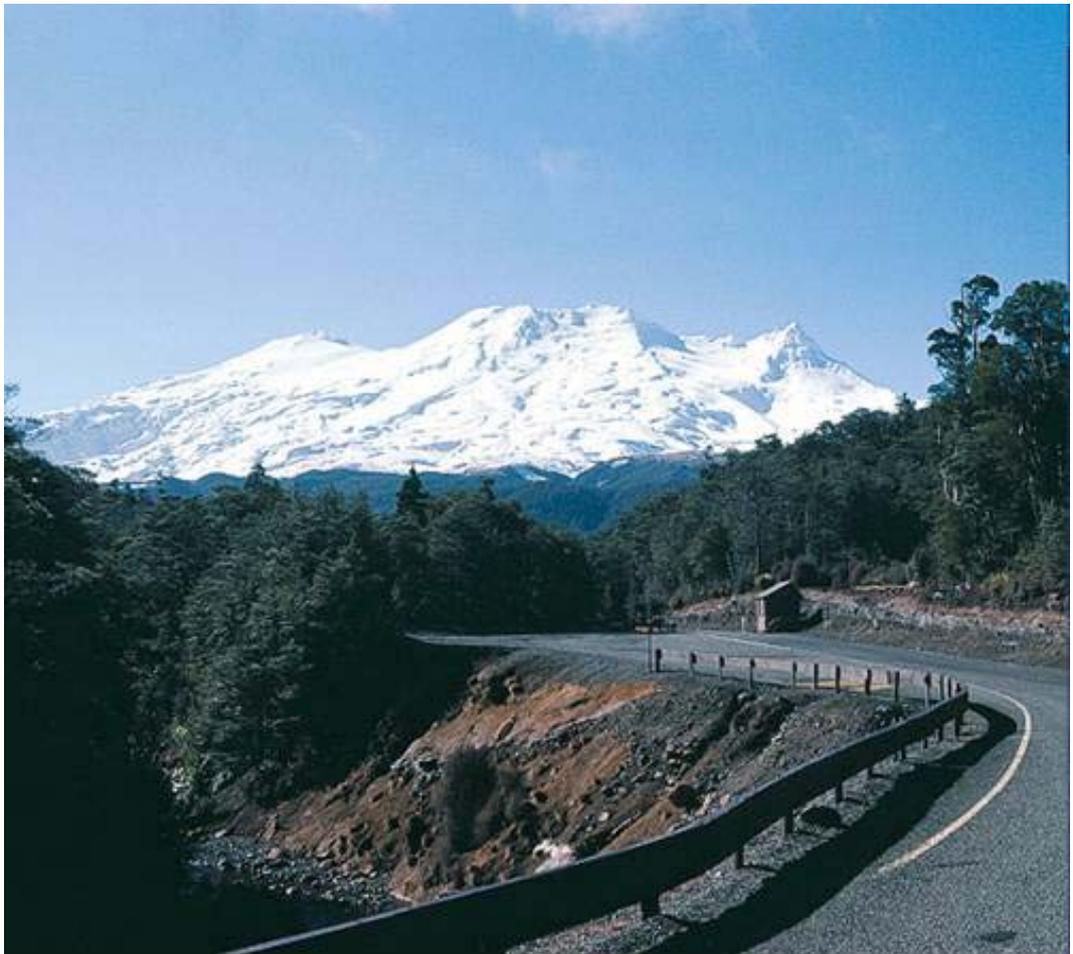


Part 4-C: Rangitikei/Ruapehu/Wanganui SMS

Rangitikei Ruapehu Wanganui Roads Safety Management System

May 2005



Land Transport NZ
Ikiiki Whenua Aotearoa

Rangitikei Ruapehu Wanganui Roads Safety Management System

Version 1

May 2005

This is an agreement between Land Transport New Zealand and the Rangitikei, Ruapehu and Wanganui District Councils to certify that this Safety Management System is endorsed by all parties as being in accordance with the LTSA Guidelines for Developing a Safety Management System.

Signed on behalf of Rangitikei District Council
by:

Leigh Halstead
Chief Executive

Date:

Signed on behalf of Land Transport New Zealand by:

Darryl Harwood
Regional Manager - Safety

Date:

Signed on behalf of Ruapehu District Council by:

Chris Ryan
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Signed on behalf of Wanganui District Council by:

Colin Whitlock
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Date:

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Preface

The 2003 LTSA Road Safety Issues reports for Rangitikei, Ruapehu and Wanganui Districts show that there were 83 fatal and 364 serious injury crashes within the three Districts over the previous five years, with 24 and 103 of these being on District road networks. The social cost of crashes on District roads was \$22 million in 2003. Particular concerns in the Rangitikei, Ruapehu and Wanganui Districts include Loss of Control, Speed, Alcohol, Intersections, Vulnerable Road Users, Fatigue, and Road or Environmental factors.

Government's 2010 Road Safety Strategy puts responsibility on individual Road Controlling Authorities to contribute to national goals for reducing fatality and hospitalisation numbers by 2010. Developing and implementing a Safety Management System (SMS) is a key component of the Strategy. An SMS should define the procedures to be used for improving the safety of the roading network, and how stakeholders can contribute to achieving safety targets.

This SMS document has been developed cooperatively by the Rangitikei, Ruapehu and Wanganui District Councils and covers the three "Local Roads" networks. It excludes State Highways, which are the responsibility of Transit New Zealand.

It's goal is to improve the level of inherent safety on the network, with a consequential and ongoing reduction in both the road crash rate and crash severity.

The SMS is regarded as a key policy document by all three authorities. It encourages a safety culture to focus the efforts of all stakeholders on achieving road safety objectives and targets. It:

- Lists the Policies, Standards, Procedures, Guidelines and Codes of Practice used to improve the safety of the local roading networks.
- Identifies the engineering expertise and culture needed to deliver safety.
- Outlines the Management System which ensures that the necessary standards and expertise are developed and used to deliver safety outcomes
- Includes an audit regime to ensure ongoing compliance with the SMS
- Includes a review process to ensure that "best and current practice" is maintained.

The SMS is dynamic and subject to continuous improvement. It represents a partnership between the three RCA's and Land Transport NZ. It will be updated annually by the combined Safety Management Team as a new version to reflect changing road safety priorities. Significant changes of a legislative or procedural nature will be made on an as required basis.

Record of Amendments

AMENDMENT NO.	SUBJECT	UPDATED BY	DATE

Distribution List

<i>INDIVIDUAL</i>	<i>ORGANISATION</i>	<i>COPIES</i>	<i>DATE OF DISTRIBUTION</i>
Bill Greenwood	Land Transport New Zealand	1	
David Curson	Land Transport New Zealand	1	
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Bruce Dobson	Ruapehu District Council	1	
John Jones	Wanganui District Council	2	
Charl Alberts	GHD Consultants	1	
Jim Moore	Opus Consultants	1	
<i>vacancy</i>	Road Safety Coordinator (MW region)	1	
Anne Redgrave	Horizons Regional Council	1	
Neil Wynne / Nick Dobson	NZ Police (Central Districts Regional Commander)	1	
Sam Hoyle	NZ Police (Area Commander Wanganui)	1	
Dave Scott	NZ Police (Area Commander Rangitikei)	1	
Steve Mastrovich	NZ Police (Area Commander Ruapehu)	1	
Roger McLay	Transit New Zealand	1	
Mark Gordon	Maunsell	1	

Glossary of Terms

TERM	DESCRIPTION
AA	Automobile Association
ACC	Accident Compensation Corporation
AMP	Activity / Asset Management Plan
Audit	A planned or programmed check of documentation and activity that examines compliance with established standards or best practice requirements. An audit consists of Review, Monitor and Evaluation stages and generally leads to a full report on compliance with best practice and provides recommendations and/or corrective actions if necessary.
Austrroads	The association of Australian and New Zealand (Transit) road transport and traffic authorities whose purpose is to contribute to the achievement of improved Australian and New Zealand transport related outcomes
CAS	Crash Analysis System
CDEM	Civil Defence and Emergency Management
COP	Code of Practice
CRS	Crash Reduction Study
Evaluation	An assessment of a RCA road safety outcome on the road against expected results to determine level of attainment and whether the RCA SMS is appropriate.
GIS	Geographic Information System
LATMS	Local Area Traffic Management Scheme
LOS	Levels of Service
Land Transport NZ	Land Transport New Zealand, formed in 2004 from the merger of the Land Transport Safety Authority (LTSA) and Transfund New Zealand.
LTCCP	Long Term Council Community Plan, a requirement under the Local Government Act 2002.
Monitoring	A formal process by which operational activity is overseen and checked. Its purpose is to increase knowledge and determine any variation or pattern, in order to identify and recommend future action.
NAASRA	National Association of Australian State Road Authorities, superseded by Austrroads
Review	A reconsideration or revisiting of an SMS document or component to assess

	relevance and appropriateness to a requirement or a desired best practice outcome.
RAMM	Roading Assessment and Maintenance Management software system
RLTS	Regional Land Transport Strategy
RTPP	Risk Targeted Patrol Plan
RCA	Road Controlling Authority - the organisation responsible for the management of the roading network within a defined geographical area.
RLTC	Regional Land Transport Committee, a statutory committee of the regional council
RSS	Road Safety Strategy - a general framework, which provides guidance, rationale and direction for actions to be taken (and, at the same time, is shaped by the actions to be taken), based on a clear and broad understanding of the desired Road Safety goals, targets and interventions.
RSP	Road Safety Plan - an activity-based plan, which sets out the specific actions to be taken, as well as responsibilities and timelines for activity. It should be clearly linked to the Road Safety Strategy.
SIP	Safety Intervention Plan - provides guidance to maintenance contractors for prompt detection of deficiencies to allow early intervention so that a safe, efficient and “no surprises” roading network is achieved.
SMP	Safety Management Plan - defines responsibilities of network managers to document the methodology for the collection, analysis and management of safety deficiencies to achieve stated safety outcomes.
SMS	Safety Management System - a documented system that helps road controlling authorities to have consistent strategies, policies, standards and procedures in place to ensure that safety is a central consideration in every decision made about construction, maintenance and management of road networks.
SMT	Safety Management Team
SCRIM	Sideway Force Coefficient Routine Investigation Machine – measures road surface skid resistance
TLA / TA	Territorial Local Authority
TMP	Traffic Management Plan – a document recording the methods of controlling traffic and managing safety at road works sites or other events involving the temporary disruption of traffic
VPD	Vehicles per day – a measure of traffic volume

Introduction

1.1 Purpose and Philosophy

The Government has stated its commitment to reducing the impact and trauma of road crashes in New Zealand. "Road Safety to 2010" presents the Government's direction for road safety and sets specific targets, recognising the key roles of engineering, education and enforcement.

One of the key actions that can be taken by a Road Controlling Authority is taking a systematic approach to road safety.

Safety Management Systems are designed to assist RCA's to better manage the safety of their roading networks, and ensure that consistent strategies, policies, standards and procedures are in place. The SMS is therefore an effective way to improve the safety of road networks, and forms an integral part of the "total management system" for a road network.

Benefits of a safety management system

The systematic approach to managing the safety of a road network using an SMS helps to ensure that:

- safety is considered in decisions about construction, maintenance, planning and management of the road network
- implementation of road management procedures is consistent and efficient
- risk management is documented, providing protection from litigation
- road safety knowledge and expertise needs are documented
- methods to address any gaps are in place
- documentation provides clear guidance for all staff and can be used for training new employees
- development and auditing of the roading network are undertaken in a systematic way
- safety is improved for **all** road users.

Structure of a safety management system

The role of the SMS is to provide a policy document giving direction for a systems based approach to road safety on the local roads networks of the Rangitikei, Ruapehu and Wanganui Districts. The structure of this SMS is shown in Figure 0.1 below.

RCA's road safety strategy

Reference to or inclusion of current safety strategy and action plan.

Policies, standards, procedures and guidelines

Reference to or inclusion of current policies, standards, procedures and guidelines for all safety related roading functions.

Roles and responsibilities

RCA's staff structure, roles and associated expertise, qualifications and experience requirements

Management system

Processes used and responsibilities for the safety strategy and SMS

Audit regime

Performance targets, review, monitoring and evaluation processes



Figure 0.1: Structure of the Rangitikei Ruapehu Wanganui Safety Management System

The SMS is therefore the primary reference document for all “road safety” issues associated with the management of the three networks.

Firstly, the **Safety Strategy (Direction)** for the three RCA's is outlined. This includes:

- Road Safety Vision
- Road Safety Problems and Issues
- Road Safety Goals and Targets
- Monitoring and Measuring Road Safety Performance
- Key Stakeholders and Relationships

The Safety Strategy is linked to the government's national goals for continuous improvement in road safety.

The Safety Strategy is supported by the **Means of Delivery**. This includes:

- Definition of the road safety “components”, each of which has relevant policies, standards, guidelines and procedures.
- The organisational expertise needed of the RCA’s and their service suppliers.
- Reference to the Safety Management Plan and Safety Intervention Plan – these being supporting processes for network managers and maintenance contractors.

Below this is the **Management System (Control)** level. This section defines management responsibilities within the system to ensure that:

- The procedures and standards will deliver consistency and desired improvements in road safety.
- The SMS is used by those who have a responsibility for road safety issues on the road network, or adjacent to any road if the activity may have a safety impact on that road.
- Responsibility for key SMS functions is assigned, with a view to ensuring continuous improvement of the system and all related documents with respect to any road safety issues.
- An improvement plan is in place for safety management practices and the implementation and further development of the SMS.

The final section of the Safety Management System below this is the **Audit Regime (Review)**. This section defines the procedures for regular review and audits of the:

- The SMS itself.
- Progress towards road safety targets.
- Use of and compliance with the requirements of the SMS.

1.2 SMS Model for Rangitikei, Ruapehu and Wanganui Roads

This SMS covers the local roading networks of the following RCA’s:

- Rangitikei District Council
- Ruapehu District Council
- Wanganui District Council

While the state highway network passes through all of these Districts, these roads are not formally part of this SMS as they are managed by Transit New Zealand. Transit is however a key stakeholder as there are many points of interaction between the networks. A close collaboration is essential in maximising potential safety benefits, and it may be possible in the future to consider a joint SMS which includes the SH’s in the area.

A single SMS has been developed for the three local road networks, referred to as the “Rangitikei Ruapehu Wanganui Roads Safety Management System”. This reflects a desire to work collaboratively in managing and improving road safety across the three networks.

Differences in levels of service between the three Districts are noted and dealt with in the various SMS components in **Appendix IV**.

The SMS is an important implementation tool within each RCA's Activity (or Asset) Management Plan, as shown in **Figure 0.2**.

The SMS also cross-references other documents, such as Standards, Guidelines, Codes of Practice, and Contract Specifications, rather than duplicating information in them.

1.3 Network Description

Maps of each RCA network are included in **Appendix I**. Physical details for these networks are summarised in Table 0.1 below.

<i>District Network</i>	<i>Total Length (kms)</i>	<i>Length Unsealed (kms)</i>	<i>Length Sealed (kms)</i>	<i>Length Urban (kms)</i>	<i>Length Rural (kms)</i>	<i>No of Bridges</i>
<i>Rangitikei</i>	1238	483	755	92	1146	221
<i>Ruapehu</i>	1335	880	455	121	1214	335
<i>Wanganui</i>	834	301	533	216	618	89
TOTAL	3407	1664	1743	418	3051	645

Table 0.1: Rangitikei Ruapehu Wanganui Local Roding Networks Physical Characteristics

The main characteristic of the Rangitikei and Ruapehu networks is that over 90% of the roads are rural with speed limits greater than 70 km/h. This influences the type and nature of crashes occurring in these two districts, with those involving loss of vehicle control or excessive speed being the most common.

Much of Ruapehu's network in particular was developed through seal extensions on unsatisfactory alignments, and this has resulted in a rural network which has a lack of prominent safety features and inadequate design standards.

Wanganui's roading network is more urban in nature and 64% of all injury crashes in the district occur on urban roads. This is also reflected in the fact that 41% of all injury crashes occur at intersections.

1.4 Strategic Linkages

The SMS is driven by legislation and by key Plans and Strategies at the National, Regional and District level, as shown in **Figure 0.2**.

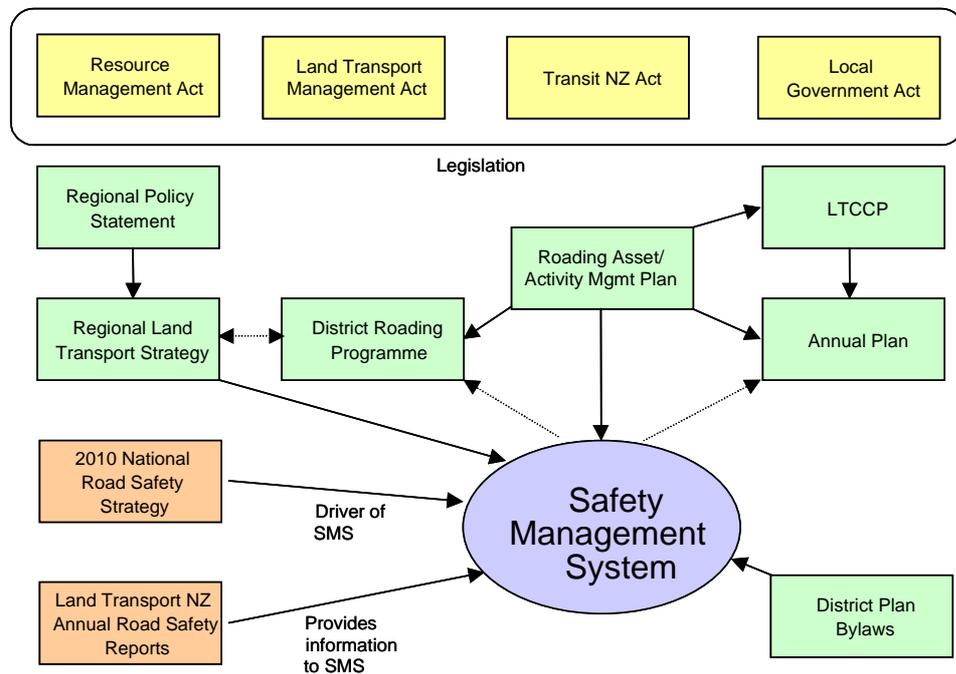


Figure 0.2: Relationship of SMS with Legislation and Other Key Planning Documents

1.5 Operational Linkages

The SMS targets a systematic approach, not only within each local authority, but also for externally contracted agencies – consultants and contractors. It is primarily focussed on Engineering operations, but is also relevant to Enforcement and Education. **Figure 0.3** illustrates these linkages.

Consultants and contractors engaged in both network management and physical works activities have responsibilities under the SMS. This is important, as the system will only be successful if it is “owned and actioned” not only by Council staff but also by these parties.

District Council asset management staff have a responsibility to establish and monitor the safety performance of their local roading networks. The network manager’s role is to manage safety on a day-to-day basis, this includes management of maintenance contracts and a number of other specific activities as agreed with the client.

The roles and responsibilities of network managers and maintenance contractors is to be further developed and documented in the **Safety Management Plan** and **Safety Intervention Plan** respectively. These are further described in Section 3.

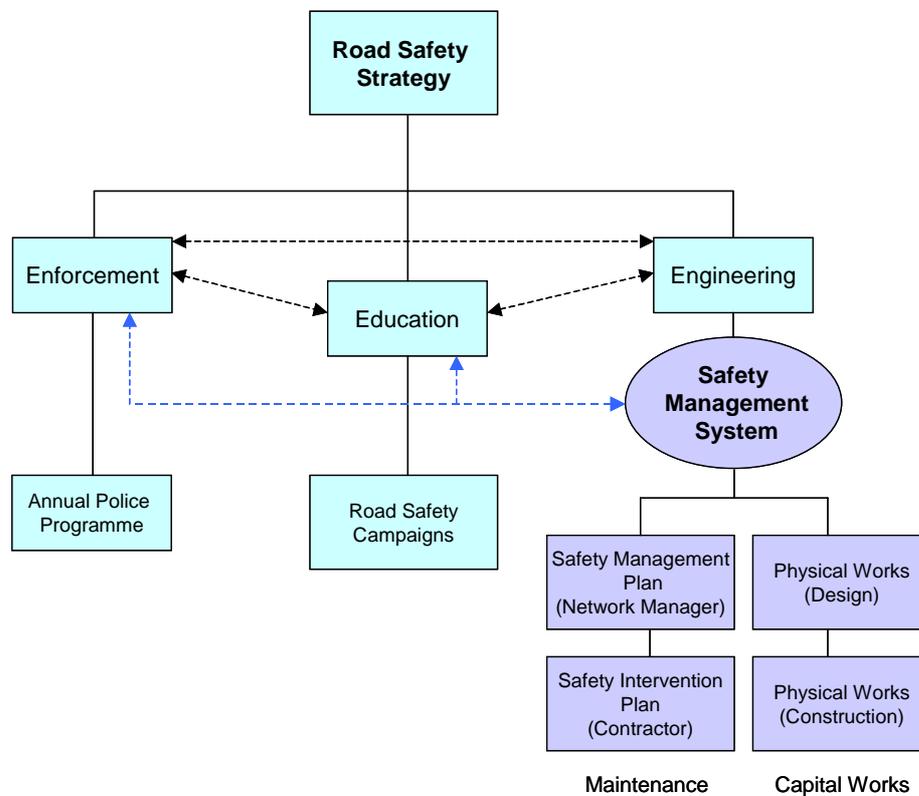


Figure 0.3 : SMS Operational Linkages

Road Safety Coordination

There are strong working relationships between roading staff and road safety coordinators in each District. Coordinators are employed by Horizons Regional Council, one for each District with the Wanganui position being senior and also responsible for regional projects. Reporting is through the Regional Land Transport Committee. Each Council is represented on the RLTC, and the regional Road Safety Committee¹. Each Council also participates in a local Road Safety Coordinating Committee, and this ensures an exchange of information about safety initiatives and concerns.

Activities often cross District boundaries, requiring the coordinators to work closely together.

The overall objective is to increase the combined effectiveness of the three E's, to be achieved by continuing to develop appropriate mechanisms.

¹ Road Safe Central – includes representatives of 7 TLA's, ACC, AA, Police and other key road safety agencies.

Police

Police report regularly to the District Councils with meetings being held at each of the three Councils. Achievements in relation to the S(A)P, enforcement and hours are discussed. The S(A)P is confirmed annually, with the opportunity for input by each Council.

The current status of communication and liaison on the Road Safety Action Plan within each District is summarised below:

<i>District Council</i>	<i>Police Area</i>	<i>Communication and Road Safety Action Plan Status</i>
Rangitikei	Wanganui	Quarterly meetings, and RSAP is discussed and agreed.
Ruapehu	Ruapehu	Informal liaison. Not specific about the RSAP.
Wanganui	Wanganui	Quarterly reporting by Police to Committee. Not specific about the RSAP.

Close working relationships between each RCA and the Police are to be developed and maintained. The Road Safety Action Plan is to be discussed and monitored at quarterly meetings of each RCA, Land Transport NZ and the Police.

Communication will include information on crash factors.

This process must be ongoing, and where it is not working well attention is to be given by the RCA and Land Transport NZ to developing a stronger working relationship with the Police. This is to include identification of enforcement priorities and hours and sharing knowledge on road safety problems and initiatives. Efforts to increase the level of communication and reporting on Police achievements within each RCA area are to be promoted.

Transit New Zealand

Transit is responsible for the State Highway network, and there are many points of interaction with the Local Roads networks and with community interests. This requires a close working relationship between each RCA and Transit, with regular communication about matters of mutual interest on the networks.

A Transit NZ representative will be invited to participate in future Safety Management Team meetings (*Imp't plan action*).

Road Safety Strategy (RSS)

1.6 Introduction

Currently there is no specific road safety strategy in place for any of the three Councils. This RSS therefore provides direction for the SMS. The RSS is to be reviewed after one year in consultation with key stakeholders.

This section shows how the RSS relates to national and regional strategies, reviews historical crash trend data, defines future road safety targets for each District, and identifies key stakeholders.

1.7 Road Safety Vision

The first step in developing the RSS is to confirm a clear, achievable road safety Vision for the three networks.

National Vision

The government's transport vision is that *"by 2010 New Zealand will have an affordable, integrated, safe, responsive and sustainable transport system"*.

Regional Vision

The Manawatu-Wanganui region covers all of the Districts in this SMS, and extends to Tararua and Horowhenua in the south-east. The safety component of the long-term vision is for a *"land transport system in the Region whichis the safest possible..."*. This must be balanced against other competing needs, and the RLTS includes 6 objectives, one of which relates to safety.

District Outcomes

Each Council has produced a Long Term Council Community Plan and Asset Management Plan, which include desired outcomes in relation to transportation and safety:

District Council	LTCCP Outcomes relating to Road Safety	Other Goals relating to Road Safety
Rangitikei	na	AMP purpose includes – <i>"providing a road network that meets generally accepted standards"</i> .
Ruapehu	<i>"Safe, reliable, efficient road, air and rail transportation"</i>	AMP Strategic goal – <i>"the land transport network provides for the safety of its users"</i> .
Wanganui	<i>"A safe and healthy community"</i>	Rural Roads Strategy – <i>"to provide road users with a sustainable, safe, and cost-effective roading system..."</i>

Vision for the “Three Networks”

“The transport network is safe for all road users”

1.8 Key Road Safety Issues and Problem Analysis

From analysis of five-year crash data and trends from 1999 to 2003 for each RCA, the major road safety issues in the Rangitikei, Ruapehu and Wanganui Districts compared with national trends are summarised below:

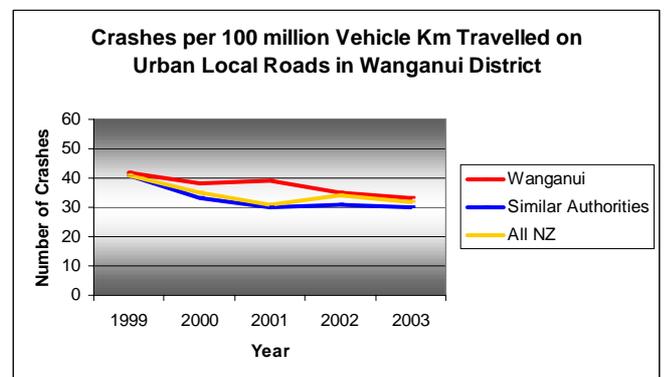
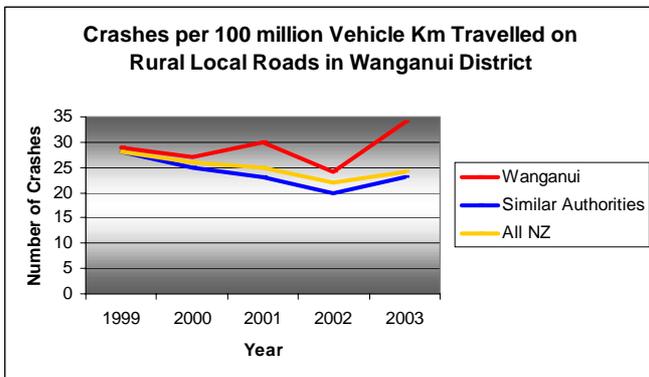
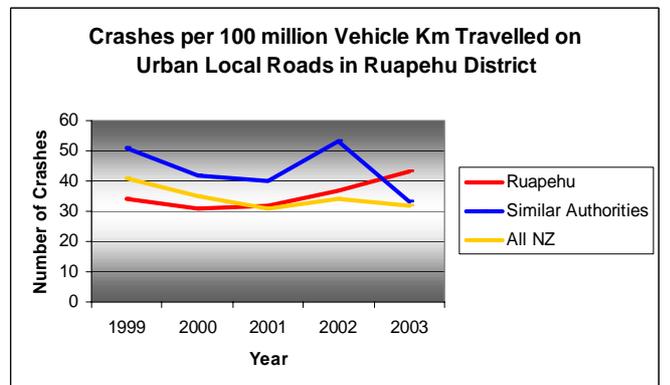
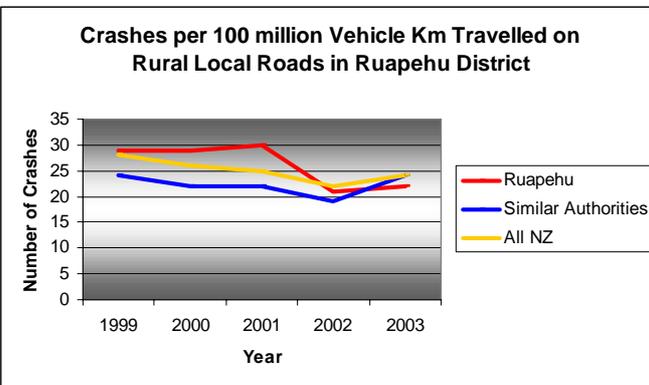
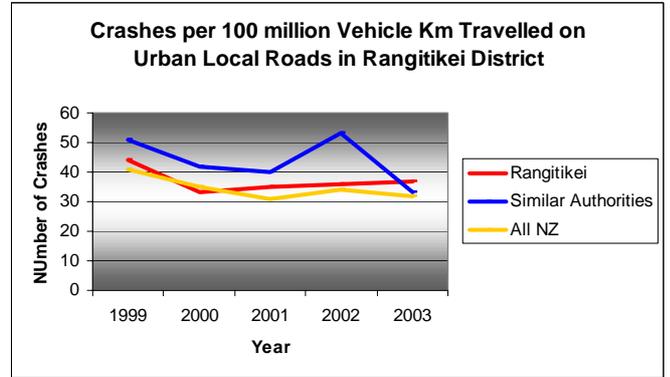
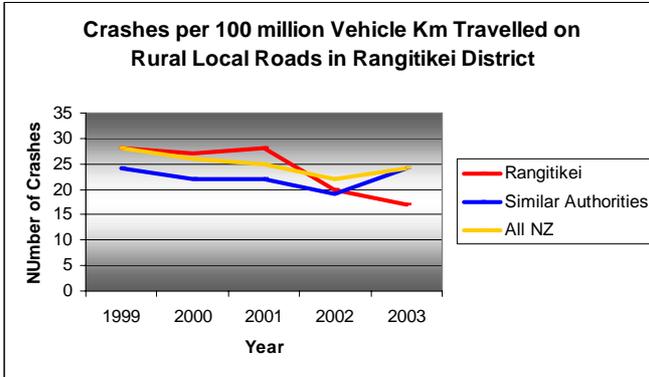
Issue	RaDC	RuDC	WDC	National
Alcohol			*	*
Fatigue	*			
Intersections			*	
Loss of Control	*	*	*	
Road/ environmental factors		*		
Speed	*	*		*
Vulnerable Road Users			*	

Table 0.1: Rangitikei, Ruapehu and Wanganui’s Major Road Safety Issues

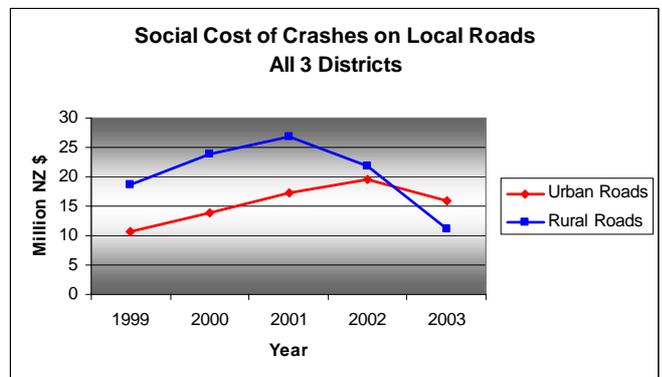
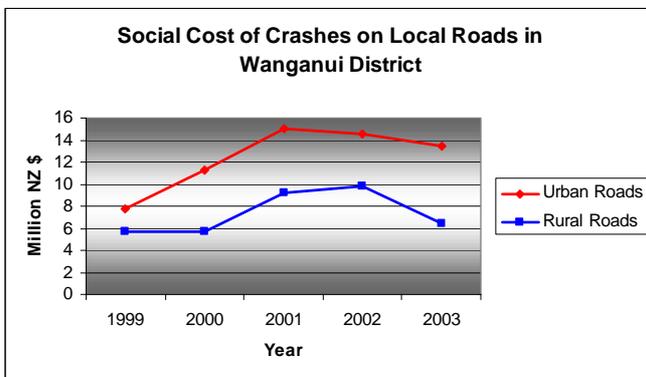
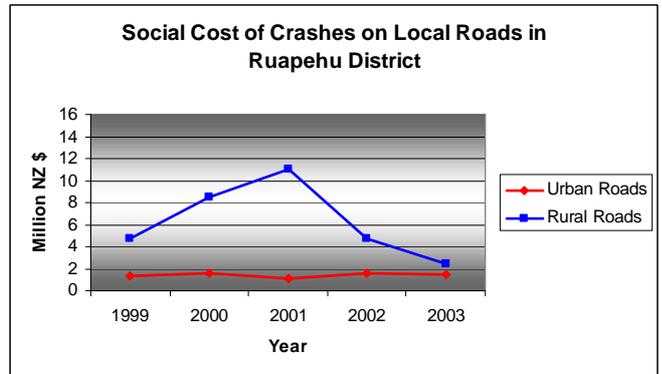
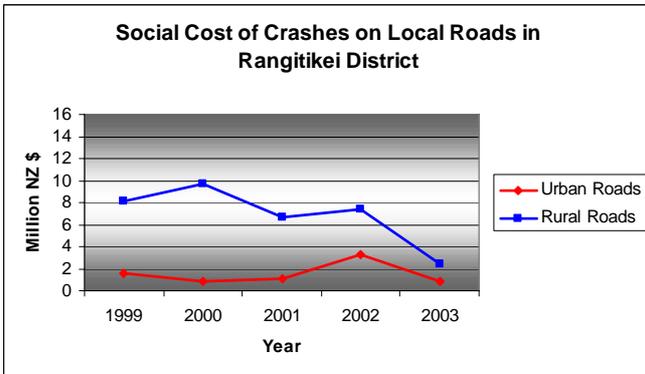
Note that these issues, and the Road Safety to 2010 goals and targets, include both State Highways and Local Roads. However, this SMS is only concerned with Local Road networks.

Crash rates for the three Local Roads networks are shown below, compared with national and “similar group” trends. These indicate the “relative exposure level” in relation to the total distances travelled on each network. Of particular note is the increase for urban roads in Wanganui District, while other trends are generally similar to national or “similar group” RCA’s.

The RLTS, which was last updated in June 2000, notes an overall downward trend in road crashes in the region. Forestry, tourism, freight volumes, and an increasing demand for travel are all factors likely to affect road safety in the future.



The social costs of crashes on the Local Roads networks are based on the economic costs of fatal, serious and minor urban and rural crashes, with an allowance for unreported crashes and non-injury crashes. The following graphs show quite different trends between districts, and between urban and rural roads.



The number and dispersal of crashes throughout the rural networks in particular highlights the random nature of crash events and the need to understand the underlying causes. For example, the proximity of crashes to State Highway intersections and the extent to which these are a factor.

The major safety issues and suggested mitigation actions are further discussed for each District in **Appendix III**, and a number of these actions involve engineering interventions. Addressing these issues is expected to have a significant effect in achieving the safety targets.

This information has been sourced from the 2003 LTSA “Road Safety Issues” reports and most recent statistics for each RCA.

1.9 Road Safety Goals and Targets

1.9.1 National and Regional Goals

The national goal of the Road Safety to 2010 strategy is to reduce the number of road deaths per year to no more than 300 and hospitalisations to no more than 4,500 by 2010. This will enable the country’s road safety performance to be closer to that of countries with the best safety records.

There are no specific road safety goals in the RLTS, however safety related policies include:

- *“promote a safer roading network*
- *encourage a coordinated approach to road safety*
- *promote the development of systems that improve the reporting, recording and investigation of road crashes*
- *improve safety for cyclists and pedestrians”.*

Note that the RLTS has no specific safety targets or performance measures.

Other regional policies in the RLTS, such as the promotion of road network upgrading and provision for cyclists and pedestrians within the roading network, are also relevant to the SMS. This SMS is consistent with these policies and is a means of giving effect to them.

1.9.2 RSS Goal

Between 2000 and 2004 the average annual figures for fatalities and serious casualties on roads within the Rangitikei, Ruapehu and Wanganui Districts (State Highways and Local Roads) were:

- Fatalities 18
- Serious Casualties 70

The specific goal of the Road Safety Strategy for the three Districts is to:

“Annually reduce the number of fatalities and the number of serious casualties resulting from road crashes within the group of three RCA’s in line with the RLTS and Road Safety to 2010 Strategy targets”.

1.9.3 District Targets

Road Safety to 2010 sets regional targets for the maximum total number of deaths and hospitalisations for 2004 and 2010. Hospitalisation data is not currently available for each of the Districts, so serious casualties trends have been used instead. This Strategy has set the following target outcomes for deaths and serious casualties for each District, using on average a target reduction level of 25%² from the 3 year average. The reduction in fatalities is higher, reflecting the need to reverse an increasing trend over the last few years in some Districts. As these targets include Local Roads and State Highways, they are to be regarded as guidelines pending the development of Local Roads network targets (*Improvement Plan action*). It is also to be noted that the SMS is only one of several initiatives influencing road safety.

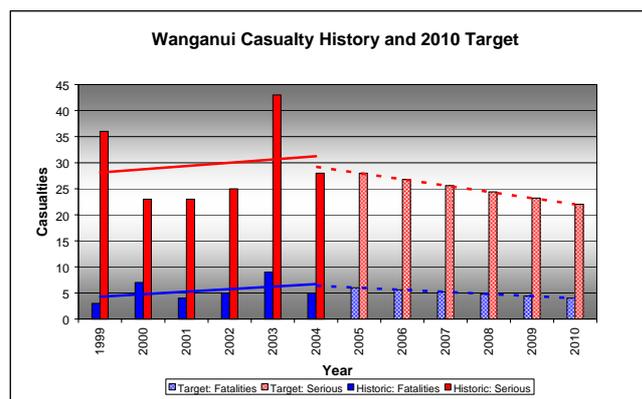
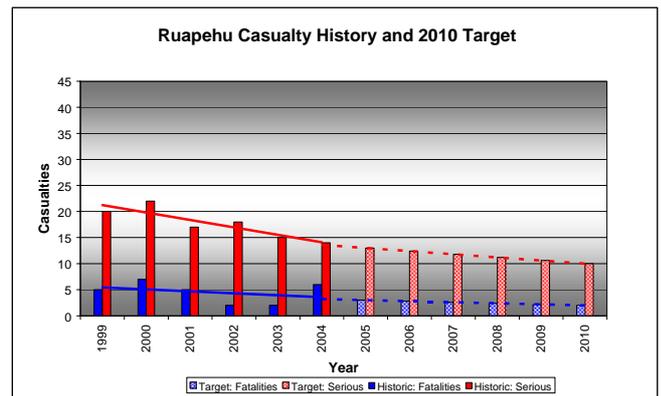
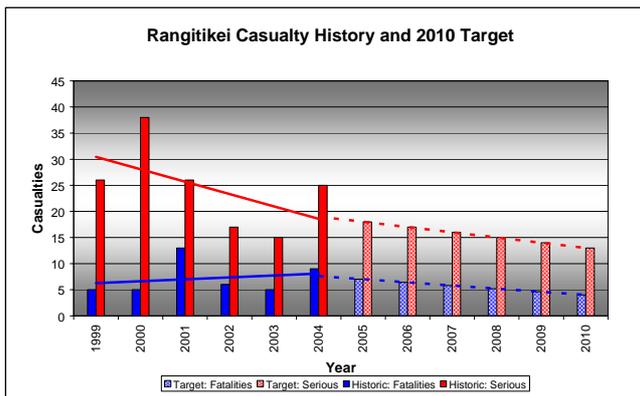
The following table lists the targets for 2005 and 2010. Between 2002 and 2003 the reporting rate of serious injuries to hospital admissions was 63% for the Manawatu-Wanganui region. This is slightly lower than the

² This is consistent with the national strategy

67% reporting rate for the whole of New Zealand. Hospitalisation data will need to be obtained from health agencies for future monitoring purposes.

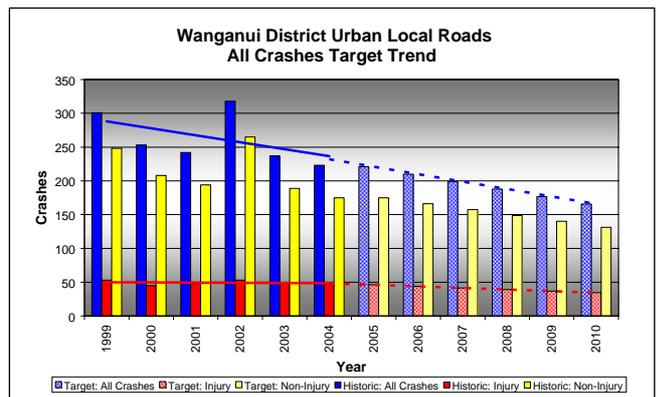
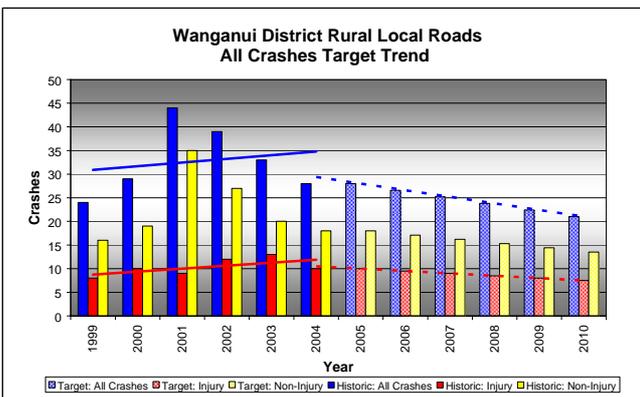
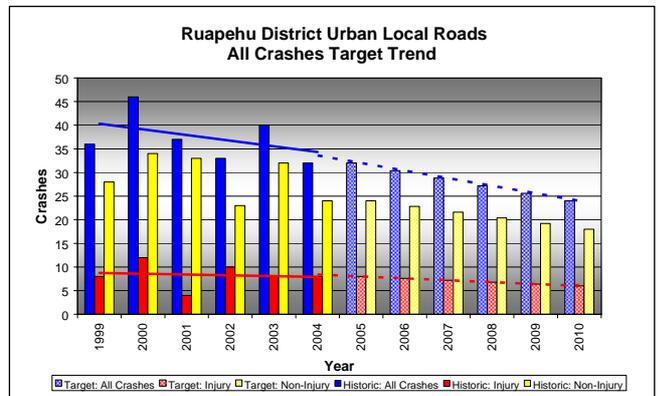
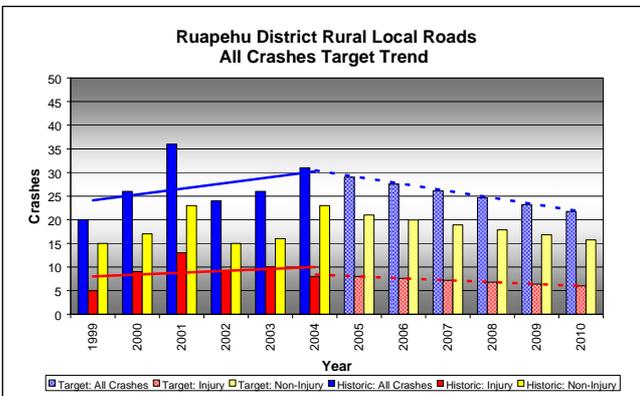
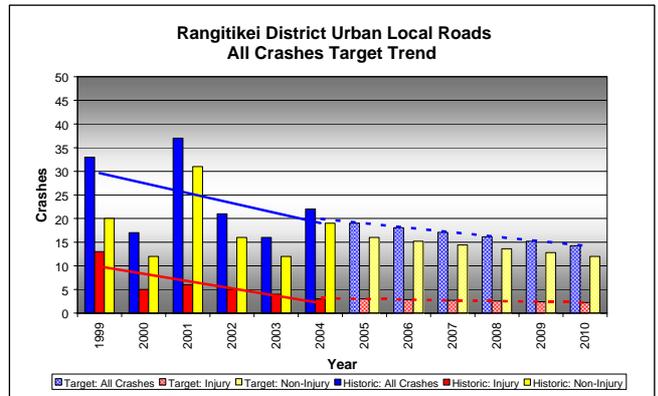
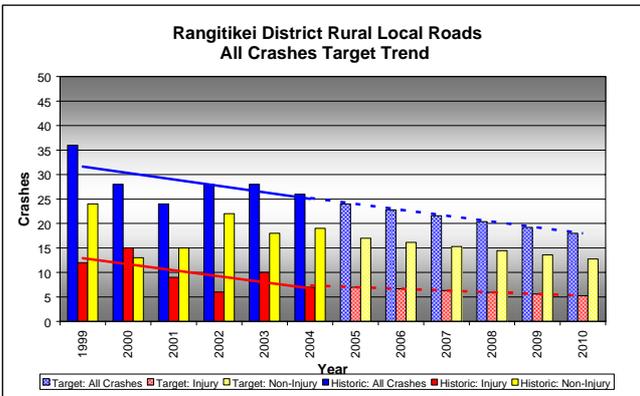
	2005 Deaths	2005 Serious Casualties	2005 Total	2010 Deaths	2010 Serious Casualties	2010 Total
Rangitikei	7	18	25	4	13	17
Ruapehu	3	13	16	2	10	12
Wanganui	6	28	34	4	22	26
All Districts	16	59	75	10	45	55
New Zealand				300		

Historic fatality and serious casualty trends and the above targets are shown graphically below.



Note that these targets include crashes on both State Highways and Local Roads.

Similar targets for crash numbers on the local roads networks are shown separately below. Monitoring these will enable the impact of initiatives on the Local Roads networks to be better assessed.



Generally, historical trends over the last 5-6 years have been downward. In the case of Wanganui, the longer term trend (ie since 1990) has been reducing, with low figures in the late 1990's tending to mask this trend.

Note that some of the reported crashes above may occur off the local roads network, and therefore lie outside the direct control of the Council.

1.10 Safety Action Programmes

This SMS, along with the Safety (Administration) Programme, Road Safety Action Plan, and the potential actions listed in Appendix III, provides the basis for a number of activities and tasks to be programmed and implemented in a structured and coordinated manner – in order to achieve the goals and targets in the RSS.

Each RCA will therefore be actively involved in the safety planning process, identifying and monitoring the performance of programmed actions.

1.11 Monitoring Road Safety Performance

The objective of the SMS is to increase the level of safety of the Local Roads networks.

Monitoring of the target trends will be undertaken as part of the annual review of the SMS and the achievement of its goals.

In addition, RCA's establish levels of service (LOS) and performance measures for safety in asset / activity management plans, and these are also to be reviewed in the evaluation of the effectiveness of the RSS.

All of these trends can be influenced by actions taken in engineering, education and enforcement.

1.11.1 Three E's Indicators

“Engineering” is the responsibility of the individual RCA's with the support of other organisations such as Land Transport NZ.

“Educational” programmes may be national or local. Land Transport NZ manages national campaigns. Education and promotion activities may also be delivered by local agencies, and coordinated by local road safety coordinators.

“Enforcement” is the responsibility of the NZ Police.

While responsibility for delivery differs in each of these three areas, there is significant interaction between them. Regular meetings and communication are needed to coordinate activities, such as through the Road Safety Action Plan process (this is included as part of the NZ Road Safety Programme process), along with Risk Targeted Patrol Plans – these are all important road safety planning components.

Typical measures, in addition to the target trends above, which RCA's may select from for annual reporting are noted below.

Engineering

- Value of Minor Safety Works undertaken per year, for example as triggered through the SMS
- Actions undertaken specifically as a result of the SMS (eg with reference to the SMS Improvement Plan)
- Results of specific investigations or crash reduction studies in relation to the effectiveness of remedial measures undertaken – typically reported by Land Transport NZ
- Number of injury crashes in which a “local road” was a contributory factor.

Education³

- Outcomes of campaigns on community behaviour, attitudes and culture.
- Numbers of road safety educational campaigns run per year.
- Evaluation and reporting results for specific campaigns.

Enforcement

- NZ Police under-reporting rate as defined by Land Transport NZ.
- Number of infringement notices issued for key offences, such as drink / driving, lack of restraint, speeding and failure to give way
- Time spent on key enforcement activities, such as drink driving, lack of restraint, speeding and failure to give way
- Targeted enforcement through use and deployment of RTPP’s developed through the RSAP process

1.12 Road Safety Stakeholders

A number of agencies will be involved in implementing the RSS or have an interest in it, and some have a role in implementing the SMS, as shown in Table 0.2 below. This list forms the basis for consultation on future reviews of the RSS.

³ typically, these sorts of measures are reported on by Road Safety Coordinators to the RLTC, with the information being reported to the RCA’s for information.

<i>Agency / Sector</i>	<i>Specific Organisations / Sector Groups</i>	<i>Key SMS User</i>
<i>Rangitikei, Ruapehu and Wanganui RCA's⁴</i>		<i>Yes</i>
<i>Network Managers</i>		<i>Yes</i>
<i>Consultants</i>		<i>Yes</i>
<i>Contractors – maintenance (key)</i>		<i>Yes</i>
<i>Contractors – projects</i>		<i>Awareness</i>
<i>NZ Police & Emergency services</i>		<i>Awareness</i>
<i>Land Transport New Zealand</i>		<i>Advisor/Sponsor</i>
<i>Transit New Zealand</i>		<i>Awareness</i>
<i>Utility Services</i>		<i>Yes</i>
<i>Road Safety Coordinators</i>		<i>Awareness</i>
<i>Regional Councils</i>		<i>Awareness</i>
<i>Health Authorities</i>	<i>Good Health Wanganui</i>	<i>Awareness</i>
	<i>Waikato Health</i>	<i>Awareness</i>
<i>Accident Compensation Corporation</i>		<i>Awareness</i>
<i>Road User Groups</i>	<i>Public</i>	<i>No</i>
	<i>Automobile Association</i>	<i>No</i>
	<i>NZ Road Transport Association</i>	<i>No</i>
	<i>Heavy Haulage Association</i>	<i>No</i>
<i>Sectors</i>	<i>Dairy Industry</i>	<i>No</i>
	<i>Forestry Companies</i>	<i>No</i>
	<i>Ski Industry</i>	<i>No</i>
	<i>Tourism</i>	<i>No</i>

Table 0.2: Road Safety Stakeholders

⁴ Users within RCA's will include engineering staff, in-house utilities, Parks and Reserves staff, and potentially front-line customer staff

Policies, Standards, Procedures and Guidelines

1.13 Introduction

This section outlines the framework by which RCA's manage road safety on each network. It refers to the SMS procedure components in **Appendix IV**, each of which incorporates reference to specific Policies, Standards and Guidelines. The list has been derived from the components in the "Guidelines for developing a Safety Management System" (LTSA).

Two tools that require further development in implementing this SMS are the **Safety Management Plan** and **Safety Intervention Plan**. These define the safety related roles and responsibilities of network consultants / managers and maintenance contractors, and provide a basis for defining future contractual requirements for managing safety. Support for developing these tools will be sought from Land Transport NZ.

Another tool is the AS/NZS 4360 risk management framework, which is to be used for the identification and rating of road safety risks on the network, and prioritisation of the SMS components. This framework is consistent with that used in Asset and Activity Management Plans.

1.14 Road Safety Activity Components

The SMS procedures described in **Appendix IV** cover a wide range of activities carried out within the road reserve, and are to be used by Council staff, Consultants and Contractors as is appropriate to the activity. The SMP and SIP when developed will link to these activity sheets.

It is important that judgement be used when applying standards and guidelines. Where a departure is considered to be necessary, it must be recorded and the Asset Manager notified. In situations where there is no appropriate documented standard or guideline, users should refer to and use others as contained in **Appendix II** with the approval of the Asset Manager.

1.14.1 Categories

A brief outline of the SMS activity component categories follows:

Planning

These components provide guidance with network and planning controls in relation to specific safety planning activities, and will largely be used by asset management staff and planners.

Capital Works

These components provide guidance for activities relating to the design of new assets, and will be used largely by asset managers, project designers and contractors.

Traffic Data

Provide guidance to the collection and utilisation of roading and traffic data for safety planning purposes.

Safety Operations

Provide guidance across a range of activities, including speed, network inspections / auditing, crash reduction studies, deficiencies, etc, leading to the development of safety programmes.

External Agencies

Provide guidance for temporary traffic control and relationships with other organisations which can impact on safety.

User Services

Provide guidance for dealing with applications for specific services or activities on road reserve.

Assets

These components provide guidance for activities relating to specific asset groups (which should be consistent with those in the AMP), to be used largely by network consultants / managers and maintenance contractors.

Maintenance

These components provide guidance for the development and review of maintenance contracts and emergency response procedures.

1.14.2 SMS Procedures

For each road safety component, procedures are typically grouped from the following headings:

- Inspection / Monitoring – inspecting or monitoring of an activity, contractor performance, asset condition or performance, or any other factor that may affect safety
- Planning Procedures – for establishing and implementing safety requirements in the District Plan
- Development Standards – definition of the standards to which the roading network is to be developed, particularly subdivisions, but also applicable to new works.
- Operational Procedures – practices and processes relating to safety planning and assessment.
- Emergency Maintenance – procedures and levels of service for urgent work, key response times, etc, impacting on safety
- Routine Maintenance – procedures and levels of service for maintenance activity which impact on safety
- Capital Works – procedures for capital projects, including design and construction standards, which impact on safety
- Audit Requirement – specific safety auditing practices, such as network, capital works, road openings and maintenance

- Review, Monitor and Evaluation Requirements – for assessing and improving a procedure / component and its impact on road safety

1.15 Safety Management Plan

From the Guidelines for Implementing a Safety Management System (LTSA), “a *Safety Management Plan (SMP)* is a document which provides project control for the network consultant, identifying the safety issues, concerns and deficiencies and prioritising them for investigation, improvement or mitigation with a recognition of the funding requirements. It should allow for the implementation and monitoring of improvements, and be reviewed jointly by the RCA, the network consultant and network contractors annually”.

The purpose of the SMP will therefore be to formalise and document the specific safety related responsibilities of the network manager where this role is fulfilled by an external consultant. An SMP is therefore to be developed for each of the Wanganui and Rangitikei networks by each Council and their network manager (refer *Improvement Plan*). It will then form part of the SMS. Ruapehu District manages its network internally, and will therefore focus on SMS based implementation activity.

The SMP will document:

- Council and Consultant responsibilities – including SMS training, intervention levels, communications, and requirements for managing contractors
- How safety issues, concerns, and deficiencies are to be identified and recorded
- Managing and reporting on the Safety Deficiency Database
- Managing and reporting on the Safety Hazard Register
- Network safety inspections (day and night) and existing road safety audits
- Network safety deficiency analysis which shall include, where relevant:
 - Crash review, analysis and reporting
 - Fatal and serious crash reporting
 - Crash reduction and prevention studies
 - Black spot studies
 - Grey spot studies
- Safety issue prioritisation, which shall be based on risk analysis / risk profiling
- Programming of the proposed safety treatments
- Development and implementation with the network maintenance contractor of the Safety Intervention Plan (SIP)

Figure 0.1 shows how these elements are to be integrated so that:

- All relevant safety information is brought together for assessment and analysis, and
- Safety management tasks can be defined and scheduled within each area
- Works programmes include prioritised safety treatments

The inputs to the process shown in this diagram are incorporated in the SMS activity sheets in **Appendix IV**.

Activities are linked, for example, pavement surface skid resistance is to be considered where loss of control crashes occur – initial guidance for site identification for testing / investigation is provided in **Appendix V**.

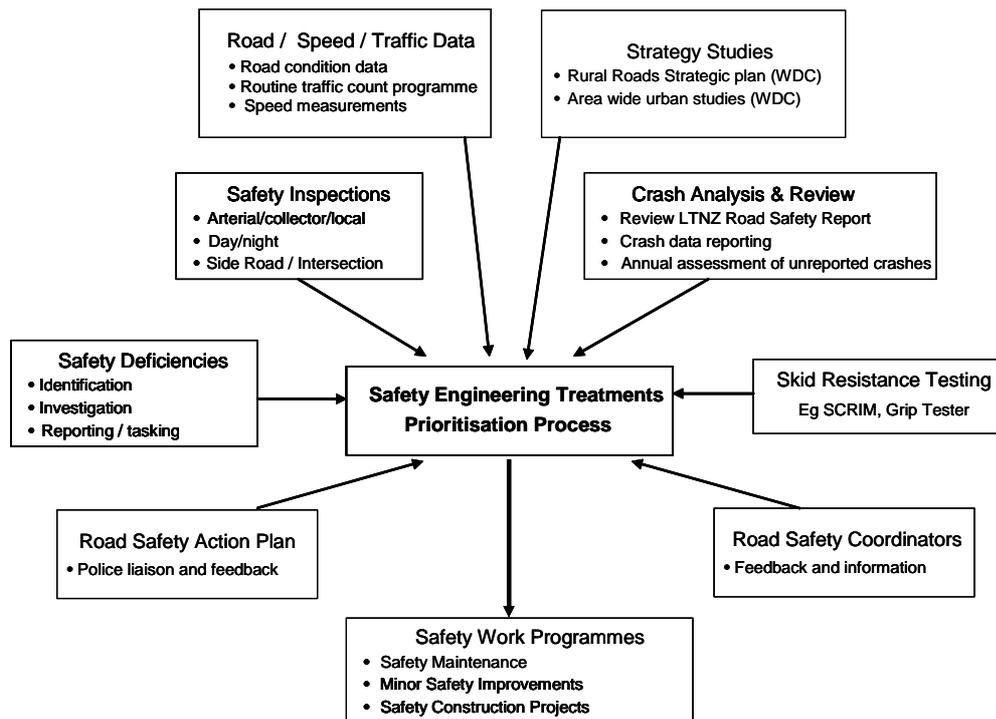


Figure 0.1: Safety Planning Integration

1.16 Safety Intervention Plan

From the Guidelines for Implementing a Safety Management System, this plan “provides the network contractor(s) with a system of works based on acceptable level specifications for road assets, including surface, drainage, marking and signage. When the condition of an asset falls below the acceptable level, intervention is usually required by way of repairs or renewal”.

The SIP therefore provides guidance to maintenance contractors to enable the prompt detection of deficiencies, allowing early intervention so that a safe, “no surprises” roading network is achieved.

The SIP is also expected to raise the level of safety consciousness of all staff involved in road maintenance.

It achieves this by:

- Providing guidance on the programming of safety related maintenance work

- Providing a basis for the development of internal systems to achieve safety related contract responsibilities
- Its coverage includes:
 - Inspections
 - Work prioritisation and programming
 - Treatment selection
 - Work execution
 - Monitoring and recording
 - Hazard register

For example, contract response times for different maintenance actions can have a significant safety impact.

The initial SIP will be developed jointly by the network manager / consultant and contractor, with joint reviews occurring on an annual basis (refer *Improvement Plan*). Reviews will target operational procedures and ensure that they capture current safety related best practice. The SIP may relate to contractual performance measures. Review outputs will provide feed-back to the SMS.

1.17 Safety Planning Related Activities

Wanganui

A Rural Roads Strategic Plan was developed in 2001 in response to concerns about future growth in forestry traffic, winding hilly roads, and the conflicts with local use.

It included a review of standards and levels of service, and defined a large number of objectives and policies relating to safety, such as:

- To undertake crash-reduction studies, safety management strategies, and safety audits to identify possible safety improvements
- To generally improve the safety of the rural roads system, in particular by addressing crash blackspots

Priorities, many of which can be implemented through the Minor Safety Works programme, include:

- alignment improvements, especially in high crash areas
- “no surprises” road environment – target speed environment anomalies,
- better visibility – eg sight distances on narrow winding roads
- improved safety and traffic management at work-sites
- more passing opportunities

The Strategy is to be reviewed every 3-5 years.

Two other studies have since been initiated, and also two route based studies.

In parallel with a 2003 Crash Reduction Study, Wanganui DC has developed an area wide investigatory approach to safety in urban areas, beginning with the Laird Park area – a part of the network characterised by a grid layout, wide streets, and a high intersection crash rate. This study identified extensive safety related issues, which require more investigation to identify appropriate solutions. Solutions could include, for example, the programmed narrowing of overly wide low volume roads to NZS 4404 standards to reinforce the roading hierarchy.

About one study is carried out each year, with the intent of eventually covering the whole city. The Police complement study findings with targeted enforcement.

Study results feed into lists of works for justification and prioritisation.

1.18 Identification of Safety Deficiencies

An important aspect in managing safety is the identification of safety deficiencies, and defining how they will be mitigated or corrected.

Figure 0.2 illustrates the general procedure for identifying, recording and treating safety deficiencies on the network. The management systems needed to implement this procedure are to be recorded in the SMP and SIP by the network manager and Contractor respectively. This will need to include clear criteria and responsibilities for deciding whether the issue is safety related or not.

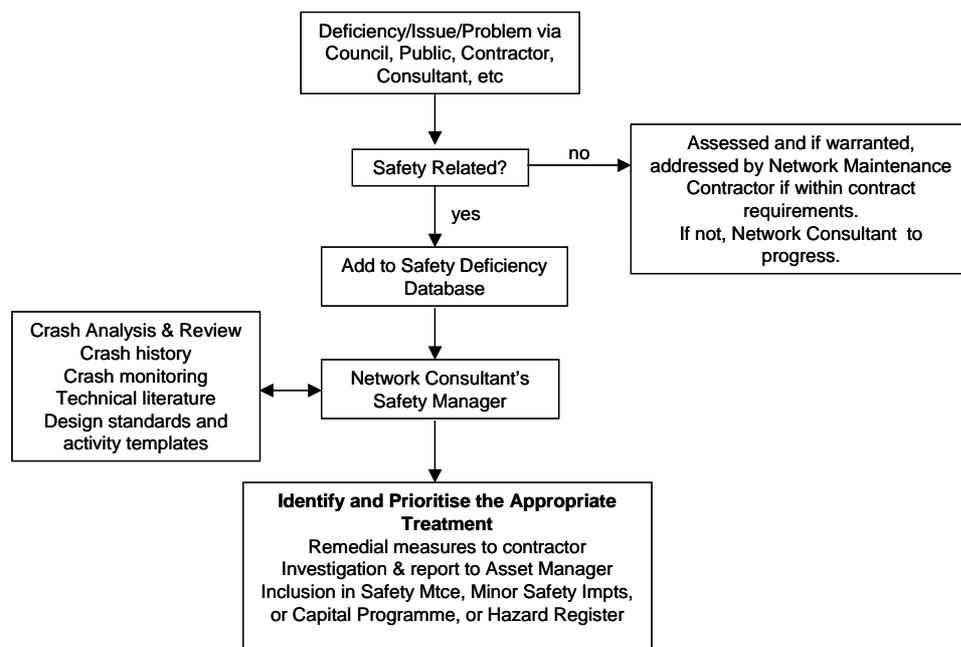


Figure 0.2 : Safety Deficiency Process

The safety deficiency database is to be developed. This will draw on national work being undertaken by Land Transport NZ, which has reviewed existing systems in use and is developing appropriate practice for different types of authority.

1.19 Risk Identification, Evaluation and Management

The following framework, which is consistent with AS/NZS 4360 and current best practice asset management planning, is included to provide a basis for:

- Prioritising specific road safety activity components to be included in the SMS
- Assessing the risk exposure of safety deficiencies / hazards identified on the network, and prioritising remedial measures

Asset management plans currently deal with risk management as follows:

- Rangitikei – includes a more detailed risk analysis process for safety, a risk register is maintained for each asset group (eg roading), and this includes safety.
- Ruapehu –
- Wanganui – risk is included in the AMP, however this is not specific to safety.

The SMS has been developed on the basis that:

- All items identified in the LTSA’s “Guidelines for the Developing a SMS for RCA’s - Version 2”, with a “Must be included” ranking have been included.
- All significant risk items identified to date have appropriate systems, procedures, policies, standards and guidelines currently in place to ensure effective safety management.
- Other components included in the activity sheets relate to a perceived High or Medium risk as defined by the following Risk Evaluation Matrix.

Risk Evaluation Matrix – Risk Exposure Level

Likelihood	Frequent	Probable	Occasional	Remote	Improbable
Severity					
Catastrophic	High	High	High	High	Medium
Critical	High	High	High	Medium	Medium
Major	High	High	Medium	Medium	Low
Minor	High	Medium	Medium	Low	Low
Negligible	Medium	Medium	Low	Low	Low

Hazard Severity

Severity	Definition/Description
Catastrophic	Will cause multiple fatalities
Critical	Likely to cause a fatality
Major	Could possibly cause a fatality
Minor	Could cause serious injury
Negligible	Not likely to cause serious injury

Hazard Probability

Likelihood	Definition/Description
Frequent	Likely to occur frequently (once/year)
Probable	Likely to occur occasionally (once/5 years)
Occasional	Likely to occur at some time (once/10 years)
Remote	Will rarely occur (> 10 years)
Improbable	Unlikely that the occurrence may ever be experienced

Table 0.1: Risk Evaluation Assessment

1.20 Crash Reporting

State Highway Crashes

Many crashes in rural Districts occur on State Highways, and it is useful for each RCA to have good information on whether crashes are occurring on State Highways or Local Roads so that resources can be appropriately targeted.

In the case of Ruapehu District the Council receives many complaints from residents about crash related issues on SH's. However, the Council does not have access to SH crash information and is often unable to assist residents. A better understanding of the SH network in the Ruapehu District is needed, and a number of measures are proposed to help achieve this, including (*Improvement Plan action*):

- Sharing of crash information between RCA's
- Safety issues included as an agenda item in regular liaison meetings
- Use CAS to enquire about SH crashes
- Obtain copies of engineering reports from fatal crashes on the SH network

Unreported Crashes

Crash reporting rates vary throughout the country, depending on factors such as Police presence and remoteness.

There are likely to be many sites in remote rural areas which are crash-prone and for which there are few recorded (albeit minor or non-injury) crashes. There is merit in improving knowledge about non-reported crash sites, as any site with a non-injury crash record has the potential for a more serious crash. This however does need to be balanced with the available level of resources to enquire and investigate, and given the often very low levels of traffic it may be considered un-economic to capture unreported crash data.

Ruapehu has high numbers of unreported crashes and intends to capture better data. This will involve the development of procedures for obtaining non-reported crash data and assessing sites for potential treatment (*Improvement Plan action*).

Wanganui has a number of key areas that are monitored by locals, however there is a desire to improve the process (*Improvement Plan action*).

Roles and Responsibilities

1.21 Introduction

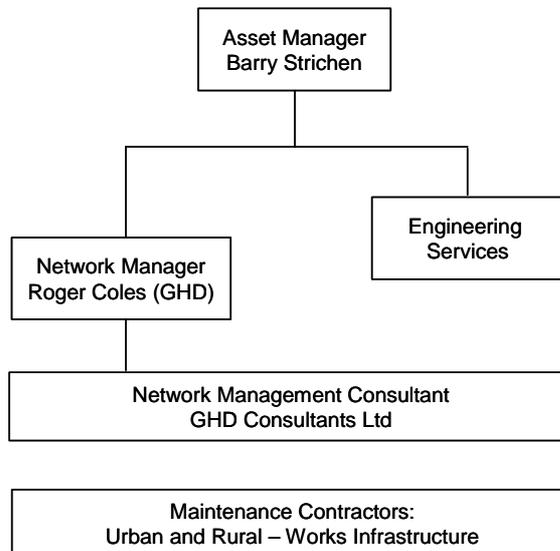
This Section describes the safety responsibilities, roles and desirable levels of expertise of roading personnel engaged in activities that contribute to safety on the Local Roads networks. The safety related experience of staff from Council, consultants and contractors should be reviewed annually and training records maintained to confirm their ongoing competency.

1.22 Organisational Structures

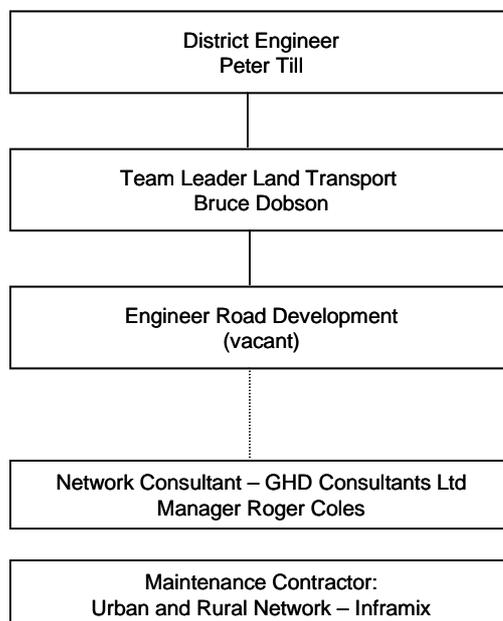
The following diagrams illustrate the organisational structures within each RCA, including the provision of network management and maintenance contract services.

Also important are the safety related interactions with other internal departments within each Council. These are recorded in the detailed SMS procedure sheets in **Appendix IV**.

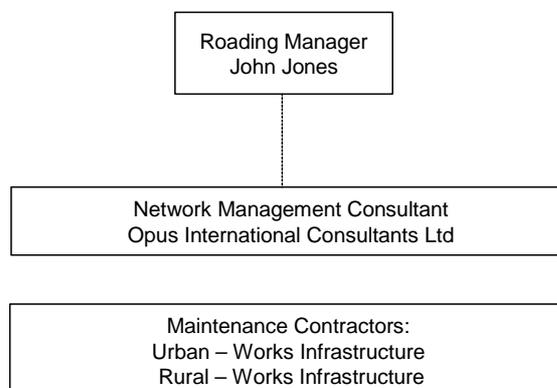
Rangitikei District



Ruapehu District



Wanganui District



1.23 Safety Management Team (SMT)

The establishment of a Safety Management Team, involving each key participating organisation in the SMS, will encourage ownership of network safety and foster a safety culture within each organisation. An indicative team structure is shown below.

Other key agencies who are involved in the delivery of safety, and with whom close working liaison will be needed by the SMS team, are shown in this diagram.

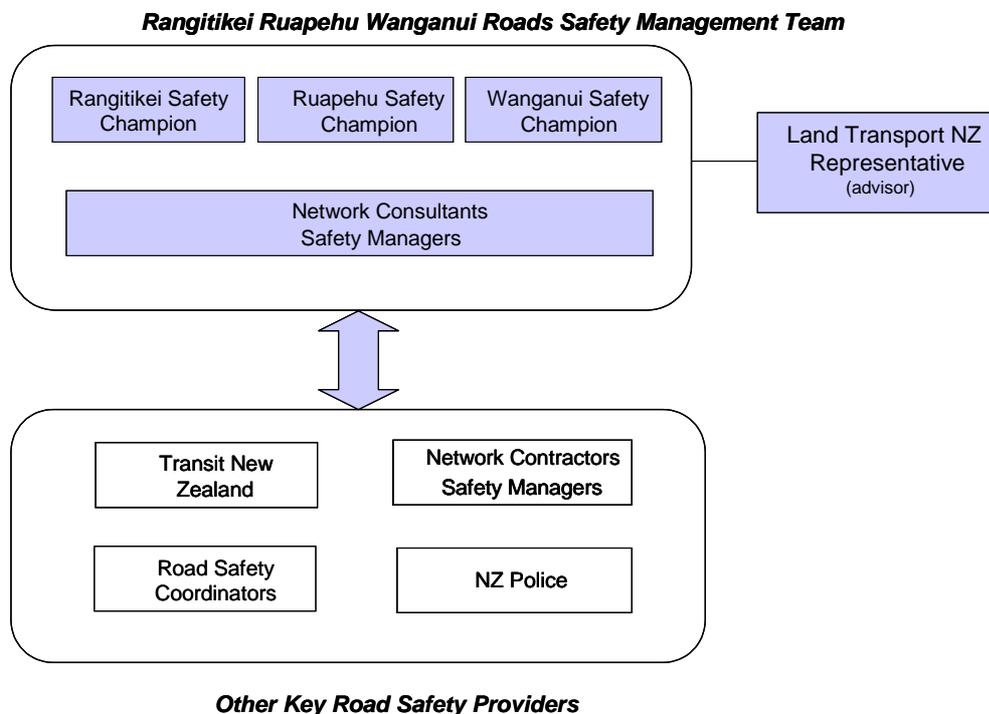


Figure 0.1: Safety Management Team Structure and Relationships

An SMS Team Leader is to be nominated by the SMT – this person will take responsibility for “championing” the SMS within the group and promoting a coordinated approach.

The present SMS Team Leader is Roger Coles of GHD Consultants.

1.24 Safety Managers / Safety Champions

This team structure identifies the need for a “safety manager / safety champion” role within each organisation. The role needs to be developed within Councils, network manager and maintenance contractor organisations – and is the key person responsible for the promotion of road safety. A key aspect is developing the road safety culture in the organisation, and ensuring buy-in and implementation of the SMS.

Network managers and contractors are expected to undertake training and development of this role within their organisations, and this is to be included in future tender proposals.

Safety Managers / Safety Champions are expected to have or gain an intimate knowledge of the safety issues within the RCA’s roading network through experience and over time.

The designated safety champions are:

- Rangitikei Barry Strichen
- Ruapehu Bruce Dobson
- Wanganui John Jones

Other staff who contribute to road safety also have a role to play in contributing to the successful outcomes of the safety teams within each organisation.

1.25 Safety Culture, Training and Development

The development of a safety culture within the SMT is critical to the effective successful implementation of the SMS. A strong safety culture should ensure that safety is a routine consideration in all day-to-day activities.

All staff contributing to safety should be trained and suitably skilled to deal with road safety issues which are expected to arise on the roading network. This will involve recruitment, and the training and development of staff.

Training levels for personnel involved in the SMS process shall be reviewed annually by the SMT. Particular safety related qualifications/training that could be considered for Council/consultant/contractor staff include:

- Training in Land Transport NZ's Crash Analysis System (CAS).
- Transit NZ's Temporary Traffic Management at Roadwork Sites.
- Land Transport NZ's Safety Audits of Existing Roads.
- Road Safety Engineering Course (covering crash reduction studies, safety auditing, etc) – Land Transport NZ, NZIHT

Furthermore, encouragement will be given to service authorities and commercial road occupiers to develop a safety culture and safety champion approach.

Wide distribution of the SMS and Road Safety Strategy within SMT organisations and key stakeholders will emphasise key road safety issues and promote greater safety awareness within them.

1.26 Safety Roles and Competence

The roles of SMT member organisations are defined as follows:

District Councils – audit and control the safety management process.

Network Manager / Consultant – manage the safety process on a day-to-day basis, including the identification of safety related deficiencies and monitoring of solutions. May be an external professional services provider or an in-house business unit.

Network Maintenance Contractor – maintain and improve the network. Minimise safety deficiencies through proactive intervention.

Suggested levels of competence are defined in Table 0.1 for each position for particular **safety management** functions on the road network. These should be used in Job Descriptions and in recruitment and training development.

Competence Level		Description of expected abilities
A	Appreciation	Recognises the purpose of the activity or infrastructure element. Knows who can help and what the likely processes are in responding to requests and notifications. Can assess the need for urgency.
U	Understanding	Understands the processes and decisions involved. Appreciates the impact of options available and can identify the appropriate response within readily available guidelines
C	Competence	Develops appropriate solutions without supervision, drawing on previous experience and training. Can identify when expert or specialist assistance is necessary.
E	Expertise	Provides specialist advice, training and supervision in the relevant field. Can develop guidelines for others to determine actions, assess the implications of trends and offer options for solution.

Table 0.1: Safety Competence Levels

Specific requirements for the levels of each position are defined below. Note that some individuals may have one or more roles in this table.

SMS Function / Component Grouping	DC Senior Eng'g Manager / Director	DC Road Asset Manager	DC Safety Champion	DC Utility Assets staff	DC Planning staff	Network Manager Team Leader	Network Manager Safety Champion	Network Manager Contract Mgmt	Network Maintenance Contractor Team Leader	Design Consultants	Construction Contractors	Utility Services (external)	Utility Services Contractors
PLANNING	A	C	U	U	E	U	U	U	A	U	A	U	A
CAPITAL WORKS	A	U	U	C	U	U	U	U	A	E	E	U	C
TRAFFIC DATA	A	U	C	U	A	C	C	C	C	C	C	C	C
SAFETY OPERATIONS	A	C	E	C	C	C	E	E	C	U	A	A	A
EXTERNAL AGENCIES	A	C	C	E	A	C	E	E	U	A	A	E	C
USER SERVICES	A	C	C	A	U	C	E	E	U	A	A	A	A
ASSETS	A	E	C	A	A	C	E	E	C	C	U	A	A
MAINTENANCE	A	E	C	U	A	C	E	E	E	U	U	U	U
SAFETY MANAGEMENT PLAN	A	U	C	A	A	C	E	E	E	A	A	A	A
SAFETY INTERVENTION PLAN	A	A	U	A	A	C	C	C	A	A	E	A	A

Table 0.2: Safety Roles and Expertise

Key positions from above within each organisation are currently as follows:

Position	Rangitikei	Ruapehu	Wanganui
Senior Manager / Director	Barry Strichen	Peter Till	John Jones
Road Asset Manager	Barry Strichen	Bruce Dobson	John Jones
Safety Champion	Barry Strichen	Bruce Dobson	John Jones
Network Mgmt Team Leader	Roger Coles	Ros McLachlan	John McGeorge
Network Mgmt Safety Champion	Roger Coles	Ros McLachlan	Jim Moore

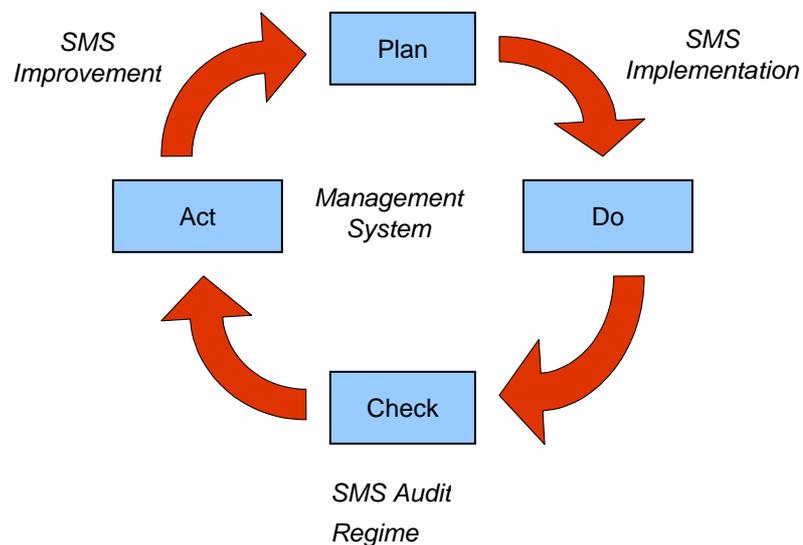
Network Mgm't Contract Manager	tbc	Carey Morris	Simon McSweeney (U) Graham Dhyrberg (R)
NM Contractor TL	Dave Nicholls	Brett Simpson	Glen Campbell
Design Consultants	GHD	GHD	Opus

Management System

1.27 Introduction

The Management System must ensure that all activities follow the appropriate SMS policies and procedures, and that they will contribute to the achievement of road safety goals for each District. The system is cyclic and has an annual review. This Section sets out the management responsibilities and systems necessary to achieve this objective. It also includes a continuous improvement plan.

The following diagram illustrates the overall management cycle.



1.28 Management Responsibilities

The following staff have overall responsibility for implementing, auditing, and improving the Safety Management System within each Council, in line with the overall framework above. These responsibilities may be delegated as appropriate.

Council	Management Responsibility		
	Implement SMS	Monitor SMS	Develop/improve SMS
Rangitikei	Roger Coles	Jointly undertaken by the 3 RCA's and Land Transport NZ Area Engineer	Barry Strichen
Wanganui	Jim Moore		John Jones
Ruapehu	Bruce Dobson		Bruce Dobson

All Council staff, network managers, and contractors are responsible for applying the SMS procedures to their activities. The adoption and day-to-day use of the SMS will require significant “buy in” from all of these organisations.

Network managers are to manage the safety process in terms of identifying deficiencies and the determination, actioning and monitoring of solutions.

Network contractors are required to maintain and improve the network.

A close working relationship between these two parties is critical in maximising the benefits of the SMS.

Acceptance of the SMS by other key stakeholders such as Land Transport NZ, NZ Police and the wider community is also important. Therefore a partnership approach is proposed, involving all relevant parties involved in engineering, education, and enforcement.

As SMS requirements change, the staff responsible above will discuss the necessary amendments with the various parties and determine how best to ensure compliance.

1.29 Integration of Systems within each Organisation

The SMS needs to be integrated with the management processes of each organisation to ensure maximum buy-in and effectiveness. These include:

- Human resource development – training, recruitment, performance management
- Asset management – AMPs, data collection, data analysis
- Financial planning – budgets, programme development (eg Minor Safety Improvements and 10 Year Forward Works Programmes)
- Management reporting – achievement against budgets and targets
- Information technology – applications relating to road safety

These linkages are to be strengthened within each organisation over time. In particular, this applies to SMS training and development needs and the performance management systems within each RCA, network manager, and maintenance contractor.

Levels of safety knowledge and expertise must be incorporated in job descriptions and training requirements.

1.30 SMS Continuous Improvement Plan

The continuing development of an SMS in terms of “best practice” relies on the identification, implementation and monitoring of improvement opportunities.

To ensure continuous improvement, the SMS Team Leader will maintain an Improvement Plan for the SMS.

All participants within the SMS team and their staff, in addition to Land Transport NZ liaison staff, are responsible for making suggestions for improvements as they arise. A partnership based approach is to be promoted.

The effectiveness of the Improvement Plan will be reviewed during the annual audit of achievements and the outstanding items updated for future action.

The 3 year Improvement Plan is scheduled below. This Plan includes actions identified during the preparation of this first SMS.

It also includes specific tasks which need to be undertaken in order to comply with the SMS.

SMS IP Ref	Improvement Description	Responsible	Resource Required	Date for Action	Date Completed
SMS Main Document					
S1.5	Transit NZ representative to be invited to participate on SMT	SM Team	internal	9/05	
S2.4	Review and update local road network targets for 2010 (fatalities and serious casualties)	SM Team	internal	annually	
S3.3	Develop Safety Management Plan (SMP) as part of SMS Implementation phase	Network managers (RangDC, WDC)	external	12/05	
S3.4	Develop Safety Intervention Plan (SIP) as part of SMS Implementation phase	Network managers (all)	external	6/06	
S3.8	Share information with Transit about crashes in the District	All RCA's	internal	ongoing	
S3.8	Improve local non-reported crash data capture procedures	RuapDC	internal	12/05	
SMS Activity Components					
SMS 1.1	Review road hierarchy and standards on completion of Land Transport NZ guideline (and consider impact on District Plans)	RuapDC WangDC	internal	12/05	
SMS 1.1	Review consistency of application of	WangDC	internal	ongoing	

SMS IP Ref	Improvement Description	Responsible	Resource Required	Date for Action	Date Completed
	road hierarchy development standards				
SMS 1.2	Review District Plan and other provisions for access control relating to land-use.	RuapDC	internal	12/05	
SMS 1.2	Ensure enforcement of non-compliant advertising signage	WangDC	internal	ongoing	
SMS 2.4	Develop, improve and document Project Safety Audits processes.	All RCA's	internal	9/05	
SMS 3.2	Review asset data capture and management needs (eg rationalise inventory, complete data capture)	All RCA's	internal	ongoing	
SMS 3.2	Monitor opportunity to link CAS system with GIS &/or RAMMS, provide training	All RCA's	internal	ongoing	
SMS 4.1	Formalise process for curve advisory speed signage, and use of 100kph vs de-restricted signage on rural roads.	RuapDc	internal Land Tpt NZ	12/05	
SMS 4.2	Develop LATMS implementation framework for Council approval	WangDC	internal	6/05	completed
SMS 4.3	Review the approach to and timing of crash reduction studies.	All RCA's	internal	ongoing	
SMS 4.4	Systematise and implement Network Safety Audits, and focus on key safety issues (eg delineation)	All RCA's	internal	12/05	
SMS 4.5	Develop / improve and implement deficiencies database inc data capture process	All RCA's	internal	ongoing	
SMS 4.7	Review, document and implement prioritisation process for Minor Safety Improvements	All RCA's	internal	ongoing	
SMS 5.1	Review and formalise operation of temporary traffic management site audit procedures	All RCA's	internal	9/05	
SMS 5.2	Coordination meetings with utilities to ensure TTM is effective	All RCA's	internal	ongoing	

SMS IP Ref	Improvement Description	Responsible	Resource Required	Date for Action	Date Completed
SMS 5.2	Improve and resource road opening notice management process to ensure compliance	WangDC	internal	ongoing	
SMS 5.4	Improve communication regime with TrackCo	All RCA's Land Tpt NZ	national	ongoing	
SMS 6.1	Tighten up the application process for over-weight vehicle permits (application lead in period needed)	RuapDC	internal	12/05	
SMS 7.2	Review new footpath safety expenditure programme needs	RuapDC	internal	ongoing	
SMS 7.4	Implement pavement surface friction assessment process	All RCA's	internal	12/05	
SMS 7.5	Review response times for pavement defects in relation to safety risk	WangDC	internal	12/05	
SMS 7.7	Develop systematic and consistent approach to delineation, including justification criteria.	All RCA's	internal	12/05	
SMS 7.7	Update data for Regulatory Controls.	RangDC	internal	12/05	
SMS 7.8	Strategic review of urban lighting levels and needs, and define criteria for rural flag-lighting	WangDC	internal	6/06	
SMS 7.9	Develop criteria for safety treatments at bridges (eg sealing of approaches, guard-rails, etc)	All RCA's	internal	6/06	
SMS 7.10	Review safety effects of deep road-side drains and develop management approach	WangDC	intenal	6/06	
SMS 7.11	Review safety issues relating to urban vegetation and street trees	WangDC	intenal	6/06	
SMS 7.12	Develop criteria for safety barriers, including compliance ratings for existing assets	All RCA's	internal	12/05	
SMS 8.1	Review and update safety provisions in maintenance contracts prior to re-tendering	All RCA's	internal	ongoing	

SMS IP Ref	Improvement Description	Responsible	Resource Required	Date for Action	Date Completed
SMS 8.2	Improve Police liaison for SH closures	RangDC	internal	9/05	

Table 0.1 : SMS Improvement Plan

Audit Regime

1.31 Purpose of Audit

The purpose of auditing is to provide assurance to each RCA and Land Transport NZ that the SMS aligns with best practice and the RCA is meeting the requirements of the SMS.

For the first two years, the audit regime for the SMS will be developed, trialled and refined.

The process will be integrated with the LTCCP audit cycle, and may involve Audit NZ review of related aspects (such as target outcomes).

The approach is based on “review, monitor and evaluate”, and is to be focussed on two processes as follows.

Technical Effectiveness (internal “audit”)

This consists of an evaluation of trends and a review of how well the SMS is working. It will include:

- Progress towards road safety targets
- Suitability of the road safety targets
- Crash trends (from Land Transport NZ reports) and the likely influence of the SMS on those trends
- Funding and human resource needs for ongoing SMS implementation
- Adequacy of the SMS itself, and any need for updating or review

System Compliance (external “audit”)

Formal processes are to be developed by the Land Transport NZ over the next 2-3 years, and a flexible approach is likely. The objective will be to monitor the:

- Currency of SMS components / items in terms of national best practice
- Adherence by the RCA to the procedures and guidelines within the SMS
- Implementation of improvement plan actions within the SMS

1.32 Responsibility

Each Roding Asset Manager will take responsibility for ensuring that the internal audit is undertaken for their RCA organisation. The overall results will be reviewed by the SMT, reported to the appropriate management level within each RCA, and actions documented.

The SMT may also, if appropriate, engage an external consultant to assist it to evaluate the effectiveness of the SMS on the road.

The external audit will be performed once agreed national guidelines are in place.

The external audit team may include:

- Land Transport NZ SMS auditor
- Land Transport NZ area engineer
- Each Council's safety team leader / champion or representative
- Specialist consultant(s) for areas in which expertise is required.

Members of the external audit team must be suitably experienced in road safety engineering and the independent auditing of compliance with safety or quality management systems.

1.33 Audit Programme

The technical internal audit will typically be undertaken in August / September of each year.

The external audit will typically follow the internal audit, in September / October. This audit will be undertaken on a 2-3 yearly cycle, but not within the next two years.

1.34 Specific SMS Audit Requirements

1.34.1 Road Safety Strategy

The Road Safety Strategy will be monitored annually as part of the **internal** technical audit, in terms of:

- Progress towards the goals defined in Section 2.
- Adequacy of funding and resources to meet safety related levels of service in relation to recorded crashes on the network.
- Consistency with the national strategy "Road Safety Towards 2010".
- Consistency with the current Regional Land Transport Strategy
- Consistency with each RCA's Asset Management plan with respect to Road Safety.

1.34.2 Expertise

Monitor annually as part of the **internal** audit:

- Competency Matrix and Competency Register
- Staff competence and training development

In addition, confirm staff competence (RCA's, Network Manager and Network Maintenance Contractor) through periodic tender evaluations and contract and performance evaluations.

1.34.3 Policies, Standards, Procedures and Guidelines

The procedures templates shall be individually reviewed and monitored as part of the **external** audit in terms of:

- Policies, procedures, standards and guidelines for consistency, currency and relevance in relation to national best practice
- Monitor the level of compliance with the specific requirements and outcomes set out in the activity sheets.

1.34.4 Management Systems

The **external** audit will specifically review the SMS for:

- Consistency with each RCA's structure, systems, operations, delegations and responsibilities,
- Adequacy, fitness for purpose and sufficiency of resources,
- Adequacy and relevance of the SMS Improvement Plan,
- Confirmation that appropriate liaison between road safety agencies with a vested interest in the SMS is taking place.

1.35 External Audit Report

The audit team will report on:

- Review of previous audits (internal and external)
- Areas of significant non-compliance with the SMS (later)
- A summary of the actions required to address any areas of significant non-compliance (later)
- Progress towards stated road safety goals with comment on how well the SMS addresses each safety issue, noting areas for improvement.
- Recommendations for the development of new or updated policies, standards, guidelines, specifications and actions.

The report will be presented to Land Transport NZ and a summary of the results may in turn be reported to each Council.

Appendix I – District Road Network Maps

Road network maps are provided for the Rangitikei, Ruapehu and Wanganui Districts.

Appendix II – List of Standards and Guidelines

The following list of available standards and guidelines has been compiled by Land Transport NZ and is also published in the Guidelines for Developing a Safety Management System.

This list provides a secondary source of information for users of the SMS.

Appendix III – Current Road Safety Issues by District

The annual Land Transport NZ Road Safety reports prepared for each District provide an overview of the key road safety issues in each District. The issues for the 1999 to 2003 period for each of the Local Road networks are summarised below, along with suggested actions for targeting each area.

Key actions are to be considered, selected and prioritised for implementation and reporting within each District. Implementation shall be through the respective coordinator, Police plan, or SMS programme actions.

Rangitikei District

Loss of Control

This is the most common crash type, accounting for 56% of all crashes, a major road safety issue. Key factors contributing to these crashes are poor handling, poor observation, and poor judgement. Poor driving skills amongst the 15 to 24 year age group is a wider concern within the District.

Actions that are to be used to target this key safety area could include:

Education and Enforcement

- Encourage education campaigns to improve the cornering skills of younger drivers
- Support campaigns on adjusting drivers' speed for different driving conditions
- Support strategic education and enforcement campaigns targeting speed and alcohol

SMS

- Maintain good road surfaces and drainage
- Improve delineation around curves, for example by providing edge lines and centre lines
- Ensure roadside areas are kept clear of solid objects

Speed

Excessive speed has been identified as a contributing factor in 27% of all reported injury crashes over the 5 year period. Factors include too fast for conditions and combination with alcohol.

Actions that are to be used to target this key safety area could include:

Education and Enforcement

- Support strategic enforcement campaigns targeting speed and alcohol.
- Conduct crash studies to determine whether road improvements are needed.

SMS

- Provide consistent 'no surprises' road environments.

Failure to Give Way

This was recorded to be a contributing factor in 37% of injury crashes over the 5 year period.

Actions that are to be used to target this key safety area will focus on intersection behaviour and visibility improvements.

Ruapehu District

Speed

Over the last five years 34% of crashes on local roads were speed related. Most speed related injury crashes in the District occur during July and August due to the popularity of winter sports in the district. Also significant overall is the representation of 15-24 year old drivers in these crashes.

Actions that are to be used to target this key safety area could include:

Education and Enforcement

- Support strategic enforcement campaigns targeting speed and alcohol.
- Conduct crash studies to determine whether road improvements are needed.

SMS

- Provide consistent 'no surprises' road environments.

Loss of Control

This is a major issue on Ruapehu District's local roads, with loss of control having contributed to about 55% of all reported crashes over the 5 years. Most of these have occurred on rural roads with speed limits greater than 70 km/hr. Key factors in such crashes tend to be poor handling, too fast for conditions, and road or environmental factors.

Actions that are to be used to target this key safety area could include:

Education and Enforcement

- Encourage education campaigns to improve the cornering skills of younger drivers
- Support campaigns on adjusting drivers' speed for different driving conditions
- Support strategic education and enforcement campaigns targeting speed and alcohol

SMS

- Maintain good road surfaces and drainage
- Improve delineation around curves, for example by providing edge lines and centre lines
- Ensure roadside areas are kept clear of solid objects

Alcohol

Over the last five years 31% of crashes on local roads were speed related.

Actions that are to be used to target this key safety area could include:

Education and Enforcement

- Continue to support drink-driving strategic enforcement campaigns.
- Continue to support the Police's risk targeted patrol planning.
- Support the use of roving roadblocks and the booze bus in the district.
- Continue to support education campaigns aimed at drink-driving.
- Encourage campaigns aimed at rural communities.
- Support host responsibility and designated driver programmes.

Wanganui District

A concern for the Wanganui District is the increase in serious injury crashes in 2003. Of particular concern on local roads are alcohol, failure to give way and loss of control.

Alcohol

Alcohol has been a contributing factor in 19% of all injury crashes on local roads in recent years, with loss of control, speed and poor handling skills being involved in a significant number of these crashes. 15-24 year olds were involved in many of the crashes. Rural road trends are above the national and "group" averages for the District as a whole (Local Roads and SH's).

Actions that are to be used to target this key safety area could include:

Education and Enforcement

- Continue to support drink-driving strategic enforcement campaigns.
- Continue to support the Police's risk targeted patrol planning.
- Support the use of roving roadblocks and the booze bus in the district.
- Continue to support education campaigns aimed at drink-driving.
- Encourage campaigns aimed at rural communities.
- Support host responsibility and designated driver programmes.
- Conduct crash studies to determine whether road improvements are needed.

SMS

- Provide consistent 'no surprises' road environments.

Loss of Control

Loss of control accounted for 55% of all injury crashes on local roads over the 5-year period, with most of the rural crashes occurring at bends. Overall in the District, for each injury crash in 2003, there were over two additional non-injury crashes. A high proportion of crash injuries were to 15-24 year olds.

Actions that are to be used to target this key safety area could include:

Education and Enforcement

- Encourage education campaigns to improve the cornering skills of younger drivers
- Support campaigns on adjusting drivers' speed for different driving conditions
- Support strategic education and enforcement campaigns targeting speed and alcohol

SMS

- Maintain good road surfaces and drainage
- Improve delineation around curves, for example by providing edge lines and centre lines
- Ensure roadside areas are kept clear of solid objects

Failure to Give Way

This factor makes up 66% of all injury accidents on local roads, with most occurring on urban roads. Failure to give way / stop is the most common contributory factor, followed by poor observation. This is a key improvement area for the Wanganui District.

Actions that are to be used to target this key safety area could include:

Education and Enforcement

- Support strategic enforcement campaigns aimed at T-junctions and crossroads.
- Support the risk targeted patrol planning of the New Zealand Police.
- Encourage education programmes to address key driver behaviour issues.

SMS

- Encourage crash reduction studies of known black spots.
- Ensure signs and markings are up to the appropriate standard.
- Encourage engineering staff and consultants to attend road safety workshops and conferences.
- Install appropriately designed islands at rural crossroads.

Appendix IV – Rangitikei Ruapehu Wanganui SMS Procedures

SMS Element Reference	Description
Planning:	SMS 1.1 Road Hierarchy
	SMS 1.2 Land use planning and regulatory controls including district plan and bylaws
Capital Works:	SMS 2.1 Road Design and Geometrics
	SMS 2.2 Structure Design
	SMS 2.3 Traffic Signal Design
	SMS 2.3 Project Safety Audits
Traffic Data:	SMS 3.1 Traffic Counting
	SMS 3.2 RAMM Data
Safety Operations:	SMS 4.1 Speed Management
	SMS 4.2 LATMS and Threshold Treatments
	SMS 4.3 Crash Reduction Studies
	SMS 4.4 Existing Road Safety Audits
	SMS 4.5 Deficiency Register and Analysis
	SMS 4.6 Road Safety Hazard Register
	SMS 4.7 Development of Minor Safety Works Programme
External Agencies:	SMS 5.1 Temporary Traffic Management (inc approval and auditing)
	SMS 5.2 Road Openings by utility and external service authorities and other departments within Council
	SMS 5.3 Cross-boundary Issues / Roads controlled by other RCA's
	SMS 5.4 Railway Crossings
User Services:	SMS 6.1 Overdimension and Overweight routes
	SMS 6.2 Road Closures (planned)
	SMS 6.3 Vehicle Crossings and Accessways
	SMS 6.4 Stock Control, Crossings and Underpasses
	SMS 6.5 Vulnerable Road Users
	SMS 6.6 Parking
Assets:	SMS 7.1 Pedestrian Crossing Facilities
	SMS 7.2 Footpaths
	SMS 7.3 Cycle Facilities
	SMS 7.4 Pavement Surface Skid Resistance
	SMS 7.5 Pavement Condition – Sealed
	SMS 7.6 Pavement Condition – Unsealed
	SMS 7.7 Traffic Control Devices
	SMS 7.8 Streetlighting
	SMS 7.9 Bridges, Culverts and Structures
	SMS 7.10 Drainage Systems

	SMS 7.11	Landscaping and Vegetation Control
	SMS 7.12	Safety Barriers
Maintenance:	SMS 8.1	Maintenance Contracts Management
	SMS 8.2	Emergency Response

Additional lists of specific District Council standards are also to be referred to, as follows:

Ruapehu

- Standards Index (internal) (included in Appendix VII) – Roading, Vegetation Control
- TNZ Specifications (held on “Folder 1” and on RDC intranet)

Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 1.1
May 2005		

Component Information

Activity Component:	Road Hierarchy
Description / Purpose:	To assign functional categories to the road network to enable standards, guidelines and controls that are appropriate to road function to be applied in a consistent manner.
Safety Issues:	Use of roads that are inappropriate (eg through traffic using local access roads) Achieving higher safety standards (eg through better lighting, capacity, separation, etc) on busier roads

Legislation, Policies, Standards and Guidelines

Legislation:	Resource Management Act Local Government Act (2002)
Policies:	RangDC District Plan RuapDC AMP WangDC District Plan
Standards:	RangDC District Plan RuapDC – na WangDC AMP
Guidelines:	Rural Road Design: Guide to the Geometric Design of Rural Roads, Austroads, 1989 Urban Road Design: Guide to the Geometric Design of Major Urban Roads, Austroads (where applicable) NZS 4404 : 2004 : Land Development and Subdivision Eng

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Planning Procedures	Hierarchy defined in District Plan, includes map form. Hierarchy consists of 4 categories – Strategic, Arterial, Collector, Local.	Hierarchy is generally defined in the District Plan – this needs to be reviewed (<i>Imp't Plan, with Land Transport NZ support</i>). Hierarchy consists of 3 categories – Arterial, Collector, Local – based on traffic volumes.	Urban network in DP, rural network defined in Rural Strategic Plan, map form. Hierarchy consists of 4 categories – State Highways, Arterial, Collector, Local
	Roading staff are consulted by Planners in preparing District Plan, and provide recommendations on safety (and other) related issues that need to be addressed.		
Development Standards	Standards are based on road function rather than traffic volume. Standards, including intersections, are controlled in District Plan, S 23.2.	LOS standard based on the hierarchy levels.	Rural strategies define ideal rural standards which are also listed in the AMP. Standards to be consistently applied (<i>Imp't Plan action</i>)
	General requirement to meet Austroads (rural) and NZS 4404 (urban) standards		
Review, Monitor & Evaluation Requirements	Review hierarchy with District Plan review or if warranted by development, land-use change or traffic demand. Roading staff have input to this process.		
		Review road hierarchy and standards following development of national guidelines (<i>Imp't Plan action</i>)	

Organisation

Primary Responsibility:	District Planners / Asset Managers
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Controlling Documents:	District Plans, Asset Management Plans
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 1.2
May 2005		

Component Information

Legislation, Policies, Standards and Guidelines

Activity Component:	Land use planning and regulatory controls including district plan and bylaws	Legislation:	Local Government Act (2002) Resource Management Act
Description / Purpose:	To establish controls on land use planning processes and changes so that impacts on traffic safety and efficiency can be minimised and / or balanced against the benefits of the change	Policies:	DC District Plans RuapDC Roads Reserve Management Policy 2003 (Working Draft) Bylaws: <ul style="list-style-type: none"> • RangDC – General Bylaw, Stock Bylaw • RuapDC – Road Reserve Management Bylaw 2003 • WangDC – General Bylaw, Transport section
Safety Issues:	Adjacent land uses can affect road safety if they are not controlled to be sympathetic to the road network. This includes access points, on street manoeuvring and parking demand and associated site specific signage, including advertising signs. (Excessive advertising can cause distraction and sign clutter detracting from important regulatory and warning signs. Other signs such as sandwich board signs on footpaths can create a hazard for pedestrians if they are inadequately controlled).	Standards:	DC District Plans NZS 4404 : 2004 : Land Development and Subdivision Eng
		Guidelines:	RTA Guide to Traffic Generating Developments RTS 3 - Guidelines for Establishing Rural Selling Places, LTSA RTS 6 - Guidelines for Visibility at Driveways, LTSA RTS 7 – Advertising Signs and Road Safety: Design and Location Guidelines, LTSA RTS 13 - Guidelines for Service Stations, LTSA Manual of Traffic Signs and Markings (MOTSAM) Guidelines for Traffic Impact Assessments, Institution of Highways and Transportation, 1994

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Planning Procedures	District Plan Issues and Objectives section requires safety to be considered. Land use activities adjoining intersections typically permitted where intersection rules are met and sight distance and driveway / access rules complied with – referred to Network Manager for checking of sight distances and review.	District Plan controls access to and from roads. District Plan includes Rules for Access, Parking, sight distance, etc.	Accessways and driveways – RTS standards over-ride District Plan provisions.

	Rangitikei District	Ruapehu District	Wanganui District
	Consent applications (subdivision and resource consents) are managed through the District Plan, roading staff / Network Manager provide comment on consents where there are safety and /or transportation effects.		
	Advertising signage is controlled in the District Plan.		
	Limited Access Roads considered at discretion of Asset Manager	Limited Access Roads not used for control purposes.	
Audit Procedures	Subdivisions / developments may require independent safety review / audit as determined by Asset Manager.		
Review, Monitor & Evaluation Requirements		Bylaws under review at present, include Traffic, Parking Restrictions, Stock Droving (<i>Imp't Plan action</i>).	
	Reviews of DP and Bylaws involve Roding staff advice and input.		

Organisation

Primary Responsibility:	Asset Managers	Controlling Documents:	District Plans
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 2.1
May 2005		

Component Information

Activity Component:	Road Design and Geometrics
Description / Purpose:	To provide design guidance for roading projects. To ensure consistency in construction standards for long term safety and cost effectiveness.
Safety Issues:	Providing "no surprises" for road users through consistent design standards. Potential for conflict between road users.

Legislation, Policies, Standards and Guidelines

Legislation:	Resource Management Act Local Government Act
Policies:	Asset Management Plans
Standards:	NZS 4404 : 2004 : Land Development and Subdivision Eng RuapDC AMP – Sect A2, Pavements
Guidelines:	Guide to Geometric Design Rural Roads, NRBNZ, 1985 Rural Road Design: Guide to the Geometric Design of Rural Roads, Austroads, 2003 Guide to Traffic Engineering Practice, Part 5 Intersections at Grade, Austroads, 1991 Guide to Traffic Engineering Practice, Part 6 Roundabouts, Austroads, 1993 Pavement Design: A Guide to the Structural Design of Road Pavements; Austroads, 1992 (plus NZ supplement November 1995) Code of Practice for Design of Urban Streets, NRB, 1975. Highway Surface Drainage – Design Guide for Highways with a Positive Collection System, National Roads Board

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Capital Works	Designs must incorporate safe pull-off areas on rural roads.	Designers to advise on standards appropriate to individual designs.	Use TNZ proforma documentation.
	Professional services for design, supervision and contract management are undertaken by consultants. Geometric and design standards are defined in the Guidelines above, and are to be specified in briefs. Deviations must be discussed with and approved by the Asset Manager.		
	Project safety audits are to be conducted as outlined in SMS 2.4.		
Review, Monitor & Evaluation Requirements			

Organisation

Primary Responsibility:	Asset Managers
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Controlling Documents:	
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Component Information

Activity Component:	Structure Design
Description / Purpose:	To ensure structures are designed and constructed to provide safety for road users
Safety Issues:	Weight and speed restrictions. Bridge end structures represent a potential hazard. Narrow approaches with limited stopping sight distance. One way structures. Retaining structures. Pedestrian walkways and overbridges.

Legislation, Policies, Standards and Guidelines

Legislation:	Resource Management Act Local Government Act
Policies:	Asset Management Plan – Bridges, Culverts
Standards:	NZS Standards and Codes for loadings, design and materials. NZ Building Code (2002) TNZ M23 Specification for Design, Manufacture & Maintenance of Guardrails. NZS 4404:2004 : Land Development and Subdivision Engineering
Guidelines:	TNZ Bridge Manual. Waterways Design: A Guide to the Hydraulic Design of Bridges, Culverts and Floodways: Austroads 1994

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Capital Works	Professional services for design, supervision and contract management by consultants. All new structures require specific design and building consent. Project safety audits are to be conducted as outlined in SMS 2.4. Design standards are defined above. Deviations must be discussed with and approved by the Asset Manager.		
Review, Monitor & Evaluation Requirements			

Organisation

Primary Responsibility:	Asset Managers	Controlling Documents:	
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 2.3
May 2005		

Component Information

Activity Component:	Traffic Signal design
Description / Purpose:	To ensure that the design of new traffic signals or the modification of existing signals, is within the applicable standards/guidelines.
Safety Issues:	To optimise effectiveness traffic signal design needs to be consistent both with current best practice and throughout the network.

Legislation, Policies, Standards and Guidelines

Legislation:	Resource Management Act Local Government Act
Policies:	
Standards:	AS/NZS Standards relating to traffic signals and components
Guidelines:	Guide to Traffic Engineering Practice, Austroads, Part 7 "Traffic Signals" Guide to Traffic Engineering Practice, Austroads Part 8 "Traffic Control Devices"

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Capital Works	na	na	Professional services for design, supervision and contract management are undertaken by consultants. Design standards are defined in the Guidelines above, and are to be specified in briefs. Deviations must be discussed with and approved by the Asset Manager.
Review, Monitor & Evaluation Requirements			

Organisation

Primary Responsibility:	Asset Managers
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Controlling Documents:	
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Component Information

Activity Component:	Project Safety Audits
Description / Purpose:	To ensure safety audits are carried out as appropriate to the scale and safety risk of capital projects.
Safety Issues:	<p>Inappropriate standards applied to design</p> <p>Potentially unsafe designs that could be easily remedied prior to construction</p> <p>Nearby features that may affect safety (but are not within the design area).</p> <p>Inconsistent design</p> <p>Hazards not identified as early as possible, where remedial action could be taken to reduce risk.</p> <p>The needs of all types of road users should be considered.</p>

Legislation, Policies, Standards and Guidelines

Legislation:	Transit NZ Act Local Government Act
Policies:	
Standards:	Transfund Project Safety Audit requirements Transit NZ Manuals and Specifications
Guidelines:	<p>Road Safety Audit, 1994, Austroads</p> <p>Rural Road Design: Guide to the Geometric Design of Rural Roads, 1989, Austroads</p> <p>Guide to Traffic Engineering Practice, Part 5 Intersections at Grade, Austroads, 1991</p> <p>Guide to Traffic Engineering Practice, Part 6 Roundabouts, Austroads, 1993</p> <p>LTSA Traffic Notes and Information Sheets</p>

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Audit Procedures		Informal process at present. Contractor provides informal feedback. Need for improved process.	
	<p>Audit procedures to follow Land Transport NZ Project Safety Audit requirements – this defines when pre-design, design and post construction phase audits are needed.</p> <p>All new internal capital works are subject to the safety audit procedure, other projects at the discretion of the asset manager.</p> <p>Minimum expectation is for a field based and desk-top review.</p> <p>Asset Manager to receive safety audit reports and recommendations. Subsequent design decisions to be recorded in writing.</p> <p>Subdivisions / developments may require independent safety review / audit as determined by Asset Manager. Safety audit findings and responses reported to DC Asset Manager prior to project sign-off and acceptance. Record on the appropriate file.</p> <p>Requirement for project audit to be included in project brief for professional services.</p> <p>All safety audits must be conducted by specifically trained safety auditors or a qualified CPEng engineer. Design certification / producer statement to be provided for all works where a safety audit is undertaken.</p>		

	Rangitikei District	Ruapehu District	Wanganui District
Review, Monitor & Evaluation Requirements	Process to be documented within each RCA (<i>Imp't Plan action</i>). Procedures for considering, responding to and acting on the findings of Project Safety Audits are to be developed. These will include a simple safety review / audit checklist for "normal" projects (including minor safety improvements), and include a post-construction audit for "major" projects. (<i>Improvement Plan</i>)		

Organisation

Primary Responsibility:	Asset Managers	Controlling Documents:	
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 3.1
May 2005		

Component Information

Activity Component:	Traffic Counting
Description / Purpose:	To monitor traffic flows throughout the network so that a better understanding of traffic demands and patterns can be obtained
Safety Issues:	Traffic flow information assists with road design and in prioritising improvements. This data is also valuable in assessing road safety risk exposure.

Legislation, Policies, Standards and Guidelines

Legislation:	
Policies:	
Standards:	
Guidelines:	"A Guide on Estimating AADT and Traffic Growth, and a Traffic Count Monitoring Programme Basis", Transit New Zealand Project Evaluation Manual, Transfund

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Operational Procedures	Annual / biannual / 3 yearly traffic counting programmes based on hierarchy and AMP needs, and include speed / axle classification counts. Programme may also be coordinated with forward programme needs, such as for Reseals and sites requiring Project Feasibility Reports. All traffic count data is recorded in RAMM, and may be used for setting and monitoring LOS in AMP. CAS crash data may be accessed and used with traffic data to investigate particular safety issues. Cycle counting not undertaken.		
Review, Monitor & Evaluation Requirements			

Organisation

Primary Responsibility:	Asset Managers	Controlling Documents:	
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 3.2
May 2005		

Component Information

Activity Component:	RAMM Data
Description / Purpose:	Collection and analysis of road asset and condition data to enable the assessment of compliance with safety related standards, and contribute to project prioritisation
Safety Issues:	Asset safety deficiencies (e.g. width, skid resistance/surface condition, signs and markings etc.) Consistency of road environment.

Legislation, Policies, Standards and Guidelines

Legislation:	Transit NZ Act
Policies:	
Standards:	PFM 6 - RAMM Road Condition Rating and Roughness Manual, Transfund
Guidelines:	PFM 7 - Local Authority RAMM Database Operation Manual, Transfund

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Operational Procedures	The following data are recorded in RAMM for all RCA's: Pavements, Footpaths, Drainage		
	Streetlighting – SLIM (RAMM) Bridges – BRIMS (RAMM)	Bridges – BRIMS (RAMM)	Most signs, but excludes Markings, EMP's and delineation. Streetlighting – SLIM (RAMM) Bridges – BRIMS (RAMM)
	Annual RAMM road asset condition rating. Annual capture of changes to asset data – new works, subdivisions, renewals, reseals, etc. RAMM data is analysed as part of the AMP and used in establishing LOS and roading strategies, including safety.		
Review, Monitor & Evaluation Requirements	Ongoing review of asset data capture and management needs, for example for safety planning purposes (<i>Imp't Plan action</i>) Monitor opportunities to enable integration of RAMM data and CAS data for safety planning (<i>Imp't Plan action</i>)		

Organisation

Primary Responsibility:	Asset Managers	Controlling Documents:	
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Component Information

Activity Component:	Speed Management
Description / Purpose:	To ensure that the posted speed limit is appropriate for the surrounding environment and development, and to manage speed so that it is consistent and appropriate to the environment.
Safety Issues:	Road side development can result in speed restrictions becoming inappropriate. Inconsistent speed limits leading to erratic driver behaviour Excessive speeds in urban areas and on rural narrow roads. Speed management and need for regular reviews near schools, especially rural.

Legislation, Policies, Standards and Guidelines

Legislation:	Land Transport Rule: Traffic Control Devices 2004 Land Transport Rule: Setting of Speed Limits 2003
Policies:	Speed limit bylaw <ul style="list-style-type: none"> • RangDC – Speed Limit Bylaw 2004 • RuapDC – Setting of Speed Limits Bylaw (consult'n, 4/05) • WangDC – Speed Limits Bylaw 2004/1, to 2005/1
Standards:	
Guidelines:	RTS 15: Guidelines for urban-rural speed thresholds Code of Practice for Temporary Traffic Management (COPTTM), TNZ Guidelines for Urban Safety Management, IHT, 1990.

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Operational Procedures	Controlled by Bylaw, including applications for specific restrictions such as 40km/hr school speed zones.		
Capital Works	Speed zones management – demand for special speed limits (eg 30km/hr), such as schools, settlements “at the end of the road”, are to be monitored, and where appropriate “voluntary slow speed zones” will be trialed. Mandatory slow speed zones to be complemented with enforcement. Speed surveys may be undertaken to assess potential speed control problem areas.	Speed zones anticipated in the District – 50 / 70 / 100 km/hr. Need to formalise process for curve advisory speed signage and use of 100kph sign on poor quality rural roads (<i>Imp't plan action</i>).	Speed and crash data are monitored annually, and a comprehensive review undertaken periodically.
	Temporary speed restrictions are controlled by the Asset Manager or delegated to the Network Manager / Consultant.		
	Identified speed problem sites are fed into the safety planning process. This may result in the development of specific capital works or minor safety improvements.		

	Rangitikei District	Ruapehu District	Wanganui District
Review, Monitor & Evaluation Requirements	Refer Setting of Speed Limits Rule 2003 – results reviewed by Land Transport NZ		

Organisation

Primary Responsibility:	Asset Managers or by delegation to Network Managers	Controlling Documents:	Land Transport Rule:Setting of Speed Limits 2003
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Component Information

Activity Component:	LATMS and Threshold Treatments
Description / Purpose:	Features built into roads to control speed or the travel path of vehicles, cyclists and pedestrians using them. Includes raised thresholds / platforms / kerb extensions
Safety Issues:	Road safety in residential areas. Local roads used as collectors or arterials by some drivers, usually to avoid traffic signals. Placement and visibility of devices

Legislation, Policies, Standards and Guidelines

Legislation:	Local Government Act (2002) Transport Act (1962) Transit NZ Act (1989) Land Transport Rule: Traffic Control Devices 2004
Policies:	
Standards:	
Guidelines:	RTS 15 – Guidelines for urban-rural speed thresholds, LTSA. Guide to Traffic Engineering Practice, Part 10, Local Area Traffic Management, Austroads, 2004 A Land Transport NZ guideline on the use of traffic calming and speed management is currently being developed. Guidelines for Urban Safety Management, IHT, 1990.

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Capital Works	Case-by-case basis. Physical obstructions not typically used (eg speed humps). Recognise specific needs for slow speed environment when designing roading projects – this may result in the addition of narrowings, raised areas, as has been achieved in the Marton CBD area. Typically, this will be considered in close proximity to pedestrian priority areas.	The use of physical measures for controlling speed is to be considered on a case-by-case basis. SH's can be an issue.	Historically, the implementation of physical control devices was reactive and ad-hoc. The process now involves area based studies and strategies (see SMS 4.5), from which specific works may be systematically identified and programmed. Propose to develop a framework and approach, including a strategy for implementation for Council consideration (<i>Imp't Plan action</i>).
Review, Monitor & Evaluation Requirements			

Organisation

Primary Responsibility:	Asset Managers	Controlling Documents:	
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 4.3
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Component Information

Legislation, Policies, Standards and Guidelines

Activity Component:	Crash Reduction Studies	Legislation:	
Description / Purpose:	Detailed studies of crash site “black spots” to identify improvement options, primarily focusing on low cost solutions to remedy engineering deficiencies	Policies:	
Safety Issues:	Potential for crash numbers to continue unabated or to increase at identified crash sites. Hazards need to be identified as early as possible so remedial works to reduce risk exposure can be carried out. Some sites may become future “black spots” – ie crash migration	Standards:	Austrroads Ch 4 Treatment of Crash Locations (also refer NZ supplement by LTSA) Accident Investigation System Manual, 1994, LTSA Accident Investigation Procedures, 1991, TNZ, MoT Accident Investigation Monitoring System - Coding Manual, 1994, MoT
		Guidelines:	Policy Guidelines for Traffic Accident Reduction and Prevention, 1990, TNZ, MoT Standard Operating Procedure for CRS Monitoring Final Ver.1 November 2003.

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Operational Procedures	CRS completed several years ago. Ongoing involvement with SH CRS's. Crash sites are dispersed throughout the District, there are no real “black spots”, although intersections are a particular focus – there are a small number where there may be several crashes / 5 years.	CRS has not been a routine activity to date. Study to be completed in 2005. Review and formalise the implementation of CRS (<i>Imp't Plan action</i>).	CRS completed in 2003. Ongoing, frequency 3 years. However, these studies are beginning to become less effective as issues are progressively being dealt with – need to review CRS process (<i>Imp't Plan action</i>). Decision on future CRS will be based on changes in crash trends, results from previous CRS, and outputs from other (eg area) studies.
	Rural local roads CRS are to be incorporated with State Highway studies wherever possible, and in particular in close proximity to intersections with SHs.		
	RCA's to identify need for, timing and base frequency of CRS - if significant increase in crash rate occurs this will prompt greater frequency. Land Transport NZ engineering staff to be involved in all CRS's. Black spots, grey spots and significant changes in crash data are identified in annual Land Transport NZ Road Safety Report. This information is considered along with the outputs of the CRS in the annual SAP process, safety planning, and deficiency analysis. Section 3 of the SMS illustrates how these processes are integrated in identifying safety treatments for prioritisation and programming.		
Routine Maintenance	Actions involving maintenance activity arising from the CRS process are to be implemented through maintenance contracts.		

	Rangitikei District	Ruapehu District	Wanganui District
Capital Works	Identified sites for capital expenditure treatment are fed into the safety planning process. This may result in the development of specific capital works or minor safety improvements. Completed site treatments documented by Network Manager.		
Review, Monitor & Evaluation Requirements	Monitoring system for CRS to be enhanced to allow assessment of benefits from site treatments: <ul style="list-style-type: none"> RCA to notify Land Transport NZ of sites identified in CRS's that have been treated, who may undertake independent review of the effectiveness of the treatments. Land Transport NZ to undertake post-construction monitoring and reporting of the effectiveness of measures in terms of crash rates through annual Road Safety Reports. 		

Organisation

Primary Responsibility:	Network Managers	Controlling Documents:	
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 4.4
May 2005		

Component Information

Activity Component:	Existing Road Safety Audits
Description / Purpose:	To ensure that existing roads are safety audited for consistency and compliance with current safety standards
Safety Issues:	Inappropriate / inconsistent standards on existing roads Potentially unsafe roads or features that can be readily remedied Nearby features that may adversely affect safety. Achievement of a "no surprises" environment.

Legislation, Policies, Standards and Guidelines

Legislation:	
Policies:	
Standards:	
Guidelines:	Guidelines for Auditing Existing Roads, 2000, Transfund Rural Road Design: Guide to the Geometric Design of Rural Roads, 1989, Austroads Guide to Traffic Engineering Practice (various Parts), Austroads LTSA Traffic Notes and Information Sheets

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Inspection and Audit Procedures	<p>Network is mostly low volume roads and experience shows that there is often little change from year to year.</p> <p>Audits are undertaken periodically with Land Transport NZ, and an audit was undertaken recently. Policy and practice need to be formalised.</p> <p>Annual inspection of road network assets is required of the Network Manager, and this includes night-time inspections. This reviews all aspects including safety, but is to be strengthened for safety (see below).</p> <p>AMP highlights a number of "risk aspects" to be focussed on, including Intersections, Alignment, Signs & Markings (eg legibility to be checked when asset register is updated).</p> <p>Routine liaison ongoing with Police.</p>	<p>Network is mostly low volume roads.</p> <p>Network Manager is required to drive over the network on an annual basis, and this includes night-time inspections – this reviews all network aspects including safety.</p> <p>However, there is no structured safety inspection / network auditing process at present and the need for this has been signalled in the AMP.</p> <p>(Most recent audit undertaken several years ago).</p>	<p>Routine inspections are carried out under various maintenance contracts, these include:</p> <ul style="list-style-type: none"> • Signs visibility – a particular concern • Performance based LOS for pavements and lighting • Footpaths annually • Markings and RPM's 6 monthly <p>Informal night-time inspections take place, although these are not yet formally programmed.</p> <p>Need to focus in particular on delineation in rural areas (<i>Imp't Plan action</i>).</p> <p>New professional services contract from 1 July 2005 to include this activity.</p>

	Rangitikei District	Ruapehu District	Wanganui District
	Land Transport NZ support for developing audit procedures may be available on request. Note that specialist teams are available throughout NZ (eg traffic signals).		
Emergency Maintenance	Immediate safety items referred to appropriate contractor for urgent response.		
Routine Maintenance	Items requiring routine response are to be implemented through monthly maintenance programmes.		
Capital Works	Identified needs for capital expenditure treatment are to be fed into the deficiency register and safety planning process. This may result in the development of specific capital works or minor safety improvements.		
Review, Monitor & Evaluation Requirements	Systematise existing roads safety inspection and audit processes suitable for local roads networks. Use Transfund Guidelines for Auditing Existing Roads as basis for implementation. (<i>Improvement Plan</i>). This will define the expertise required, standards and frequency of inspections and audits, and procedures for responding to and acting on the findings.		

Organisation

Primary Responsibility:	Network Managers	Controlling Documents:	Land Transport NZ Guidelines
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 4.5
May 2005		

Component Information

Activity Component:	Deficiency Register and Analysis
Description / Purpose:	The RCA needs to be aware of the specific safety deficiencies within its road network, so that improvements can be programmed. Deficiencies need to be systematically recorded and ranked for remedial action.
Safety Issues:	Development of future safety problems / crash sites.

Legislation, Policies, Standards and Guidelines

Legislation:	
Policies:	
Standards:	
Guidelines:	

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Operational Practice	Deficiencies are identified in the following ways: <ul style="list-style-type: none"> • Feedback from the Road Safety Coordinator • Submissions on DLTP or Annual Plan • Service requests which are logged, categorised and monitored – may be received by Council or Network Manager • Contractors (eg monthly reports, advice on specific sites) – proactive approach • Land Transport NZ annual Road Safety reports • Routine inspections and road safety audits • Specific studies (WangDC – see below) 		
	Actions which have been taken or are programmed, crash record, and road environment factors are to be recorded. Specific lists maintained for: <ul style="list-style-type: none"> • Sight distances • Benching deficiencies • Poor alignment • Other candidates for Minor Safety Imp'ts 	Forward list of potential projects maintained. Sites inspected and fed into Minor Safety Works programme. Evaluated and prioritised using multiple criteria.	Service request issues are monitored and reported on by Customer Service staff. Contractor has electronic access (Comms Web) to logged deficiencies. Strategic studies (eg Tokomaru East, T.W., and Koatanui Roads completed in Jan 04). Two further studies programmed for 04/05. Identify deficiencies such as vegetation, geometrics, and benching, from which lists of works needed for safety improvement are developed. Safety studies (eg speed) are undertaken in urban areas with known/potential problems (eg Laird Park area which has a high crash rate).

	Rangitikei District	Ruapehu District	Wanganui District
	<p>Record all deficiencies on each DC database (to be developed - <i>Imp't Plan action</i>), assess remedial priorities based on risk exposure and other appropriate criteria, programme as appropriate in Maintenance, Minor Safety Improvements, or Capital Programme.</p> <p>Safety deficiencies requiring major work (eg poor alignment of rural roads) are prioritised using economic analysis. Project status is to be identified for the FWP (eg programmed, pending, not yet justified, etc).</p> <p>A proactive approach is to be taken to identifying safety deficiencies where changes to the network (such as forestry) are anticipated, leading to the identification and prioritising of safety improvement works.</p>		
Review, Monitor & Evaluation Requirements			

Organisation

Primary Responsibility:	Network Managers	Controlling Documents:	
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 4.6
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Component Information

Legislation, Policies, Standards and Guidelines

Activity Component:	Road Safety Hazard Register	Legislation:	
Description / Purpose:	Recurring, intermittent safety issues that may not be able to be remedied permanently – these are different to the “deficiency register”. The register enables an RCA to identify, eliminate or manage all road safety hazards in a risk prioritised manner.	Policies:	
Safety Issues:	Any safety hazard that may occur in the road reserve has the potential to increase the number and/or severity of crashes.	Standards:	
		Guidelines:	Engineering Lifelines reports

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Inspection / Monitoring	Taihape-Napier Road is affected by snow and ice. There are no particular sites subject to regular flooding.	List of sites recorded in “Flood Damage Report”. Maintenance Contractor is required to observe and monitor hazards such as ice and snow. Specific risks which are known and advised to the contractor include: <ul style="list-style-type: none"> • Ohakune Mountain Road • Steep inclines where frost is prevalent. Sites with overhanging trees or embankments – negotiate with landowners to rectify, many of these are DOC sites.	Urban flooding. Problem sites (eg sump blockages) are listed in the Maintenance Contract. Wanganui River is also a flood risk. Four rural roads sites identified for flooding risk. Rural slips and washouts are the most common hazards. A list is maintained on Excel spreadsheet, and this has been used as a basis for identifying works. Feb 2004 storm has added significantly to this list.
Emergency Maintenance	Roads which are expected to be closed because of natural hazard events are listed in the Maintenance Contract.	Maintenance Contractor required to take action to control ice and snow.	Maintenance Contractor.
Routine Maintenance	Refer Maintenance contracts		
Review, Monitor & Evaluation Requirements			

Organisation

Primary Responsibility:	Network Managers	Controlling Documents:	
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 4.7
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Component Information

Legislation, Policies, Standards and Guidelines

Activity Component:	Development of Minor Safety Works Programme	Legislation:	Local Government Act 2002 Transit New Zealand Act
Description / Purpose:	The preparation of an annual list of small scale projects which qualify (within a "cap") for Transfund financial assistance, with expected road safety benefits.	Policies:	
Safety Issues:	Any road engineering problem with a safety concern	Standards:	
		Guidelines:	Land Transport NZ programme guidelines

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Inspection / Monitoring			
Emergency Maintenance			
Routine Maintenance			
Capital Works	<p>Works up to a limit of \$150k can be included in the MSW programme, others must be assessed using B/C and included in FWP.</p> <p>Prepare annual list of candidates from following sources – Land Transport NZ road safety report, deficiencies database, complaints, crash reduction studies, speed measurements, inspections, reviews of compliance of traffic facilities with standards (eg pedestrian crossings).</p> <p>Review crash data, traffic use and composition, potential for conflicts between users (eg cyclists / motor vehicles), community concerns. Identify projects which fit the criteria for Minor Safety Improvements (others to be actioned through maintenance contracts or CAPEX process). Prioritise the list of candidates and include in the annual plan and budget process.</p>		
Review, Monitor & Evaluation Requirements	Transfund recommendations on prioritising Minor Safety Improvements projects to be considered following their recent survey and publication of report (<i>Improvement Plan action</i>).		

Organisation

Primary Responsibility:	Asset Managers	Controlling Documents:	
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Component Information

Activity Component:	Temporary Traffic Management (inc approval and auditing)
Description / Purpose:	Standards are needed to ensure the safe and efficient passage of traffic through work-sites on the road, and a safe environment is needed for those working on the road. The process requires the approval and auditing of a specific Traffic Management Plan for the works.
Safety Issues:	The existence of a worksite on any road is a hazard which alters the normal operating condition of a road, and must be managed to eliminate, isolate or minimise it. Traffic travelling past or through works sites is a danger to workmen, particularly if they are working outside the work zone. Machinery operating on works sites is a danger to the travelling public. Drivers travelling at speed over rough, uneven surfaces or loose gravel can lose control of their vehicles. Restriction of traffic flow at a works site can cause congestion and long delays. Signs/directions need to be clear and comply with standards. Provision for pedestrians/cyclists.

Legislation, Policies, Standards and Guidelines

Legislation:	Health and Safety In Employment Act 1993 Land Transport Rule: Traffic Control Devices 2004 Local Government Act
Policies:	DC Occupational Health & Safety Policy RangDC – no written policy RuapDC Road Reserves Management Policy (s9, 10, 11)
Standards:	OSH documents Contractors Health and Safety procedures Transit New Zealand COPTTM (and Low Volume Roads supplement) G1: 1995 Specification for Temporary Traffic Control.
Guidelines:	Transfund Guidelines for Audit of Temporary Traffic Management TNZ handbook “Working on the Road” SNZ HB 2002:2003 Code of Practice for Working in the Road (NZUAG Roadshare).

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Operational Procedures	COPTTM standard and Low Volume Roads supplement to be generally applied. Exceptions and specific practices for each RCA are noted below. All TMP approvals must be given by STMS qualified staff.		
	Network management team (GHD) has delegated authority to receive, review and approve TMP's, including those for utility works on road reserve. Problems or concerns to be referred to GHD for action.	All TMP's approved by Road Asset Manager. STMS training required for key RuapDC and GHD staff. Code of Practice defines local variations as agreed by Ruapehu, Waitomo and Otorohanga DC's. Generic utility TMP's reviewed annually by Asset Manager, similarly for Maintenance Contracts.	Network management team (Opus) STMS qualified personnel must approve, otherwise dealt with by WDC. Rural unsealed roads (typically with traffic volumes < 100 VPD) – Working on the Road is to be applied. Narrow rural roads where space is limited and where cones / traffic control cannot be implemented require specific provision – warning signage. (Rural category groups 3,4,5, <100 VPD) Promote education of the industry to improve overall compliance. Residents advised by letterbox drop of road closures.
Events on Road Reserve	All events must have TMP and follow the Road Closure Process. Maintenance contractor may lay out sites for events.		
Routine Maintenance and Capital Works	Maintenance contracts covered by generic TMP, personnel must have appropriate STMS safety qualifications. All capital works must have specific TMP, and STMS qualified staff on site at all times.		
Audit Procedures	GHD monitors all contracts during construction phase, and maintains record of site visits on file.	Asset Manager samples and audits sites.	Opus staff monitor urban and rural contract work sites. Also monitor sites being managed by other agencies when carrying out other duties.
	Engineer to the Contract is responsible for monitoring compliance with the TMP, and undertaking audits as documented in the contract. If there is no TMP, or compliance is unsatisfactory, or a significant potential safety issue exists, then the procedure is to request remedial action (may be immediate if warranted), issue a written notice, and if necessary issue a stop-work notice. All site activity non-compliances to be notified and recorded along with the response actions taken by the contractor. Compliance issues may be communicated by Council staff, consultants, contractors and the public.		
Review, Monitor & Evaluation Requirements	Monitor the level of compliance with the above procedures on a regular basis, and implement process improvements where necessary. Review and improve TTM audit procedures for work being managed by other agencies.		

Organisation

Primary Responsibility:	Network Managers	Controlling Documents:	Transit NZ Code of Practice for Temporary Traffic Management, 2 nd Edition Oct 2002 (inc low volume roads supplement) Working on the Road.
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 5.2
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Component Information

Legislation, Policies, Standards and Guidelines

Activity Component:	Road Openings by utility and external service authorities and other departments within Council	Legislation:	Local Government Act (2002) Transport Act (1962) Land Transport Rule: Traffic Control Devices 2004 Electricity Act Telecommunications Act
Description / Purpose:	<p>RCA's need to exhibit some control over others who work on the road. This can only be effective when the RCA knows who is working on the road, and where and when – eg using an openings register system.</p> <p>Controls are needed to ensure the safety of the utility / service provider and the public, and to ensure that reinstatement complies with Engineering Standards.</p> <p>These include requirements for Traffic Management Plans and appropriate temporary traffic control.</p> <p>Road openings are also undertaken by internal utility units – water, sewerage, and stormwater. It is possible to improve internal controls through a “service level agreement”.</p> <p>Final location of utility covers / trenches can be a safety hazard in wheel tracks</p> <p>Control of smaller work sites, such as driveways, builders, etc.</p> <p>Restoration in rural areas.</p> <p>Not receiving Road Opening Notices in advance, particularly for maintenance and emergency works.</p> <p>Possible inclusion of trees in RON process (eg Rotorua).</p>	Policies:	DC District Plan DC Street Opening Policy RuapDC Road Reserves Management Policy (s9, 10, 11) RuapDC Road Reserve Bylaw (Opening of the Road).
Safety Issues:	As for Temporary Traffic Control On carriageway vs off carriageway have different levels of control requirements.	Standards:	DC Engineering Standards SNZ HB 2002:2003 Code of Practice for Working in the Road (NZUAG Roadshare). Transit NZ COPTTM
		Guidelines:	Network Utilities Within the Road Corridor: The Role of the Resource Management Act: A Guide to Best Practice (NZUAG Roadshare)

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Operational Procedures	<p>Street Opening Notice process (refer Policy Manual), which includes requirement for TMP (refer also SMS 5.1 above). Network Manager investigates, processes and advises Council on conditions.</p> <p>Final inspection undertaken by RDC. Sealing carried out by RDC for both internal and external utility services.</p>	<p>Operations are controlled by the Roads Reserve Management Policy, this includes a requirement to lodge a Road Opening Notice ("Operating on the Road" form). New utility connections (water and wastewater) are to be undertaken by United Water, private contractors are not permitted to do this work.</p>	<p>Road Opening Notice Procedure to follow NZUAG Roadshare standard. System to be improved to meet NZ standard practice – to provide a formal record of all road openings, with information captured on location, timing, responsibility, etc. This will require confirmation of resource to control <i>(Imp't Plan action)</i></p>
Audit Requirement	All Utilities to be audited and are required to comply with Street / Road Opening Notice conditions.		
Review, Monitor & Evaluation Requirements	Coordination meetings with utilities to ensure TTM requirements are recognised and implemented <i>(Imp't Plan action)</i> .		

Organisation

Primary Responsibility:	Network Managers	Controlling Documents:	
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 5.3
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Component Information

Legislation, Policies, Standards and Guidelines

Activity Component:	Cross Boundary Issues/Roads controlled by other RCA's	Legislation:	
Description / Purpose:	To ensure that there is effective cooperation to deal with adjacent RCA's that have common boundaries.	Policies:	
Safety Issues:	Different standards applying on cross-boundary roads could present "surprises" to motorists	Standards:	
		Guidelines:	

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Operational Procedures	Quarterly coordination meetings with neighbouring RCA's (Ruapehu, Wanganui, Manawatu)	Interfaces with Waitomo, New Plymouth, South Taranaki, Wanganui, Taupo and Rangiteiki Districts. DOC – The Bruce Road Electricity generators – roads to power generation sites Local RCA coordinating groups, including TNZ – to the south and the north.	Formal regular meetings are held with Transit and neighbouring RCA's (South Taranaki, Stratford, New Plymouth, Ruapehu, Rangitikei).
	Regular and ongoing liaison with Transit NZ on SH / Local Roads interface issues.		
Routine Maintenance	Boundary agreements in place for maintenance of roads and bridges, plant / resources may be shared as appropriate. Common standards on cross-boundary roads to be maintained.		
Capital Works	Joint projects by agreement and appropriate cost sharing.		
Review, Monitor & Evaluation Requirements			

Organisation

Primary Responsibility:	Asset Managers	Controlling Documents:	
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 5.4
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Component Information

Legislation, Policies, Standards and Guidelines

Activity Component:	Railway Crossings	Legislation:	Local Government Act Transit NZ Act Transport Act (1962) Railway Safety and Corridor Management Act, 1992 Land Transport Rule: Traffic Control Devices 2004
Description / Purpose:	Ensuring that the rail operator maintains and upgrades rail crossings to a safe and acceptable standard for road users, and that appropriate signage is in place.	Policies:	
Safety Issues:	Potential for serious crashes involving trains and motor vehicles. Insufficient stacking length for truck and trailer units under certain roading / side road / railway layouts. Poor condition of railway crossings, lack of maintenance by rail authority, and perceived lack of good understanding of safety conflicts at rail crossings. Low level of communication between RCA, TrackCo and contractors, and low responsiveness.	Standards:	RTS 10: Road Signs and Markings for Railway Level Crossings
		Guidelines:	

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Inspection / Monitoring	RDC monitors sight distance and general quality of crossings and advises Transrail of concerns.	Currently, not a crash problem, however proximity of some local road crossings to SH's is a potential concern and must be monitored.	
	Communication with TrackCo is currently ad hoc, and requests for response have been poor. Protocols / formal meetings required. Requirements are identified by TrackCo and cost sharing agreements for maintenance apply.		
	Regular joint inspection and communication regime required between RCA's and rail authorities (operator and infrastructure management) so that both the road and rail perspectives can be identified (minimum annual). Communication protocol needs to be improved at national level (<i>Imp't Plan action</i>). (Land Transport NZ commencing joint audits with TrackCo, and can also provide support to RCA's).		
Routine Maintenance	Maintenance needs to be identified and communicated to rail authority prior to undertaking work. Maintain contacts with local rail contractors.		
Review, Monitor & Evaluation Requirements			

Organisation

Primary Responsibility:	Network Managers
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Controlling Documents:	
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Component Information
Legislation, Policies, Standards and Guidelines

Activity Component:	Overdimension and Overweight Routes	Legislation:	Heavy Motor Vehicle Regulations 1974
Description / Purpose:	To ensure the safe passage of loads over structures and on the network, and to minimise potential damage and disruption to roading assets from overweight and overdimension vehicles.	Policies:	
Safety Issues:	Overweight loads can damage the carriageway and major structures, eg bridges, culverts. Permits are often not obtained for over-weight vehicles with a resulting lack of control of routes being used. Large vehicles obstruct traffic flow and visibility. Oversize loads can damage signs, traffic facilities and street furniture. Information / applications not being received from the transport industry.	Standards:	Transit New Zealand Overweight Permit Manual Transit New Zealand Bridge Inspection and Maintenance Manual
		Guidelines:	

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Operational Procedures	Routes identified for over-dimension and over-weight vehicles.	Maps of District show available over-weight routes. Maps and documented procedure available to applicants.	Daily list of overwidth and overweight permits is provided to Opus by Transit.
	Network Managers manage process and issue overweight permits.		
	Over dimension permits are issued by the Palmerston North Land Transport NZ office, who will also provide lists of approved routes on a regular basis.		
	Compliance on SH's is enforced by the Police.		
Review, Monitor & Evaluation Requirements			Over-weight permit application process to be reviewed to ensure higher applications rate (<i>Imp't Plan action</i>)

Organisation

Primary Responsibility:	Network Managers	Controlling Documents:	
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 6.2
May 2005		

Component Information

Activity Component:	Road Closures (Planned)
Description / Purpose:	To provide effective public consultation procedures for the temporary closure of roads. To enable the holding of a public or sporting event. To enable the reconstruction of a road or facility.
Safety Issues:	Potential conflict and confusion to road users. Adequacy of signage for detour route

Legislation, Policies, Standards and Guidelines

Legislation:	Transport Act Land Transport Rule: Traffic Control Devices 2004 Resource Management Act Local Government Act
Policies:	RuapDC – Roads Reserve Management Policy 2003 (s18,19) RuapDC – Road Reserve Bylaw (Operating on the Road)
Standards:	DC District Plan MOTSAM Part I
Guidelines:	TNZ COPTTM

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Operational Procedures	Procedure documented in Network Management Contract.	Temporary Road Closure Application form documents procedures and requirements.	
	Follow road closure permitting process as defined in legislation – includes advertising and 42 days notice time. All events on road reserve must be approved by RCA. Event organisers to provide adequate TMP (refer also SMS 5.1), application must be signed off by STMS qualified personnel. Owner of event insurance policy to be advised and copy of TMP provided. Network Manager to provide advice where requested, Maintenance Contractor may undertake set-up on the day.		
Audit Requirement	Refer SMS 5.1. Events to be monitored for compliance with conditions.		
Review, Monitor & Evaluation Requirements			

Organisation

Primary Responsibility:	Network Managers / Regulatory departments	Controlling Documents:	
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 6.3
May 2005		

Component Information

Activity Component:	Vehicle Crossings and Accessways
Description / Purpose:	To control the provision of safe, convenient and efficient property access, so that new and existing crossing places are formed to an appropriate standard and in the appropriate location.
Safety Issues:	Use of inadequate vehicle crossings and accessways (urban and rural) may pose safety hazards to other users. Design to meet vehicle turning and vehicle clearance requirements. Location/alignment at intersections. Poor visibility. Existing crossings can be a safety concern. Poorly located crossings (rural in particular).

Legislation, Policies, Standards and Guidelines

Legislation:	
Policies:	DC District Plans RuapDC – Roads Reserve Management Policy 2003 (s12, 31) RuapDC – Road Reserve Bylaw (Opening the Road) WangDC – District Bylaw Part 8 Streets
Standards:	NZS 4404 : 2004 : Land Development and Subdivision Engineering DC District Plans NZS 4121:2001 : Design for Access and Mobility: Buildings and Associated Facilities AS/NZS 3661.2:1994 : Guide to reduction of slip hazards
Guidelines:	LTSA RTS 6 - Guidelines for Visibility at Driveways Austroads Guide to Traffic Engineering Practice: Part 5 Intersections at Grade

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Operational Practices	Standards defined in s23.1 of District Plan. All applications are referred to Network Manager (GHD). Process controls the location of all crossings and access points. Standards checked following construction by contractor. Action to be taken on illegally installed crossings, particularly if there is non-compliance with standards or location requirements (eg sight distance).	Applications must come through resource or building consent process. Engineering standards for construction including size and layout are defined. RRMP s 31 defines construction and maintenance responsibilities – property owner's expense. Design criteria defined in s12 of the RRMP. Rural crossings to be monitored closely for non-compliance, and DP provisions enforced.	Application required (Street Opening Permit) for all installations – to Environmental Services (WDC), with input sought from Roding. Applications may be stand-alone or part of consent application (eg for re-development). Compliance with District Plan (eg spacings) and standard drawings checked, however need to also check for consistency with road environment (eg markings, features). Monitoring for illegally installed crossings.
Review, Monitor & Evaluation Requirements			

Organisation

Primary Responsibility:	Network Managers	Controlling Documents:	District Plans
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 6.4
May 2005		

Component Information

Legislation, Policies, Standards and Guidelines

Activity Component:	Stock Control, Crossings and Underpasses	Legislation:	Local Government Act (2002) Transport Act (1962) Land Transport Rule: Traffic Control Devices 2004 Transit New Zealand Act Building Act
Description / Purpose:	To prevent uncontrolled interaction between stock and other road users. This requires processes to manage or separate stock movements from traffic (eg stock crossing points, stock underpasses)	Policies:	RangDC – Stock Droving and Grazing Bylaw 2001 RuapDC – Roads Reserve Management Policy 2003 (s6, 7, 14) RuapDC – Road Reserve Bylaw (Stock Droving) WangDC – Bylaw
Safety Issues:	Lack of control of stock movement resulting in the potential for crashes involving stock being driven along the road or across the road.	Standards:	DC District Plans NZ Building Code (2002)
		Guidelines:	Transit NZ COPTTM Transit NZ Stock Underpass Procedures Manual 2001 Transfund NZ Programme and Funding Manual: clause 7.4.20 Stock Underpasses. Culvert Manufacturer's Guidelines for Design and Installation Best Practice Guidelines on Stock Crossings (draft), RCA's Forum

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Operational Procedures	Bylaw to control stock droving and at grade stock crossing points managed by Environmental Services/ regulatory department.	Requirements in Bylaw and RRM Policy for traffic management procedures and signage, visibility, cleaning, formation of stock crossing points, stock droving. Grazing of the road verge is controlled through the RRM Policy (s 14).	Bylaw to control stock droving and at grade stock crossing points managed by Environmental Services/ regulatory department.
	Formal application required for stock crossing points, conditions apply. TMP must meet farmers' H&S requirements under OSH.		
Inspection / Monitoring	Compliance monitoring and enforcement undertaken by regulatory department. This may involve reporting of significant non-compliances to OSH.		

	Rangitikei District	Ruapehu District	Wanganui District
Capital Works		Resource consent required for construction.	
	<p>Underpasses are encouraged, particularly where there is the potential for safety conflicts with traffic. Licence to occupy road space required prior to construction commencing. Council engineering standards must be complied with. Producer statements to be provided by structural designer of underpass. Maintenance of underpasses is the responsibility of the land owner – condition to be included on licence to occupy. Generally follow guidelines on stock crossings being developed by the RCAs Forum. Financial assistance from Land Transport NZ programme (eg capital / minor safety), plus Council grant where applicable (eg RangDC \$5,000 grant)</p>		
Audit Requirement			
Review, Monitor & Evaluation Requirements			

Organisation

Primary Responsibility:	Network Managers	Controlling Documents:	RuapDC – Roads Reserve Management Policy Transit NZ COP for TTM
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 6.5
May 2005		

Component Information

Activity Component:	Vulnerable Road Users
Description / Purpose:	Vulnerable road users include those with special needs but whose potential presence or use of the network needs to be considered and evaluated in any project. They include children, the elderly, handicapped, or impaired people.
Safety Issues:	Potential for injuries – which may or may not involve motor vehicles

Legislation, Policies, Standards and Guidelines

Legislation:	Local Government Act (2002) Transport Act (1962) Land Transport Rule: Traffic Control Devices 2004
Policies:	
Standards:	DC District Plan
Guidelines:	Guide to Traffic Engineering Practice, Part 13: Pedestrians; Austroads RTS 14: Guidelines for Facilities for Blind and Vision-Impaired Pedestrians (2003), LTSA

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Operational Procedures	<p>Formal consultation is undertaken as part of the LTCCP process.</p> <p>Ongoing feedback/submissions are received from groups such as the disabled, with reactive response.</p> <p>Schools, bus stops, and bus waiting areas (esp rural areas) are monitored – eg safe stopping, sight distance requirements.</p> <p>Encouragement approach to passenger transport users.</p> <p>Liaison with school bus companies.</p>	<p>Reactive, case-by-case approach.</p>	<p>Cycling Strategy (May 2003) in place and to be reviewed periodically.</p> <p>Includes development of on-road and off-road cycle routes.</p> <p>Capture safety concerns using public complaints and feedback from community groups, focus groups, elderly, disabled groups, etc.</p> <p>Also receive regular feedback from Road Safety Coordinator, and participate in monthly Coordinating Committee meetings.</p> <p>Input concerns into safety planning process, leading to maintenance / minor safety works programming.</p> <p>Also include in Urban Strategy Studies, LATMS designs, liaison with Schools process.</p> <p>Develop initiatives such as Walking School Bus.</p>

	Rangitikei District	Ruapehu District	Wanganui District
Routine Maintenance			
Capital Works	<p>Specific needs to be considered during normal project design process.</p> <p>Kerb cut-downs provided for mobility scooters / wheelchairs on a reactive basis.</p>	<p>There is a need for more in-depth consideration and assessment of vulnerable road users' needs in design.</p> <p>Increased emphasis to be considered during normal project design process, and briefs to designers to be specific.</p>	<p>Standards defined in Cycle Strategy.</p> <p>Consider needs of vulnerable road users in all new designs (eg as defined in Cycle Strategy).</p> <p>Undertake implementation of cycleway network development as defined in the Cycling Strategy.</p> <p>Ensure new subdivisions and footpath programmes include pram crossings – implement under MSW.</p> <p>Provide tactile crossing facilities for new / upgraded traffic signals, and sound for Barnes dance crossings.</p>
Review, Monitor & Evaluation Requirements			

Organisation

Primary Responsibility:	Asset Managers	Controlling Documents:	
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Component Information

Activity Component:	Parking
Description / Purpose:	To control and manage parking facilities so that drivers can park their vehicles in safety while they let down or pick up passengers or leave their vehicles unattended.
Safety Issues:	<p>Parking on street can restrict visibility, egress and the flow of traffic, eg vehicles parked at intersections restrict sight distance</p> <p>Conflict between cyclists and motorists opening car doors, or reversing out of angle car-parks.</p> <p>Vehicles stopping in the traffic stream cause congestion and potential for collisions.</p> <p>Pedestrians stepping out from between parked vehicles are difficult for drivers to see.</p>

Legislation, Policies, Standards and Guidelines

Legislation:	Land Transport Rule: Traffic Control Devices 2004 Transport Act 1962 Local Government Act 2002
Policies:	RangDC - RuapDC – Traffic Bylaw WangDC – District Bylaw Part 23 Traffic
Standards:	MOTSAM Parts I and II District Plan Parking Bylaw
Guidelines:	Guide to Traffic Engineering Practice Part 11 : Parking, NAASRA NZS 4404 : 2004 : Land Development and Subdivision Eng AS/NZS 2890.1:2004 : Parking facilities - Off-street car parking

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Operational Procedures	On-site parking controlled through District Plan. On-street parking controlled through bylaw, enforcement by regulatory departments. Provide education about parking safety where necessary.		
Inspection / Monitoring			
Review, Monitor & Evaluation Requirements			

Organisation

Primary Responsibility:	Network Managers	Controlling Documents:	
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 7.1
May 2005		

Component Information

Legislation, Policies, Standards and Guidelines

Activity Component:	Pedestrian Crossing Facilities	Legislation:	Land Transport Rule: Traffic Control Devices 2004
Description / Purpose:	To provide safe and well maintained pedestrian crossing facilities where traffic flow is heavy and there is a pedestrian demand	Policies:	
Safety Issues:	Sight distances and intervisibility between driver and pedestrian. Location of crossing. Adequacy of signs and markings and lighting. Overhanging vegetation can be a visibility issue at crossings. Material type.	Standards:	TR11 (MOT/LTSA specification) MOTSAM Parts I and II AS/NZS 1158: 1997 – Street Lighting
		Guidelines:	Trafinz Pedestrian Crossing Standards NZ Local Authority Traffic Institute: Pedestrian Crossings RTS 14: Guidelines for Facilities for blind and vision-impaired pedestrians. LTSA Guidelines for KEA crossings – Fact Sheet 26, 2003 Austroads Guide to Traffic Engineering Practice Part 13 – Pedestrians

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Operational Practices	Locate crossing facilities in slow vehicle areas within CBD.	Low demand for Kea crossings at schools because of low numbers. Case-by-case consideration.	Maintain Wanganui CBD crossings in current form. 3 Kea crossings in place for schools, comply with warrants, with one approved school patrol. Flourogreen signs used for school crossings. Urban studies will highlight further needs for schools (see "Vulnerable Road Users").
	Facilities including Kea crossings for schools considered on a case-by-case basis. New pedestrian crossings are to be considered where pedestrian and vehicle numbers meet the following MOT warrants (includes State Highways):		
	<ul style="list-style-type: none"> • School Kea Crossings: Number of vehicles per half hour x number of pedestrians per half hour exceeds 3000. • School Pedestrian Crossing: Number of vehicles per half hour x number of pedestrians per half hour exceeds 5000, and number of vehicles exceeds 100 per half hour. • Other unsignalised pedestrian crossings: Number of vehicles per hour x number of pedestrians per hour exceeds 45,000 and number of vehicles exceeds 300 per hour. 		
Capital Works			Upgrade lighting at existing pedestrian crossings.

	Rangitikei District	Ruapehu District	Wanganui District
	Upgrading works to be completed in the time specified as required by the Traffic Control Devices 2004 Rule, including markings, signage, lighting.		
Review, Monitor & Evaluation Requirements	Maintain ongoing review of existing pedestrian crossings in relation to warrants, safety, and other relevant considerations such as lighting.		

Organisation

Primary Responsibility:	Network Managers	Controlling Documents:	-
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 7.2
May 2005		

Component Information

Activity Component:	Footpaths
Description / Purpose:	To provide safe and efficient pedestrian access
Safety Issues:	<p>Separation of pedestrian traffic from vehicular traffic. Need for an even footpath surface conflicts with the crossfall required for vehicle crossings, or disturbance by roots of adjacent trees. Use by bicycles, push scooters and ride-on mobility scooter. Overhanging vegetation Location/alignment at intersections Design and location of crossing points Free standing signs Tactile indicators Cleanliness (lichen/moss, leaf drop) Crossfall at some wheelchair crossings excessive for wheelchairs / mobility scooters.</p>

Legislation, Policies, Standards and Guidelines

Legislation:	Land Transport Rule: Traffic Control Devices 2004
Policies:	<p>DC District Plans</p> <ul style="list-style-type: none"> RangDC – footpath required on one side of road only
Standards:	<p>NZS 4404:2004 : Land Development and Subdivision Engineering AS/NZS 3661.2:1994 : Guide to the reduction of slip hazards AS/NZS 4586:1999 : Slip resistance classification of new pedestrian surface materials AS/NZS 4663:2002 : Slip resistance measurement of existing pedestrian surfaces</p>
Guidelines:	RTS 14 Guideline for installing pedestrian facilities for people with visual impairment

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Inspection / Monitoring	Annual feedback from residents, followed up by consultant's inspection.	Annual inspection by Maintenance contractor.	3 yearly inspection of all footpaths. 100% condition rating used for ranking renewal / resurfacing.
	Service requests from public. Monitor overhanging vegetation and trip hazards on footpaths for pedestrian safety.		
Emergency and Routine Maintenance	Hazard standard defined as 10mm trip height. Vegetation clearance zones defined in maintenance contracts.		Reactive to user feedback and complaints – in particular tilted/uplifted footpath slabs.
	Service requests and safety hazards are referred to the Maintenance Contractor for action. Safety hazards are also to be identified by the Maintenance Contractor and treated / reported.		
Capital Works	Renewals based on monitoring information above.		
	New footpaths – target one side of road with footpath, implement through LTCCP process.		Adequate numbers of footpaths.
Review, Monitor & Evaluation Requirements		Review footpath capital budgets (<i>Imp't plan action</i>).	

Organisation

Primary Responsibility: Network Managers

Controlling Documents:

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May 2005		

Component Information

Activity Component:	Cycle Facilities
Description / Purpose:	Provide a safe network of on and off-road facilities for cyclists so as to make cycling more attractive, enhance its convenience and improve safety
Safety Issues:	Surface condition and debris Alignment Parking Cyclists using pedestrian facilities. Cyclists on arterial routes. Cycle facilities at intersections and crossing places.

Legislation, Policies, Standards and Guidelines

Legislation:	Land Transport Rule: Traffic Control Devices 2004 Local Government Act 2002
Policies:	
Standards:	NZS 4404:2004 : Land Development and Subdivision Engineering
Guidelines:	Austrroads Guide to Traffic Engineering Part 14 – Bicycling

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Inspection / Monitoring	No specific cycle facilities, with the exception of a combined walkway/cycleway route, linkages to High School and pools. Low numbers of cyclists – school routes are the primary focus.	Provision of specific facilities is not an issue for RuapDC. Developing cycle education in schools through the Road Safety Coordinator.	See Vulnerable Road Users. Cycle Strategy reviews. Annual meetings with cycle focus groups.
Emergency Maintenance	Inspect and remove broken glass, loose sealing chip or sand, missing service access covers or sump gratings as per Maintenance contracts.		
Routine Maintenance			
Capital Works	Consider cyclists' needs during design process, especially near schools, for example adequate space provision on bridges. Case-by-case basis and requests through LTCCP.		
Review, Monitor & Evaluation Requirements			

Organisation

Primary Responsibility:	Network Managers	Controlling Documents:	
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 7.4
May 2005		

Component Information

Legislation, Policies, Standards and Guidelines

Activity Component:	Pavement Surface Skid Resistance	Legislation:	
Description / Purpose:	To ensure that the carriageway surface is safe and has adequate skid resistance for road users during all weather conditions	Policies:	
Safety Issues:	Texture depth and skid resistance (Micro and Macro texture). Poor skid resistance can reduce tyre traction and contribute to loss of control crashes.	Standards:	PFM 6: Road Condition Rating and Roughness Manual; Transfund New Zealand, 1997
		Guidelines:	Transfund New Zealand Maintenance Guidelines for Local Roads, August 2004 TNZ Standards and Specifications for Testing and Evaluation T10: Specification for Skid Resistance Deficiency Investigation and Treatment Selection (SCRIM only) TNZ Bituminous Sealing Manual Austroads – Friction Related Crashes – Guidelines for Minimising Friction Related Crashes on Road Networks, 2002 Draft Austroads – Guide to the Selection of Pavement Surfacing, 2000

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Inspection / Monitoring	<p>No formalised skid resistance tests undertaken at present.</p> <p>Surface friction assessment process to follow Transfund Maintenance guidelines above – “Method For The Identification and Programming Of Sites With Insufficient Skid Resistance”; to be developed (<i>Imp’t Plan action</i>).</p> <p>Problem sites are recorded by maintenance contractor or from complaints.</p> <p>Examine loss of control crash data to check if skid resistance was a contributory factor.</p> <p>High risk sites identified and monitored proactively.</p>		
Capital Works	<p>Routine inspections for reseals to assess safety factors such as texture, surface friction.</p> <p>Case-by-case approach with more frequent resealing of known problem locations.</p>		
			Potential improvements to skid resistance by grooving AC surfaces to be considered at time of resurfacing.
Review, Monitor & Evaluation Requirements			

Organisation

Primary Responsibility:	Network Managers
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Controlling Documents:	
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Component Information

Activity Component:	Pavement Condition – Sealed
Description / Purpose:	To ensure the pavement is sound and the carriageway surface free of defects, providing a safe, trafficable surface
Safety Issues:	<p>Pavement failure can contribute to loss of control crashes.</p> <p>Potholes, subsidence, pavement shape (deformation, rutting, shoving, edge breaks), low shoulder, service covers, crossfall, ponding.</p> <p>Shoulder rutting – safety issues on outside of curves</p> <p>Edge break – can contribute to loss of control</p> <p>Rutting and shoving – particularly on curves</p> <p>Surface cleanliness at intersections</p> <p>Excessive chip / chip loss following on from reseals</p> <p>Flushing / bleeding bitumen</p> <p>Spillages (diesel, fertiliser, mud etc)</p>

Legislation, Policies, Standards and Guidelines

Legislation:	Resource Management Act Local Government Act 2002
Policies:	DC Asset Management Plans
Standards:	PFM 6: Road Condition Rating and Roughness Manual; Transfund New Zealand, 1997
Guidelines:	<p>Transit New Zealand Code of Practice for Temporary Traffic Management</p> <p>C10: Specification for the Maintenance of Unsealed Shoulders</p> <p>ARRB Sealed Roads Manual, Guidelines to Good Practice for the Construction, Maintenance and Rehabilitation of Pavements 1995</p>

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Inspection / Monitoring			Review of response times in relation to safety objectives is required (<i>Imp't Plan action</i>).
	Maintenance contract defines the characteristics of “defects” and response / repair times, and recording requirements.		
Emergency and Routine Maintenance	<p>Results of regular audits advised to Contractor for action.</p> <p>Refer also to Land Transport NZ KPI's and annual level of service / performance agreements.</p> <p>Reviews of Maintenance Contracts to consider and provide for LOS related to safety for each condition defect type – to maintain and improve the network.</p>		
Review, Monitor & Evaluation Requirements	Refer contract performance evaluation procedures. Deductions may apply. Network manager inspections established in contract (eg 10% formal inspection each month).		

Organisation

Primary Responsibility:	Network Managers	Controlling Documents:	
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 7.6
May 2005		

Component Information

Legislation, Policies, Standards and Guidelines

Activity Component:	Pavement Condition – Unsealed	Legislation:	Resource Management Act Local Government Act 2002
Description / Purpose:	To ensure the unsealed carriageway is free of surface defects for the provision of a safe and efficient trafficable surface	Policies:	DC Asset Management Plans
Safety Issues:	Potholes, crossfall, ponding, loss of metal. Metal drift, grading shape, material type.	Standards:	
		Guidelines:	ARRB Unsealed Roads Manual, Guidelines to Good Practice, 2000 Transit New Zealand Code of Practice for Temporary Traffic Management

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Inspection / Monitoring	Maintenance contract defines the characteristics of “defects” and response / repair times, and recording requirements.		
Emergency Maintenance Routine Maintenance	Grading cycles are performance based, cycle times are influenced by inspections. Service requests also identify response needs, eg dust, metalling.	Maintenance contract requires specific unsealed surface materials and grading regime which together provide improved vehicle control characteristics.	Performance based minimum standards.
	Results of regular audits advised to Contractor for action. Refer also to Land Transport NZ KPI's and annual level of service / performance agreements. Reviews of Maintenance Contracts to consider and provide for LOS related to safety for each condition defect type – to maintain and improve the network.		
Capital Works			
Review, Monitor & Evaluation Requirements	Refer contract performance evaluation procedures. Deductions may apply. Network manager inspections established in contract (eg 10% formal inspection each month).		

Organisation

Primary Responsibility:	Network Managers	Controlling Documents:	
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Component Information

Activity Component:	Traffic Control Devices
Description / Purpose:	<p>Road markings - Highlight roadway, regulate traffic movements and provide guidance and information to road users</p> <p>Traffic Signs - provide good visual guidance/control, warning, information and regulates road users</p> <p>Delineation - provide guidance to drivers by defining the traffic lane, carriageway alignment and roadside hazards, to ensure the safe movement of traffic eg. Edge marker posts, RRPM's, sight rails.</p> <p>Traffic Signals - provide safe, well maintained signals</p>
Safety Issues:	<p>Roadmarkings - Faded/poor quality road markings Incorrect/inappropriate road markings Can not be seen on very wet nights Can be slippery (eg cyclists and motorcyclists).</p> <p>Re-instatement of markings following pavement maintenance repairs / resurfacing.</p> <p>Traffic Signs - Signs incorrectly/poorly located could provide a hazard for certain user groups, eg disabled, cyclists.</p> <p>Loss of reflectivity, cleanliness Placement and visibility, obstructions Damaged or missing signs. Signs obscured by foliage. Inadequate signage.</p> <p>Delineation - Consistency in delineation to reduce loss of control crashes Placement and spacing Missing or damaged items Type of delineator</p> <p>Traffic Signals - Hardware performance Maintenance of signs and markings Temporary traffic control during system failures or planned shut-downs</p>

Legislation, Policies, Standards and Guidelines

Legislation:	<p>Land Transport Rule: Traffic Control Devices 2004 Local Government Act (2002) Transit NZ Act (1989) Transport Act (1962)</p>
Policies:	<p>RuapDC District Plan RuapDC Roads Reserve Management Policy 2003 (s 13) RuapDC Bylaw (Signs)</p>
Standards:	<p>LTSA and TNZ Road and Traffic Standards. TNZ/LTSA Manual of traffic Signs and Markings Parts I and II TNZ Standards for Design, Construction & Materials RSMA Standards for the Manufacture and Maintenance of Traffic Signs, Posts and Fittings NZS 5431:1973 : Specification for traffic signals</p>
Guidelines:	<p>RTS 1: Guidelines for the implementation of traffic controls at crossroads (1990) RTS 2: 1990 – Guidelines for Street Name Signs RTS 4: Guidelines for flush medians RTS 5: Guidelines for Rural Roadmarking and Delineation Road Signs Manufacturers Association Specification Edge Marker Posts Guidelines Austroads Guide to Traffic Engineering Practice, Part 7 "Traffic Signals" Austroads Guide to Traffic Engineering Practice, Part 8 "Traffic Control Devices"</p>

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Inspection / Monitoring	Monthly audit and reporting of the network includes all Traffic Control Devices within the maintenance contract.		<p><u>Markings</u> – inspect and replace faulty RPM's 6-monthly.</p> <p><u>Signs</u> – inspection routine (eg for reflectivity) needs to be improved – part of network safety audit process (<i>Imp't Plan action</i>)</p> <p><u>Signals</u> – performance monitored by Opus, reactive approach</p>
Routine Maintenance	<p><u>Markings</u> are not defined by road type or function. Refer Austroads specs.</p> <p>Marking of the inside of curves is discretionary.</p>	<p>Defined in maintenance contracts.</p> <p><u>Markings</u> – LOS based approach at present, and this is moving to an increased emphasis on reflectorisation – expect to re-mark annually, or more frequently where required for performance, eg intersections.</p> <p><u>Signs and Markings</u> – meet TNZ standards for reflectivity, condition and display (AMP LOS).</p>	<p><u>Markings</u> – annual re-mark.</p> <p>Reflective markings used on rural roads without RPM's and some central city non-parking lines.</p> <p><u>Island delineation</u> – clean and paint as required, typically 2 yearly.</p> <p><u>Signals</u> – non SCATS. Cyclic routine maintenance programme in place.</p>
Capital Works	<p><u>Delineation</u> need (eg chevrons) is assessed using "g" measurements for new designs, AWT's and minor safety improvements.</p> <p>Guardrails also considered where warranted by safety risk.</p>	<p>Case-by-case basis for any new work.</p> <p>For example, currently ad-hoc approach in place for curve speed advisory signs.</p> <p>No planned approach in place for improving delineation.</p>	
Review, Monitor & Evaluation Requirements	<p>Update project required to identify, locate and record all regulatory traffic controls (<i>Imp't Plan action</i>).</p>	<p>Controlled through District Plan and RRM Policy.</p>	<p><u>Delineation</u> – rural strategic studies (eg Wanganui River Rd, Whangaehu Rd) can identify issues, but there is a need for a more consistent approach to delineation.</p>
	<p>Systematic and consistent approach to delineation to be developed (<i>Imp't Plan action</i>).</p> <p>Include criteria where appropriate – traffic volume, road function, location of sight rails, etc.</p>		

Organisation

Primary Responsibility:	Network Managers	Controlling Documents:	
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 7.8
May 2005		

Component Information

Activity Component:	Street Lighting
Description / Purpose:	To provide a safe level of road lighting to a standard appropriate for the road hierarchy
Safety Issues:	Light levels, uniformity and glare Light outages Maintenance failures Crash risks

Legislation, Policies, Standards and Guidelines

Legislation:	
Policies:	DC Asset Management Plans
Standards:	AS/NZS 1158 – Road Lighting NZS 4404:2004 : Land Development and Subdivision Engineering
Guidelines:	Austrroads Guide to Traffic Engineering Part 12 : Roadway Lighting

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Inspection / Monitoring	Night time and routine inspections of lighting effectiveness by lighting contractor. Most complaints relate to too much brightness, rather than lack of lighting for safety.	Investigating efficiency of existing lighting installations and the level of conformity with AS/NZS 1158. Results of this review to be used as an input to the Minor Safety Works Programme, capital projects, or lighting upgrade projects. Schools and accessways a particular issue.	Light measurements not currently undertaken, although it is expected that the arterial network is up to standards.
Routine Maintenance	Separate maintenance contract for street lighting. Response times in maintenance contract.		
Capital Works	Flaglighting considered on a case-by-case basis for rural intersections, but largely not warranted.	New / upgraded lighting may be installed with roading projects. AMP LOS to meet AS/NZS 1158 by 2010. Replacement programme based on technological upgrade. Flaglighting on a case-by-case basis.	Demand for flaglighting and there is a need for a review of criteria.
	AS/NZS 1158 to be used for new lighting and upgrades.		
Review, Monitor & Evaluation Requirements			Strategic review planned, this will assess lighting levels, pedestrian safety (eg alleyways), residential streets and aesthetics, flag-lighting criteria (<i>Imp't Plan action</i>).

Organisation

Primary Responsibility:	Network Managers
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Controlling Documents:	
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 7.9
May 2005		

Component Information

Legislation, Policies, Standards and Guidelines

Activity Component:	Bridges, Culverts and Structures	Legislation:	Heavy Motor Vehicle Regulations Resource Management Act Health and Safety in Employment Act Building Act
Description / Purpose:	To provide safe and effective access across waterways, gullies, high volume roads, railway lines and flood prone areas. To protect road users from the effects of slips or collapse of the road structure.	Policies:	
Safety Issues:	Structural integrity. Containment (vehicles, pedestrians and other road users). Guardrails, handrails, joint movement, loading, structure (super and sub-structure) abutments/ approaches and "end-protection", drainage and ponding. Bridge approaches and delineation at bridges. One lane priority (traffic management). Proximity to the road of retaining walls, headwalls, culverts, drains or intrusion into the clear zone which creates a traffic hazard.	Standards:	Asset Management Plan NZ Building Code (2002) Transit NZ Bridge Manual SP/M/016
		Guidelines:	Transit NZ Bridge Inspection & Maintenance Manual S/M/016

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Inspection / Monitoring	Routine annual inspection, 5-6 yearly structural inspection.		2 yearly inspection, includes railings, approaches. Not currently used to identify need for improvements however.
	Weight and speed limits on bridges notified under HMV regulations. Width, passing and stopping provisions for one-way bridges to be regularly monitored for safety.		
Routine Maintenance	Maintenance contracts to maintain all bridges, guardrails, associated structures, delineation, and keep waterways clear.		

	Rangitikei District	Ruapehu District	Wanganui District
Capital Works	Currently treat sealing of approaches, guardrailing and other safety improvements on a case-by-case basis, based on road function, traffic and alignment. Programme under Minor Safety Works, capital, etc as appropriate.	Sealing of bridge approaches on unsealed roads underway – based on 100m each side. Realignment of bridge approaches to correct existing alignment / width deficiencies – programme under Minor Safety Works, AWT, etc as appropriate.	Currently treat sealing of approaches, guardrailing and other safety improvements on a case-by-case basis, based on road function, traffic and alignment. Programme under Minor Safety Works, capital, etc as appropriate.
Review, Monitor & Evaluation Requirements	Safety issues and LOS associated with bridges and structures are to be reviewed when the AMP is updated or LOS are reviewed, with deficiencies logged in the deficiency database (refer SMS 4.5). This will include alignment, guardrailings, sealing of approaches (<i>Imp't Plan action</i>).		

Organisation

Primary Responsibility:	Asset Managers	Controlling Documents:	
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Version 1.0	RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM	SMS 7.10
May 2005		

Component Information

Legislation, Policies, Standards and Guidelines

Activity Component:	Drainage Systems	Legislation:	NZ Building Code Resource Management Act Health and Safety in Employment Act
Description / Purpose:	Deep road-side & swale drains – Ensure drainage of the road corridor to minimise the risk of flooding on the carriageway, and reduce the potential damage to loss of control vehicles from impact with water channels Kerb & channel - Captures and transports water; defines and protects edge of traffic lane Sumps - Efficient and safe collection of stormwater and disposal of stormwater off roadways	Policies:	Refer Asset Management Plans
Safety Issues:	Deep road-side & swale drains – Entrapment, crash hazard/risk. Depth of drain / narrowness of road combination Poor / insufficient drainage causing flooding Water channel design can contribute to vehicle roll over (Roadside clear zone philosophy) Head wall structures can represent hazards Kerb & channel – Trips, flooding and height. Sumps – Blockage: flooding (aquaplanning, spray) Grates: missing, easy to lift, cyclist hazard Servicing: Traffic control	Standards:	Rural Road Design: Guide to the Geometric Design of Rural Roads, Austroads, 2003
		Guidelines:	NZS 4404:2004 : Land Development and Subdivision Engineering

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Inspection / Monitoring	Waterways and drainage systems inspections undertaken by Maintenance Contractor on a regular basis. Watertable infill deficiencies identified and recorded in RAMM for future works programming (eg as “major drainage control”).		
Routine Maintenance	Maintenance contracts include LOS for drainage systems including kerbs and channels to control risk of blockages and carriageway flooding. Includes regular cleaning programmes.		
Review, Monitor & Evaluation Requirements			Review the safety implications of deep drains and hazardous swales (<i>Imp't Plan action</i>)

Organisation

Primary Responsibility:	Network Managers	Controlling Documents:	
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Version 1.0

May 2005

RANGITIKEI RUAPEHU WANGANUI ROADS SAFETY MANAGEMENT SYSTEM

SMS 7.11

Component Information

Activity Component:	Landscaping and Vegetation Control
Description / Purpose:	Maintain landscaping and vegetation on various parts of road reserve in a cost effective and visually attractive manner to ensure safety is not hindered. Trees can also provide a visual backdrop.
Safety Issues:	Traffic hazards caused by visibility constraints eg at intersections, traffic signals, signs etc. Planting in traffic islands and planters can restrict visibility if not maintained or of the appropriate type. Vegetation encroaching onto and over footpaths an obstacle for pedestrians. Rural vegetation envelope compromised (height and width dimensions). Public pressure for planting of trees in road reserve compromising clear zone requirements. Impact with non-frangible planting. Shading of the road exacerbates ice problems in winter. Street trees can limit the effectiveness of street lighting.

Legislation, Policies, Standards and Guidelines

Legislation:	Local Government Act (2002) Transport Act (1962) Land Transport Rule: Traffic Control Devices 2004 Electricity Act
Policies:	DC District Plans Bylaws: <ul style="list-style-type: none"> • WangDC – District Bylaw Part 8 Streets
Standards:	NZS 4404:2004 : Land Development and Subdivision Engineering
Guidelines:	Traffic sight distance criteria – eg intersections, corners, signs TNZ COPTTM Guidelines for Planting for Road Safety (1991), TNZ

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Inspection / Monitoring	Urban vegetation – visibility standard defined in District Plan. Rural trees shading controlled by 10m set-back from road boundary – District Plan. Property owners given notice to trim vegetation when non-compliance advised to RDC or through inspections, notice period applies after which Parks contractor undertakes work and owner is invoiced the costs.	Defined window relates to different road classes. Length standard specified for grass height. Inspection cycles defined in maintenance contracts.	Inside bends sight distance table for operating speed defined in maintenance contract. Rural vegetation envelope – 4.5m clear height, extending 0.3m beyond edge of SWC – defined in maintenance contract.

	Rangitikei District	Ruapehu District	Wanganui District
	All trees on rural road reserves are defined as “non-important” under the Electricity Act, and can be removed if required.		
Emergency Maintenance			
Routine Maintenance	Rural envelope managed by Maintenance Contractor.	Rural – maintenance contract. Urban – Parks and reserves contract, includes regulatory needs, vegetation envelope, signage visibility etc	Overhanging vegetation (footpaths and road carriageway) controlled by Bylaw and Environmental Services unit. Parks unit manages urban street trees, and some safety issues are apparent.
	Urban street trees, islands, roundabouts etc maintained by Parks and Reserves contractor.		
	Sight lines and visibility requirements to be specified in all contracts		
Capital Works			
Review, Monitor & Evaluation Requirements			Review safety implications of urban street trees and vegetation management practices (<i>Imp't Plan action</i>).

Organisation

Primary Responsibility:	Network Managers
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Controlling Documents:	
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Component Information

Activity Component:	Safety Barriers
Description / Purpose:	Safety barriers provide protection for road users from potential hazards such as bridges, embankments, and high drops, and can improve delineation.
Safety Issues:	Damaged or missing guardrail can present hazards to motorists. Many different standards and types Length for hazard protection Correct installation and end treatment Sight rails can be inappropriately used and present a hazard in themselves

Legislation, Policies, Standards and Guidelines

Legislation:	Local Government Act (2002) Transport Act (1962) Transit NZ Act (1989) Land Transport Rule: Traffic Control Devices 2004
Policies:	
Standards:	AS/NZS 3845: 1999 Road Safety Barrier Systems TNZ standard specification M23 for design, manufacture and maintenance of guardrails
Guidelines:	Transit New Zealand Draft Geometric Design Manual Austroads Guides – 13 and 14 RTS 8: Guidelines for safe kerbline protection (1993) RTS 11: Guidelines for Urban Roadside Barriers and Alternative Treatments

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Inspection / Monitoring	Regular inspections.	Historical practice has resulted in many sight rails effectively functioning as (unsatisfactory) safety barriers.	Regular inspections
Emergency Maintenance			
Routine Maintenance			
Capital Works	Case-by-case basis.	Case-by-case at present. Design and location criteria for safety barriers need to be established.	Case-by-case basis.
Review, Monitor & Evaluation Requirements	Criteria to be established for new safety barriers (<i>Imp't Plan action</i>). Existing barriers – review for compliance with standards (<i>Imp't Plan action</i>).		

Organisation

Primary Responsibility:	Asset Managers
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Controlling Documents:	
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Component Information

Activity Component:	Effluent Disposal
Description / Purpose:	Disposal facilities for stock trucks and to a lesser extent tourist vehicles reduces the risk of spillages onto and contamination of the road.
Safety Issues:	Spillages can be a safety hazard if they result in slippery surfaces or surprise motorists into taking evasive and potentially risky action.

Legislation, Policies, Standards and Guidelines

Legislation:	
Policies:	
Standards:	
Guidelines:	

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Inspection / Monitoring	Monitoring for future potential improvements through LTCCP process.		
Emergency Maintenance			
Routine Maintenance			
Capital Works		Programme for the development of effluent disposal sites is to be continued.	
Review, Monitor & Evaluation Requirements			

Organisation

Primary Responsibility:	Asset Managers	Controlling Documents:	
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Component Information

Activity Component:	Maintenance Contracts Management
Description / Purpose:	Regular review of all roading maintenance contracts to ensure that the levels of service, standards, and specifications are optimal in relation to network safety performance.
Safety Issues:	Response times. Safety intervention standards. Safety Intervention Plan (SIP).

Legislation, Policies, Standards and Guidelines

Legislation:	Local Government Act 2002 Transit NZ Act
Policies:	
Standards:	Asset Management Plan Transfund Levels of Service / Performance Agreement
Guidelines:	

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Operational Procedures	Maintenance contract(s) include requirements for Site Safety Plan, Temporary Traffic Control. SIP to be developed for principal network maintenance contract(s).		
		Maintain a "parallel" contract document with desired changes marked up – implement when re-tendering or renegotiating parts of contract based on risk and need.	
Inspection / Monitoring	Network Manager must carry out routine safety inspections of the network as part of the management of the Maintenance contract.		
Emergency Maintenance	Response times set out in AMP LOS.		
	Maintenance tasks classed as Priority Work where the safety of road users may be compromised.		

	Rangitikei District	Ruapehu District	Wanganui District
Routine Maintenance	<p>“Omnibus” contract in place for most maintenance activities – “performance” based. Some activities undertaken in Parks contract. Contracts are:</p> <ul style="list-style-type: none"> • Southern and northern maintenance contracts • Streetlighting maintenance • Street cleaning <p>Some activities managed within Parks contract.</p>	<p>Separate contracts in place for:</p> <ul style="list-style-type: none"> • Maintenance of all assets • Metalling of unsealed roads • Resealing • Footpath renewals and new development • Vegetation / noxious plants control 	<p>Rural maintenance contract covers rural maintenance, vegetation, minor bridge repairs, non-structural metalling, delineation (EMP’s), footpaths, K&C cleaning, signs and drainage. Urban maintenance contract is similar and also includes, litterbin emptying, cycleways, guardrails, carriageway vegetation, sumps, street furniture, bus shelters. Pavement markings contract – markings, RPM’s, islands. Streetlighting contract. Traffic signals contract. Response times typically based on traffic volumes, and many of these do not vary across road types. Some specific standards apply to specific roads.</p>
Capital Works			
Review, Monitor & Evaluation Requirements	<p>Monthly meetings with maintenance contractor to include “safety” LOS as a regular discussion topic. Aim to develop safety culture in meetings. Review and standardise, where appropriate, provisions for and references to safety in maintenance contracts (<i>Improvement Plan</i>). All maintenance LOS are to be reviewed regularly in relation to the safety performance of the network. Normally, this will be on a 3 to 5-yearly cycle and / or when contracts are being re-tendered. However, an earlier review may be triggered by significant change in crash trends or by the findings of other safety management processes (eg network inspections). Consider applying penalty system for high priority / safety risk safety failures / non-compliances.</p>		

Organisation

Primary Responsibility:	Network Managers	Controlling Documents:	
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Component Information

Activity Component:	Emergency Response
Description / Purpose:	Following on from emergency / significant weather or hazard events which compromise road user safety, make roads safe and trafficable (to at least one-way) in shortest possible time. Implement detour routes if required.
Safety Issues:	Safety of roads during adverse weather conditions. Obstacles e.g. slips, trees, damaged road surface, surface flooding. Alternative routes if necessary. Safety of road users during such events Erection of appropriate signs and barriers.

Legislation, Policies, Standards and Guidelines

Legislation:	Transport Act (1962) Transit NZ Act Land Transport Rule: Traffic Control Devices 2004 Civil Defence Emergency Management Act 2002
Policies:	Civil Defence and Emergency Management Group Plans
Standards:	Transit NZ COPTTM.
Guidelines:	Transfund NZ Programming and Funding Manual

SMS Procedures

	Rangitikei District	Ruapehu District	Wanganui District
Operational Procedures	Emergency Procedures Manual in place. Network Manager participates fully in CDEM activities for RDC. Police liaison to be improved and involve maintenance contractor (<i>Imp't Plan action</i>).	Incorporate requirements of contractors in Maintenance Contracts. Complete development of roadside Disaster Recovery Plan. Plan for SH emergency route diversions.	Incorporate requirements of contractors in Maintenance Contracts. Emergency Response Plan in place.
Emergency Maintenance			
Routine Maintenance			
Capital Works	Alternative routes – destination signage to be improved, particular need is SH3 closures.		
Review, Monitor & Evaluation Requirements			

Organisation

Primary Responsibility:	Network Managers	Controlling Documents:	
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Appendix V – Skid Resistance

Land Transport NZ has defined a method for the identification and programming of sites with insufficient skid resistance by local authorities, this is documented in “Transfund New Zealand Maintenance Guidelines for Local Roads”, August 2004 Draft.

The procedure includes the following steps:

- Desk top study
- Site investigations
- Prioritisation and programming of remedial actions
- Monitoring the effect of the remedial actions

The process includes the collection of surface friction data where resources permit.

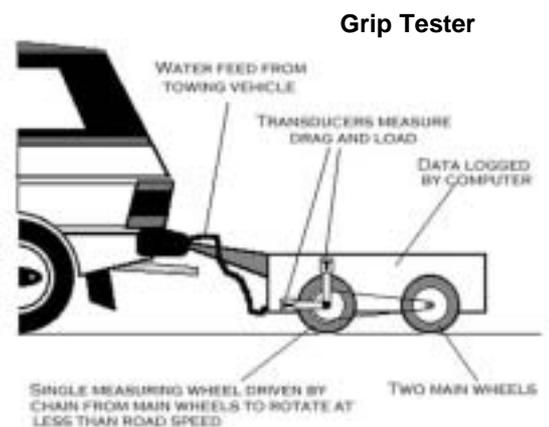
Lists of sites, based on factors such as wet weather crashes, can be provided from Land Transport NZ’s crash database and identify where loss of control crashes have occurred. These sites could have low skid resistance contributing to the occurrence of crashes.

The networks are typically characterised by low volume roads and polish resistant chips.

Available lists are included in this Appendix.

In addition, the following sites can be considered for skid resistance / surface friction tests:

- approaches to pedestrian crossings, railway crossings, roundabouts, Stop and Give Way controlled intersections, traffic signal controlled intersections, one lane bridges, isolated curves, etc.
- other sites as identified by engineering staff



Appendix VI – Rangitikei Resource Information

Insert in this Appendix any key diagrams, lists, forms etc for ready reference in the Rangitikei District.

Appendix VII – Ruapehu Resource Information

Insert in this Appendix any key diagrams, lists, forms etc for ready reference in the Ruapehu District.

Appendix VIII – Wanganui Resource Information

Insert in this Appendix any key diagrams, lists, forms etc for ready reference in the Wanganui District.