

# Technical Direction

for Road Safety Practitioners

POLICY - GUIDELINES - ADVICE



TD 2003/

**RS03**

Ver 2 - August 2005

Supersedes:

Ver 1 - Sept 2003

## Policy for road safety audits of construction and reconstruction projects

### Introduction

Best practice requires road safety audits of all road development works. The Roads and Traffic Authority of NSW (RTA) has identified road safety audits as an integral part of providing safer roads.

In general, the RTA's objectives are to apply innovative techniques in road safety diagnosis and treatment during the building of new roads and improvements to existing roads. The criteria for new construction are to be of the highest safety standards. Potential safety hazards are to be identified and eliminated even before construction commences through road safety audits. The RTA promotes mandatory road safety audits of all new road developments.

Requirements for road safety audits of existing roads (stage five audits) are to be addressed separately.

### Coverage

This policy applies to RTA funded State Roads, RTA funded capital works and RTA managed infrastructure in the Unincorporated Area of New South Wales. It also applies to federally funded works, including National Highways. Separate requirements for road safety audit processes are set out in the Scope of Works and Technical Criteria documents for privately-funded infrastructure projects, Design-Construct-Maintain contracts, and Design-Construct contracts procured by Motorways Directorate. The requirements are compatible with the objectives of this technical directive commensurate with the differing risk and responsibility assignments for these types of projects.

### Background

A road safety audit is a series of formal checks of road and traffic works, both existing and future, in relation to their accident potential and safety performance. It is conducted by a team independent to the project who can provide an objective safety assessment. The purpose of this audit process is to pro-actively manage road safety by identifying and addressing risks associated with road safety deficiencies.

Policy for Road Safety Audits of Construction & Reconstruction Projects	Approved by:
Version: 2.0 (replaces Sept 2003 issue version 1.0)	Director RS,L & VM,
Issued: August 2005 Effective: August 2005	Director T & T,
UNCONTROLLED WHEN PRINTED.	Director RNI

- For:
- Director Road Safety, Licensing & Vehicle Management
  - Director Road Network Infrastructure
  - Road Safety, Traffic Management, Asset Management and Network Development Personnel
  - Director Traffic and Transport
  - Director Operations and Services

The road safety audit policy was last issued in the *Road Safety Audits* 1995 manual. This technical direction and *Accident Reduction Guide Part 2 Road Safety Audits* 2005 have been updated to reflect the Government's requirement for mandatory road safety audits and to introduce changes designed to improve the quality, consistency, efficiency and outcomes of road safety audits:

- This *technical direction* outlines new policy requirements for undertaking Stage one to four road safety audits of construction and reconstruction projects (design stages: feasibility, preliminary design, detailed design, and pre-opening); and
- The RTA *Accident Reduction Guide Part 2 Road Safety Audits* 2005 have also been updated to outline the management procedures, accountabilities and roles and responsibilities in implementing the policy.

There are four stages at which a road safety audit of construction and reconstruction projects can be conducted:

1. Feasibility stage.
2. Preliminary design stage.
3. Detailed design stage.
4. Pre-opening stage.

Stage one to four road safety audits are formal safety examinations of projects that are under development, design, or construction. They follow defined procedures to identify safety issues that, subject to risk assessment decisions, may result in changes to the concept or design of a project, or as in the case of stage four audits, adjustments to construction work already completed prior to project completion.

Identification of systemic road safety issues from stage one to four audits can lead to improvements in guidelines, practice and training, as well as individual areas of concern being addressed through modifications to concepts, designs or construction.

The aim is to position road safety audits of construction and reconstruction projects as a tool to assist project managers and ensure improved project outcomes for road users. As experience with safety audits grows, fewer design and in-service deficiencies should appear and more safety enhancements will be implemented to reflect new knowledge.

## Policy objectives

The purpose of this policy is to replace the RTA's previous policy for road safety audits of construction and reconstruction projects and establish the accountabilities and responsibilities of Road Safety, Licensing & Vehicle Management (RS, L&VM), Road Network Infrastructure (RNI), Traffic and Transport (T&T), and Operations and Services Directorate (OSD) in the management of road safety audits of construction and reconstruction capital works projects, regardless of funding source.

This policy sets out the minimum road safety audit requirements of roadwork projects to ensure that safety is integrated into construction and reconstruction projects from the early design stages to commissioning of the work, so as to minimise exposure to risk, help drive improved road safety standards.

The objectives of this policy are to:

- Outline the requirement for road safety auditing of construction and reconstruction works.
- Outline the role, responsibilities and accountabilities of RS, L&VM, Operations and Services Road Safety Representatives, Project Managers and auditors in the management of the road safety audit process.
- Establish a mechanism to reflect these respective roles, responsibilities and accountabilities.

## Policy

Minimum requirements have now been set out for the delivery of stage one to four road safety audits on all construction and reconstruction projects to meet RTA's objectives. These minimum intervention levels for stage one to four road safety audits are outlined in Appendix A.

# Implementation

## Criteria for selecting projects for road safety audits

The policy sets out minimum intervention levels for the delivery of stage one to four road safety audits for various work types across the RTA directorates. Selected stages of road safety audits are required if project value exceeds the minimum intervention level (Appendix A).

Additional road safety audits at various stages of the project should be undertaken as appropriate<sup>1</sup>

- The earlier a project is audited in the design and development process the greater the benefit as it can lead to the elimination of problems and, consequently, minimisation of wasted design time and construction costs at later stages. As such, stage one (feasibility stage) and stage two (preliminary design stage) audits may also be conducted where appropriate. Audits at these stages look at broader safety issues such as route options and location of intersection.
- There are also benefits to auditing in later design stages. For example, stage three detailed design audits will give greater cost savings but will not address construction issues. In this situation, a stage four pre-opening audit will be of benefit. Audits at these stages allow more specific issues to be reviewed and rectified, for example, hazards in clear zone, location of safety barriers, and effectiveness of signage.

A balanced program of audits may be considered for all projects. For large projects in particular, auditing at stages two or three, in addition to stage four enable the early elimination of design problems as well as addressing safety issues that may have emerged during construction.

## Development of an annual road safety audit program

An annual audit program will be prepared for each core area (RNI, T&T, Road Safety). The program will be devised by the client representative using the selection criterion as outlined above but must be approved by core clients and Road Safety Strategy<sup>2</sup>. This audit program will be forwarded to Operations and Services Directorate (OSD). OSD will be expected to liaise with project managers to review and adjust the schedule of projects for road safety audit, taking into account project managers' discretion in some instances, to choose between road safety audits at different project stages.

## Role, responsibilities and accountabilities in road safety auditing

RS, L & VM is responsible for setting the policy governing road safety audits.

RS, L & VM in conjunction with other core directorates (RNI, T&T), oversee the total road safety audit program.

**Core program client representatives** are responsible for ensuring delivery of stage one to four road safety audits, following the guidelines established in the RTA's *Accident Reduction Guide Part 2 Road Safety Audits* and this technical direction.

**Road safety auditors** of construction and reconstruction projects will identify potential safety deficiencies only and will not make recommendations.

The **project manager's** responsibility is to ensure all Corrective Action Requests (CARs) are appropriately addressed following an audit. Once CARs are initiated, project managers must respond to audit findings and identify how CARs are to be addressed. Where it is decided not to respond to a particular finding, justification should be given for the determination that no action will follow. Client representatives must be satisfied with outcomes determined by the project managers in addressing the CARs.

RS, L & VM and its **Operations and Services road safety representatives** are responsible for monitoring the overall road safety audit process in each region. This management role involves the development, administration, monitoring and review of the road safety audit process, and includes ensuring that all construction and reconstruction projects are audited in accordance with the requirements of this policy.

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<sup>1</sup> For the first year of the mandatory road safety audit program, a project cost threshold would be the best criterion for selecting projects. This criterion will be reviewed after the first year to determine if there should be any change to the cost threshold or whether other criteria should be also considered.

<sup>2</sup> In the first year, Road Safety Strategy branch in conjunction with core directorates (RNI, T&T) will draft the annual audit program using the selection criterion as outlined in TD2003/03 in consultation with OSD.

Core program client representatives must advise Operations and Services road safety representatives when the CARs have been addressed to their satisfaction in order to ensure that road safety audits are being closed out.

RS, L & VM is responsible for the auditing of audits to ensure quality of the process is being maintained in accordance with the established RTA guidelines in order to identify any systemic issues from road safety audits.

## Information management of road safety audits

Operations and Services road safety representatives will be required to keep a central database of the status of road safety audits conducted across the state and associated CARs. Following an audit, details of CARs resulting from the audit should be provided to the relevant Operations and Services road safety representative to form part of this database. Systemic road safety issues identified from these records will form part of RS, L & VM's quality assurance processes, ensuring improvements are reflected by current standards, policies, guidelines and training. Details of the road safety audits are to be recorded as part of project handover to asset managers using the RNI/OSD Project Handover procedures.

It is the responsibility of the relevant core program client representative to ensure that Operations and Services road safety representatives are regularly informed of audits conducted and the status of CARs in order to ensure currency of the database.

## Road safety audit – risk management

Road safety audits enable pro-active risk management. Road safety audits of construction and reconstruction works attempt to highlight apparent deficiencies so as to minimise the exposure of road users to potentially unsafe elements of the road and the road environment.

Centralised record management of road safety audits allows the delivery of audits and their findings to be tracked. Monitoring of the process aims to ensure that road safety audits are effectively highlighting potential deficiencies in the State Road network, so that action can be taken to minimise the RTA's risk and maximise safety of road users.

## Action

This policy is to take effect immediately.

Approved by:  
(signed)

Michael Bushby  
Director  
Road Safety, Licensing & Vehicle Management

Approved by:  
(signed)

Chris Ford  
Director  
Traffic and Transport

Approved by:  
(signed)

Mike Hannon  
Director  
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## Appendix A - Minimum intervention levels for undertaking stage one to four road safety audits

Directorate	Work Type	Total Project Cost	Road Safety Audits (RSA)			
			Stage 1 Feasibility	Stage 2 Preliminary Design	Stage 3 Detailed Design	Stage 4 Pre-opening
RNI	Development works <sup>(1)</sup>	>500K			*	*
		>2M <sup>(2)</sup>			✓	✓
		>5M	✓	✓	✓	✓
	Maintenance construction and reconstruction works <sup>(3)</sup>	>1M			✓	✓
RS, L & VM	16301 Accident blackspot treatment	>\$100K			*	*
		>\$500K			✓	✓
	16302 Road safety audits <sup>(4)</sup>	>\$50K			*	*
		>\$250K			✓	✓
	16303 Mass action	>\$200K			*	*
		>\$750K			✓	✓
	16306 Local area safety	>\$25K <sup>(5)</sup>	Stage 1 or Stage 2		Stage 3 or Stage 4	
	16307 Rest areas	>\$200K			*	*
		>\$750K			✓	✓
	16308 Road facilities	>\$50K			*	*
>\$200K				✓	✓	
16606 Pedestrian safety	>\$20K <sup>(5)</sup>			✓		
T&T	17100 Network efficiency 17200 Bus network	>\$100K			*	*
		>\$500K			✓	✓
	17401 Pedestrian facilities 17402 Mobility 17403 Pedestrian bridges	>\$100K			*	*
		>\$500K			✓	✓
	17404 - Traffic calming	>\$50K <sup>(5)</sup>	Stage 1 or Stage 2		Stage 3 or Stage 4	
	17304 - Cycleways 17305 - Bicycle facilities	>\$50K <sup>(5)</sup>	Stage 1 or Stage 2		Stage 3 or Stage 4	

\* Complete at least one of the selected (\*) RSA

✓ Mandatory requirement to complete the selected (✓) RSA

(1) Excludes financial assistance grants to local government for works on regional and local roads.

(2) Stage three detailed design and stage four pre-opening RSA are minimum requirements for construction and reconstruction projects over \$2M. Additional RSA should be undertaken at various stages of the project as considered appropriate.

(3) Apply to projects of:

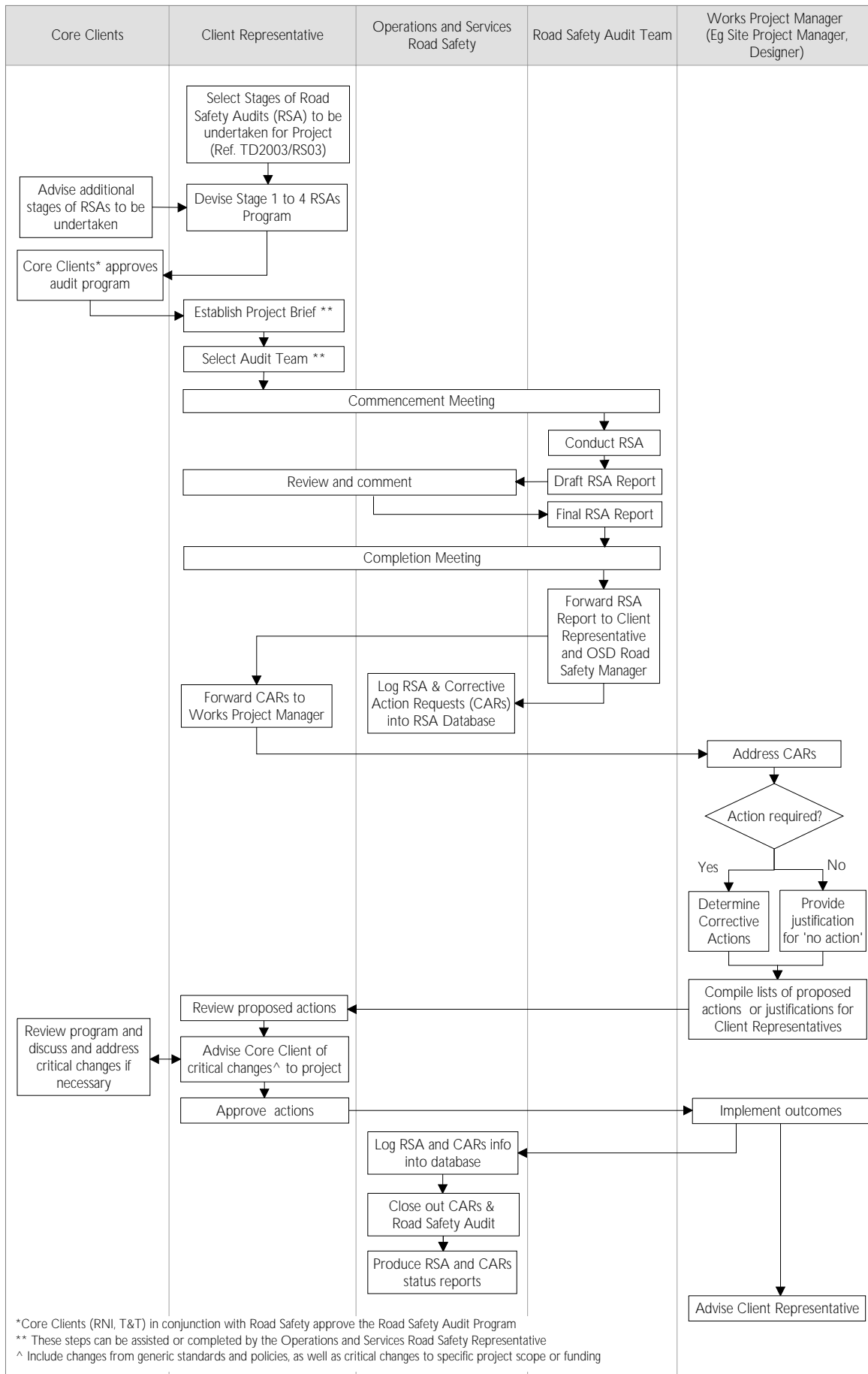
- Pavement rehabilitation
- Initial sealing
- Road widening
- Pavement reconstruction
- Pavement reconstruction including realignment
- Bridge upgrade
- Bridge widening

Excludes financial assistance grants to local government for works on regional and local roads.

(4) Total project costs apply to road safety audit remedial works.

(5) RTA's contribution to the project, excluding contribution from local governments.

# Appendix B – Management procedures for stage one to four road safety audits



<sup>1</sup>In the first year, Road Safety Strategy branch in conjunction with core directorates (RNI, T&T) will draft an annual road safety audit program using the selection criterion as outlined in TD2003/03. This audit program will be forwarded to Operations and Services Directorate (OSD) for concurrence.

## Initiation of stage one to four road safety audits

- Client representatives of construction and reconstruction projects are responsible for selecting stages of road safety audits to be undertaken in accordance with the minimum intervention levels for the delivery of stage one to four road safety audits as outlined in Appendix A.

Client representatives for construction and reconstruction projects should ensure that the requirements for undertaking stage one to four road safety audits are included as part of the project management tasks. Client representatives are responsible for devising a program of stage one to four road safety audits for core clients' approval<sup>3</sup>.

Where stage four pre-opening road safety audit is undertaken at a considerable time prior to the opening to traffic, it is appropriate for the same road safety audit team to inspect the site again at a closer date prior to opening to ensure Corrective Action Requests (CARs) raised in the previous site inspection have been actioned. The project brief may include a clause to require the road safety audit team to inspect the site again at a closer date prior to the opening to traffic.

The general principle is that a range of projects should be audited (in terms of size / cost) at a range of project stages.

- Core clients and client representatives may also determine additional stage one to four road safety audits for projects to be undertaken in the program.

## Project brief and contract management

- Client representatives are responsible for setting up the project brief and for contracting an independent audit team to conduct the road safety audit. RTA staff on an audit team must be independent of the project being audited.

## Road safety auditing

- Prior to the commencement of the audit, the client representative, as the road safety audit's project manager, and the audit team will review project document and plans at a commencement meeting.
- The audit team is required to conduct the road safety audit in accordance with the RTA *Accident Reduction Guide Part 2 Road Safety Audits*. A site meeting may be appropriate for stages one to three, while stage four audits will require both day and night inspections.
- Operations and Services Road Safety is responsible for reviewing the audit report prior to finalisation, to ensure that format and structure of the report is consistent with the RTA format. In particular, road safety auditors should not make recommendations with respect to road safety deficiencies identified as part of the road safety audit.
- Road safety audit findings will be presented by the audit team at a completion meeting.

## Management of corrective action requests (CARs)

- Operations and Services road safety representative is responsible for logging all audit findings and CARs into the *Road Safety Audit Database*.
- CARs completed by auditors in the standard CAR format will be forwarded to client representative, as the road safety audit's project manager. Project managers for the works are responsible for addressing the CAR and documenting the corrective actions for the safety deficiency or for providing justification in the case of no action. It is optional for the project manager to commission a detailed risk assessment to assist in the decision on appropriate corrective actions.

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<sup>3</sup> In the first year, Road Safety Strategy branch in conjunction with core directorates (RNI, T&T) will draft an annual audit program using the selection criterion as outlined in TD2003/03. This audit program will be forwarded to Operations and Services Directorate (OSD) for concurrence.

- Project managers of the works should obtain concurrence from their client representatives on the proposed action plan to address the outcomes of the CARs in the road safety audit report. This ensures that the client representatives are informed of any potential change in scope or project costs due to corrective actions proposed. The client representative signs the CAR for concurrence of proposed outcomes.
- Project managers are required to sign the CAR and forward it to the client representative and the Operations and Services Road Safety Manager for road safety audit and CAR records management.

## Road safety audit database

- Operations and Services Road Safety needs to ensure that CARs are addressed and signed by project managers and have the concurrence of client representatives, prior to closing out for administration.
- Operations and Services Road Safety is responsible to ensure that all audit findings and CARs status are updated in the *Road Safety Audit Database*. Copies of road safety audits and CARs status reports should be forwarded to core clients, Regional Managers, and Manager, Road Environment and Light Vehicles Standards section (RELVS). The record keeping of road safety audit findings and CARs assists in the identification of systemic or recurrent road safety issues for future improvements in road design.