



## **Road Safety Audits**

**December 2000**

**Summary :**

This Standard covers the requirements for Road Safety Audits on national road schemes. It describes the stages at which the audits shall be carried out, the procedures to be followed and the monitoring of schemes after opening.

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**VOLUME 5 ASSESSMENT AND  
PREPARATION OF ROAD  
SCHEMES**

**SECTION 2 PREPARATION AND  
IMPLEMENTATION**

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**PART 2**

**NRA HD 19/00**

**ROAD SAFETY AUDITS**

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# 1. INTRODUCTION

## General

1.1 The objective of this Standard is to ensure that the road safety implications of all schemes are fully considered for all users of the road and others affected by the scheme.

## Definitions

1.2 *Road Safety Audit*: The evaluation of road schemes during design and construction to identify potential safety hazards which may affect any type of road user before the scheme is opened to traffic and to suggest measures to eliminate or mitigate those problems.

1.3 *Road Schemes*: All works that involve permanent change to the existing road layout.

1.4 *Design Office*: The organisation managing the various phases of scheme preparation and supervision of construction.

1.5 *Design Team*: The group undertaking the various phases of scheme preparation and supervision of construction on behalf of the Design Office. This may be a team within the Design Office or a separate consultant.

1.6 *Audit Team*: A team of a minimum of two persons, independent of the Design Team and approved by the Overseeing Organisation. The Audit Team shall comprise staff with appropriate levels of training and experience in road safety engineering, accident investigation, and safety audit, as set out in memoranda produced from time to time by the Overseeing Organisation. Each member of the Audit Team shall consider the scheme design at specific stages to identify road safety problems. In the case of Design and Build schemes, the Audit Team shall be from a completely separate organisation to the Design Team.

1.7 *Audit Team Leader (ATL)*: The person nominated and approved as Audit Team Leader in accordance with the memorandum discussed in Paragraph 1.6 above.

1.8 *Director*: The Head of Project Management and Engineering in the Overseeing Organisation. In Ireland, the Overseeing Organisation for national roads is the National Roads Authority (NRA).

1.9 *Design Office Project Manager (DOPM)*: The person within the Design Office responsible for ensuring the progression of a scheme in accordance with policy and procedures.

1.10 *Design Team Leader (DTL)*: The person within the Design Team responsible for managing the scheme design.

1.11 *Exception Report*: A report prepared by the Design Office PM following discussion with the Director on each recommendation in the Audit Report, which the Design Office PM proposes should not be implemented. The report shall give reasons and where necessary propose alternative means of addressing the underlying safety problem identified by the Audit.

1.12 During the course of scheme preparation and construction the Design Organisation may change, as may the personnel within the Design Team and Audit Team. It is recommended that where possible the same Audit Team is used throughout the scheme delivery to ensure a consistent approach.

## Scope

1.13 This Standard sets out the procedures required to implement Road Safety Audits on national road schemes. It defines the relevant schemes and stages in the design and construction at which audits shall be undertaken and sets out the requirements for post-implementation accident monitoring.

1.14 The Standard is commended to other Roads Authorities for use in the preparation of their own road schemes on non-national roads.

## Implementation

1.15 This Standard shall be used for schemes currently being prepared (unless granted specific exemption – see Paragraph 2.4 below) provided that, in the opinion of the Overseeing Organisation, this would not result in unacceptable additional preparation cost or unduly delay progress. Schemes for which planning is initiated after December 2000 shall be subject to this Standard unless exempted under Paragraph 2.4.

## 2. ROAD SAFETY AUDIT

### Schemes to be Audited

2.1 Except as noted at Paragraph 2.4 this Standard shall apply to all road schemes on national roads including motorways. This includes work carried out under agreement with the Overseeing Organisation resulting from developments alongside or affecting the national roads.

### Application to Major Temporary Traffic Management Schemes

2.2 Application of this Standard to major temporary traffic management schemes is at the discretion of the Design Office PM in consultation with the Overseeing Organisation.

### Application to Design and Build Contracts

2.3 Except as noted at Paragraph 2.4, this Standard shall apply to Design and Build contracts.

### Exemption

2.4 Schemes may be given exemption from auditing requirements by the Director where their effect on the network is minimal or where specialist consideration has already been given to safety issues and a formal audit would merely duplicate that work.

### Scope of the Audit

2.5 The Road Safety Audit shall only consider matters that have an adverse bearing on road safety. It shall consider safety under all operating conditions.

2.6 The primary purpose of a Road Safety Audit is to identify potential safety hazards within the scheme design as they could affect road users. The audit shall not be concerned with structural safety.

2.7 Formulation of recommendations for dealing with the identified hazards should make allowance for the fact that strategic decisions on matters such as route choice, junction type,

standard of provision and Departures from Standards should already reflect the best balance of a number of factors, including safety.

### Stages of Audit

2.8 Audits and subsequent action shall be completed at four specific stages in the preparation of the scheme, except as detailed in Paragraph 2.9 below. These stages are:

Stage F: Route selection stage, prior to route choice.

Stage 1: Completion of preliminary design prior to land acquisition procedures.

Stage 2: Completion of detailed design, prior to tender of construction contract. In the case of Design and Build contracts, a Stage 2 audit shall be carried out in accordance with the requirements of the contract.

Stage 3: Completion of construction (prior to opening of the scheme to traffic wherever possible).

2.9 In general larger schemes, except as noted at Paragraph 2.4, shall be audited at Stages F, 1, 2 and 3. In the case of smaller schemes, Stages F, 1 and 2 may be combined. For temporary traffic management schemes, only Stage 2 and 3 audits shall be required.

2.10 Where no previous stage audit has been undertaken then those factors that would normally be considered at an earlier stage shall be included as necessary.

2.11 On conventional admeasurement contracts, tenders shall not be invited until the Stage 2 Audit has been completed and the appropriate amendments incorporated into the design.

### Audit Team – Proposal and Approval

2.12 The Design Office PM shall examine the curriculum vitae of each team member of available Safety Audit Teams in conjunction with

a designated Safety Audit Officer of the Overseeing Organisation. Having satisfied itself and the Overseeing Organisation as to the qualifications of available Audit Teams, the Design Office PM shall appoint an Audit Team. The Audit Team shall have had no previous connection with the design of the scheme.

2.13 In the case of Design and Build contracts the procedure for appointment of the Audit Team may be included in the Employers' Requirements.

### **Project Management**

2.14 The Design Office PM shall provide the link between the Audit and Design Teams for dealing with queries or requests for additional information.

2.15 The Design Office PM shall liaise with the Design Team and initiate the Audit process at the appropriate stages, ensuring that sufficient programme time is available to complete the full audit procedure. This should include an allowance for the incorporation of design changes.

2.16 The Design Office PM shall ensure that the Audit Team is given due notice of when the scheme will be ready for audit and the date by which the report shall be required.

2.17 The Design Office PM is responsible for ensuring that representatives of An Garda Síochána and those responsible for network management are invited to take part in the Stage 3 Audit.

### **Audit Brief**

2.18 The Design Office PM is responsible for preparing the audit brief.

### **The Report and Subsequent Actions**

2.19 At each stage, the Audit Team shall prepare a written report, which shall be forwarded directly to the Design Office PM, with a copy to the Design Team Leader. The report must clearly identify the scheme, the audit Stage and the Audit Team membership, including the names of others contributing at Stage 3 site visits. The body of the report should be kept brief and shall contain descriptions of the specific road safety problems that the Audit Team believes would be created. It

should include background reasoning in support of the findings together with the Audit Team's recommendations to eliminate or mitigate the hazards identified. The report should indicate the relative importance of each problem.

2.20 The reports shall contain a signed statement by each Audit Team member confirming team membership and independence from the Design Team.

2.21 The Design Team Leader shall consider the audit report and prepare a Design Team response to each of the recommendations, stating clearly whether the recommendations are accepted, rejected, or whether an alternative recommendation is proposed. Copies of the Design Team response shall be sent to the Design Office PM and the Audit Team.

2.22 Where appropriate, discussions between the Audit Team, Design Team and Design Office should be held to clarify issues raised and determine appropriate action.

2.23 The Design Office PM shall consider the Audit Report and the Design Team Response. Where unresolved issues remain, the Design Office PM shall prepare an Exception Report, following discussions with the Overseeing Organisation. The final decision shall rest with the Director of the Overseeing Organisation.

2.24 The Design Office PM shall instruct the Design Team in respect of any changes required during the preparation, design and construction of the scheme resulting from audit.

2.25 The Design Office PM shall send copies of all reports and decisions to the Overseeing Organisation, the Design Team Leader and the Audit Team Leader.

### **Accident Monitoring**

2.26 Staff in the Overseeing Organisation who are responsible for network management shall arrange for accident monitoring of audited schemes to be undertaken.

2.27 A record of all the accidents that have occurred on the scheme since opening shall be obtained at 1 year and 3 years after opening in order to monitor the effectiveness of road safety audits. This shall supplement routine monitoring.

2.28 The accident records shall be analysed in detail to identify such factors as:

- a) locations at which accidents have occurred;
- b) accidents which appear to arise from similar causes or show common factors; and
- c) the accident rate and severity ratio after 3 years compared with the average rates for either the type of road or the road before improvement.

### **Guidance**

2.29 This Standard should be read in conjunction with the separate NRA Guide to Road Safety Audits, due to be published in December 2000.

2.30 A flow chart illustrating the Safety Audit process is shown in Figure 1.

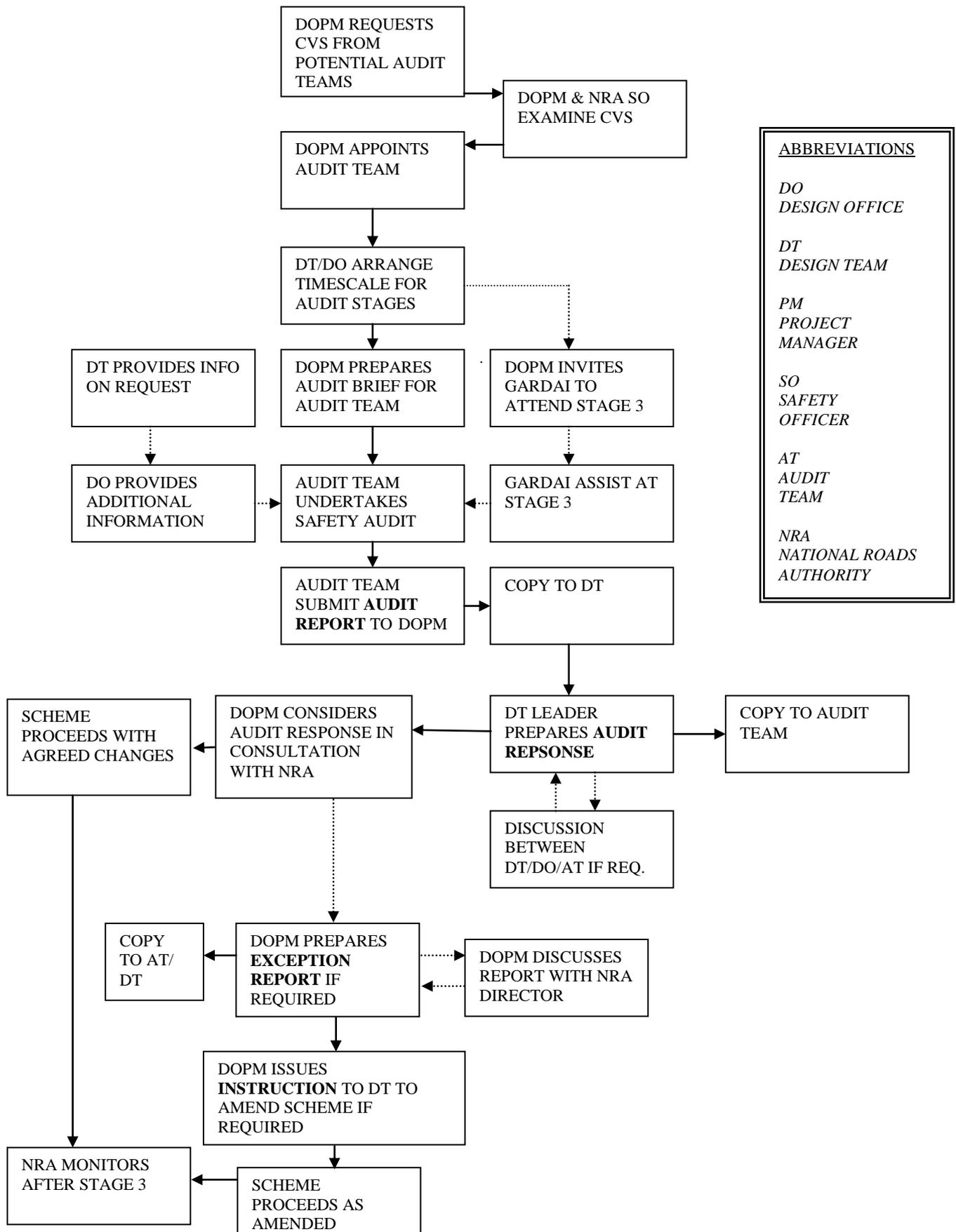


Figure 1 : Safety Audit Flow Chart

### **3. REFERENCES**

3.1 The following document is referred to in this Standard:

NRA Guide to Road Safety Audits, 2000



## 4. ENQUIRIES

4.1 All technical enquiries or comments on this Standard should be sent in writing to:

Head of Project Management and Engineering  
National Roads Authority  
St Martin's House  
Waterloo Road  
Dublin 4



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E O'CONNOR  
Head of Project Management and  
Engineering

