3 Initiating a CRS

3.1 SMSs and reviewing the safety of the road network

In an effort to achieve road safety goals and co-ordinate the efforts of all stakeholders, RCAs are being encouraged to develop SMSs. This is a key initiative in the government's *Road Safety to 2010* strategy (October 2003).

A CRS is one of the crash reduction tools within the SMS toolbox, although it may take various forms. There may be the requirement for periodic (annual to six-yearly) programmed formal CRSs or the unprogrammed reactive response to recent or developing crash problems.

An RCA needs to periodically review crash trends on its road network. Road safety problems that have been identified in Land Transport NZ's *Road safety issues reports* and by local Police, local residents, transport operators and other road safety partners should be considered in identifying priorities for CRSs.

Crash sites or routes with an increasing incidence of crashes should receive particular attention along with sites or routes with a continuing relatively high crash rate. Assistance should be sought from Land Transport NZ or other specialist road safety engineers in predicting the likely crash reductions that may be possible from initiating a CRS to devise treatments for these locations.

For background information see sections 2, 3 and 4 of Austroads Pt 4.

3.2 CRS initiation and management

RCAs throughout New Zealand have varying approaches to initiating and managing both programmed and unprogrammed CRSs. They include:

- studies being initiated and managed by in-house staff
- studies being initiated and managed by Land Transport NZ
- specific consultant contracts for individual studies
- long-term (three to five years) CRS professional services contracts
- crash monitoring and the management of studies by consultants or contractors within a network management type contract.

There are advantages and disadvantages for the various arrangements. However, the following issues need to be considered.

- The RCA should have an ongoing knowledge and ownership of the crash situation on its network. It should also have a commitment to reducing crashes.
- There are some advantages of ownership of the CRS process by the RCA from instigation through to implementation and evaluation.
- It is desirable to have multi-discipline, highly skilled, experienced teams and to continually develop a pool of new people with CRS skills.
- It is desirable and important to periodically have fresh eyes and ideas involved in CRSs.
- A good outcome requires a thorough crash and site analysis.
- Until the initial crash analysis has been undertaken it is often difficult to scope the type of study, or the number of crash locations or the skills required.

Contractual arrangements for undertaking any CRS need to recognise the importance of the above and ensure the briefing process and financial arrangements encourage the best results from the CRS process.

The establishment of an on-going CRS programme should ensure there is a continuing source and availability of funding for CRSs and that the personnel involved in the studies develop expertise and experience in reducing the road crash problems in that area.

3.3 Programming and funding the study

Funding for programmed CRSs is available through Land Transport NZ {Refer to the *Project funding manua*l (PFM)}.

Land Transport NZ also make staff resources available subject to the CRS being programmed and identified within the New Zealand Road Safety Programme. Depending upon resource availability, Land Transport NZ may also assist in unprogrammed, responsive type studies.

3.4 The CRS process

The CRS process is diagrammatically shown in figure 3.1, with each phase being described in more detail in the following sections.

Figure 3.1 The CRS process

Pre-study

Steps	Responsibility	Comment	Refer
Determine need for study by analysing crash data	RCA/Network management consultant/ contractor/ Land Transport NZ	In accordance with SMS requirements; may be a cyclic study, or identified through annual safety monitoring, or in response to a specific problem	Section 3
Programme study funding Land Transport NZ support	RCAs in conjunction with Land Transport NZ	Land Transport NZ programmed studies included in NZ Road Safety Programme. Land Transport NZ funding available. Unprogrammed studies may not receive specific Land Transport NZ resources	Section 3

Typical Crash Study Scope

Steps	Responsibility	Comment	Refer
Initiate study	RCAs/ consultants	Various in-house, or consultant arrangements used. Short and long term CRS contracts	Section 3
Identify crash locations	RCAs/ consultants/ Land Transport NZ	This may be undertaken prior to initiating the study or by the CRS team. The CRS initiation may be in response to a specific crash	Sections 4.1, 4.2, 4.3, 4.4
Form team	RCA/ consultant	Team member skills specific to the crash problems and environment. Study team may identify crash locations	Section 5.3
Data collection Introduction report	RCA/ consultant/ Land Transport NZ	Traffic volumes, aerial photos, maps, road data, collision diagram etc	Section 5.2
Preliminary diagnosis	CRS team	Usually undertaken prior to site inspections	Section 5.3
Field inspections and follow-up inspections	CRS team	Drive-over, inconspicuous observations, and any follow-up investigations required	Sections 5.4, 5.5, 5.6
Identify problems	CRS team	Play detective and identify problems by thoroughly investigating both data and location	Section 5.7
Develop solutions	CRS team	Countermeasures targeted to safety problems identified. Follow-up visits and measurements may be required	Section 6
Estimate/ economics	CRS team	Usually undertaken by the team leader or one member. Economics dependent on funding sources and requirements	Section 6
Reporting	CRS team	Draft report prepared and reviewed by all team members. Final draft may be sent to the RCA for comment. Final report to include monitoring set-up forms for Land Transport NZ.	Section 7
Monitoring forms	CRS team	Site problem and recommendation forms sent back to Land Transport NZ who then sends implementation forms to the RCA	Section 9.2

Post-study

Steps	Responsibility	Comment	Refer
Design, construction and imple-mentation	RCA/ consultant/ network management consultant/ contractor	Timing, responsibility dependent on contractual arrangements and funding source. May or may not form part of the CRS	Section 8
Safety audit	CRS team or independent team (not designers or installers of improvement works)	Check that improvement works will achieve the crash savings stated in report	Section 8.3 and 'Road safety audit proce-dures'
Monitoring	RCA/Land Transport NZ	Implementation forms completed by the RCA or consultant and returned to Land Transport NZ. Monitoring results produced by Land Transport NZ	Section 9