Urban Land Subdivision; NZS 4404, 1981	Guideline
Guide to Cycle Facilities National Roads Board/Urban Transport Council, 1985	Guideline
Guide to Traffic Engineering Practice - Part 7 Traffic Signals; AUSTRROADS, 1993	Guideline
Guide to Traffic Engineering Practice Part 5: Intersections at Grade; NAASRA, 1988	Guideline
Guide to Traffic Engineering Practice Part 6: Roundabouts; AUSTRROADS, 1993	Guideline
Guidelines for Establishing Rural Selling Places; Ministry of Transport/Transit New Zealand 1992	Guideline
Guidelines for Flush Medians; Ministry of Transport/Transit New Zealand, 1991	Guideline
Guidelines for Planting for Road Safety Transit New Zealand, 1991	Guideline
Guidelines for Rural Marking and Delineation; Ministry of Transport/Transit New Zealand, 1992	Guideline
Guidelines for Safe Kerbline Protection; Transit New Zealand/Land Transport Safety Authority, 1993	Guideline
Guidelines for Setting Speed Limits; Land Transport Safety Authority, 1995	Guideline
Guidelines for Street Name Signs; Ministry of Transport, 1990	Guideline
Guidelines for the Implementation of Traffic Control at Crossroads; Ministry of Transport, 1990	Guideline
Guidelines for the Signing and Layout of Slip Lanes; Transit New Zealand/Land Transport Safety Authority, 1993	Guideline
Guidelines for Visibility at Driveways; Ministry of Transport, 1993	Guideline
Highway Surface Drainage - Design Guide for Highways with a Positive Collection System: National Roads Board, 1977	Guideline
Local Authority RAMM Operation Database Manual; Transfund New Zealand, 1997	Guideline

SMS Standards & Guidelines Assessment Project

Manual of Traffic Signs and Markings; Part 1 Traffic Signs; Transit New Zealand/Ministry of Transport, 1992	Guideline
Manual of Traffic Signs and Markings; Part 2 Markings; Transit New Zealand/Land Transport Safety Authority, 1994	Guideline
Pavement Design: A Guide to the Structural Design of Road Pavements; AUSTROADS, 1992 (plus New Zealand supplement of November 1995)	Guideline
Policy Guidelines for Traffic Accident Reduction and Prevention; Transit New Zealand/Ministry of Transport, 1990	Guideline
Recommended Practice for Pedestrian Crossings; National Roads Board, 1998	Guideline
Road Condition Rating and Roughness Manual; Transfund New Zealand, 1997	Guideline
Road Lighting Part 0 Introduction; STANDARDS AUSTRALIA AND STANDARDS NEW ZEALAND, 1997	Guideline
Road Lighting Part 1.1 Vehicular Traffic (category V) lighting - Performance and Installation design requirements; STANDARDS AUSTRALIA AND STANDARDS NEW ZEALAND, 1997	Guideline
Road Lighting Part 1.3 Vehicular Traffic (category V) lighting Guide to Design, Installation, Operation and Maintenance; STANDARDS AUSTRALIA AND STANDARDS NEW ZEALAND, 1997	Guideline
Road Safety Audit; AUSTROADS, 1994	Guideline
Rural Road Design - Guide to the Geometric Design of Rural Roads; AUSTROADS, 1989	Guideline
Safety Audit Policy and Procedures; Transit New Zealand, 1993	Guideline
Standard for the Manufacture and Maintenance of Traffic Signs, Posts and Fittings; Transit New Zealand/Road Safety Manufacturers' Association, 1995	Guideline
State Highway Database Operations Manual; Transit New Zealand, November 1995	Guideline
Waterways Design: A Guide to the Hydraulic Design of Bridges, Culverts and Floodways. AUSTROADS, 1994	Guideline

* Documents not included in Table 3 H, 2005

3 Database construction

3.1 Safety Management System Templates

Copies of the SMS Templates or tables were obtained from the following 20 SMS reports;

- Banks Peninsula D.C.
- Buller/Grey/Westland
- Central Hawkes Bay D.C.
- Central Otago D.C.
- Dunedin City
- Far North D.C.
- Gisborne City
- Gore D.C.
- Hastings City
- Hauraki D.C.
- Masterton D.C.
- Matamata-Piako D.C.
- Napier City
- Porirua City
- Rangitikei/Ruapehu/Wanganui
- Selwyn D.C.
- South Waikato D.C.
- Southland D.C.

SMS Standards & Guidelines Assessment Project

- Tararua D. C.
- Thames-Coromandel D.C.

Where available the following set of data was transferred from the SMS template to a spreadsheet;

- Name of RCA
- Name of Consultant
- Activity
- Subject
- Legislation
- Standards
- Guidelines
- Policies
- Council Requirements

Note: The Gore and the Southland SMS did not have templates as such but both had a comprehensive list of the standards and guidelines that made them generally compatible with those SMS using templates. They were included in the database.

3.2 Subject areas

Most SMS specify the safety activities of the RCA in terms of some 30 to 50 subjects. These subjects are not universal across all SMS. In the SMS referenced to date there are 490 different subject areas. Many of the differences are subtle and relate to the issues that confront a particular RCA. However to allow comparison between SMS some standardisation of subject area is essential.

Subject standardisation was addressed in the 2004 study resulting in the 38 subjects now present in Table 3 H of the SMS Guide is the result. The new data available in this study allowed those categorisations to be re-examined.

There were some new subject headings in the data including “forestry”, “rubbish collection”, “crash data analysis”, “monitoring” and “events management”. However none of these subjects were sufficiently widely used to warrant forming a new subject group. Instead, they have been incorporated into slightly broadened and sometimes renamed versions of the existing groups. Consequently all SMS subject areas in this report have been mapped to a set of 38 subject areas similar to those defined in Table 3 H of the SMS guide.

3.3 References to Standards

The database contains over 9,000 references to standards. It is essential that common standards are recognised and grouped as such. The text strings “Signs and Markings Manual”, “Signs & Markings Manual”, and “MOTSAM” will form three separate and apparently unique references in the database. In fact they all refer to the same document. Identifying with complete certainty all common documents from the range of references given is not possible. However using a series of filters, key words, lookup strings and knowledge of the terminology it has been possible to identify the majority of common documents.

It is estimated that around ninety five percent of references to common documents have been recognised and are now standardised. Some unmatched documents will undoubtedly remain. In using the database, care should be taken to check for possible alternative wording when searching for a particular document.

SMS Standards & Guidelines Assessment Project

3.4 Database Structure

The 2006 database consists of data from 20 SMS reports and contains 9,044 records with 24 fields each. Each record represents a reference from a SMS on a particular subject to either a piece of legislation, a standard, a guideline, a policy or a council requirement. An explanation of the fields is given in Table 3.

The data is currently stored in spreadsheet format and can be analysed by use of Pivot Tables or by the application of spreadsheet filters.

Table 3: An explanation of the 24 fields available in the database

No.	Field Name	Description
1	No.	Record Identifier (1 to 9059). Not used in the Pivot Tables.
2	RCA	Name of the Road Controlling Authority
3	Consultant	Name of the Consultant producing the SMS
4	Activity	High level RCA structure above "subject" (only occasionally used)
5	Subject (Original)	The subject of the SMS template eg Ped Xings
6	Description	Description of the subject (only occasionally used)
7	Legislation (Original)	Legislation as referenced in the SMS
8	Standards (Original)	Standards as referenced in the SMS
9	Guidelines (Original)	Guidelines as referenced in the SMS
10	Policies (Original)	Polices as referenced in the SMS
11	Council Requirements	Council requirements as referenced in the SMS
12	Subject v3	Standardised subjects V3 (38 subjects)
13	Group v3	Standardised groups V3 (5 groups)
14	Subject v4	Standardised subjects V4 (38 subjects)
15	Group v4	Standardised groups V4 (4 groups)
16	Legislation	Standardised Legislation
17	Standards	Standardised Standards
18	Guidelines	Standardised Guidelines
19	Policies	Standardised Policies
20	Leg+S+G+P	Combined references from the Legislation, Standards, Guidelines and Policies fields
21	Std+G+P	Combined references from the Standards, Guidelines, and Policies fields
22	Std+G	Combined references from the Standards and Guidelines fields
23	Orig L+S+G+P	Combined references from the Original SMS Legislation, Standards, Guidelines and Policies fields
24	Orig S+G	Combined references from the Original SMS Standards and Guidelines fields

Note: The combined fields (20 to 24 above) are useful to amalgamate the categories of legislation, standards, guidelines etc. The documents referenced in each category varies between SMS and it is often better to use all-inclusive categories.

SMS Standards & Guidelines Assessment Project

4 Interview Survey

4.1 Introduction

Between April and June 2006 Land Transport NZ regional staff and the consultant carried out 20 interview surveys with staff from Road Controlling Authorities (RCAs) that had recently produced a Safety Management System.

The purpose of the survey was to identify:

- The needs of RCAs for new or updated national standards
- Innovative local policies which could have broader application to other RCAs or as the basis of a new national guideline
- Any errors or omissions in the list of standards referenced in Table 3 H

4.2 Survey Method

4.2.1 Road Controlling Authorities

The RCAs responsible for producing the 20 SMS used in part one of this project were invited to take part in the survey. These RCAs formed approximately 30% of Provincial New Zealand (Peer groups C, D and E) and about 15% of Metropolitan New Zealand (Peer groups A and B). (see Table 4 below.)

Table 4: Road Controlling Authorities included in the survey

Peer Group	Names of RCAs included in the survey	No. RCAs in Survey	No. RCAs in all NZ
Group A	Dunedin	1	10
Group B	Napier	1	5
Group C	Porirua, Hastings, Gisborne	3	9
Group D	Far North, Masterton, Matamata-Piako, Selwyn, Southland, South Waikato, Thames-Coromandel	7	22
Group E	Banks Peninsula*, Buller, Central Otago, Central Hawkes Bay, Gore, Grey, Hauraki, Rangitikei, Tararua, Westland	10	27
Total		22	73

Group A : Major urban areas with some rural areas on the outskirts. (Population > 97500 and/or rural crashes less than 25 percent)

Group B : Major urban areas with some rural areas on the outskirts. (Population 40000-97500 and/or rural crashes less than 35 percent)

Group C : Large provincial towns and hinterland. (Population 35000-75000 and/or rural crashes less than 55 percent)

Group D : Provincial towns and hinterland. (Population 20000-75000 and/or rural crashes greater than 55 percent)

Group E : Small provincial towns, low traffic volumes. (Population less than 20,000 and/or rural crashes greater than 55 percent)

* **Note:** Banks Peninsula District Council's SMS was included in this survey. Banks Peninsula is now part of Christchurch City (from March 2006)

4.2.2 Interview

An introductory questionnaire was sent to each RCA participating in the survey and followed some time later by an interview.

The interview moved progressively through each of 38 subject areas according to the following guide:

SMS Standards & Guidelines Assessment Project

1. Establish the range of topics to be discussed under each subject area - facilitated by a table on the interview form identifying the range of SMS subject headings and RCAs referencing each subject area.
2. Establish that the referenced documents from Table 3 H as shown on the interview form were generally appropriate. Identify any that were not and add any additional standards.
3. Discuss the local activity in the subject area
4. Identify any changes needed to legislation standards or guidelines.
5. Rank any suggested changes according to the priority table (1 = low, 5 = high)

The final question, No. 39, provided the opportunity for RCAs to identify new or innovative policies they had developed where the knowledge could be shared with other RCAs.

The interview sheet is available as a separate document "Interview Sheet LT_06.doc"

4.3 Interview Results

The RCA comments were collated and the total priority score for each subject determined. Table 7 lists the subjects in the order they were discussed at the interview and identifies the need for change in terms of a priority score and a ranking order.

Table 7: The total priority score for each subject and its ranking. The total priority score is the sum of the priority scores from each RCA that made a comment in the subject area.

Group	Subject	Total Priority Score	Ranking Order
Traffic Management	1. Road Signage	50	3 rd
	2. Roadmarking	26	13 th
	3. Intersection Controls (inc Signals & RailX)	60	1 st
	4. Delineation	27	11 th
	5. Road Lighting	34	7 th
	6. Speed Limits	43	4 th
	7. Parking (inc. bus stops)	17	20 th
	8. Temporary traffic management	16	21 st
	9. Vehicle operations (inc. OD/OW loads)	51	2 nd
	10. Road Closures (inc. events management)	41	5 th
	11. Detritus, sweeping and vegetation control	12	27 th
	12. Traffic calming	31	9 th
	13. Pedestrian crossings	22	17 th
	14. Pedestrian facilities	31	10 th
	15. Cycle facilities	19	18 th
Systems	16. Traffic counting programme	27	12 th
	17. Public services and consultation	6	32 nd
	18. Emergency response	3	34 th
	19. Accident notification system	23	16 th
	20. Hazard registers and safety databases	25	15 th
	21. Safety inspections	16	22 nd
	22. Crash reduction studies and data analysis	15	24 th
	23. Safety audits	10	29 th
Planning	24. Annual plan and strategic plan process	3	35 th
	25. Road network planning	26	14 th
	26. Road safety plans and strategies	16	23 rd
	27. Land use planning and controls	12	28 th

SMS Standards & Guidelines Assessment Project

Group	Subject	Total Priority Score	Ranking Order
	28. Landscaping	32	8 th
Structures	29. Drains, catchpits and sumps	3	36 th
	30. Bridges and culverts	7	31 st
	31. Stock crossings and underpasses	15	25 th
	32. Road construction & design (inc barriers)	10	30 th
	33. Carriageway pavements	14	26 th
	34. Carriageway surface and friction	6	33 rd
	35. Kerb and channel (inc vehicle crossings)	3	37 th
	36. Slips and retaining structures	18	19 th
	37. Asset creation, development and management	0	38 th
	38. Utilities and road reserve	40	6 th
<i>Total</i>		810	

4.4 Gaps in National Standards and Guidelines

Comments made by RCAs on the gaps in national standards and guidelines are summarised below in interview order. The summary has concentrated on identifying common themes within each subject area. Comments outside the general theme are shown as bullet points. (Not all comments are included in the summary but a full list of comments is provided in Appendix 3.)

4.4.1 Road Signage

With 50 priority points Road signage was the 3rd highest scoring subject.

There were concerns that the Manual of Traffic Signs and Markings (MOTSAM) was not currently fulfilling its role as the primary document for signs and markings on all New Zealand roads. Specific issues that were raised included:

- ◇ The time delay between new signs being introduced and their eventual appearance in MOTSAM needed to be shortened.
- ◇ MOTSAM needed to be better integrated with other standards on signs and markings such as RTS 5, the traffic notes and the traffic devices rule.
- ◇ Some specific signs were needed but were not included in MOTSAM. These included the folding Kea Crossing sign and the right hand version of PW42 falling rocks sign.

The solution proposed by a number of RCAs was that:

- ◇ Land Transport should take ownership of MOTSAM
- ◇ MOTSAM should be both a web based document and a hard copy document
- ◇ MOTSAM should be updated on a regular basis, the date of the last update recorded and the users notified.

Other issues raised in this subject area included;

- ◇ More prescriptive guidance was needed on the use of advertising and fingerboard type signs to resist the ongoing proliferation of signs.
- ◇ The impact of illuminated advertising signs on the readability of adjacent street name signs needs attention.
- ◇ There is a need to amend the Stop sign criteria as it results in too many Stop signs.

SMS Standards & Guidelines Assessment Project

4.4.2 Roadmarking

With 26 priority points Roadmarking is the 13th highest scoring subject.

Roadmarking is an area undergoing change and there was a desire by a number of authorities for guidelines that would allow them to decide what is the best road-marking regime for them. Issues that should be included are the paint type, the optimum marking frequency and the benefits of reflectorisation. The guidelines should also be relevant to rural districts with many kilometres of low volume roads to mark. The economics of marking edgelines on low volume roads were a particular concern.

There was a request for MOTSAM to communicate advice on the latest ways to accommodate cycle lanes at intersections.

It was noted that the reflective performance of roadmarking can vary by the direction of application. The impact of this needs to be assessed and included in specifications.

4.4.3 Intersection Controls (inc Signals & RailX)

With 60 priority points Intersection controls was the highest scoring subject.

Comment in this area falls into three main groups: Railway crossings, the right hand rule and stop signs control.

Signing and maintenance of rail crossings was a concern for many authorities. A common comment was that RCAs and Transrail need better contact and liaison to correct the safety issues at railway crossings. Some authorities questioned whether the platforms at level crossings were being maintained to adequate long term standards. In some parts of the country the liaison appears to be working better than others. The other issues at rail crossings included the need to review and standardise sign positions where the rail was very close to the road and the need to assess safety at rail crossings using risk assessment techniques.

There was support for reversing the intersection rule so that right turning traffic gave way to left turning traffic.

Four authorities asked for a review of the criteria for installing Stop signs. It was felt the current criteria results in too many Stop signs. The review should include factors such as road hierarchy, urban / rural conditions and traffic volume.

4.4.4 Delineation

With 27 priority points Delineation is the 11th highest scoring subject.

Reviews of RTS 5 were requested with suggestions that it should eventually become part of MOTSAM and the Traffic Control Devices rule. The reviews should consider the wider range of speed limit options now available, the correct use of bridge end markers, and the benefits of edge marking in reducing edge break as well as safety. Research is needed into why RRPMS have such a short life on rural roads. Guidance was also sought on getting the right balance in resources for delineation on rural roads.

4.4.5 Road Lighting

With 34 priority points Road lighting is the 7th highest scoring subject

SMS Standards & Guidelines Assessment Project

A number of RCAs identified road lighting as an area where further local work was needed – perhaps to develop a local road lighting strategy. Some guidance on options and issues to consider when developing a road lighting strategy would be helpful. Some rural authorities also questioned whether lighting at a level below AS/NZS1158 category P had value in rural fringe areas.

Particular issues raised included the proliferation of different types of subdivision luminaires where councils had subsequent maintenance responsibilities. Maintenance of these was proving very costly.

There was interest in the use of solar powered lighting and the role it could play for both street and accessway lighting.

4.4.6 Speed Limits

With 43 priority points Speed Limits is the 4th highest scoring subject.

Speed limits remains a controversial topic with most RCAs. Many suggested a review of the criteria and the consultation procedures implicit in it. As the speed limit criteria is largely determined by speed limits NZ it was suggested that the level of consultation required under standard bylaw provisions was unrealistic for something the public has so little influence on.

There was variable support for the speed zoning trials with the suggestion that the speed zoning criteria needed simplifying. There were also comments that the number of speed limit options is already too great and that there should be a maximum to the number of speed limit changes that drivers can expect along a route.

Issues suggested for resolution or guidelines included:

- ◇ Resolve the differences between the speed limit rule and speed limits NZ on the minimum length of road for an 80km/h speed limit.
- ◇ Provide stronger and more specific guidelines on the use of 30km/h speed limits.
- ◇ Provide a community orientated guideline that addresses the issues of speed limits and the reasons behind them.
- ◇ Provide guidance on the sorts of things (other than speed limit changes) that can be done to alleviate the problems at rural schools in 100km/h areas.

4.4.7 Parking (inc. bus stops)

With 17 priority points Parking (inc. bus stops) is ranked the 20th highest scoring subject.

There was no central theme evident in the comments on parking, rather a number of issues that needed tidying up. These were:

- ◇ Change the definition of parking in the Road User Rule to include "manicured grass berms"
- ◇ Produce a guideline and hard data on the parking needs for developments
- ◇ Review the NZ vehicle size and parking dimensions to incorporate the trend towards SUVs
- ◇ Produce a brochure on the needs / requirements for disabled parking
- ◇ Increase the length of the parallel parking bay given in NZS 4404:2004

The sole comment on Bus stops noted that bus shelters tended to be placed outside public reserves not for the better access of bus patrons but because private objection rights did not apply in these areas. An issue for the Local Government Act section 339.

SMS Standards & Guidelines Assessment Project

4.4.8 Temporary traffic management

With 16 priority points Temporary traffic management is ranked the 21st highest scoring subject.

In the previous 2004 study temporary traffic management was a leading issue. It is not a leading issue now. The production of the new RCA local volume guide seems to have addressed the majority of the issues.

The suggestions included:

- ◇ The CoPTTM supplement is good for urban areas but still does not fit well with low volume, narrow, rural roads.
- ◇ Make the Low Volume Road supplement part of CoPTTM
- ◇ CoPTTM should include the 3 diagrams showing a generic layout for stock on roads
- ◇ Need to have standards so that temporary traffic signs don't blow over in the wind. Eg. Smaller sized signs or signs with an open mesh.

4.4.9 Vehicle operations (inc. OD/OW loads)

With 51 priority Vehicle operations is ranked the 2nd highest scoring subject

Many RCAs still have some unease with system of issuing over dimension (OD) permits. The permits are issued by Land Transport in Palmerston North rather than locally as is usually the case with over weight (OW) permits. RCAs do not know the loads are moving through their district until they see damage to signs and road furniture. While an email system of notification does exist for RCAs, some improvements may be possible to help identify which districts loads were moving through.

A second and possibly related issue was the number of loads that were being moved without any permits. Observation was that enforcement in this area was low and that many operators considered the risk of being caught without a permit was low.

Several RCAs commented on the need for the TNZ OD Map booklet to be kept up to date, made into a glove box sized manual and expanded to be more useful to RCAs.

The legislation dealing with abandoned vehicles places unrealistic time frames on those responsible for dealing with them. In everybody's interest these time frames sometimes have to be cut short putting authorities at some legal risk. A review of the legislation is due.

4.4.10 Road Closures (inc. events management)

With 41 priority points Road Closures (inc. events management) is ranked the 5th highest scoring subject.

There was a strong theme arising from comment in this area. The organisers of public events are not necessarily familiar with the needs of traffic and the time frame required to legally close a road for an event.

The following comment is typical of many. "There are many issues involved in events management and it takes time to make it all happen. A public document on the process would be very helpful." A further comment suggested that a decision tree chart should be included in the document and that it should be targeted at car clubs and the like.

Other specific comments in this area included:

- ◇ Need to amend legislation so that roads that are considered "unsafe for the general public" can be closed by a locked gate.
- ◇ The legislative lead times for advertising road closures are too long.

SMS Standards & Guidelines Assessment Project

- ◇ The legal provisions of the Local Government Act (LGA) and the Transport Act (TA) need better alignment in the area of road closure.

4.4.11 Detritus, sweeping and vegetation control

With 16 priority points detritus, sweeping and vegetation control is ranked the 22nd highest scoring subject.

Several aspects of the need to control vegetation on roads were highlighted in the comments under this subject. They included:

- ◇ The need for a document to raise the issues of visibility, shading and icing at intersections
- ◇ The need to amend legislation providing for protection of trees to include conditions to maintain road safety
- ◇ The need for a national definition of the dimensions of the vegetation free envelope above urban roads.
- ◇ The strict application of OSH rules has curtailed a highly successful litter clearing operation. The issue needs revisiting with broader community benefits being considered.

4.4.12 Traffic calming

With 31 priority points Traffic calming is ranked the 9th highest scoring subject.

Seven authorities saw the need for a general New Zealand guide on traffic calming devices. The guideline should indicate those calming measures that work, those that don't and those that still need further trials. Further, the guide should identify the places and traffic conditions under which the devices are most appropriate. One authority suggested the guide should be limited to around 6 or 7 pages, be highly visual and suitable for handing out to the public.

One RCA suggested that further education on pedestrian and driver rights and responsibilities at raised pedestrian platforms was needed.

4.4.13 Pedestrian crossings

With 22 priority points Pedestrian crossings is ranked the 17th highest scoring subject.

At the time of the interview it was known that Land Transport would shortly release a pedestrian network planning guide and that this may address some of the issues raised. Several RCAs commented on the need for some integrated guidelines describing when to use Pedestrian crossings, Kea crossings, raised platforms, visually impaired and mobility impaired facilities.

Other specific issues included:

- ◇ Need more guidance on how to floodlight pedestrian crossings
- ◇ Produce electronic worksheets covering the calculations for pedestrian crossings in Appendix 3 of the draft Pedestrian Network Guide
- ◇ Re-enforce the pedestrian crossing warrant as a tool to help remove and prioritise unnecessary pedestrian crossings.
- ◇ Publicise pedestrian's responsibilities not to step on crossings when cars are too close to stop.

SMS Standards & Guidelines Assessment Project

4.4.14 Pedestrian facilities

With 31 priority points pedestrian facilities is ranked the 10th highest scoring subject.

The major theme under pedestrian facilities was the need for guidelines on dealing with the mobility impaired (eg mobility scooters) and how to integrate this with facilities for the visually impaired as in RTS 14. There is also a need to rationalise the differences between NZS 4142:2001 and RTS 14.

4.4.15 Cycle facilities

With 19 priority points Cycle facilities is ranked the 18th highest scoring subject.

Lack of information on the correct signs and markings to use for cycle facilities appeared to be the major issue in this subject area. Guidelines (perhaps MOTSAM) should provide information on how to sign shared pedestrian / cycle facilities, cycle route signage, and the points where cyclists cross the road on rural cycleways.

The New Zealand supplement to the Austroads Part 14 (Guide to Traffic Engineering Practice, Bicycles) now needs to be updated to be compatible with the Cycle network guide.

4.4.16 Traffic counting programme

With 27 priority points Traffic counting programme is ranked the 12th highest scoring subject.

The state of RCAs Traffic counting programmes was quite variable. Some were confident their programme was robust while others were still looking to make it so. Those RCAs that wished to improve their programme sought general updates to the existing guides and guidance on counting for strategic needs - anticipate future needs now and collect the data necessary so that it is available when the questions are asked. Data on seasonal factors were also sought.

A review of available technology that would reliably count cycle traffic was also requested.

4.4.17 Public services and consultation

With 6 priority points public services and consultation was ranked the 32nd highest scoring subject.

One RCA thought a guide on public services and consultation would be helpful. Another observed that the consultation requirements on issues like parking restrictions or LATMs were too onerous

4.4.18 Emergency response

With 3 priority points Emergency response was ranked 34th highest scoring subject.

One RCA suggested that the emergency response procedures need to be reviewed. The RCAs and emergency services will have input to make.

4.4.19 Accident notification system

With 23 priority points Accident notification system is ranked the 16th highest scoring subject.

SMS Standards & Guidelines Assessment Project

Approximately half of all RCAs interviewed had some form of accident notification system in place but there was common agreement that further guidelines and standardisation was needed. The guidelines should include a simple, standard mailing form with the data in a format suitable for input into CAS.

4.4.20 Hazard registers and safety databases

With 25 priority points Hazard registers and safety databases is ranked the 15th highest scoring subject.

For many of the RCAs interviewed, hazard registers and safety databases were areas they were only peripherally involved in. Guidelines on what should be done and in particular on what data was useful and what was not. What constitutes a safety hazard and what can be done about it.

Safety deficiency database could be standardised nationally in a similar way to RAMM. The dataset could be standardised but others could add bells and whistles if required.

4.4.21 Safety inspections

With 16 priority points Safety inspections is ranked the 23rd highest scoring subject.

Training or a best practice guide needs to be established on what to look for in safety inspections. Land Transport N.Z. could provide guidance and direction - perhaps linked to some sort of crash analysis from CAS.

4.4.22 Crash reduction studies and data analysis

With 15 priority points Crash reduction studies and data analysis is ranked the 25th highest scoring subject.

Almost all of the RCAs interviewed were involved in the Land Transport N.Z. crash reduction study programme and were pleased to have that assistance. The available guidelines were adequate.

Two suggested improvements to the TCR system included giving priority to processing serious and fatal crashes so that they were available on the CAS system earlier. The second one involved making CAS more user friendly with a simple front end that would allow those with minimal training to obtain a standard output.

4.4.23 Safety audits

With 10 priority points safety audits is ranked the 29th highest scoring subject.

Again RCAs were in support of the Land Transport N.Z. assistance in carrying out safety audits. Suggestions included updating the current Transfund document on "Safety Audit of existing roads" and perhaps including some more examples.

4.4.24 Annual plan and strategic plan process

With 3 priority points Annual plan and strategic plan process is ranked the 35th highest scoring subject.

SMS Standards & Guidelines Assessment Project

The only comment on the Annual plan and strategic plan process was to reduce the duplication between the processes of LTCCP and the LTP.

4.4.25 Road network planning

With 26 priority points Road network planning is ranked the 14th highest scoring subject.

The main theme to emerge from Road network planning was the need to learn more of the results of the Ministry of Transport study on road hierarchy and how it would assist RCAs. The establishment of local road hierarchies often lacks consistency.

Other comments included:

- ◇ Helpful to have a geometric and pavement design guide for unsealed roads
- ◇ Need to ensure that seal widening continues to be an option when resealing minor rural roads
- ◇ Resolve the conflict between NZS 4404 and the AUSTROADS guide. (NZS 4404 requires a higher friction level than the AUSTROADS guide.)

4.4.26 Road safety plans and strategies

With 16 priority points Road safety plans and strategies is ranked the 24th highest scoring subject.

The main theme was the need for developing national guidelines on producing road safety plans and strategies.

Other comments included:

- ◇ The often last minute changes to the Community Project Funding system can be quite confusing and discouraging at an RCA level. Fewer changes and a more generous timeframe is needed.
- ◇ Collectively (Police/RCA/LTNZ) need to make more effort to make the plans happen

4.4.27 Land use planning and controls

With 12 priority points Land use planning and controls is ranked the 28th highest scoring subject.

While there was no single theme to the comments in this subject area there were a number of pertinent individual comments:

- ◇ NZS 4404 lacks guidance on ways to minimise traffic speed through better design.
- ◇ Need more information / references on parking demand for developments. Developers are running rings around councils at the moment.
- ◇ There is a need for a national land-use planning document
- ◇ Provide guidance or material to encourage better integration between the disciplines of planning and engineering. eg a check lists of possible safety issues

4.4.28 Landscaping

With 33 priority points Landscaping is ranked the 8th highest scoring subject.

Comments in this topic centred around the need for a guide on tree planting. A planning guideline on planting that anticipated the future problems with trees in terms of trunk size, shading, ice and related issues. The State Highway guide is not appropriate for local bodies.

SMS Standards & Guidelines Assessment Project

Other roadside hazards that needed national guidance included the risks associated with poles located beside the road, the design of non hazardous letter boxes, and general guidelines on clear-zones for non State Highway use.

Other comments included:

- ◇ To help prevent wandering stock crashes the fencing act needs to be more prescriptive and have more strength. This needs to be done at a national level as it is too hard to do at a local level.
- ◇ Provide guidelines for urban landscaping so that safety is part of the outcome.

4.4.29 Drains, catchpits and sumps

With 3 priority points Drains, catchpits and sumps is ranked the 36th highest scoring subject.

Some generic guidelines with input from suppliers is needed.

4.4.30 Bridges and culverts

With 7 priority points Bridges and culverts is ranked the 31st highest scoring subject.

The two comments in this area were:

- ◇ Need some bridge maintenance guidelines for local authorities as not all RCAs have robust maintenance programmes in place.
- ◇ Need some simple rules of thumb on culvert sizes so that the foreman can install minor culverts without with further recourse.

4.4.31 Stock crossings and underpasses

With 15 priority points Stock crossings and underpasses is ranked the 26th highest scoring subject.

The issues from this area were the need to provide better definition of traffic measures at stock underpasses (eg. Barriers), some specific design guides on construction of stock underpasses and a need to establish ongoing liability for the maintenance of stock underpasses by linking them to the title of the property not the current owner. Another authority overcame this problem by having ownership of the underpass remain with council.

4.4.32 Road construction & design (inc barriers)

With 10 priority points Road construction & design (inc barriers) is ranked the 30th highest scoring subject.

The issue in this area was the need for guidelines on the end protection of bridges, which is appropriate to the risk on low volume rural roads. Options other than standard W section guardrail should be considered.

4.4.33 Carriageway pavements

With 14 priority points Carriageway pavements is ranked the 27th highest scoring subject.

The comments in this area were:

SMS Standards & Guidelines Assessment Project

- ◇ Need a NZ guide to seal extensions on low volume roads - the Austroads guide is too high level so the job doesn't get done.
- ◇ Rationalise the State Highway pavement design manual and the Austroads guide into a single document.
- ◇ As M4 aggregates become harder to find we need to consider alternative basecourse and sub base materials specified by properties.
- ◇ Need research to examine the B/C of maintenance on rural roads so that higher subsidy rates can be made available.

4.4.34 Carriageway surface and friction

With 6 priority points Carriageway surface and friction is ranked the 33rd highest scoring subject.

Most RCAs involved in the interviews seemed unconvinced as to the benefits of SCRIM testing on local roads. Guidance was needed on just how much skid testing regimes actually contribute to road safety on local roads.

4.4.35 Kerb and channel (inc vehicle crossings)

With 3 priority points Kerb and channel (inc vehicle crossings) is ranked the 37th highest scoring subject.

Provide better tracking curves that recognise that both the vehicle and the driver have performance characteristics.

4.4.36 Slips and retaining structures

With 18 priority points Slips and retaining structures is ranked the 19th highest scoring subject.

Slips and retaining structures usually require individual attention and design. However there were many suggestions for improvements and guidelines in this area. These included:

- ◇ A flood damage and "drop out" guide - a guide to help new engineers on the options available.
- ◇ A problems / requirements guide for the maintenance of structures.
- ◇ An updated guide to the construction of retaining structures and the legal implications both above and below the road.
- ◇ A best practice guide on slips and debris fences.
- ◇ The Building Act needs amendment in the area of design of retaining walls as its current provisions restrict innovation and force uneconomic repairs.

4.4.37 Asset creation, development and management

There were no comments in this subject area.

4.4.38 Utilities and road reserve

With 35 priority points Utilities and road reserve is ranked the 6th highest scoring subject.

SMS Standards & Guidelines Assessment Project

The work of the NZUAG group "RoadShare" was acknowledged but some local implementation problems remained. It was suggested that RoadShare needed a champion to promote and encourage local implementation of the guidelines.

It would be helpful to have a guide on locating poles beside roads that addressed all the issues including the type of pole to install. A related issue that could be part of the same guideline is the need for and maintenance of slip base poles for road lighting. The performance of slip base poles located behind a kerb should also be examined.

There is a case for developing two training courses on road safety issues – one for utility engineers and another for land use planners.

4.5 Themes

An alternative to the subject by subject description above is to cluster and rank the comments by common theme. This type of analysis produced 45 themes where there were at least two comments within a subject area on a similar topic. The themes are ranked by total priority score and are listed in Appendix 4.

4.6 Innovations

At the interviews RCAs were asked to outline any successful or innovative ideas, policies or guidelines that they had produced and were willing to share. The question was intended to assist networking of successful ideas that had wider application than the authority in which it was produced. The aim was to avoid the need to re-invent work that had already been done.

There were 26 comments offered and these are listed in Table 8 below.

Table 8: A list of successful or innovative ideas applied by the RCAs in the interview survey

RCA	Description
Tararua D.C.	Have produced brochures on the issues involved in stock crossings and droving.
Tararua D.C.	Have independent crash investigation skills available to investigate crashes
Porirua City	Have trialed some bus friendly speed humps.
Porirua City	Have trialed the use of traffic studs to reinforce the presence of painted traffic islands
Rangitikei D.C.	Developed methods to alleviate traffic problems at a rural school which did not include changing the speed limit.
Rangitikei D.C.	Experimenting with the use of pocket RAMM in a rural area.
Dunedin City	Maintain a directory of "1 pagers" on issues such as flag lighting or minor design to help consistency across council operations
Dunedin City	Propose to operate an electronic format for consultants monthly reports which standardises the format and provides better input.
Central Otago D.C.	Have developed a local Walking and Cycling Strategy
Central Otago D.C.	Have an operational accident notification system
Southland D.C.	Have developed an accident notification system that uses a reply paid card that is left with the crash reporting network
South Waikato D.C.	Have developed a process of consultation for stock crossings

SMS Standards & Guidelines Assessment Project

RCA	Description
South Waikato D.C.	Have a fencing policy that allows grazing of the road reserve without causing undue hazards from concrete strainer posts etc.
Selwyn D.C.	Have an agreement with the local maintenance contractor so that events organisers get the help they need to produce Traffic Management Plans
Buller D.C.	Have an "approved contractor" system in operation to ensure contractors are suited to the task
Grey D.C.	Have considerable experience in riverbank rock protection techniques
Grey D.C.	Have a workable traffic counting programme in place
Grey D.C.	Have a bridge rating system in operation
CHB D.C.	Have a workable professional service contract that defines the safety performance expected from the network.
Hastings D.C.	Have redesigned the paddle sign for school patrols to overcome UV fading issues
Napier City	Discovered that the overdimension vehicle permit system can be used to bring errant OD vehicle operators into line
Napier City	Installed short sections of green pavement near intersections to economically highlight the presence of cycle lanes
Gisborne D.C.	Have a workable method, based on the North Shore guide, to prioritise traffic calming schemes.
Far North D.C.	Have developed a system of flow charts to determine where and when safety audits are required
Far North D.C.	Specify the corridor clearance envelope on roads in the maintenance contract documents
Far North D.C.	The vehicle speed profiles from the traffic count programme are used to assist the Police in their targeted speed enforcement programmes.

4.7 Key Standards

At the interviews RCAs were given a list of the current standards and guidelines relevant to the subject being discussed. Comments on possible omissions / deletions from the list were recorded and the list for comment was progressively updated as the interview programme progressed. These comments have been used to refine the list of standards recommended for Table 3 H

5 Updates to Documents

5.1 Update to Table 3 H

The final update of Table 3 H draws on inputs from three sources:

- The 2006 update to standards described in section 2
- The development of a database of references described in section 3
- The interview survey described in section 4 above

The following formats are suggested for references within Table 3 H.

The reference to a standard or guideline should normally be:
"Name of the document", "abbreviated name of the organisation", "publishing or latest revision date".

SMS Standards & Guidelines Assessment Project

The reference to legislation should be the official short title which is often “*Name of the legislation*” (“*enactment date*”) eg Local Government Act (2002)

References could include document reference numbers such as “TR11” only when this forms an important part of common usage.

An update to Table 3 H is presented in Appendix 5 of this report. This update takes into account:

- How frequently a document is referenced in the SMS database
- The comments from the interview survey
- The relevance of the document to the particular subject area
- The quality of the document and its role as an industry leader
- The need for a standardised referencing system

5.2 Update to the Transfund Standards & Guidelines Manual

Appendix 2 compares the structure and references in the Transfund Standards and Guidelines Manual with those of Table 3 H. Table A2-2 of Appendix 2 provides an update (but without a review) of the standards in the current Standards and Guidelines manual.

5.3 Recommendations

Arising from this project are three recommendations Land Transport N.Z. may wish to consider:

1. That the Transfund Standards and Guidelines Manual structure and standards are reviewed so that they more closely align with the structure and standards of Table 3 H.
2. That the Standards and Guidelines Manual and Table 3 H are updated regularly using a common source.
3. That Land Transport N.Z. considers the need to develop a web-based inventory of standards, relevant to RCAs and with links to standards as PDF files where appropriate. In this activity there could be opportunities for synergies with the TNZ Standards and Guidelines Manual.

6 Summary

This project has produced a database of the legislation, standards, guidelines, policies, and council directives referenced in 20 Safety Management Systems produced between 2004 and 2006.

A review of the web pages and other sources has led to an update of the references contained in Table 3 H of the Guidelines for developing and implementing a Safety Management System for road controlling authorities.

The database has been used to identify the documents that are most commonly referenced by these Safety Management Systems. This information has been used to propose an updated list of legislation, standards and guidelines for Table 3 H.

SMS Standards & Guidelines Assessment Project

The use of standards by RCAs was discussed during the interviews and further input to updating Table 3 H obtained.

A questionnaire and interview survey of 22 Road Controlling Authorities (RCAs) has been completed and the priority areas as seen by RCAs have been documented and analysed. The results are documented as a subject by subject analysis and a listing of the top 45 themes.

An update of Table 3 H has been provided using all the inputs available in this study. Land Transport N.Z. may wish to further refine the table to reflect policy or other strategic objectives it may have.

SMS Standards & Guidelines Assessment Project

7 Glossary of Abbreviations

Abbreviation	Full Description
AADT	Average Annual Daily Traffic
BCA	Bitumen Contractors' Association
CAS	Crash Analysis System
IHT	The Institution of Highways and Transportation
LTNZ	Land Transport New Zealand
LTSA	Land Transport Safety Authority (not current)
MOT	Ministry of Transport
NAASRA	'National Association of Australia State Road Authorities' (not current)
NAMS	National Asset Management Steering Group
NRB	National Roads Board (not current)
OSH	Occupational Safety and Health
RAMM	Road Asset Management
RRU	Road Research Unit (not current)
RSMA	Road Safety Manufacturers Association
RSS	Road Safety Survey series
RTS	Road and Traffic Standards series
SCRIM	Sideway- force Coefficient Routine Investigation Machine
SNZ	Standards New Zealand
TNZ	Transit New Zealand
Transfund	Transfund New Zealand (not current)
UTC	Urban Transport Council (not current)

SMS Standards & Guidelines Assessment Project

Appendix 1: Current and Updated References

Table A1-1: A list of all standards referenced in the current, SMS Guidelines, Table 3 H and the proposed equivalent reference for 2006. .

2004 (current) SMS Table 3H reference	Proposed 2006 SMS Table 3H reference
Electricity Act (1992)	Electricity Act (1992)
Gas Act (1992)	Gas Act (1992)
Health and Safety in Employment Act (1992)	Health and Safety in Employment Act (1992)
Heavy Motor Vehicle Regulations (1974)	Heavy Motor Vehicle Regulations (1974)
Land Transport Rule: Setting of Speed Limits (2003)	Land Transport Rule: Setting of Speed Limits (2003)
Local Government Act (2002)	Local Government Acts (1974 & 2002)
NZ Building Code (1992)	NZ Building Code (updated to 2004)
Resource Management Act (1992)	Resource Management Act (1992)
Telecommunications Act (2001)	Telecommunications Act (2001)
Traffic Regulations (1976)	Land Transport Rule: Traffic Control Devices (2004)
Transit NZ Act (1989)	Transit NZ Act (1989)
Transport (Vehicular Traffic – Road Closures) Regulations (1965)	Transport (Vehicular Traffic – Road Closures) Regulations (1965)
Transport Act (1962 & 1997)	Transport Act (1962)
Accounting Regulations and Standards	Accounting Regulations and Standards
AS/NZS 1158 Road lighting series	AS/NZS 1158 Road lighting series. 1997-2005
AS/NZS 2144:2002 Traffic signal lanterns	AS/NZS 2144:2002 Traffic signal lanterns
AS/NZS 3661 series (1993-94): Slip resistance of pedestrian surfaces	AS/NZS 4586:1999 Slip resistance classification of new pedestrian surface materials
AS/NZS 3845:1999 Road Safety Barrier Systems	AS/NZS 3845:1999 Road Safety Barrier Systems
Bridge Inspection and Maintenance Manual (SP/M/016), TNZ	Bridge Inspection and Maintenance Manual, TNZ, 2001
Bridge Manual (SP/M/022) 2nd Ed, TNZ	Bridge Manual, 2nd Ed, TNZ, 2003
Code of Practice for Temporary Traffic Management (SP/M/018), TNZ	Code of Practice for Temporary Traffic Management, TNZ, (including 2006 amendment)
Contractors health and safety procedures	Contractors health and safety procedures
Culvert Manufacturer's Guidelines for Design and Installation	Culvert Manufacturer's Guidelines for Design and Installation
Draft Guide to Pedestrian Crossing Facilities (2001), Traffinz	Draft Guide to Pedestrian Crossing Facilities, Traffinz, 1991
Draft State Highway Geometric Design Manual (2000-03)	State Highway Geometric Design Manual, TNZ, 2005
Guide to Traffic Engineering Practice series, general, Austroads	Guide to Traffic Engineering Practice series, General, Austroads
Guide to Traffic Engineering Practice, Part 10: Local Area Traffic Management	Guide to Traffic Engineering Practice, Part 10: Local Area Traffic Management, Austroads, 2004
Guide to Traffic Engineering Practice, Part 11: Parking	Guide to Traffic Engineering Practice, Part 11: Parking, Austroads, 1988

SMS Standards & Guidelines Assessment Project

2004 (current) SMS Table 3H reference	Proposed 2006 SMS Table 3H reference
Guide to Traffic Engineering Practice, Part 13: Pedestrians	Guide to Traffic Engineering Practice, Part 13: Pedestrians, Austroads, 1995
Guide to Traffic Engineering Practice, Part 14: Bicycles	Guide to Traffic Engineering Practice, Part 14: Bicycles, Austroads, 1999
Guide to Traffic Engineering Practice, Part 7: Traffic Signals	Guide to Traffic Engineering Practice, Part 7: Traffic Signals, Austroads, 2003
Guide to Traffic Engineering Practice, Part 9: Arterial Road Traffic Management	Guide to Traffic Engineering Practice, Part 9: Arterial Road Traffic Management, Austroads, 1988
Guidelines for Auditing Existing Roads, Transfund	Safety Audit Procedures for existing roads, Transfund, 1998
Guidelines for Cycle Audit and Cycle Review, IHT	Guidelines for Cycle Audit and Cycle Review, IHT
Guidelines for Planting for Road Safety (1991), TNZ	Guidelines for Planting for Road Safety, TNZ, 1991
International Infrastructure management Manual, 2002, NAMS	International Infrastructure Management Manual, NAMS, 2006
Land Transport Rule: Setting of Speed Limits (2003)	Land Transport Rule: Setting of Speed Limits (2003)
LTSA and TNZ Road and Traffic Standards	Land Transport NZ and TNZ Road and Traffic Standards
LTSA Fact Sheet 26: Kea Crossings - School Crossing Points, 2003	Land Transport NZ Fact Sheet 26: Kea Crossings - School Crossing Points, 2005
LTSA RTS Standards general	Land Transport NZ RTS Standards general
Manual of Traffic Signs and Markings: Part 1 - Traffic Signs (Ed. 4)	Manual of Traffic Signs and Markings: Part 1 - Traffic Signs (with amendments up to 2006)
Manual of Traffic Signs and Markings: Part 2 - Markings (Ed. 3 Interim Update)	Manual of Traffic Signs and Markings: Part 2 - Markings (with amendments up to 2005)
Manual of Traffic Signs and Markings: Parts I and II	Manual of Traffic Signs and Markings: Parts I and II
NZ Asset Management Asset Valuation and Depreciation Guidelines	NZ Asset Management Asset Valuation and Depreciation Guidelines
NZS 4404:2004 Land Development and Subdivision Engineering	NZS 4404:2004 Land Development and Subdivision Engineering
NZS 6701: Code of Practice for Road Lighting	NZS 6701:1983 Code of Practice for Road Lighting
OSH documents	OSH documents
Overweight Permit Manual, TNZ	Overweight Permit Manual, TNZ, 2005
Proposed District Plan	District Plan
RSMA Compliance Standard for Traffic Signs (2003)	RSMA Compliance Standard for Traffic Signs, 2003
RTS 14: Guidelines for Installing Pedestrian Facilities for People with Visual Impairment	RTS 14: Guidelines for Installing Pedestrian Facilities for People with Visual Impairment, LTSA, 2003
RTS 5: Guidelines for Rural Road Marking and Delineation	RTS 5: Guidelines for Rural Road Marking and Delineation, LTSA, 1992
RTS 6: Guidelines for Visibility at Driveways	RTS 6: Guidelines for Visibility at Driveways, LTSA, 1993
Safety Audit Policy and Procedures (1993), TNZ	Road Safety Audit Procedures for Projects, Transfund, 2004
Speed Limits New Zealand (2003), LTSA	Speed Limits New Zealand, LTSA, 2003
Standards and Guidelines Manual, Transfund	Standards and Guidelines Manual, Transfund, 1998
TNZ Guidelines	TNZ Guidelines
TNZ M/14 Edge Marker Posts	TNZ M/14 Edge Marker Posts

SMS Standards & Guidelines Assessment Project

2004 (current) SMS Table 3H reference	Proposed 2006 SMS Table 3H reference
TNZ M/23 Road Safety Barrier Systems	TNZ M/23 Road Safety Barrier Systems
TNZ Standards	TNZ Standards
TR 11: Recommended Practice for Pedestrian Crossings	TR 11: Recommended Practice for Pedestrian Crossings, NRB, 1988
Transfund Programme & Funding Manual: Clause 7.4.20 Stock Underpasses	Land Transport NZ Programme and funding manual: Clause 7.4.20 Stock crossings
Transit NZ Stock Underpass Procedures Manual 2001	State Highway Control Manual, TNZ
"A Guide on Estimating AADT and Traffic Growth, and a Traffic Count Monitoring Programme Basis", Transit New Zealand	Update and Enhancement of Traffic Count Guide, Research Report 202, Transfund, 2002
Accident Investigation Monitoring System - Coding Manual, LTSA	Crash Reduction Monitoring System Coding Manual (Ver.3), Land Transport NZ, 2005
Accident Investigation Procedures, TNZ/MOT, 1991	A New Zealand guide to the Treatment of Crash Locations, Land Transport NZ, 2004
Accident Investigation System Manual, LTSA	Online CAS HELP, Land Transport NZ
All new structures require specific design and building permit	All new structures require specific design and building permit
Annual LTSA Road Safety Report	Annual Land Transport NZ Road Safety Report
ARRB Sealed Local Road Manual, 1995	Sealed Local Roads Manual: Guidelines to Good Practice, ARRB, 2005
AS/NZS 1906 Series (1993-97): Reflective materials	AS/NZS 1906 Series (1993-97): Reflective materials
AS2353 - 1999 Pedestrian push button assemblies	AS2353 - 1999 Pedestrian push button assemblies
Asset Management Manual, Chapter 2, Transfund	(see) State Highway Asset Management Manual, TNZ, 1996.
Bituminous Sealing Manual, Transit New Zealand, 1993	Chipsealing in New Zealand, TNZ, 2005
Draft Regional Land Transport Strategy.	Draft Regional Land Transport Strategy.
Guide to Cycle Facilities, NRB/UTC	Guide to Cycle Facilities, NRB/UTC
Guide to the Design of Road Surface Drainage, NAASRA	Guide to the Design of Road Surface Drainage, NAASRA
Guide to the selection of road surfacings, 2000, Austroads	Guide to the Selection of Road Surfacings (2nd ed.), Austroads, 2003
Guide to Traffic Engineering Part 12 : Roadway Lighting	Guide to Traffic Engineering Practice, Part 12 : Roadway Lighting, Austroads, 2004
Guide to Traffic Engineering Practice, Part 1: Traffic Flow	Guide to Traffic Engineering Practice, Part 1: Traffic Flow, Austroads, 1988
Guide to Traffic Engineering Practice, Part 4: Road Crashes	Guide to Traffic Engineering Practice - Part 4: Treatment of Crash Locations, Austroads
Guide to Traffic Engineering Practice, Part 5: Intersections at Grade	Guide to Traffic Engineering Practice, Part 5: Intersections at Grade, Austroads, 2005
Guide to Traffic Engineering Practice, Part 6: Roundabouts	Guide to Traffic Engineering Practice, Part 6: Roundabouts, Austroads, 1993
Guide to Traffic Engineering Practice, Part 8: Traffic Control Devices	Guide to Traffic Engineering Practice, Part 8: Traffic Control Devices, Austroads, 1988
Guidelines for Local Area Traffic Management, Western Australia Main Roads Department	Guidelines for Local Area Traffic Management, Western Australia Main Roads Department
Highway Surface Drainage: Design Guide for Highways with a Positive Collection System, NRB	Highway Surface Drainage: Design Guide for Highways with a Positive Collection System, NRB, 1977
Load Pilot Driver Code, 2004, LTSA	Load Pilot Driver Code, LTSA, 2004

SMS Standards & Guidelines Assessment Project

2004 (current) SMS Table 3H reference	Proposed 2006 SMS Table 3H reference
Local Authority RAMM Operation Database Manual	Local Authority RAMM Database Operation Manual, Transfund, 1997
LTSA Fact Sheet 13: Maximum permitted vehicle weights and dimensions	Land Transport NZ Fact Sheet 13: Vehicle dimensions and mass – guide to factsheet 13 series, 2005
LTSA Guidelines for developing a Safety Management System for Road Controlling Authorities	Guidelines for Developing and Implementing a Safety Management System for Road Controlling Authorities, Land Transport NZ, 2005
LTSA Guidelines general	Land Transport NZ Guidelines general
New Zealand Cycle Design Guide, Draft, 2003, TNZ	Cycle Network and Route Planning Guide, LTSA, 2004
New Zealand On-road Tracking Curves, LTSA	New Zealand On-road Tracking Curves, LTSA
NRB TR8 – Manual for maintenance of unsealed roads	NRB TR8 – Manual for maintenance of unsealed roads
NZ Road Code	NZ Road Code
NZ Road Safety Plan Guidelines, 2004, LTSA	NZ Road Safety Plan Guidelines, 2004, LTSA
NZS 3661 - Slip resistance of pedestrian surfaces	AS/NZS 3661.2:1994 Slip resistance of pedestrian surfaces - Guide to the reduction of slip hazards
NZS 4121:2001, design for access and mobility – buildings and associated facilities	NZS 4121:2001 Design for access and mobility – buildings and associated facilities
NZS 4402: 1986 Methods for Testing Soils for Civil Engineering Purposes	NZS 4402: 1986 Methods for Testing Soils for Civil Engineering Purposes
NZS 5431:1973 Specification for Traffic Signals, Section 18: Warrants for traffic signals	NZS 5431:1973 Specification for Traffic Signals, Section 18: Warrants for traffic signals
NZS 8409: 1995 Agrichemical Uses Code of Practice	NZS 8409:2004 Management of Agrichemicals
Pavement Design: A Guide to the Structural Design of Road Pavements, Austroads (plus) New Zealand supplement (May 2000)	Pavement Design: A Guide to the Structural Design of Road Pavements, Austroads (plus New Zealand supplement to 2004 version)
Planning Policy Manual (1999), TNZ	Planning Policy Manual, TNZ, 1999
Policy Guidelines for Traffic Accident Reduction and Prevention, TNZ/MOT	A New Zealand guide to the Treatment of Crash Locations, Land Transport NZ, 2004
Project Evaluation Manual, Transfund	Project Evaluation Manual, Land Transport NZ, 2005
Quality Standard TQS1: 1995 for High QA Level Contracts, TNZ	Quality Standard TQS1:2005 for High QA Level Contracts, TNZ
Road Condition Rating and Roughness Manual (PFM 6); Transfund, 1997	RAMM Road Condition Rating and Roughness Manual, Transfund, 1997
Road Safety Audit, Austroads 1994	Road Safety Audit (2nd Edition), Austroads, 2002
Roading Design Guidelines RD-1 Intersections at Grade RD-2 Roundabouts	Roading Design Guidelines: RD-1 Intersections at Grade, RD-2 Roundabouts, TNZ, 1991
RRU Bulletin 79 - Guidelines for Selection, Design and Construction of Thin Flexible Bituminous Surfacing in NZ	RRU Bulletin 79 - Guidelines for Selection, Design and Construction of Thin Flexible Bituminous Surfacing in NZ
RSS 10 - Skid Resistance, LTSA , 1998	RSS 10 - Skid Resistance, LTSA , 1998
RSS 15 - Roadside Hazard Management, LTSA	RSS 15 - Roadside Hazard Management, LTSA, 2002
RTA Guide to Traffic Generating Developments	RTA Guide to Traffic Generating Developments

SMS Standards & Guidelines Assessment Project

2004 (current) SMS Table 3H reference	Proposed 2006 SMS Table 3H reference
RTS 1: Guidelines for the Implementation of Traffic Control at Crossroads	RTS 1: Guidelines for the Implementation of Traffic Control at Crossroads, LTSA, 1990
RTS 11: Guidelines for Urban Roadside Barriers and Alternative Treatments	RTS 11: Guidelines for Urban Roadside Barriers and Alternative Treatments, LTSA, 1995
RTS 2: Guidelines for Street Name Signs	RTS 2: Guidelines for Street Name Signs, LTSA, 1990
RTS 3: Guidelines for Establishing Rural Selling Places	RTS 3: Guidelines for Establishing Rural Selling Places, LTSA, 1992
RTS 7: Advertising Signs & Road Safety: Design and Location Guidelines	RTS 7: Advertising Signs & Road Safety: Design and Location Guidelines, LTSA, 1993
RTS 9: Guidelines for the Signing and Laying out of Slip Lanes	RTS 9: Guidelines for the Signing and Laying out of Slip Lanes, LTSA, 1994
Rural Road Design: A Guide to the Geometric Design of Rural Roads, Austroads	Rural Road Design - A Guide to the Geometric Design of Rural Roads, Austroads, 2003
Safe Handling of Bituminous Materials, BCA	Code of Practice for the Safe Handling of Bituminous Materials, BCA, 2000
Safety Barriers: Consideration for the revision of safety barriers on Rural Roads, NAASRA	Safety Barriers: Consideration for the revision of safety barriers on Rural Roads, NAASRA
SCRIM Deficiency Report, User Guidelines, TNZ 1998	SCRIM Deficiency Report, User Guidelines, TNZ 1998
State Highway Asset Management Manual	State Highway Asset Management Manual, TNZ, 2003
State Highway Control Manual (SM012), TNZ	State Highway Control Manual, TNZ, 2004
The National Cycle Network: Guidelines and Practical Issues: Issue 2 (Ove Arup, 1997)	The National Cycle Network: Guidelines and Practical Issues: Issue 2 (Ove Arup, 1997)
TNZ C/03 Repair Potholes	TNZ C03 Repair Potholes
TNZ C/04 Digout Repairs in Flexible Pavements	TNZ C04 Digout Repairs in Flexible Pavements
TNZ C/05 Repair of Surface Openings and Minor Surface Levelling	TNZ C05 Repair of Surface Openings and Minor Surface Levelling
TNZ C/06 Repair of Surface Defects	TNZ C06 Repair of Surface Defects
TNZ C/07 Repair of Edge Break	TNZ C07 Repair of Edge Break
TNZ C/08 Adjusting Service Covers	TNZ C08 Adjusting Service Covers
TNZ C/09 Emergency Work	TNZ C09 Emergency Work
TNZ C/10 Maintenance of Unsealed Shoulders	TNZ C10 Maintenance of Unsealed Shoulders
TNZ C/11 Unsealed pavements : Repair of Potholes	TNZ C11 Unsealed pavements : Repair of Potholes
TNZ C/12 Unsealed Pavements : Surface and Shape Restoration	TNZ C12 Unsealed Pavements : Surface and Shape Restoration
TNZ C/13 Unsealed Pavements : Digout Repairs	TNZ C13 Unsealed Pavements : Digout Repairs
TNZ C/14 Unsealed Pavements : Supply and Place Maintenance Aggregate	TNZ C14 Unsealed Pavements : Supply and Place Maintenance Aggregate
TNZ C/15 Removal of Surface Detritus	TNZ C15 Removal of Surface Detritus
TNZ C/16 Maintenance of Stormwater Structures	TNZ C16 Maintenance of Stormwater Structures
TNZ C/18 Maintenance of Edge Marker Posts	TNZ C18 Maintenance of Edge Marker Posts
TNZ C/20 Erection and Maintenance of Traffic Signs, Chevrons, Markers & Sight	TNZ C20 Erection and Maintenance of Traffic Signs, Chevrons, Markers & Sight

SMS Standards & Guidelines Assessment Project

2004 (current) SMS Table 3H reference	Proposed 2006 SMS Table 3H reference
Rails	Rails
TNZ C/21 Vegetation Control	TNZ C21 Vegetation Control
TNZ C/22 Frost & Ice Gritting and Snow Clearance	TNZ C22 Frost & Ice Gritting and Snow Clearance
TNZ C3, C4, C5, C6, C7, C8, C10, C11, C12, C13, C14, P4, P7, T11	TNZ C3, C4, C5, C6, C7, C8, C10, C11, C12, C13, C14, P4, P7, T11
TNZ handbook "Working on the Road"	TNZ Code of practice for Temporary Traffic Management, 2006
TNZ M/01 Roothing Bitumens, 1995	TNZ M/01 Asphaltic Bitumens, 1995
TNZ M/12 Raised Pavement Markers	TNZ M/12 Raised Pavement Markers
TNZ M/12, M/14, P/14	TNZ M/12, M/14, P/14
TNZ Maintenance Specifications	TNZ Maintenance Specifications
TNZ P/12 Pavement Marking	TNZ P/12 Pavement Marking
TNZ P/14 Installation of Raised Pavement Markers	TNZ P/14 Installation of Raised Pavement Markers
TNZ P/16 Installation of Edge Marker Posts	TNZ P/16 Installation of Edge Marker Posts
TNZ Planning and Policy Manual	Planning Policy Manual, TNZ, 1999
TNZ SH Safety Management system Manual	State Highway Safety Management System Manual, TNZ, 2003
TNZ specifications - E/3 1995; E/4 1994; M/7 1993; M12 1986; M/20 1994; P/12 1998; P14 1995; Q/3 1995; T/8 1996; TQS/2 1995	TNZ specifications - E/3 1995; E/4 1994; M/7 1993; M12 1986; M/20 1994; P/12 1998; P14 1995; Q/3 1995; T/8 1996; TQS/2 1995
TNZ Specifications and guidelines for maintenance of road networks	TNZ Specifications and guidelines for maintenance of road networks
TNZ Standards and Specifications for Testing and Evaluation	TNZ Standards and Specifications for Testing and Evaluation
TNZ Standards for Design, Construction & Materials	TNZ Standards for Design, Construction & Materials
TNZ Standards, Criteria and Guidelines	TNZ Standards, Criteria and Guidelines
TNZ Standards, Criteria and Guidelines Manual	TNZ Standards, Criteria and Guidelines Manual
TNZ T3: Measurement of Texture by Sand Circle Method	TNZ T3: Measurement of Texture by Sand Circle Method
Transfund Interim Procedures for Safety Audit of Traffic Control at Roadwork Sites: Feb. 1999	Revised and incorporated into Transit NZ Code of Practice for Temporary Traffic Management Appendix C
Transit New Zealand Safety Certification procedures	Transit New Zealand Safety Certification procedures
Transit NZ Planning for a safe and efficient highway network (1994)	Transit NZ Planning for a safe and efficient highway network (1994)
Waterways Design: A guide to the Hydraulic Design of Bridges (AP-23/94), Austroads	Waterway Design: A guide to the Hydraulic Design of Bridges, Austroads, 1994

SMS Standards & Guidelines Assessment Project

Appendix 2: Transfund Standards and Guidelines Manual

A comparison of the structure of topics and the standards and guidelines in the Transfund Standards and Guidelines Manual and in Table 3 H

Structure of topics:

Standards and Guidelines Manual:

The Transfund Standards and Guidelines Manual (S & G Manual) organises documents into 9 subject areas. These are:

- 2.1 Bridges and Culverts
- 2.2 Competitive Pricing Procedures
- 2.3 Geometric Design
- 2.4 Maintenance Management Systems
- 2.5 Pavement and Surfacing
- 2.6 Programme Development
- 2.7 Safety
- 2.8 Signs and Markings
- 2.9 Street Lighting and Traffic Signals

For each standard or guideline the following fields are available;

- Document Number
- Document Name
- Status
- Amendment Date
- Application
- Comments

SMS Guidelines, Table 3 H:

The SMS Guidelines, Table 3 H organises documents into 5 groups and 38 subject areas (see Table A2-1 below)

References in Table 3 H are a single field that includes the document name, the organisation responsible and the publication date.

SMS Standards & Guidelines Assessment Project

Table A2-1: Group and Subject structure from the current (2005) Table 3 H

GROUP	SUBJECT	
Planning	Land Use Planning and Controls	
	Landscape	
	Road Network Planning	
	Road Safety Plans and Strategies	
Structures	Bridges & Culverts	
	Carriageway Pavements	
	Drains, Catchpits and Sumps	
	Kerb and Channel (inc vehicle crossings)	
	Road construction & design (inc barriers)	
	Slips and Retaining structures	
Systems	Accident Notification System	
	Annual Plan and Strategic Plan Process	
	Asset Creation, Development & Management	
	Crash Reduction Studies	
	Emergency Response	
	Hazard Registers / Safety Databases	
	Over-Weight/ Over-Dimension Loads	
	Public services / consultation	
	Safety Audits	
	Traffic Management	Safety Inspections
		Traffic Counting Program
		Carriageway Surface Friction
		Delineation
Detritus Sweeping and Vegetation control		
Intersection Controls (inc Signals & rail)		
Parking & Bus Stops		
Road Closures / Events Management		
Road Lighting		
Road Signage		
Roadmarking		
Speed Limits		
Stock Crossings and Underpasses		
Temporary Traffic Management		
Traffic Calming		
Vulnerable Users		Cycle Facilities
	Pedestrian Crossings	
	Pedestrian Facilities	

Comparison:

The structures of the two documents are quite different. While "Bridges and Culverts" is a common subject in both documents most other subjects in the S & G Manual cover many subjects, often in more than one group of Table 3 H. (See Table A2-2 below).

SMS Standards & Guidelines Assessment Project

Table A2-2: An indicative mapping of subjects from the Transfund S & G Manual to those in Table 3 H

S & G Manual	SMS Guidelines, Table H
2.1 Bridges and Culverts	Bridges and Culverts (1 x Subject)
2.2 Competitive Pricing Procedures	Annual Plan and Strategic Plan Process and most other areas. (1 x Subject +)
2.3 Geometric Design	Road construction & design (inc barriers), Intersection Controls (inc Signals & rail), and Cycle Facilities. (3 x Subjects)
2.4 Maintenance Management Systems	Detritus Sweeping and Vegetation control, Temporary Traffic Management, Carriageway Surface Friction, and most of the Systems group. (3 x Subjects + 1 x Group)
2.5 Pavement and Surfacing	Carriageway Pavements, Road construction & design (inc barriers) and Carriageway Surface Friction (3 x Subjects)
2.6 Programme Development	Annual Plan and Strategic Plan Process, Road Network Planning and Asset Creation, Development & Management. (3 x Subjects)
2.7 Safety	Speed Limits, Safety Audits, Crash Reduction Studies, Landscape, and Pedestrian Crossings. (5 x subjects)
2.8 Signs and Markings	Road Signage and Roadmarking (2 x Subjects)
2.9 Street Lighting and Traffic Signals	Road Lighting and Intersection Controls (inc Signals & rail) (2 x Subjects)

Documents:

Standards and Guidelines Manual:

The Standards and Guidelines Manual references forty-two documents. Six of these are referenced as “Standards” and thirty-six as “Guidelines”.

SMS Guidelines, Table 3 H:

The SMS Guidelines, Table 3 H references Legislation, Commonly used guidelines, Additional standards/guidelines, and provides examples of local policies. In all some 494 references are provided, 161 of these are unique references to legislation, standards or guidelines.

Updates:

According to the Land Transport web page the Standards and Guidelines Manual was last updated on 12 August 1998. To help identify which standards in the Standards and Guidelines Manual may need updating they have been cross-referenced to the latest references used in the update of Table 3 H. (see Table A2-3 below). Approximately half of the references in the Standards and Guidelines manual should now be updated.

SMS Standards & Guidelines Assessment Project

Table A2-3: An update of the references in the Transfund Standards and Guidelines Manual using the same update mechanism employed with Table 3 H.

Document Name (Transfund S&G Manual)	Document Name (Table 3 H Update)
Bridge Manual	Bridge Manual, 2nd Ed, TNZ, 2003
Waterways Design: A Guide to the Hydraulic Design of Bridges, Culverts and Floodways. AUSTROADS, 1994	Waterway Design: A guide to the Hydraulic Design of Bridges, Austroads, 1994
Manual of Competitive Pricing Procedures Volume 1: Physical Works and Professional Services; Transfund New Zealand, 1997	Competitive Pricing Procedures Manual: Volume 1 Physical Works & Professional Services, Transfund, 2002
Manual of Competitive Pricing Procedures Volume 2: Passenger Transport; Transit New Zealand, 1995	Competitive Pricing Procedures Manual: Volume 2 Passenger Transport, Transfund, 2002
Highway Surface Drainage - Design Guide for Highways with a Positive Collection System: National Roads Board, 1977	Highway Surface Drainage: Design Guide for Highways with a Positive Collection System, NRB, 1977
Code of Practice for Urban Land Subdivision; NZS 4404, 1981	NZS 4404:2004 Land Development and Subdivision Engineering
Guide to Cycle Facilities National Roads Board/Urban Transport Council, 1985	Guide to Cycle Facilities, NRB/UTC
Rural Road Design - Guide to the Geometric Design of Rural Roads; AUSTROADS, 1989	Rural Road Design - A Guide to the Geometric Design of Rural Roads, Austroads, 2003
Guide to Traffic Engineering Practice Part 5: Intersections at Grade; NAASRA, 1988	Guide to Traffic Engineering Practice, Part 5: Intersections at Grade, Austroads, 2005
Guide to Traffic Engineering Practice Part 6: Roundabouts; AUSTROADS, 1993	Guide to Traffic Engineering Practice, Part 6: Roundabouts, Austroads, 1993
Road Condition Rating and Roughness Manual; Transfund New Zealand, 1997	RAMM Road Condition Rating and Roughness Manual, Transfund, 1997
Local Authority RAMM Operation Database Manual; Transfund New Zealand, 1997	Local Authority RAMM Database Operation Manual, Transfund, 1997
State Highway Database Operations Manual; Transit New Zealand, November 1995	State Highway Database Operations Manual, TNZ, 2004
Bituminous Sealing Manual; Transit New Zealand, 1993	Chipsealing in New Zealand, TNZ, 2005
Pavement Design: A Guide to the Structural Design of Road Pavements; AUSTROADS, 1992 (plus New Zealand supplement of November 1995)	Pavement Design: A Guide to the Structural Design of Road Pavements, Austroads (plus New Zealand supplement to 2004 version)
Programme and Funding Manual; Transfund New Zealand, 1996	Programme and Funding Manual, Land Transport NZ, 2005
Project Evaluation Manual Transfund New Zealand, 1997	Project Evaluation Manual, Land Transport NZ, 2005
Evaluation Procedures for Alternatives to Roading; Transfund New Zealand, 1997	Economic evaluation manual - volume 2, Land Transport NZ, 2005
Accident Investigation Procedures; Transit New Zealand/Ministry of Transport, 1991	A New Zealand guide to the Treatment of Crash Locations, Land Transport NZ, 2004
Policy Guidelines for Traffic Accident Reduction and Prevention; Transit New Zealand/Ministry of Transport, 1990	A New Zealand guide to the Treatment of Crash Locations, Land Transport NZ, 2004

SMS Standards & Guidelines Assessment Project

Document Name (Transfund S&G Manual)	Document Name (Table 3 H Update)
Recommended Practice for Pedestrian Crossings; National Roads Board, 1998	TR 11: Recommended Practice for Pedestrian Crossings, NRB, 1988
Guidelines for Planting for Road Safety Transit New Zealand, 1991	Guidelines for Planting for Road Safety, TNZ, 1991
Guidelines for Setting Speed Limits; Land Transport Safety Authority, 1995	Speed Limits New Zealand, LTSA, 2003
Safety Audit Policy and Procedures; Transit New Zealand, 1993	Road Safety Audit Procedures for Projects, Transfund, 2004
Road Safety Audit; AUSTROADS, 1994	Road Safety Audit (2nd Edition), Austroads, 2002
Manual of Traffic Signs and Markings; Part 1 Traffic Signs; Transit New Zealand/Ministry of Transport, 1992	Manual of Traffic Signs and Markings: Part 1 - Traffic Signs (with amendments up to 2006)
Manual of Traffic Signs and Markings; Part 2 Markings; Transit New Zealand/Land Transport Safety Authority, 1994	Manual of Traffic Signs and Markings: Part 2 - Markings (with amendments up to 2005)
Standard for the Manufacture and Maintenance of Traffic Signs, Posts and Fittings; Transit New Zealand/Road Safety Manufacturers' Association, 1995	RSMA Compliance Standard for Traffic Signs, 2003
Guidelines for the Implementation of Traffic Control at Crossroads; Ministry of Transport, 1990	RTS 1: Guidelines for the Implementation of Traffic Control at Crossroads, LTSA, 1990
Guidelines for Street Name Signs; Ministry of Transport, 1990	RTS 2: Guidelines for Street Name Signs, LTSA, 1990
Guidelines for Establishing Rural Selling Places; Ministry of Transport/Transit New Zealand 1992	RTS 3: Guidelines for Establishing Rural Selling Places, LTSA, 1992
Guidelines for Flush Medians; Ministry of Transport/Transit New Zealand, 1991	RTS 4: Guidelines for Flush Medians, LTSA, 1991
Guidelines for Rural Marking and Delineation; Ministry of Transport/Transit New Zealand, 1992	RTS 5: Guidelines for Rural Road Marking and Delineation, LTSA, 1992
Guidelines for Visibility at Driveways; Ministry of Transport, 1993	RTS 6: Guidelines for Visibility at Driveways, LTSA, 1993
Advertising Signs and Road Safety: Design and Location Guidelines; Transit New Zealand/Land Transport Safety Authority, 1993	RTS 7: Advertising Signs & Road Safety: Design and Location Guidelines, LTSA, 1993
Guidelines for Safe Kerblines Protection; Transit New Zealand/Land Transport Safety Authority, 1993	RTS 8: Guidelines for Safe Kerblines Protection, LTSA, 1993
Guidelines for the Signing and Layout of Slip Lanes; Transit New Zealand/Land Transport Safety Authority, 1993	RTS 9: Guidelines for the Signing and Laying out of Slip Lanes, LTSA, 1994
Code of Practice for Road Lighting; NZS 6701, 1983	NZS 6701:1983 Code of Practice for Road Lighting
Guide to Traffic Engineering Practice - Part 7 Traffic Signals; AUSTROADS, 1993	Guide to Traffic Engineering Practice, Part 7: Traffic Signals, Austroads, 2003
Road Lighting Part 0 Introduction; STANDARDS AUSTRALIA AND STANDARDS NEW ZEALAND, 1997	AS/NZS 1158.0:2005 Road Lighting – Introduction

SMS Standards & Guidelines Assessment Project

Document Name (Transfund S&G Manual)	Document Name (Table 3 H Update)
Road Lighting Part 1.1 Vehicular Traffic (category V) lighting - Performance and Installation design requirements; STANDARDS AUSTRALIA AND STANDARDS NEW ZEALAND, 1997	AS/NZS 1158.1.1:2005 Road Lighting – Vehicle Traffic (Category V) lighting – Performance and installation design requirements
Road Lighting Part 1.3 Vehicular Traffic (category V) lighting Guide to Design, Installation, Operation and Maintenance; STANDARDS AUSTRALIA AND STANDARDS NEW ZEALAND, 1997	AS/NZS 1158.1.3:1997 Road Lighting – Vehicle Traffic (Category V) Lighting – Guide to design, installation, operation and maintenance

SMS Standards & Guidelines Assessment Project

Appendix 3: List of RCA Comments

The following comments were made by RCA representatives during the interview process on the gaps seen in legislation, standards and guidelines.. The subjects are in the order used at the interview and comments within each subject have been ordered in decreasing priority score order.

Subject Area	Comments	Priority Score
1. Road Signage	MOTSAM needs to be kept up to date and to be owned by Land Transport	5
	Need to maintain MOTSAM as an up to date register of all available signs. In particular the folding school patrol sign does not appear in the current manual.	4
	Incorporate the issues described in Traffic Notes into MOTSAM	4
	Make MOTSAM available on-line with regular updates	4
	Incorporate RTS 5 into MOTSAM	4
	MOTSAM needs to contain broader specifications to account for the full range of roads that exist in NZ eg low / high volume, rural / urban authorities, local / TNZ.	4
	Review the Traffic Control Devices rule and MOTSAM. (especially regarding parking meters and the definition of a parking space)	4
	MOTSAM: Would like to have MOTSAM fully available on the web site, continually updated and referencing the date of the last update.	4
	Need more prescriptive guidance on the use of advertising and fingerboard type signs to resist the ongoing proliferation of signs.	4
	Provide guidance on standard maintenance for street name signs - eg ways to combat vandalism (eg raising the sign) and definitions on when damaged signs need replacing.	4
	The commercial pressures to install internally illuminated advertising signs near street name signs can lead to the visibility of street name signs being compromised. National guidance on what is acceptable could help moderate these pressures.	3
	The notification of MOTSAM updates is poor and there is a lag between new signs being approved and their appearance in MOTSAM	3
	MOTSAM: The PW-42 Falling rocks sign needs both a RH and LH version to indicate which side of the road to look for falling rocks. Signs that show the cliff on the wrong side of the road lack credibility.	3
2. Roadmarking	MOTSAM currently has little practical advice on how to accommodate cycle lanes at intersections. It needs updating to include the latest designs.	5
	A guideline that examined the costs and benefits of different marking materials would be helpful	4
	MOTSAM needs to be kept up to date and to be owned by Land Transport	4
	Reflective performance of roadmarking can vary by direction of application - include in P/12 or similar specification	4
	Provide guidance on the benefits and applicability of different pavement marking materials and what works well around the country.	3
	Provide guidance on the benefits of different types of marking, optimum marking frequency, and the benefits of reflectorisation	3
	A review of the economics of installing edgelines on low volume rural roads would be helpful.	3
3. Intersection Controls (inc Signals & RailX)	The proposals put forward in 2004/5 to revoke the left turning give way rule are supported and should be reactivated as soon as it is appropriate.	5
	Change the right hand rule	5

SMS Standards & Guidelines Assessment Project

Subject Area	Comments	Priority Score
	There is a problem getting railway crossings maintained and the standards applied are questionable - often short term.	5
	Need a better liaison system to ensure safety issues at railway crossings are fixed in a timely and appropriate way.	5
	RCAs and Railways corporation need better contact and liaison to fix and maintain railway crossings. Eg a corridor agreement	4
	Criteria for determining the need for a Stop (rather than Give Way) sign at intersections needs reviewing.	4
	Need to amend the STOP sign criteria as it results in too many signs	4
	Provide better access to the latest standards and guidelines by subject area such as on a web page	4
	There have been problems getting the railway level crossing platform upgraded	4
	Review the national give way rule at intersections	4
	Risk assessment techniques should be applied to both intersection and rail level crossing controls ²	3
	The standard location of signs at railway crossings with very short road approaches need to be reviewed. In particular the location of the cross buck sign where this cannot be located on the signal support	3
	Revise the criteria for STOP and Give Way to include hierarchy, urban / rural, and traffic volume.	3
	Guidance on the use of STOP signs to include factors such as left turning traffic volume.	3
	Remove the ambiguity in right of way at "T" junctions and resolve the technical meaning of "Right Turn" and "Straight Ahead" Traffic on the supplementary sign.	2
	Need better guidance on the sight distance criteria that is applied at rail crossings is and how it is derived.	2
4. Delineation	RTS5 needs to be updated and in particular note that the volume triggers appear too high, the crash savings should be quantified against the costs, and recognition given to the benefits edge marking has on the reduction in edge break and accident reductio	4
	Review RTS 5 and incorporate it in the TCD rule and MOTSAM. Address the benefits of delineation with respect to traffic volume and special factors such as tourist routes	4
	MOTSAM needs to be kept up to date and to be owned by Land Transport	4
	RTS 5 (Delineation) and MOTSAM should be combined into a single document	3
	Review and update RTS 5	3
	Developed a local policy for EMP and edgelines but need assistance to find appropriate balance for resources in this area.	3
	Clarify the markers that are to be used with guard rail ends at bridges	2
	Update RTS 5 to include latest speed limit options and delineation ideas	2
	The life of RRPMS on narrow rural roads can be very short - research this and produce guidelines.	2
5. Road Lighting	Guidance on how to upgrade lighting in a cost effective way and do so in a priority order that meets all the needs.	4
	Council needs to upgrade its lighting strategy - some national guidance on the issues to consider would help	4
	Provide some national guidance on ways to limit the selection of decorative (expensive) luminaires available to subdividers	4
	Need to review local road lighting and responsibilities so lower level guidance on both the administrative and technical issues would be helpful.	4
	Unbiased, supplier independent, guidelines on the use of solar powered street lights in road lighting	3
	Provide guidance on the use of solar powered street lighting	3

SMS Standards & Guidelines Assessment Project

Subject Area	Comments	Priority Score
	Guidance is needed on where solar powered lighting can be used in the street and accessway lighting network	3
	Need an appropriate lower standard of lighting than that provided for under AS/NZS 1158 for areas on the rural fringe. A guide indicating what is reasonable, what is available on the market and how it can best be used.	3
	Provide a guideline of the essential elements of road lighting for use by developers and urban designers	3
	Guidance on how to avoid the heavy costs associated with maintaining a multitude of luminaire types provided by subdividers	3
6. Speed Limits	Need guidance on the sorts of things that can be done to alleviate the problems at rural schools in 100km/h areas. Experience gained locally in improving traffic conditions at a rural school could contribute to a brochure / fact sheet. The warrant is	5
	It was noted that some speed zoning trials were being conducted locally and that eventual incorporation of the rules for these types of speed limit should appear in the national speed limit standards	5
	There are currently too many speed limit options which is confusing to drivers and policy makers alike. Reduce to just 2	5
	Resolve the "full public consultation" problems associated with making speed limit changes by bylaw. Current consultation requirements are onerous and unrealistic for something the public has so little influence over.	5
	Speed Limits NZ should be more flexible and less dependant on roadside development	5
	The trial speed zoning assessment criteria need simplifying	5
	Provide a community orientated guideline that addresses the issues of speed limits and the reasons behind them	4
	Remove conflicts between speed limits NZ and the speed limit rule. Eg the minimum length of road to qualify for an 80km/h limit.	4
	Include in the speed limits NZ criteria the need to ensure that the number of speed limit changes along a route is kept to an minimum consistent with what a driver can absorb.2	3
	The guidelines for 30km/h speed restrictions need to be made more specific and stronger	2
7. Parking (inc. bus stops)	Bus shelters are often installed outside reserves not because this is a convenient place but because residents have complaint rights in front of their property. The solution may lie in the modifying the local government act section 339.	4
	Need a guideline and hard data on the parking needs for developments	4
	Increase the specified length of the parallel parking bay given in NZS 4404:2004	3
	Change the definition of parking in the Road User Rule to include "manicured grass berms"	2
	Produce a brochure on the needs / requirements for disabled parking	2
	Need to review the NZ vehicle size and parking dimensions to incorporate the trend towards SUVs.	2
8. Temporary traffic management	Need a reinstatement LRS to CoPTTM of the three diagrams that showed a generic layout for stock on roads.	4
	Need to have standards so that temporary traffic signs don't blow over in the wind. Eg. Smaller sized signs or signs with an open mesh.	4
	More of the CoPTTM RCA local supplement needs to go into the full CoPTTM	3
	The CoPTTM supplement is good for urban areas but still does not fit well with low volume, narrow, rural roads	3
	Include the Low Volume Road supplement so that it is part of CoPTTM	2

SMS Standards & Guidelines Assessment Project

Subject Area	Comments	Priority Score
9. Vehicle operations (inc. OD/OW loads)	More involvement from the local RCA should be necessary prior to issuing OD permits. Enforcement needs to be increased and OD email list needs to be broken into districts.	5
	Abandoned Vehicles - the legal requirements involved in removing abandoned vehicles from the road needs to be reviewed and the process documented.	5
	TNZ OD Vehicle route map concentrates on State Highways and is not relevant to local authorities. An annual update is needed	5
	Need a system to improve the process and co-ordination of OW / OD loads between RCAs and increase the level of enforcement.	5
	The legislation dealing with abandoned vehicles needs to be looked at. The time frame is unrealistically long and in everyone's interest often has to be shortcut.	5
	Need to have reports on OD load movements made more accessible and better directed. Eg Filter them so that only those relevant to this RCA are received or have them accessible on the web site.	4
	Would like a more directed notification system that identifies OD loads using local routes	4
	There is an issue with the application of OD permits to local conditions when permits were issued by another agency in another City.	3
	Update the TNZ "OD Vehicle Route Maps" booklet	3
	Problem of tractors or harvesters often with poor or excessive lighting using the roads at night with seemingly little or no enforcement	3
	Produce OD Vehicle route maps in a glove box size so they can be used in the field.	3
	Make the information on OD load movement more accessible by region and maybe link the OD and OW aspects of load movement.	3
	The waiting time required when dealing with abandoned vehicles is unrealistically long. (Sometimes it is just waiting for the vandals to reduce the vehicle value to zero so they can be moved.)	3
10. Road Closures (inc. events management)	Provide some national guidance on how to operate cycling / running events from a traffic management viewpoint.	5
	Guidance needed on how council can assist the process of developing a TMP for locally held events without taking liability for the conduct of the event itself. Perhaps a brochure directed at sports clubs and including typical generic TMP.	4
	Helpful to have a simple document of just a few pages outlining the procedure for events management / road closures referencing the relevant legislation	4
	The events management system is OK but it takes time to process. There needs to be a guide perhaps including a decision tree flow chart that can be made available to car clubs and the like.	4
	The legal provisions of the LGA and TA need better alignment in the area of road closure. (LGA is used where closure >12 hours but has some undesirable aspects compared to the TA.)	4
	Need to amend legislation so that roads which are considered "unsafe for the general public" are able to be closed by locked gate.	3
	Traffic Management Plans for public events are variable in both quality and application. Generic guidelines aimed at "events people" would be helpful.	3
	Develop a guideline on the issues involved in road closures	3
	There is a lack of consistency in the application of TMP provisions within council	3
	There are many issues involved in events management and it takes time to make it all happen. A public document on the process would be very helpful.	3

SMS Standards & Guidelines Assessment Project

Subject Area	Comments	Priority Score
	The advertising period is very long - perhaps needs looking at or including some guidance in a brochure	2
	The legislative lead times for advertising road closures are too long	2
	Produce a guide for the general public on the issues involved in events type road closures	1
11. Detritus, sweeping and vegetation control	The legislation providing for protection of trees for historic or preservation reasons need to include conditions to maintain road safety	4
	Strict application of OSH rules have curtailed highly successful roadside litter collection schemes - needs to be taken up with OSH so that the broader benefits to the community are taken into account	3
	Need to revisit and bring together the legislation that addresses material dropped on roads eg mud from truck or tractor tyres and stock effluent	3
	It would be helpful to have a national definition of the envelope expected on urban roads that should be free from encroachment by a vegetation canopy.	2
12. Traffic calming	Produce guidelines for Traffic Calming for local authorities indicating where these devices are most suited.	5
	A national guide to good traffic calming practice would be helpful	4
	Need to have a guideline indicating those calming measures that work, those that don't and those that need further trials	4
	Guideline on the use of urban / rural thresholds - widths, severity, provisions for cyclists etc.	4
	Need a simple traffic calming guide that can be given to the public. Highly visual, 5 to 6 pages long.	4
	Need education on pedestrian and driver rights and responsibilities at raised pedestrian platforms.	4
	Would like a NZ guide on Traffic Calming that summarises what can be done and where it is most appropriate	3
	A single, best practice guide on traffic calming would be helpful	3
13. Pedestrian crossings	Like to see some integrated guidelines describing when to use Ped X, Kea crossings, raised platforms, visually impaired and mobility impaired facilities.	5
	Need more publicity on the pedestrians responsibilities not to step onto the crossing if a car is too close to stop.	3
	Introduce the Victorian system of transitional speeds in school zones	3
	Develop a comprehensive warrant to include Pedestrian Crossings and Kea crossings	3
	Need more guidance on how to floodlight pedestrian crossings	3
	Re-enforce the pedestrian crossing warrant as a tool to help remove and prioritise unnecessary pedestrian crossings.	3
	Produce electronic worksheets covering the calculations in Appendix 3 of the draft guide for Pedestrian Crossing Facilities	2
14. Pedestrian facilities	Need a guideline to address both visually and mobility deprived issues together. RTS14 is not good for people in wheel chairs.	5
	Guidelines for designing major driveways in areas where there are significant pedestrian volumes eg. Major developments	5
	Funding the footpath should be considered as part of funding the whole network	5
	Need guidelines on designing footpaths for physically disabled pedestrians, mobility scooters and wheelchairs	4
	Guide on the use and design of streets for the mobility impaired	4
	Guidelines on designing for mobility restricted and mobility scooters	3
	Need to rationalise the stated differences in the guidance given by NZS 4142:2001 and RTS 14.	3

SMS Standards & Guidelines Assessment Project

Subject Area	Comments	Priority Score
	Combine the requirements of RTS 14 "vision impaired" with those of the "mobility impaired" into a single guideline	2
15. Cycle facilities	Include a lower volume good practice guide including signing for where cycle facilities cross the road	5
	The NZ supplement to AUSTRROADS part 14 needs to be updated to be compatible with the cycle network guide	4
	Guidance on how to sign shared pedestrian / cycle facilities	4
	The preferred markings and signs for shared pedestrian/cycle routes need to be defined	3
	MOTSAM needs to make clear the recommended cycle route signage.	3
16. Traffic counting programme	A guide to good traffic counting practice would be helpful	5
	Review the technology to enable better counting of cycle traffic	4
	Data and guidance on counting for strategic needs - anticipate future needs now and collect the data necessary so that it is available when the questions are asked	4
	Need to update the current TNZ guide to traffic counting	4
	Need to update the guidelines for estimating AADT and traffic growth to reflect changes in traffic patterns and school terms	4
	A guide for RCAs to use and compile AADT rather than ADT data would be helpful	3
	Review and update the TNZ reference to traffic counting	3
17. Public services and consultation	Consultation requirements to install a LATM device or parking restriction are too onerous.	3
	Need a guideline on public services/consultation	3
18. Emergency response	The emergency response procedures need to be reviewed. The RCAs and emergency services will have input to make.	3
19. Accident notification system	Unreported accident register: Guidelines including a standard RCA form suitable for input into CAS would be most useful.	4
	A national standard format and form for accident notification systems would be useful	4
	Would like a best practice guide on accident notification systems that included an example mailing form.	3
	A standard, CAS compatible, Accident Notification form would be helpful	3
	Develop a standard accident notification system	3
	Provide guidance on how to set up an accident notification system	3
	A standard CAS compatible form Accident Notification form would be helpful	3
20. Hazard registers and safety databases	Provide guidance on what constitutes a safety hazard and what should be done with it.	4
	Safety deficiency database should be standardised nationally in a similar way to RAMM. The dataset could be standardised but others could add bells and whistles if required.	4
	Guidance on the minimum amount of data that should be gathered to produce meaningful results	4
	Produce a guide on how to operate hazard registers - what should be included and what is just clutter	4
	Best practice guideline needed	3
	Need some generic guidelines / checklists	3
	Land Transport NZ to define a simple workable system	3
21. Safety inspections	Land Transport NZ to provide guidance and direction - perhaps linked to CAS output	5

SMS Standards & Guidelines Assessment Project

Subject Area	Comments	Priority Score
	Training or best practice guide needs to be established on what to look for in safety inspections	4
	Best practice guide on how much how often	4
	Need some generic guidelines on safety inspections	3
22. Crash reduction studies and data analysis	Make CAS more user friendly. A simple front end for simple tasks	5
	LTSA assistance / resources made available in conducting CRS studies were highly valued as independent and often specialised expertise. Important it continue.	5
	Review the TCR procedures so that serious crashes are included in the CAS data in a much shorter timeframe	3
	A user friendly front end to CAS or a simple method for basic CAS data retrievals would be helpful.	2
23. Safety audits	Land Transport should continue to provide technical assistance and personnel for safety audits	4
	Safety Audit training is required	3
	Safety Audit of existing roads: The document now needs updating and would benefit with the provision of examples.	3
24. Annual plan and strategic plan process	Reduce the duplication between the processes of LTCCP and the LTP	3
25. Road network planning	Need to know what guidelines on road hierarchy will be forthcoming from the MOT study as this will impact on reassessment of the local road hierarchy	5
	The establishment of local road hierarchies often lacks consistency. A more rigorous scientific method is needed.	5
	Need to ensure that seal widening continues to be an option when resealing minor rural roads	4
	Helpful to have a geometric and pavement design guide for unsealed roads	3
	Resolve the conflict between NZS 4404 and the AUSTROADS guide. NZS 4404 requires a higher friction level than the AUSTROADS guide.	3
	Road Hierarchy: Would be helpful if the work MOT are doing was published with reference to how it could be used by RCAs.	3
	Need some published national guidelines on road hierarchy	3
26. Road safety plans and strategies	Guidance on how to produce road safety plans and strategies	4
	Collectively (Police/RCA/LTNZ) need to make more effort to make the plans happen	4
	Community Project Funding: The often last minute changes to the system can be quite confusing and discouraging at an RCA level. Less changes, more generous timeframe.	4
	Develop guidelines on the issues involved in producing road safety plans	4
27. Land use planning and controls	Need more information / references on parking demand. Developers are running rings around councils	4
	There is a need for a national land use planning document	3
	Provide guidance or material to encourage better integration between the disciplines of planning and engineering eg check lists of possible safety issues	3
	NZS 4404 lacks guidance on ways to minimise traffic speed through better design plus the district plan	2

SMS Standards & Guidelines Assessment Project

Subject Area	Comments	Priority Score
28. Landscaping	Need some guidelines on clear zones that are appropriate to low volume local body roads	4
	Fencing Act needs to be more prescriptive and have more strength	4
	Good practice guide on tree planting (similar to the Manawatu guide)	4
	Provide guidelines for urban landscaping so that safety is part of the outcome	4
	Planting for Road Safety: A guideline somewhat more current and available than the 1991 TNZ document on planting for road safety.	4
	Need a document that raises the issues of visibility, shading and icing at intersections	4
	Planning guideline on planning and anticipating future problems with trees, shading, ice and related issues.	4
	Guidance on clear zoning could be helpful	2
	Local operational guidelines need to be incorporated into district plan	2
29. Drains, catchpits and sumps	Need some generic guidelines with input from suppliers	3
30. Bridges and culverts	Need Bridge maintenance guidelines for local authorities (not all RCAs have robust maintenance programmes in place)	4
	Need some simple rules of thumb on culvert sizes so that the foreman can deal with the task.	3
31. Stock crossings and underpasses	The legislation on wandering stock needs to be tightened at a national level. It is too difficult to do this at a local level.	4
	Need better definition of what is required at stock underpasses - eg barriers.	4
	Need to establish ongoing liability for the maintenance of stock underpasses by linking them to the title of the property not the current owner.	4
	Need some specific design guides on the construction of stock underpasses.	3
32. Road construction & design (inc barriers)	Need some guidelines on the end protection of bridges which is appropriate to the risk on low volume rural roads. Options other than standard W section guardrail should be considered.	5
	Need a low volume guide to the treatment of guardrail ends	5
33. Carriageway pavements	The Austroads guide to seal extensions is too high level so the job doesn't get done. Need a NZ guide for lower volumes	5
	The maintenance subsidy rates for rural authorities needs to be reviewed upwards following research showing where significant B/Cs can be established.	4
	As M4 aggregates become harder to find consider alternative basecourse and sub base materials specified by properties	3
	Rationalise the SH pavement design manual and the Austroads guide into a single document	2
34. Carriageway surface and friction	Need a friction / SCRIM guide for local roads	3
	Guidance on how and by how much skid testing regimes contribute to road safety	3
35. Kerb and channel (inc vehicle crossings)	Provide better tracking curves which recognise both vehicle and driver performance	3

SMS Standards & Guidelines Assessment Project

Subject Area	Comments	Priority Score
36. Slips and retaining structures	An updated guide to the construction of retaining structures and the legal implications both above and below the road would be helpful.	5
	Maintenance of structures requires a problems / requirements guide	4
	Need a best practice guide on slips and debris fences.	3
	Flood damage and "drop out" guide: A guide would be helpful to assist new engineers on the options available. Alternatively improve training at the institutions.	3
	Building act needs amendment in the design of retaining walls where its provisions can restrict innovation and force uneconomic repairs	3
38. Utilities and road reserve	Provide guidance/data on the risks associated with power poles beside the road so that TLAs can develop controls and policies.	5
	"RoadShare" (NZUAG group) is important but needs more national sponsorship to promote implementation at the local level	5
	Need a guide on what is realistic for rural mail boxes without presenting a road safety hazard - involve rural mail delivery.	5
	Review the use of slipbase columns and clarify whether they remain effective where they are behind a kerb.	4
	Review the conditions and need for slip base poles and their maintenance	4
	Need guidelines on safe letter box design and the issues surrounding where poles should be placed in the road reserve.	4
	Cell phone towers: Cell phone towers are being installed on the road reserve as of right. Need guidelines. LGNZ is looking into this.	4
	Need a course on road safety issues for utility engineers and one for land use planners	3
	Trenching: Ensuring adequate backfilling and compacting on non RCA jobs is an issue locally. It is often left to the contractor with tenuous lines of quality control.	3
	A guide on where to locate poles which addressed all the issues including the type of pole to install would be helpful. Better systems are required for coordinating utility authorities.	3

SMS Standards & Guidelines Assessment Project

Appendix 4: Summary of Themes

The following forty-five themes arose from the comments made by RCA representatives during the interview process. The themes have been arranged in decreasing priority order.

No.	Topic	Theme Description	Priority Score
1	LATM guide	It would be helpful to have a guide on the types of traffic calming devices used in NZ, indicating the circumstances where they are likely to be effective and those where they could be hazardous or ineffective.	27
2	Hazard Index	Provide guidance or checklists on a workable hazard index database identifying what is important and what are frills or clutter.	25
3	Roadside Hazards	Helpful to have some guidelines on the frangibility issues of letter boxes and poles and where they should best be located. This includes the need for and positioning of slip base street light columns.	25
4	Keep MOTSAM current	MOTSAM should perhaps be owned by Land Transport, be available on a web site and include the entire current set of traffic signs from all publications - RTS 5, Traffic Notes etc.	24
5	Local input to OD permits	Revisit the operation of the overdimension permit system to provide better local information about the OD permits that are issued and allow more local input.	24
6	RCA/Railway Liaison	RCAs and Railways corporation need better contact and liaison to fix and maintain railway crossings.	23
7	Update Traffic Counting Guide	Could benefit from some updated data and guidance on setting up a traffic counting programme to meet the strategic needs of RCAs.	23
8	Accident Notification System	Would like a best practice guide on accident notification systems that includes an example mailing form and is suitable for CAS inputting..	23
9	Events Management	A public document on the process of events management and road closures would be helpful to highlight both the issues and the timescales involved.	22
10	Tree Hazards	Would like guidelines on tree planting including safety issues such as collisions, visibility, shading, and ice related issues. Include advice on clear zones for minor rural roads.	22
11	Mobility Impaired	Need a guideline on pedestrian facilities that addresses issues of the mobility impaired together with the visually impaired.	18
12	Roadmarking Materials	Provide guidance on the choice of road marking materials for rural roads. In particular the optimum marking frequency, the benefits of reflectorisation and the overall economics.	17
13	Intersection GW Rule	The proposals put forward in 2004/5 to revoke the left turning give way rule are supported and should be reactivated as soon as it is appropriate	16
14	Review RTS 5	Review RTS 5 and incorporate it in the TCD rule and MOTSAM.	16
15	Safety Inspections	Training or best practice guide needs to be established on what to look for in safety inspections	16
16	Road Hierarchy	The work on road hierarchy undertaken by MOT should be published with particular reference to how it could be used by RCAs.	16
17	Road Lighting Strategies	Guidance on how to upgrade lighting in a cost effective way and do so in a priority order that meets all the needs.	15
18	Flexibility in SLNZ	Speed Limits NZ should be more flexible and less dependant on roadside development	15
19	Signing Cycle Facilities	The preferred markings and signs for shared pedestrian/cycle routes need to be defined	15

SMS Standards & Guidelines Assessment Project

No.	Topic	Theme Description	Priority Score
20	Slips Guide	Need a best practice guide on slips and debris fences.	15
21	Stop sign criteria	Revise the criteria for STOP and Give Way to include hierarchy, urban / rural, and traffic volume.	14
22	Speed Limits	Include in the speed limits NZ criteria the need to ensure that the number of speed limit changes along a route is kept to a minimum consistent with what a driver can absorb	14
23	Parking	Need a guideline and hard data on the parking needs for developments	13
24	Abandoned Vehicle Legislation	The legislation dealing with abandoned vehicles needs to be looked at. The time frame is unrealistically long.	13
25	Pedestrian Crossings	Like to see some integrated guidelines describing when to use Ped X, Kea crossings, raised platforms, visually impaired and mobility impaired facilities.	13
26	CoPTTM	Include more aspects of the low volume guide into CoPTTM	12
27	Updated OD Maps	Produce OD Vehicle route maps in a glove box size so they can be used in the field	11
28	Stock Underpasses	Need some specific design guides on the construction of stock underpasses.	11
29	TMP for Events	Traffic Management Plans for public events are variable in both quality and application. Generic guidelines aimed at "events people" would be helpful.	10
30	Simplify CAS	A user friendly front end to CAS or a simple method for basic CAS data retrievals would be helpful.	10
31	Unsealed Roads	Helpful to have a geometric and pavement design guide for unsealed roads	10
32	Safety in Landscaping	Provide guidelines for urban landscaping so that safety is part of the outcome	10
33	Guardrail issues	Need some guidelines on the end protection of bridges which is appropriate to the risk on low volume rural roads. Options other than standard W section guardrail should be considered.	10
34	Solar Lighting	Unbiased, supplier independent, guidelines on the use of solar powered street lights in road lighting	9
35	Speed Limit Education	Provide a community orientated guideline that addresses the issues of speed limits and the reasons behind them	9
36	Road Closures	The legal provisions of the LGA and TA need better alignment in the area of road closure.	9
37	NZUAG Guidelines	RoadShare (NZUAG group) is important but needs more national sponsorship to promote implementation at the local level	9
38	MOTSAM Specs	MOTSAM needs to contain broader specifications to account for the full range of roads that exist in NZ eg low / high volume, rural / urban authorities, local / TNZ.	8
39	Community Funding	Community Project Funding: The often last minute changes to the system can be quite confusing and discouraging at an RCA level. Less changes, more generous timeframe.	8
40	Guide On Road Safety Plans	Guidance on how to produce road safety plans and strategies	8
41	Advertising Signs	Need more prescriptive guidance on the use of advertising and fingerboard type signs to resist the ongoing proliferation of signs.	7
42	MOTSAM Specs	MOTSAM needs to contain a broader range of specifications and signs to account for the full range of roads that exist in NZ	7

SMS Standards & Guidelines Assessment Project

No.	Topic	Theme Description	Priority Score
43	Standard Luminaires	Guidance on how to avoid the heavy costs associated with maintaining a multitude of luminaire types provided by subdividers	7
44	Bridge Guides	Need Bridge maintenance guidelines for local authorities (not all RCAs have robust maintenance programmes in place)	7
45	Pavement Design	Need a NZ guide to pavement design combining Austroads and the SH guide	7

Appendix 5: New 2006 Table 3 H

Table A5-1

A 2006 update of Table 3 H from the Safety Management Systems Guidelines, 2005.

This update draws on:

- The 2006 update to documents described in section 2 and the changes proposed in Table 1
- The development of a database to identify commonly referenced documents described in section 3
- The interview survey described in section 4
- The system of references described in section 5.1

Note: The items in bold text identify new documents included in this 2006 update.

SMS Standards & Guidelines Assessment Project

Group	Subject	Legislation	Commonly used guidelines	Additional standards / guidelines	Examples of local policies
Planning	Annual Plan and Strategic Plan Process	Local Government Act (1974 & 2002)		Guide to Traffic Engineering Practice series, General, Austroads	Regional Land Transport Strategy
		Transit NZ Act (1989)		Land Transport NZ RTS Standards general	Long Term Council Community Plan, LTCCP
				TNZ Standards	Annual Plan
Planning	Land Use Planning and Controls	Resource Management Act (1992)	NZS 4404:2004 Land Development and Subdivision Engineering	RTS 3: Guidelines for Establishing Rural Selling Places, LTSA, 1992	District Plan
		Local Government Act (1974 & 2002)	RTS 6: Guidelines for Visibility at Driveways, LTSA, 1993	RTS 7: Advertising Signs & Road Safety: Design and Location Guidelines, LTSA, 1993	Land Use and Regulatory Control Procedures
			Guide to Traffic Engineering Practice series, General, Austroads	Guide to Traffic Engineering Practice, Part 5: Intersections at Grade, Austroads, 2005	
			Planning Policy Manual, TNZ, 1999	RTA Guide to Traffic Generating Developments	
			Trips and parking related to land use, RRU 209, Transfund, 2001		
Planning	Landscaping	Local Government Act (1974 & 2002)	NZS 4404:2004 Land Development and Subdivision Engineering	Code of Practice for Temporary Traffic Management, TNZ, 2006	Asset Management Plan
			Guidelines for Highway Landscaping, TNZ, 2002	RSS 15 - Roadside Hazard Management, LTSA, 2002	Roadside Planting Procedures

SMS Standards & Guidelines Assessment Project

Group	Subject	Legislation	Commonly used guidelines	Additional standards / guidelines	Examples of local policies
Planning	Road Network Planning	Local Government Act (1974 & 2002)	NZS 4404:2004 Land Development and Subdivision Engineering	State Highway Geometric Design Manual, TNZ, 2005	Regional Land Transport Strategy
		Resource Management Act (1992)	Rural Road Design - A Guide to the Geometric Design of Rural Roads, Austroads, 2003	Transit NZ Planning for a safe and efficient highway network (1994)	Asset Management Plan
		Transit NZ Act (1989)	Urban Road Design - Guide to the Geometric Design of Major Urban Roads, Austroads, 2002	Guide to Traffic Engineering Practice series, General, Austroads	District Plan
					Roading Policies
Planning	Road Safety Plans and Strategies	Land Transport Rule: Traffic Control Devices (2004)	Road Safety to 2010 strategy, LTNZ, 2004	Guidelines for developing and implementing a safety management system for road controlling authorities, LTNZ, 2006	Road Safety Plan
		Land Transport Act (1998)	New Zealand Transport Strategy, MOT, 2002	NZ Road Safety Plan Guidelines, LTSA, 2004	Regional Land Transport Strategy
				NZ Road Code	Road Safety Strategy
					Authorities Land Transport Programme, ALTP
Structures	Asset creation, development and management	Local Government Act (1974 & 2002)	Accounting Regulations and Standards	Project Evaluation Manual, LTNZ, 2005	Asset management plan policy
		Resource Management Act (1992)	NZ Asset Management Asset Valuation and Depreciation Guidelines	Programme and Funding Manual, LTNZ, 2005	Regional Land Transport Strategy

SMS Standards & Guidelines Assessment Project

Group	Subject	Legislation	Commonly used guidelines	Additional standards / guidelines	Examples of local policies
		Transit NZ Act (1989)	International Infrastructure Management Manual, NAMS, 2006	Optimised decision making guidelines, NAMS group	
Structures	Bridges and Culverts	Resource Management Act (1992)	Bridge Inspection and Maintenance Manual, TNZ, 2001	State Highway Geometric Design Manual, TNZ, 2005	Asset management plan – bridges and culverts
		NZ Building Code (2004)	Bridge Manual, 2nd Ed, TNZ, 2003	TNZ M/23 Road Safety Barrier Systems	Policy for Upgrading Handrails
		Health and Safety in Employment Act (1992)	Waterway Design: A guide to the Hydraulic Design of Bridges, Austroads, 1994		
Structures	Carriageway Pavements	Local Government Act (1974 & 2002)	Code of Practice for Temporary Traffic Management, TNZ, 2006	TNZ C Series Specifications and Guidelines for Maintenance of Road Networks	Asset Management Plan - Roading Policies
		Resource Management Act (1992)	TR8: Manual for maintenance of unsealed roads, NRB, 1986	RAMM Road Condition Rating and Roughness Manual, Transfund, 1997	District Plan
		Transport Act (1962)	SNZ HB 2002:2003 : Code of Practice for Working in the Road	OSH code of practice for excavators	
		Land Transport Rule: Traffic Control Devices (2004)	Chipsealing in New Zealand, TNZ, 2005		
Structures	Carriageway Surface and Friction	Local Government Act (1974 & 2002)	Chipsealing in New Zealand, TNZ, 2005	Guide to the Selection of Road Surfacing (2nd ed.), Austroads, 2003	Asset Management Plan
		Resource Management Act (1992)	RAMM Road Condition Rating and Roughness Manual, Transfund, 1997	Chipsealing in New Zealand, TNZ, 2005	Road snow clearing policy

SMS Standards & Guidelines Assessment Project

Group	Subject	Legislation	Commonly used guidelines	Additional standards / guidelines	Examples of local policies
		Transport Act (1962)	Sealed Local Roads Manual: Guidelines to Good Practice, ARRB, 2005	Code of Practice for Temporary Traffic Management, TNZ, 2006	
		Land Transport Rule: Traffic Control Devices (2004)		Local Authority RAMM Database Operation Manual, Transfund, 1997	
				RRU Bulletin 79 - Guidelines for Selection, Design and Construction of Thin Flexible Bituminous Surfacing in NZ	
				RSS 10 - Skid Resistance, LTSA, 1998	
				SCRIM Deficiency Report, User Guidelines, TNZ, 1998	
				TNZ Standards and Specifications	
Structures	Drains, Catchpits and Sumps	Resource Management Act (1992)	NZS 4404:2004 Land Development and Subdivision Engineering	Guide to the Design of Road Surface Drainage, NAASRA	Asset Management Plan
		Local Government Act (1974 & 2002)	State Highway Geometric Design Manual, TNZ, 2005	Rural Road Design - A Guide to the Geometric Design of Rural Roads, Austroads, 2003	Ensure all sump grates are cyclist friendly and have grating at right angles to kerb line with no drop-offs
		Transport Act (1962)		TNZ C15 Removal of Surface Detritus	Roadside Drains should preferably be behind the fence or sufficiently far from the road that vehicles can stop before entering the drain

SMS Standards & Guidelines Assessment Project

Group	Subject	Legislation	Commonly used guidelines	Additional standards / guidelines	Examples of local policies
		Transit NZ Act (1989)		TNZ C16 Maintenance of Stormwater Structures	
				TNZ C21 Vegetation Control	
Structures	Kerb and Channel (inc vehicle crossings)	Resource Management Act (1992)	NZS 4404:2004 Land Development and Subdivision Engineering	Guide to Traffic Engineering Practice, Part 10: Local Area Traffic Management, Austroads, 2004	District Plan
		Local Government Act (1974 & 2002)		Guide to Traffic Engineering Practice, Part 13: Pedestrians, Austroads, 1995	Asset Management Plan
				Guide to Traffic Engineering Practice, Part 5: Intersections at Grade, Austroads, 2005	Footpath Policy
				RTS 6: Guidelines for Visibility at Driveways, LTSA, 1993	Footpath Strategy and Standards (Incl drainage)
Structures	Road construction & design (inc barriers)	Local Government Act (1974 & 2002)	AS/NZS 3845:1999 Road Safety Barrier Systems	Sealed Local Roads Manual: Guidelines to Good Practice, ARRB, 2005	District Plan
		Resource Management Act (1992)	State Highway Geometric Design Manual, TNZ, 2005	Bridge Inspection and Maintenance Manual, TNZ, 2001	Roading Policies
			NZS 4404:2004 Land Development and Subdivision Engineering	Bridge Manual, 2nd Ed, TNZ, 2003	Footpath Policy
			TNZ M/23 Road Safety Barrier Systems	Guide to Traffic Engineering Practice, Part 5: Intersections at Grade, Austroads, 2005	Asset Management Plan

SMS Standards & Guidelines Assessment Project

Group	Subject	Legislation	Commonly used guidelines	Additional standards / guidelines	Examples of local policies
			Rural Road Design - A Guide to the Geometric Design of Rural Roads, Austroads, 2003	Guide to Traffic Engineering Practice, Part 6: Roundabouts, Austroads, 1993	Guardrail Procedures
			Urban Road Design - Guide to the Geometric Design of Major Urban Roads, Austroads, 2002	Highway Surface Drainage: Design Guide for Highways with a Positive Collection System, NRB, 1977	
				Pavement Design: A Guide to the Structural Design of Road Pavements, Austroads (plus New Zealand supplement to 2004 version)	
				RTS 11: Guidelines for Urban Roadside Barriers and Alternative Treatments, LTSA, 1995	
Structures	Slips and Retaining structures	NZ Building Code (1992)			Regional Policy Statement
		Resource Management Act (1992)			All new structures require specific design and building permit
Structures	Stock Crossings and Underpasses	Transit NZ Act (1989)	Programme and funding manual, LTNZ, 2005	Bridge Manual, 2nd Ed, TNZ, 2003	Landowner funds all maintenance costs, except structural repairs which are not due to his use of the underpass
		NZ Building Code (1992)	Code of Practice for Temporary Traffic Management, TNZ, 2006	Manual of Traffic Signs and Markings: Part 1 - Traffic Signs (Ed. 4)	

SMS Standards & Guidelines Assessment Project

Group	Subject	Legislation	Commonly used guidelines	Additional standards / guidelines	Examples of local policies
		Local Government Act (1974 & 2002)	Guidelines for stock crossings (draft), RCA forum, 2004	Culvert Manufacturer's Guidelines for Design and Installation	
Structures	Utilities and road reserve	Local Government Act (1974 & 2002)	Manual of Traffic Signs and Markings: Parts I and II	LTNZ and TNZ Road and Traffic Standards	Street Opening Policy
		Resource Management Act (1992)	Code of Practice for Temporary Traffic Management, TNZ, 2006	TNZ M/23 Road Safety Barrier Systems	District Plan
		Telecommunications Act (2001)	Local Roads Supplement to TNZ CoPTTM, RCA Forum, 2005		Consent for Works on the Road
		Electricity Act (1992)	NZS 4404:2004 Land Development and Subdivision Engineering		Roading Policies
		Gas Act (1992)	SNZ HB 2002:2003 : Code of Practice for Working in the Road		
		Health and Safety in Employment Act (1992)	Network utilities within the road corridor - a guide to best practice, NZUAG RoadShare, 2004		
		Transit NZ Act (1989)			
		Transport Act (1962)			
		Land Transport Rule: Traffic Control Devices (2004)			

SMS Standards & Guidelines Assessment Project

Group	Subject	Legislation	Commonly used guidelines	Additional standards / guidelines	Examples of local policies
Systems	Accident Notification System	Land Transport Rule: Traffic Control Devices (2004)		Online CAS HELP, LTNZ	Police and Local Accident Reports
				Annual Land Transport NZSA Road Safety Report	Emergency Procedures Manual
Systems	Crash Reduction Studies and data analysis	Land Transport Rule: Traffic Control Devices (2004)	A New Zealand guide to the Treatment of Crash Locations, LTNZ, 2004	Crash Reduction Monitoring System Coding Manual (Ver.3), LTNZ, 2005	Crash Reduction Studies Procedures
			Guide to Traffic Engineering Practice - Part 4: Treatment of Crash Locations, Austroads	Online CAS HELP, LTNZ	Undertake Crash Reduction Study at least once every 4 years
Systems	Emergency Response	Resource Management Act (1992)	Code of Practice for Temporary Traffic Management, TNZ, 2006	TNZ C09 Emergency Work	Emergency Procedures Manual
		Land Transport Rule: Traffic Control Devices (2004)	Local Roads Supplement to TNZ COPTTM, RCA Forum, 2005		Policies for Road Stopping, Snow Clearing
		Transport Act (1962)			
		Transit NZ Act (1989)			
Systems	Hazard Registers / Safety Databases	Local Government Act (1974 & 2002)	Standards and Guidelines Manual, Transfund, 1998	Economic evaluation manual - volume 2, LTNZ, 2005	Network Maintenance Contracts

SMS Standards & Guidelines Assessment Project

Group	Subject	Legislation	Commonly used guidelines	Additional standards / guidelines	Examples of local policies
		Resource Management Act (1992)		Code of Practice for Temporary Traffic Management, TNZ, 2006	Asset Management Plan
				Manual of Traffic Signs and Markings: Parts I and II	District Plan
				RTS 5: Guidelines for Rural Road Marking and Delineation, LTSA, 1992	
Systems	Public services / consultation	Local Government Act (1974 & 2002)	Creating customer value from community assets guidelines, NAMS group	Guide to Traffic Engineering Practice series, General, Austroads	Policy Manual
		Transit NZ Act (1989)		Rural Road Design - A Guide to the Geometric Design of Rural Roads, Austroads, 2003	Delegation Manual
		Transport Act (1962)		NZ Road Code	
Systems	Safety Audits	Local Government Act (1974 & 2002)	Road Safety Audit Procedures for Projects, Transfund, 2004	Guide to Traffic Engineering Practice series, General, Austroads	Asset management plan – risk section
			Safety Audit Procedures for existing roads, Transfund, 1998	Rural Road Design - A Guide to the Geometric Design of Rural Roads, Austroads, 2003	
			Road Safety Audit (2nd Edition), Austroads, 2002	TNZ Maintenance Specifications	
Systems	Safety Inspections	Resource Management Act (1992)	Code of Practice for Temporary Traffic Management, TNZ, 2006	Highway Surface Drainage: Design Guide for Highways with a Positive Collection System, NRB, 1977	Asset Management Plan
		Local Government Act (1974 & 2002)	Waterway Design: A guide to the Hydraulic Design of Bridges, Austroads, 1994	NZS 4404:2004 Land Development and Subdivision Engineering	Roading Policies,

SMS Standards & Guidelines Assessment Project

Group	Subject	Legislation	Commonly used guidelines	Additional standards / guidelines	Examples of local policies
		Transit NZ Act (1989)	Bridge Inspection and Maintenance Manual, TNZ, 2001	Rural Road Design - A Guide to the Geometric Design of Rural Roads, Austroads, 2003	Manage unofficial signs
		NZ Building Code (1992)		Guide to Traffic Engineering Practice series, General, Austroads	Manage lighting overspill (glare)
				State Highway Geometric Design Manual, TNZ, 2005	
				Transit New Zealand Safety Certification procedures	
				TNZ Standards, Criteria and Guidelines	
Systems	Traffic Counting Program		Update and Enhancement of Traffic Count Guide, Research Report 202, Transfund, 2002	Code of Practice for Temporary Traffic Management, TNZ, 2006	GK5000 Traffic Recorder/ Classifier, Guide to Traffic Counting & Classifying
				Local Authority RAMM Database Operation Manual, Transfund, 1997	Strategic Planning Requirements
				Project Evaluation Manual, LTNZ, 2005	
Traffic Management	Cycle Facilities	Land Transport Rule: Traffic Control Devices (2004)	Cycle Network and Route Planning Guide, LTNZ, 2004	Guide to Cycle Facilities, NRB/UTC	District Plan
		Local Government Act (1974 & 2002)	Guide to Traffic Engineering Practice, Part 14: Bicycles, Austroads, 1999	Manual of Traffic Signs and Markings: Parts I and II	Cycle & Walking Strategy
			New Zealand Supplement to Austroads part 14 - Bicycles, TNZ, 2004	Guidelines for Cycle Audit and Cycle Review, IHT	Road Safety Plan

SMS Standards & Guidelines Assessment Project

Group	Subject	Legislation	Commonly used guidelines	Additional standards / guidelines	Examples of local policies
			NZS 4404:2004 Land Development and Subdivision Engineering	The National Cycle Network: Guidelines and Practical Issues: Issue 2 (Ove Arup, 1997)	Cycleway Policy and Action Plans
Traffic Management	Delineation	Land Transport Rule: Traffic Control Devices (2004)	Manual of Traffic Signs and Markings: Parts I and II	Bridge Manual, 2nd Ed, TNZ, 2003	District Plan
		Local Government Act (1974 & 2002)	RTS 5: Guidelines for Rural Road Marking and Delineation, LTSA, 1992	RSMA Compliance Standard for Traffic Signs, 2003	Rural Delineation Policy
		Transport Act (1962)	TNZ M/12 Raised Pavement Markers	TNZ C18 Maintenance of Edge Marker Posts	Asset management plan
				TNZ C20 Erection and Maintenance of Traffic Signs, Chevrons, Markers & Sight Rails	
				TNZ M/14 Edge Marker Posts	
				TNZ P/16 Installation of Edge Marker Posts	
				Standards and Guidelines Manual, Transfund, 1998	
Traffic Management	Detritus Sweeping and Vegetation control	Local Government Act (1974 & 2002)	Manual of Traffic Signs and Markings: Part 1 - Traffic Signs (Ed. 4)	Guidelines for Highway Landscaping, TNZ, 2002	Regional Policy Statement
		Transit NZ Act (1989)	Code of Practice for Temporary Traffic Management, TNZ, 2006	NZS 4404:2004 Land Development and Subdivision Engineering	District Plan

SMS Standards & Guidelines Assessment Project

Group	Subject	Legislation	Commonly used guidelines	Additional standards / guidelines	Examples of local policies
			Local Roads Supplement to TNZ COPTTM, RCA Forum, 2005	NZS 8409:2004 Management of agrichemicals	
				Guide to Traffic Engineering Practice, Part 5: Intersections at Grade, Austroads, 2005	
Traffic Management	Intersection Control (Incl Traffic Signals and Railway crossings)	Local Government Acts (1974 & 2002)	Guide to Traffic Engineering Practice, Part 7: Traffic Signals, Austroads, 2003	State Highway Geometric Design Manual, TNZ, 2005	Code of Practice for Development
		Resource Management Act (1992)	Manual of Traffic Signs and Markings: Parts I and II	Guide to Traffic Engineering Practice, Part 5: Intersections at Grade, Austroads, 2005	Asset Management Plans
		Transport Act (1962)	RTS 10: Road signs and markings for Railway Level Crossings, LTSA, 2000	Guide to Traffic Engineering Practice, Part 6: Roundabouts, Austroads, 1993	Policy not to use the rural right turn lane Type B in Austroads
		Land Transport Rule: Traffic Control Devices (2004)	AS/NZS 2144:2002 Traffic signal lanterns	Roading Design Guidelines: RD-1 Intersections at Grade, RD-2 Roundabouts, TNZ, 1991	
		Land Transport (Road User) Rule 2004	"Traffic notes" series, LTNZ	New Zealand On-road Tracking Curves, LTSA	
				RTS 1: Guidelines for the Implementation of Traffic Control at Crossroads, LTSA, 1990	
				RTS 9: Guidelines for the Signing and Laying out of Slip Lanes, LTSA, 1994	

SMS Standards & Guidelines Assessment Project

Group	Subject	Legislation	Commonly used guidelines	Additional standards / guidelines	Examples of local policies
				Rural Road Design - A Guide to the Geometric Design of Rural Roads, Austroads, 2003	
				State Highway Control Manual, TNZ, 2004	
				AS2353 - 1999 Pedestrian push button assemblies	
				Guide to Traffic Engineering Practice, Part 8: Traffic Control Devices, Austroads, 1988	
				Guide to Traffic Engineering Practice, Part 9: Arterial Road Traffic Management, Austroads, 1988	
				NZS 5431:1973 Specification for Traffic Signals, Section 18: Warrants for traffic signals	
				RTS 14: Guidelines for Installing Pedestrian Facilities for People with Visual Impairment, LTSA, 2003	
Traffic Management	Parking (Inc bus stops)	Land Transport Rule: Traffic Control Devices (2004)	Guide to Traffic Engineering Practice, Part 11: Parking, Austroads, 1988	AS/NZS 2890.1:2004 : Parking facilities - Off-street car parking	District Plan
		Local Government Act (1974 & 2002)	Manual of Traffic Signs and Markings: Parts I and II		Asset Management Plan
		Transport Act (1962)	NZS 4404:2004 Land Development and Subdivision Engineering		

SMS Standards & Guidelines Assessment Project

Group	Subject	Legislation	Commonly used guidelines	Additional standards / guidelines	Examples of local policies
		Land Transport (Road User) Rule (2004)			
Traffic Management	Pedestrian Crossings	Land Transport Rule: Traffic Control Devices (2004)	Guide to Traffic Engineering Practice, Part 13: Pedestrians, Austroads, 1995	NZS 4404:2004 Land Development and Subdivision Engineering	Pedestrian crossings are established where pedestrian and vehicle numbers meet the warrant
		Land Transport (Road User) Rule (2004)	TR 11: Recommended Practice for Pedestrian Crossings, NRB, 1988		Roading Policy
			Fact Sheet 26: Kea Crossings - School Crossing Points, LTNZ, 2005		
			Manual of Traffic Signs and Markings: Parts I and II		
			NZS 6701:1983 Code of Practice for Road Lighting		
			Draft Guide to Pedestrian Crossing Facilities, Trafinz, 1991		
Traffic Management	Pedestrian Facilities	Land Transport Rule: Traffic Control Devices (2004)	Draft Guide to Pedestrian Crossing Facilities, Trafinz, 1991	AS/NZS 4586:1999 Slip resistance classification of new pedestrian surface materials	Asset Management Plan
		Local Government Act (1974 & 2002)	Guide to Traffic Engineering Practice, Part 13: Pedestrians, Austroads, 1995	Fact Sheet 26: Kea Crossings - School Crossing Points, LTNZ, 2005	Walking and Cycling Strategy

SMS Standards & Guidelines Assessment Project

Group	Subject	Legislation	Commonly used guidelines	Additional standards / guidelines	Examples of local policies
		Transport Act (1962)	Manual of Traffic Signs and Markings: Parts I and II	NZS 4121:2001 : Design for Access and Mobility: Buildings and Associated Facilities	Pedestrian Strategy
		Resource Management Act (1992)	RTS 14: Guidelines for Installing Pedestrian Facilities for People with Visual Impairment, LTSA, 2003	NZS 4404:2004 Land Development and Subdivision Engineering	Multilane road pedestrian crossing policy
					Footpath Strategy
Traffic Management	Road Closures (inc events management)	Local Government Act (1974 & 2002)	Manual of Traffic Signs and Markings: Part 1 - Traffic Signs (Ed. 4)	Safety Planning Guidelines for events, Department of Labour, 2003	Temporary Traffic Management
		Transport Act (1962)	Code of Practice for Temporary Traffic Management, TNZ, 2006		Road Stopping Policy
		Resource Management Act (1992)	Local Roads Supplement to TNZ COPTTM, RCA Forum, 2005		District Plan
		Land Transport Rule: Traffic Control Devices (2004)			
		Transport (Vehicular Traffic – Road Closures) Regulations (1965)			
Traffic Management	Road Lighting	Transport Act (1962)	AS/NZS 1158 Road lighting series. 1997-2005	Guide to Traffic Engineering Practice, Part 12 : Roadway Lighting, Austroads, 2004	Roading Street Lighting Policy

SMS Standards & Guidelines Assessment Project

Group	Subject	Legislation	Commonly used guidelines	Additional standards / guidelines	Examples of local policies
		Local Government Act (1974 & 2002)	NZS 4404:2004 Land Development and Subdivision Engineering		Asset Management Plan
		Land Transport Rule: Traffic Control Devices (2004)	NZS 6701:1983 Code of Practice for Road Lighting		Street lighting procedures – prioritise upgrades and improvements/requests from public to fit criteria
Traffic Management	Road Signage	Land Transport Rule: Traffic Control Devices (2004)	Manual of Traffic Signs and Markings: Part 1 - Traffic Signs (Ed. 4)	State Highway Geometric Design Manual, TNZ, 2005	District Plan
		Local Government Act (1974 & 2002)	RTS 2: Guidelines for Street Name Signs, LTSA, 1990	Guide to Traffic Engineering Practice, Part 1: Traffic Flow, Austroads, 1988	Asset Management Plan
		Transit NZ Act (1989)	RSMA Compliance Standard for Traffic Signs, 2003	Quality Standard TQS1:2005 for High QA Level Contracts, TNZ	signage policy
		Transport Act (1962)	RTS 5: Guidelines for Rural Road Marking and Delineation, LTSA, 1992	RTS 7: Advertising Signs & Road Safety: Design and Location Guidelines, LTSA, 1993	Consolidated Bylaw
		Resource Management Act (1992)		TNZ C20 Erection and Maintenance of Traffic Signs, Chevrons, Markers & Sight Rails	Parking restriction selection types policy
		Land Transport (Road User) Rule 2004		TNZ Standards for Design, Construction & Materials	
Traffic Management	Roadmarking	Land Transport Rule: Traffic Control Devices (2004)	Manual of Traffic Signs and Markings: Part 2 - Markings (Ed. 3)	Code of Practice for Temporary Traffic Management, TNZ, 2006	Asset Management Plans

SMS Standards & Guidelines Assessment Project

Group	Subject	Legislation	Commonly used guidelines	Additional standards / guidelines	Examples of local policies
		Land Transport (Road User) Rule 2004	RTS 5: Guidelines for Rural Road Marking and Delineation, LTSA, 1992	Guide to Traffic Engineering Practice, Part 14: Bicycles, Austroads, 1999	Flush Medians policy
		Transport Act (1962)	TNZ P/12 Pavement Marking	TNZ P/14 Installation of Raised Pavement Markers	Keep Clear marking policy
				TNZ specifications - E/3 1995; E/4 1994; M/7 1993; M12 1986; M/20 1994; Q/3 1995; T/8 1996; TQS/2 1995	Broken Yellow Lines for intervisibility at driveways policy
					Remark existing markings in March/May and October/November each year
Traffic Management	Speed Limits	Transport Act (1962)	Speed Limits New Zealand, LTSA, 2003	Manual of Traffic Signs and Markings: Parts I and II	Asset Management Plan
		Land Transport Rule: Traffic Control Devices (2004)	Code of Practice for Temporary Traffic Management, TNZ, 2006		
		Land Transport Rule: Setting of Speed Limits (2003)			
		Local Government Act (1974 & 2002)			
		Land Transport (Road User) Rule (2004)			

SMS Standards & Guidelines Assessment Project

Group	Subject	Legislation	Commonly used guidelines	Additional standards / guidelines	Examples of local policies
Traffic Management	Temporary Traffic Management	Health and Safety in Employment Act (1992)	Code of Practice for Temporary Traffic Management, TNZ, 2006	AS/NZS 1906 Series (1993-97): Reflective materials	Roading Policies
		Land Transport Rule: Traffic Control Devices (2004)	Temporary Traffic Management for Local Roads, CoPTTM supplement, RCA Forum, 2005	Manual of Traffic Signs and Markings: Parts I and II	Street Opening Policy
		Local Government Act (1974 & 2002)	OSH documents	Code of Practice for the Safe Handling of Bituminous Materials, BCA, 2000	Asset Management Plan
		Transport Act (1962)		TNZ handbook "Working on the Road"	Special Events Guidelines for Road Usage
		Land Transport Rule: Setting of Speed Limits (2003)		Interim Procedures for the Safety Audit of Traffic Control at Roadworks report, Transfund, 1999	Health & Safety Policy
		Transit NZ Act (1989)			Road Closures Procedures
		Heavy Motor Vehicle Regulations (1974)			
		Traffic Management	Traffic Calming	Land Transport Rule: Traffic Control Devices (2004)	Guide to Traffic Engineering Practice, Part 10: Local Area Traffic Management, Austroads, 2004
Transit NZ Act (1989)	Guide to Traffic Engineering Practice, Part 9: Arterial Road Traffic Management, Austroads, 1988			Manual of Traffic Signs and Markings: Parts I and II	Code of Practice for Development

SMS Standards & Guidelines Assessment Project

Group	Subject	Legislation	Commonly used guidelines	Additional standards / guidelines	Examples of local policies
		Local Government Act (1974)		RTS 15: Guidelines for urban-rural speed thresholds, LTSA, 2002	
Traffic Management	Vehicle Operations (inc. OD/OW loads)	Heavy Motor Vehicle Regulations (1974)	Bridge Inspection and Maintenance Manual, TNZ, 2001	Load Pilot Driver Code, LTSA, 2004	Encourage overweight vehicles to travel on State Highway network wherever possible
		Land Transport Rule: Vehicle Dimensions and Mass (2002)	Overweight Permit Manual, TNZ, 2005	Fact Sheet 13: Vehicle dimensions and mass, LTNZ, 2005	Overweight Policy
		Transport Act 1962		Overdimension vehicle route maps, TNZ, 2002	

SMS Standards & Guidelines Assessment Project