

Road Safety Management Procedures for National Roads in Ireland

June 2012

Summary:

This document covers the procedures for management of road safety on the road infrastructure in Ireland on National Roads. It describes the roles and responsibilities of those engaged in the management of road safety and it outlines the procedures to be followed to address the requirements of the EU Directive 2008/96/EC on Road Infrastructure Safety Management (RISM) and its transposition into Irish Law under S.I. No. 472 of 2011.

ROAD SAFETY MANAGEMENT PROCEDURES FOR NATIONAL ROADS IN IRELAND

Contents

Part A: Implementation of Directive

Chapter

1. Introduction
2. Procedure Summary
3. Enquiries
4. [HD 15/12 Network Safety Management](#)
5. [HD 16/12 Temporary Safety Measures Inspection](#)
6. [HD 17/12 Road Safety Inspection](#)
7. [HD 18/12 Road Safety Impact Assessment](#)
8. [HD 19/12 Road Safety Audit](#)

Part B: For Information Only

- A. [Chapter 8 Traffic Signs Manual](#)
- B. [Guidance for the Control and Management of Traffic at Road Works](#)
- C. [Correlation with Directive](#)
- D. [S.I. No. 472 of 2011 & EU Directive 2008/96/EC](#)
- E. [Syllabus of Road Safety Audit course](#)

Part A: Implementation of Directive

1 INTRODUCTION

General

1.1 This document addresses the requirements of the EU Directive 2008/96/EC on Road Infrastructure Safety Management (RISM) and its transposition into Irish Law under S.I. No. 472 of 2011, (see Appendix D).

1.2 The objective of this document is to collate all the relevant standards and procedures for management of road safety on the national road network in Ireland. For ease of reference, this document is split into two parts; Part A includes the relevant standards required for the implementation of the Directive, whereas Part B includes additional relevant information.

1.3 In 2008, motorists travelled 43,790 million vehicle kilometres on Irish roads (source CSO statistics), and the distance per vehicle travelled each year by the Irish road fleet is consistently amongst the highest in Europe. Ireland is a small island nation with a dispersed population and road travel is important.

1.4 This high usage of the country's roads carries a consequential road traffic collision risk, and in 2010 the number of fatalities on Irish roads was 212 (source Road Safety Authority).

1.5 There is a duty on road users to travel with care, and there is a corresponding obligation on those who plan and construct road infrastructure to ensure that it is as safe as is realistically possible.

1.6 In recent decades the very high cost to society of collisions has led to an emphasis on road safety within Ireland and Europe. The assumption that collisions are an inevitable consequence of travel has been strongly challenged. In Ireland, implementation of road safety measures over the last 40 years has led to a downward trend in the number of road deaths, from around 600 per year in the early 1970's to 212 in 2010. This was achieved in the context of an almost four-fold increase in road travel during that period, and in that respect a better indicator of the achievement is the decrease in the number of

deaths per 10,000 licensed vehicles, which fell from 10 in 1970 to 1 in 2010.

1.7 The Member States of the European Union have become increasingly focused on road safety management. In its White Paper of 2001 'European transport policy for 2010: time to decide' the Commission expressed the need to carry out safety impact assessments and road safety audits in order to identify and manage high collision concentration locations within the Community. It also set the target of halving the number of fatalities on the roads within the European Union between 2001 and 2010, from 50,000 to 25,000.

1.8 Following the publication of the National Roads Authority Design Manual for Roads and Bridges (NRA DMRB) in Ireland, a circular was issued to each local authority instructing them that they must comply with the Standards as set out in the NRA DMRB for all National Roads and also for all works on non-National roads funded by the National Roads Authority. Therefore, procedures had been in place in Ireland for many years in respect of road safety management.

1.9 EU DIRECTIVE 2008/96/EC of 19 November 2008 on road infrastructure safety management was the culmination of that policy, and it set out the processes for all elements of road safety management.

1.10 On the 23rd September 2011, S.I. No. 472/2011, European Communities (Road Infrastructure Safety Management) Regulations 2011 were made. These regulations gave effect to the EU Directive in Ireland and also gave effect to the provisions of the Directive in relation to the publication of national standards for the various elements of road safety assessment

1.11 The National Roads Authority issued a further circular to all local authorities following this transposition into Irish law informing them of the Directive and advising them that the Authority would shortly issue comprehensive standards, prepared in accordance with the Regulations, to local authorities for comment.

1.12 Full correlation of how Irish standards meet the requirements of the EU Directive on

RISM is presented in the Table of Correlation in Part B of this document.

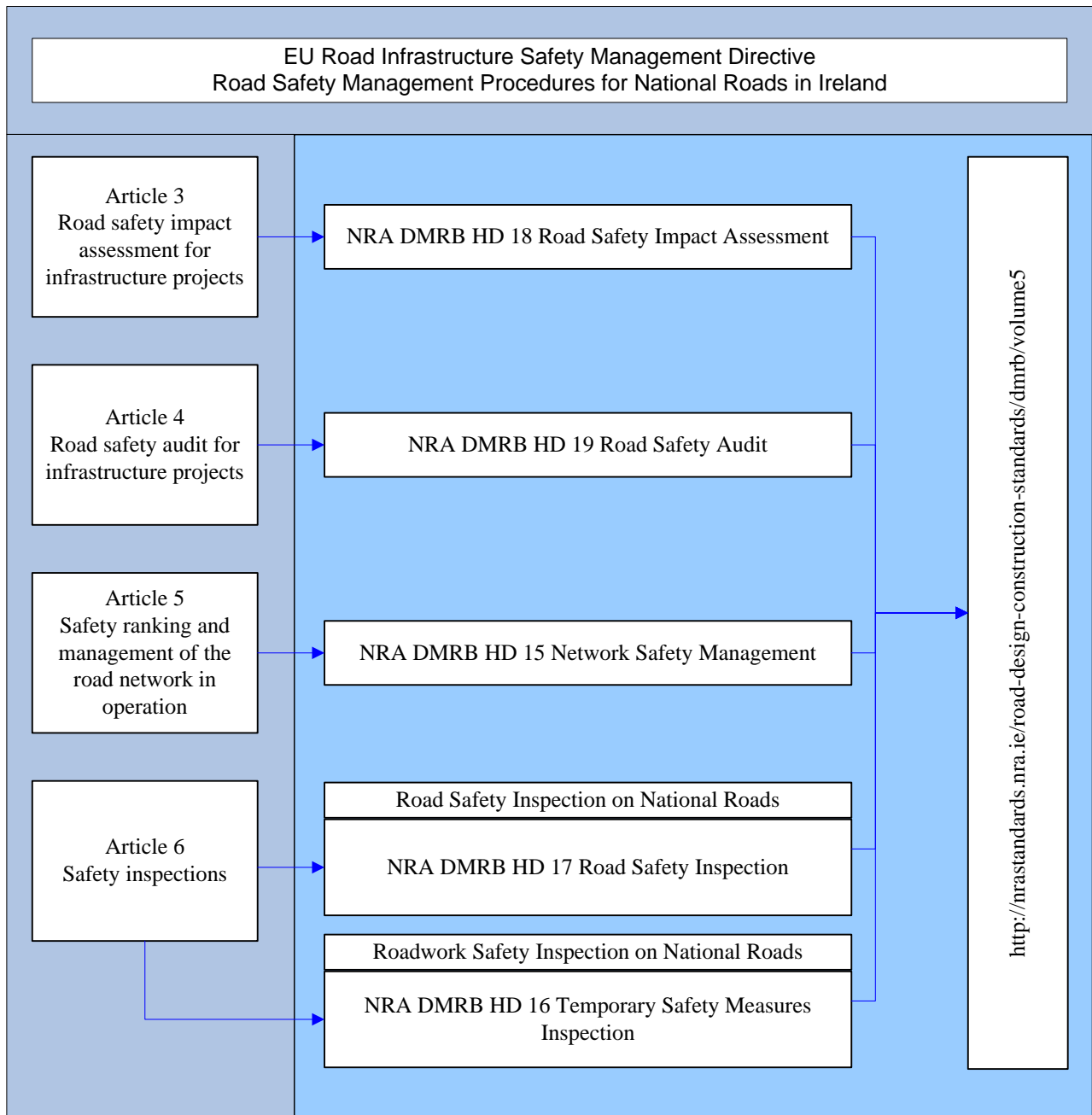
1.13 Road Safety Audits have been mandatory on all National Roads in Ireland since 2001. The specific requirements of the Irish standards are set out in:

- [HD 19/12 Road Safety Audit](#)

1.14 Additional new standards, which are contained within the NRA Design Manual for Roads and Bridges, have also been written which set out the specific requirements relating to the following elements of road safety assessment:

- [HD 15/12 Network Safety Management](#);
- [HD 16/12 Temporary Safety Measures Inspection](#);
- [HD 17/12 Road Safety Inspection](#);
- [HD 18/12 Road Safety Impact Assessment](#);

2 PROCEDURE SUMMARY



3 ENQUIRIES

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

Head of Network Management, Engineering Standards & Research
National Roads Authority
St Martin's House
Waterloo Road
Dublin 4



.....
Pat Maher
Head of Network Management,
Engineering Standards & Research

4 HD 15/12 Network Safety Management



Volume 5 Section 2
Part 2
NRA HD 15/12

Network Safety Ranking

June 2012

St. Martin's House, Waterloo Road, Dublin 4. Tel:+353 1 660 2511 Fax +353 1 668 0009
Email : info@nra.ie Web : www.nra.ie

Summary:

This Standard covers the requirements for Safety Ranking on National Road Schemes. It describes the stage at which the assessment shall be carried out and the procedures to be followed.

Published by National Roads Authority, Dublin 2012

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

**SECTION 2 PREPARATION AND
IMPLEMENTATION**

PART 2

NRA HD 15/12

Network Safety Ranking

Contents

Chapter

1. Introduction
2. High Collision Locations and Network Safety Ranking
3. Identification of High Collision Locations
4. References
5. Enquiries

1 INTRODUCTION

General

1.1 The objective of this Standard is to identify sections or locations on the road network which have a high concentration of collisions and to rank the safety of the road network.

Scope

1.2 This Standard sets out the procedures required to identify sections on the National Road Network with a high concentration of collisions and to rank the safety of the National Road Network.

1.3 The Standard is commended to other Roads Authorities for use in the preparation of their own road schemes.

Definitions

1.4 Ranking of high accident concentration sections or high collision concentration sections:
Means a method to identify, analyse and rank sections of the road network which have been in operation for more than three years and upon which a large number of fatal accidents in proportion to the traffic flow have occurred. (EU Road Infrastructure Safety Management Directive).

1.5 *Network Safety Ranking:*
Means a method for identifying, analysing and classifying parts of the existing road network according to their potential for safety development and accident cost savings. (EU Road Infrastructure Safety Management Directive).

1.6 *Assessment Team:*
A site inspection is undertaken by a competent Assessment Team which consists of a minimum of two persons. The current NRA training and experience requirements for Assessment Teams are subject to change and are downloadable on NRA website.
www.nra.ie/Publications/RoadSafety

1.7 *Authority:*
For National Roads the Authority is the National Roads Authority (NRA).

1.8 *Accident / Collision:*

A road collision is a rare, random, multi-factor event preceded by a situation in which one or more road users have failed to cope with their environment.

Road collisions occur on a public road, are reported to and recorded by the Gardaí, they are classified as fatal, serious, minor injury or material damage.

1.9 *Fatal Collision:*

Where at least one person is killed as a result of the collision and death occurs within 30 days.

1.10 *Serious Injury Collision:*

Is an injury for which the person is detained in hospital as an 'in-patient', or any of the following injuries whether or not detained in hospital: fractures, concussion, internal injuries, crushing, severe cuts and lacerations, severe general shock requiring medical treatment.

1.11 *Minor Injury Collision:*

Where there are no deaths or serious injuries. A 'minor injury' is an injury of a minor character such as a sprain or bruise.

1.12 *Material Damage Collision:*

Where there are no deaths or injuries. A collision is a 'material damage collision' if damage is caused to a vehicle or property.

1.13 *Network:*

The Network refers to all National Roads as prescribed in the Schedule of National Roads.

1.14 *Reference Populations (R.P.):*

Reference Populations are sub sets of the Network which have similar features and, as such are expected to have a similar safety performance.

1.15 *Collision Frequency (C_f):*

Is the total number of collisions which occur along a section of the Network.

1.16 *Collision Rates (R_p) & (R_j):*

A Collision Rate is the ratio between the frequency of collisions over a length of road and an exposure measure, typically in the form of vehicle kilometres of travel over the same section. The Average Collision Rate (R_p) is the collision rate for a Reference Population, while the Site

Collision Rate (R_j) is the collision rate for a specific Site.

While the EU RISM Directive specifically requires the identification of High Collision Locations based on fatal accidents numbers, the calculation of the Collision Rate on the road network is based on all Fatal, Serious and Minor Injury collisions as this data is readily available.

The vehicle kilometres of travel used when calculating the Collision Rate is the middle year of the assessment.

While the Average Collision Rate is calculated for the entire Reference Population, the Site Collision Rate is initially calculated for each 1km length of the Reference Population. Following the initial review this 1km length can be further reduced to reflect the Site of a cluster of collisions

1.17 *Potential for Improvement (P.I.):*

The Potential for Improvement is the difference between the Average Collision Rate for the Reference Population and the Site Collision Rate.

1.18 *High Concentration of Collisions or High Collision Location (HCL):*

A High Collision Location is a Site on the Network which has a Collision Rate twice above the Average Collision Rate for the Reference Population, and three or more collisions within the previous three years.

2 High Collision Locations and Network Safety Ranking

Roads to be Inspected

2.1 Except as noted in Paragraph 2.2, Ranking of High Collision Locations shall apply to all National Roads.

Exemption

2.1 To complete a review of the collisions on the Network it is necessary to have a number of years of historic collision data. Therefore, sections of the Network may be given an exemption from ranking if the section of the Network being assessed has been opened within the last three years.

Scope of Ranking High Collision Locations

2.2 The primary purpose of ranking High Collision Concentration Sections or High Collision Locations (HCL) is to identify sections of the Network which have a High Collision Concentration and from this analysis to identify sections of the Network which have a Potential for Improvement.

2.3 Reference Populations (R.P.) are defined at the commencement of the process of identification of High Collision Locations.

2.4 The end product of the ranking of High Collision Locations will be the identification of sections of the Network with a Potential for Improvement.

2.5 All High Collision Locations identified as having an engineering remedial solution will be ranked according to the potential First year Rate of Return for the preferred option at each High Collision Location.

Safety Health and Welfare at Work Act

2.6 It will be important to ensure that the Assessment Team complies with current legalisation and best practice in relation to safety

and health while undertaking the assessment of High Collision Locations.

Review Periods

2.7 The Authority is responsible for initiating the review of the Network and for ensuring that the review is repeated at the appropriate time interval.

2.8 The review of the Network to identify and rank High Collision Locations will be carried out on an annual basis.

3 Identification of High Collision Locations

3.1 The identification and ranking of High Collision Locations is a multi-stage process. It follows the steps listed below:-

- Initial Desktop Study
- Detailed Desktop Study
- Site Assessment
- Defining the Problem
- Measures to Resolve the Problem
- Prioritising the Schemes on the Network.

Initial Desktop Study

3.2 The initial desktop study is based on a robust spatial analysis of the collision data, traffic volume data and network road link data. It defines the Reference Populations (R.P.), and calculates the potential for improvement (P.I.) for individual locations.

3.3 Reference Populations (R.P.)

The following reference populations are defined:-

- Rural
 - Standard and Wide Motorways
 - Type 1, 2 and 3 Dual Carriageways
 - Type 1, 2 and 3 Single Carriageways
- Urban
 - Standard and Wide Motorways
 - Type 1, 2 and 3 Dual Carriageways
 - Type 1, 2, and 3 Single Carriageways

The initial review of the Reference Population is based on 1km section lengths.

3.4 Collision Frequency (C.F.) and Collision Rates (C.R.).

3.4.1. Collision Frequency (C.F.)

Eq 1. Average Collision Frequency for the Reference Population

$$f_{rp} = \frac{\sum f_j}{n}$$

Where:

- f_{rp} = Average Collision Frequency for the Reference Population
 f_j = collision frequency at Site j of a Reference Population
 n = number of sites

3.4.2. Collision Rate (C.R.) is a ratio between a number of collisions and an exposure to traffic volume.

Eq 2. Collision Rate for individual site (j)

$$R_j = \frac{f_j \times 10^8}{365.25 \times PL_j Q_j}$$

Where:

R_j = Collision rate of Site j (coll./10 Million veh-km)

f_j = Collision frequency at Site j

P = period of analysis (years)

L_j = segment length of Site j (km)

Q_j = average annual daily traffic of Site j (AADT)

Eq 3. Collision Rate for Reference Population

$$R_{rp} = \frac{\sum f_j \times 10^8}{365.25 \times P \times \sum L_j \times Q_w}$$

Where:

R_{rp} = Average Collision Rate (coll./10 Million veh-km)

f_j = Collision frequency at Site j

P = period of analysis (years)

L_j = segment length of Site j (km)

Q_w = Weighted average annual daily traffic (AADT)

Eq 4. Weighted AADT

$$Q_w = \frac{\sum (Q_j \times L_j)}{\sum L_j}$$

Where:

Q_w = Weighted average annual daily traffic (AADT)

Q_j = AADT of Site j

L_j = segment length of Site j (km)

3.5 This initial desktop study identifies High Collision Locations which are subject to a Detailed Desktop Study.

Detailed Desktop Study

3.6 Each High Collision Location is assessed to ensure that all the data used in identifying the

location during the initial desktop review is correct.

3.7 As the initial assessment is based on section lengths of approximately 1km, it is possible that the collisions occurred at a single Site, at multiple Sites or a Site which extends along a length of the 1km section. Where this is the case then each Site becomes the focus for the detailed review.

3.8 A detailed review of the collision data for the collisions at the High Collision Location is undertaken to identify the factors which can explain how the various road users failed to cope immediately prior to the collisions. The analysis should aim to highlight factors common to a number of the collisions at the Site.

Site Visit

3.9 Once the collision data and other relevant data for a particular location has been studied, it will be necessary to carry out a site visit. The site visit should only take place after the initial collision study has been completed. This should avoid the pre-judgement of collision problems that can happen if the site is visited prior to the collision data been examined.

The site visit should be used to try to understand the Site from the point of view of those involved in the collision. It should note the various road features at the Site.

Defining the problem

3.10 Once the collision analysis, and site visit has taken place, the collision problems for the Site can be defined. The definition of the problem should be as precise as possible so that a specific counter measure or counter measures can be designed to resolve the problem.

Measures to Resolve the Problem

3.11 Once the collision problems have been identified, possible treatments can be considered. An assessment of the different treatments is carried out to identify the most suitable treatment available.

Prioritising the schemes on the Network

3.12 All Sites which are identified as having an engineering remedial solution will be ranked against all other High Collision Locations on the Network, according to the potential First Year Rate of Return for the preferred option at each Site.

4 REFERENCES

- Association, P. -W. (2003). *Road Safety Manual*. R2Market.
- Authority, R. S. (2010). *Road Collision Facts, Ireland 2009*. Dublin: Road Safety Authority.
- Environment, D. o. (1996). *A Guide to Road Safety Engineering in Ireland*. Dublin: Government Publications Office.
- Officials, A. A. (2010). *Highway Safety Manual*. Washington: AASHTO.

5 ENQUIRIES

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

Head of Network Management, Engineering Standards & Research
National Roads Authority
St Martin's House
Waterloo Road
Dublin 4



.....
Pat Maher
Head of Network Management,
Engineering Standards & Research

5 HD 16/12 Temporary Safety Measures Inspection

Volume 5 Section 2

Part 2

NRA HD 16/12



Temporary Safety Measures Inspection

June 2012

St. Martin's House, Waterloo Road, Dublin 4. Tel:+353 1 660 2511 Fax +353 1 668 0009
Email : info@nra.ie Web : www.nra.ie

Summary:

This Standard provides guidance on establishing an inspection system for Temporary Safety Measures applying to road works on National Roads.

Published by National Roads Authority, Dublin 2012

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

**SECTION 2 PREPARATION AND
IMPLEMENTATION**

PART 2

NRA HD 16/12

**TEMPORARY SAFETY MEASURES
INSPECTION**

Contents

Chapter

1. Introduction
2. Temporary Safety Measures Inspection
3. References
4. Enquiries

1 INTRODUCTION

General

1.1 The objective of this standard is to establish an inspection system for Temporary Safety Measures applying to road works, to ensure that the standard applying to Temporary Safety Measures at road works (referenced in 1.5 below), are properly applied, and to record possible impacts on the safety of traffic flow.

1.2 This standard addresses the requirements of the EU Directive 2008/96/EC on Road Infrastructure Safety Management (RISM) and its transposition into Irish Law under S.I. No. 472 of 2011.

1.3 This standard shall ensure that individual road authorities, Road Operators and Statutory Undertakers set out a process within their Safety Management Systems requirements that facilitate the implementation of this standard.

1.4 This standard does not provide information on the design and implementation of Temporary Safety Measures.

1.5 Reference should be made to the following documents for guidelines applicable to the design and implementation of Temporary Safety Measures:

- Chapter 8 of the *Traffic Signs Manual* published by the Department of Transport, Tourism and Sport, and
- *Guidance for the Control and Management of Traffic at Road Works* issued jointly by Local Authorities, the National Roads Authority, the Department of Transport, Tourism and Sport and by the Local Government Management Services Board.

1.6 Standardisation of the reporting format for the Temporary Safety Measures Inspections is desirable for the following reasons:

- It indicates to the inspection team the quantity and quality of the information required;
- It enables the NRA to directly compare common report information;

- It enables the NRA to monitor where certain issues are reoccurring from inspection to inspection;
- It enables easier monitoring of the quality and consistency of these inspections.

1.7 The standard report format is downloadable on NRA website.

www.nra.ie/Publications/RoadSafety

Definitions

1.8 *Authority:*

For National Roads the Authority is the National Roads Authority (NRA).

1.9 *Road Works:*

Occur where the normal function of the public road used by any road user, including non-motorised users, is affected or interrupted at any time to facilitate the construction or maintenance of the public road, public or private utilities or any adjoining or overhead sites.

1.10 *Road Operator:*

A road operator is defined as a company undertaking construction, maintenance or operation of a National Road under a contract agreement with the Authority, and in circumstances where direct responsibility for the construction, maintenance or operation of the section of road has been transferred to the company. A Road Operator may be appointed under a Public Private Partnership or other form of contract with the Authority.

1.11 *Safety Management System:*

The Safety, Health and Welfare at Works Act, 2005 requires an employer to provide systems of work that are planned, organised, performed, maintained and revised as appropriate so as to be, so far as is reasonably practicable, safe and without risk to health.

1.12 *Statutory Undertaker:*

Means the parties involved in conducting media or apparatus for water, sewage, electricity, gas, oil, telecommunications, data, steam, air, or other

services, and associated apparatus or structures, together with any privately owned services.

1.13 *Temporary Safety Measures Inspection:*

An inspection of Temporary Safety Measures at road works to ensure that standards on Temporary Safety Measures at road works are properly applied.

1.14 *Temporary Safety Measures Inspection Team:*

For the purposes of this standard a Temporary Safety Measures Inspection Team shall comprise of competent inspectors appointed by the Relevant Road Authority, as defined in Paragraph 2.4 of the document.

1.15 The current NRA training and experience requirements for Temporary Safety Measures Inspection Team are subject to change and is downloadable on NRA website.

www.nra.ie/Publications/RoadSafety

2 TEMPORARY SAFETY MEASURES INSPECTION

Temporary Safety Measures Inspection

2.1 Except as noted in Paragraph 2.2, Temporary Safety Measures Inspections shall apply to all National Roads.

Exemption

2.2 This standard does not apply to road tunnels which are covered by Directive 2004/54/EC of the European Parliament, but road works on the approaches to tunnel portals may be inspected.

Scope of Temporary Safety Measures Inspection

2.3 The primary purpose of a Temporary Safety Measures Inspection is to ensure that the standard applying to Temporary Safety Measures at Road Works are properly applied and to record possible impacts of Road Works on the safety of traffic flow.

2.4 Temporary Safety Measures Inspections shall be undertaken by the relevant bodies as follows:

- National Roads Authority will undertake inspections of Temporary Safety Measures on projects sanctioned/or procured by the Authority.
- Local authority will undertake inspections of Temporary Safety Measures on projects sanctioned and / or procured by the local authority.
- Statutory Undertaker/Road Operator will undertake inspections of Temporary Safety Measures on projects under their management.

2.5 The National Roads Authority will carry out random inspections of local authority, Road Operators and Statutory Undertaker's Temporary Safety Measure Inspection Systems to verify Inspections are being carried out in accordance with this standard.

2.6 The Temporary Safety Measures Inspection shall inspect the sections of Road

Works that impact upon road users and the immediate approaches to Road Works shall also be inspected.

Occurrence of Safety Inspection

2.7 The Directive states that "*Member States shall ensure that safety inspections are undertaken ...*". The Regulations state:

- *Safety inspections shall comprise periodic inspections of the road network, and.....be sufficiently frequent to safeguard adequate safety levels for the road infrastructure in question;*
- *Member states shall adopt guidelines on temporary safety measures applying to road works.*

2.8 The frequency of inspections of Temporary Safety Measures shall be generally determined by the duration of the Road Works and shall be subject to the following minimum requirements:

Duration of Road Works	% of sites to be inspected per annum	Frequency of Inspection
Exceeding 1 year in duration	100% of sites to be inspected	Quarterly
1 month to 1 year in duration	30% to 40% of sites to be inspected	Twice per year
Greater than 1 day, less than 1 month	10% to 20% of sites to be inspected	Single Inspection
1 day in duration	Random	Single Inspection

2.9 These are the intended intervals; however, there may be circumstances where it is sensible to shorten these periods, and the NRA will make a decision where it requires additional inspections. Circumstances where that might arise are:

- On very busy strategic routes, such as the M50;

- Where major incremental changes have been made to the Temporary Safety Measures.

Safety and Health

2.10 The inspection team should exercise caution when working in live traffic. Each Inspector must be familiar with, and comply with, current legislation and best practice in relation to occupational health and safety pertaining to inspection or other activities on a live carriageway.

2.11 Websites and other sources providing guidance on safety of works and other activities on live carriageways, should be checked regularly for updates. These include the HSA website www.hsa.ie.

3 REFERENCES

Chapter 8 of the [Traffic Signs Manual](#) published by the Department of Transport, Tourism and Sport

[Guidance for the Control and Management of Traffic at Road Works](#) issued jointly by local authorities, the National Roads Authority, the Department of Transport, Tourism and Sport and by the Local Government Management Services Board.

4 ENQUIRIES

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

Head of Network Management, Engineering Standards & Research
National Roads Authority
St Martin's House
Waterloo Road
Dublin 4



.....
Pat Maher
Head of Network Management,
Engineering Standards & Research

6 HD 17/12 ROAD SAFETY INSPECTION



Volume 5 Section 2
Part 2
NRA HD 17/12

Road Safety Inspection

June 2012

St. Martin's House, Waterloo Road, Dublin 4. Tel: +353 1 660 2511 Fax +353 1 668 0009
Email : info@nra.ie Web : www.nra.ie

Summary:

This Standard covers the requirements for Road Safety Inspection on National Roads. It describes the roles and responsibilities of those engaged in Road Safety Inspection, and outlines the procedures to be followed when carrying out an Inspection. It is to be read in conjunction with the “*HA 17 Road Safety Inspection Guidelines*” published by the National Roads Authority.

Published by National Roads Authority, Dublin 2012

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

**SECTION 2 PREPARATION AND
IMPLEMENTATION**

PART 2

NRA HD 17/12

ROAD SAFETY INSPECTION

Contents

Chapter

1. Introduction
2. Road Safety Inspection
3. Road Safety Inspection Process
4. References
5. Enquiries

1 INTRODUCTION

General

1.1 The objective of this Standard is to ensure that the Road Safety Inspections in respect of roads in operation are undertaken with sufficient frequency to safeguard adequate safety levels for the road infrastructure in question.

Scope

1.2 This Standard sets out the procedures required to implement Road Safety Inspections on all National roads.

1.3 The Standard is commended to other Roads Authorities for use in inspections on Regional and Local Roads.

Definitions

1.4 *Road Safety Inspection:*

An ordinary periodical verification of the characteristics and defects of an operational road that require maintenance work for reasons of road safety.

1.5 *Authority:*

For National Roads the Authority is the National Roads Authority (NRA).

1.6 *Inspection Team:*

A competent inspection team appointed by the Authority consists of a minimum of two *Inspection Team Members*, one of whom is also approved as *Inspection Team Leader*. Current NRA training and experience requirements for Inspection Teams are available on the NRA website. www.nra.ie/Publications/RoadSafety

1.7 *Inspection Team Leader:*

An *Inspection Team Member* meeting the requirements of the Authority for *Inspection Team Leader* and appointed by the Authority to lead the *Inspection Team* for the particular *Road Safety Inspection*.

1.8 *Inspection Team Member:*

A person meeting the requirements of the Authority for participation in *Road Safety Inspection* and appointed by the Authority for the particular *Road Safety Inspection*.

1.9 *Inspection Brief:*

Prepared by the Authority for the Inspection Team to give direction on the extents of the Safety Inspection and to include all relevant data on that route section.

1.10 *NRA Road Safety Engineering Team:*

A team within the Authority capable of assessing the problems identified in the *Road Safety Inspection* and capable of making recommendations to the Authority in respect of remedial measures necessary to address the issues raised.

1.11 *Road Operator:*

A road operator is defined as a company undertaking construction, maintenance or operation of a National Road under a contract agreement with the Authority, and in circumstances where direct responsibility for the construction, maintenance or operation of the section of road has been transferred to the company. A Road Operator may be appointed under a Public Private Partnership or other form of contract with the Authority.

2 ROAD SAFETY INSPECTION

Roads to be Inspected

2.1 Except as noted in Paragraph 2.2, Road Safety Inspections shall apply to all National Roads.

Exemption

- 2.2 This Standard does not apply to:
- road tunnels covered by Directive 2004/54/EC of the European Parliament, but the approaches to tunnel portals shall be inspected;
 - road works, which are inspected under NRA HD 16/12 Temporary Safety Measures Inspection (see Para. 3.17).

Scope of the Road Safety Inspection

2.3 The primary purpose of a *Road Safety Inspection* is to identify issues relating to road safety; it is not a check of compliance with design standards. The Road Safety Inspection shall only consider those matters that have an adverse bearing on road safety under all operating conditions.

2.4 The Authority may, at its discretion, confine the scope of an Inspection to particular, pre-defined elements of the road layout; for example, it may confine the Inspection to road delineation only. Any direction to confine an Inspection will normally be provided in the Inspection Brief. This confined Inspection will not obviate the need for the periodic Road Safety Inspections at the required interval.

2.5 The Authority shall ensure that Road Safety Inspections are undertaken on National Roads and shall give direction to the Inspection Team on the inspection requirements within the Inspection Brief.

2.6 The complete road and all its elements and junctions are to be inspected between the start and end points provided in the Inspection Brief. Intersecting roads shall be inspected to the position of the advance direction sign (ADS), or, in its absence, to 200m from the principal route, unless otherwise directed.

Safety Health and Welfare at Work Act

2.7 It is important to ensure that the Inspection Team complies with current legislation and best practice in relation to safety and health while undertaking Road Safety Inspections.

Occurrence of Safety Inspection

2.8 The Authority is responsible for initiating the Road Safety Inspection and for ensuring that a Road Safety Inspection is repeated at the appropriate time interval.

2.9 Road Safety Inspections shall be carried out on National roads at regular intervals of 5 years for Motorways, Type 1 & 2 Dual Carriageways, and 3 years for all other roads.

2.10 The Authority may carry out, or arrange for, additional Inspections at its discretion. Changed operating conditions on a road, such as significantly increased traffic flows, are circumstances under which the Authority might consider that an additional Inspection would be warranted.

2.11 The Road Safety Inspection shall identify the road safety issues which require engineering works to remediate.

3 ROAD SAFETY INSPECTION PROCESS

Inspection Management

3.1 Regular road safety inspections are an essential tool to identify the road safety issues in order to remove possible dangers and prevent collisions for all road users, including vulnerable road users. Road safety inspections will be carried out by an Inspection Team.

3.2 The Authority shall take the lead role in administering Road Safety Inspection on national roads.

3.3 The Authority shall initiate the inspection process, and shall provide an Inspection Brief.

3.4 The Inspection Team Leader is responsible for advising the local authorities, and, if appropriate, the emergency services, that a road safety inspection is being carried out.

Inspection Team

3.5 The Authority shall appoint an Inspection Team, consisting of a Team Leader and at least one other Team Member.

3.6 The current NRA training and experience requirements for Road Safety Inspection Teams are subject to change and is downloadable on NRA website.

www.nra.ie/Publications/RoadSafety

Inspection Brief

3.7 The Authority shall prepare an Inspection Brief.

Desk Study

3.8 The list below describes the items that should be provided, where available, to the road safety inspection team for review prior to undertaking the site visit:

- Inspection Brief;
- Route mapping at appropriate scale;
- Video information collected as part of annual surveys;
- Collision data;

- Road Collision Factors compiled by NRA from statistics from national collision data;
- Traffic flows;
- Road Speeds;
- Road Surface Analysis;
- Previous Road Safety Inspections including any remedial measures implemented in response to these inspections.

3.9 The Inspection Team should assemble and study the available route data prior to undertaking the site visit to ensure that they have sufficient knowledge of the route to make informed judgements during the visit.

3.10 Initial identification of possible road safety issues may be made from this information subject to verification during the site visit.

Site Visits

3.11 A site visit, in both directions of travel, shall be carried out by all members of the assessment team together, during both the hours of daylight and darkness.

Road User Role Play

3.12 The Inspection Team shall assess the safety of the route from the perspective of all road users.

Methodology for Safety Inspection

3.13 The section below describes a working methodology for carrying out Road Safety Inspections.

- The Inspection Team looks through route data, in particular the collision factors, provided by the Authority to get an overall appreciation of the route and to get an indication of potential safety issues and potential locations of concern in advance of the site visit;
- The Inspection Team visits the site during daylight and at night. Photographs or video images should be taken, which can be used for later reference;
- Each road section should be driven more than once, and assessed from the point of view of all road users;
- One team member takes notes and images of all the possible road safety issues;

- The team members discuss their findings;
- A team meeting should be held as soon as reasonably practicable or ideally on site if considered safe to do so to ensure that the note-taker has covered all safety points;
- The Inspection Team then consults with the relevant local authorities to obtain local information on any road safety issues which may have been brought to the local authority's attention;
- Having consulted with the relevant local authorities and examined the issues raised, one team member produces a draft Road Safety Inspection Report; the second team member checks the report and edits if necessary.

3.14 Where there are road works on the route, the inspection should consider the road as it normally operates without the road works. Inspection of road works is not covered by this standard but is covered by *NRA HD 16/12 Temporary Safety Measures Inspection*.

Inspection Report

3.15 The Inspection Team shall prepare a written report, which shall be forwarded directly to the Authority.

3.16 The report must clearly identify the route and the Inspection Team membership.

3.17 The body of the report shall be kept brief and shall contain descriptions of the specific road safety issues identified by the Inspection team together with their associated risk rating comprising of an assessment of the probability of collision occurrence and a prediction of the likely severity of the collision.

3.18 The following items should be included in the Inspection Report:

- Brief description of the route;
- The date of the site visit and the weather at the time;
- A list of the Inspection Team members and any other personnel present as observers;
- Identification of road safety issues and associated risks;
- Plans showing the locations of the road safety issues, with thumbnail photographs appended;

- A statement signed by the Team Members certifying that they have inspected the route;
- A list of information used in the inspection.

3.19 The main element of the report is the identification of the road safety issues and associated risks. The following points should be borne in mind when writing this section:

- Issues raised in the Inspection report shall relate only to road safety issues within the scope of the Inspection, as outlined in the Brief. Non-safety items should not be included.
- The body of the report should be kept brief but must contain sufficient detail to fully describe the road safety issues identified by the Inspection Team.
- It should contain supporting information in respect of the findings and should include an informal risk assessment of each issue, comprising of an assessment of the probability of collision occurrence and a prediction of the likely severity of the collision.
- Safety issues that have remained unaddressed from previous inspections should be re-recorded at subsequent inspection stages, if the current Team considers them to be items relevant to an Inspection.
- A sample report format, which satisfies the requirements of this standard, is contained in the guidance document *NRA HA 17 Road Safety Inspection Guidelines*, available from NRA website.

3.20 The Inspection Report shall be provided by the Team Leader directly to the Authority and should be sent by the date, if any, specified in the Inspection Brief.

Subsequent Actions to the Inspection Report

3.21 The recipient of the Inspection Report will be the Authority who shall forward it to the NRA Road Safety Engineering Team.

3.22 The NRA Road Safety Engineering Team may, if it considers that clarification or discussion of the report would be of benefit, arrange a meeting involving the following:

- NRA Engineering staff
- Road Authorities, Road Operator relevant to the meeting
- The Inspection Team Leader and other Team Members considered necessary by the Authority.

3.23 The Inspection Report shall be issued to the Authority by the Team Leader in final format following that meeting, or in the absence of a meeting, by a date specified by the Authority.

4 REFERENCES

NRA Design Manual for Roads and Bridges, Volume 5: *HD 19, Road Safety Audits*.

Institution of Highways and Transportation. *Road Safety Audit Guidelines*. IHT, London, 2008

National Roads Authority. *2010 Project Management Guidelines*

5 ENQUIRIES

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

Head of Network Management, Engineering Standards & Research
National Roads Authority
St Martin's House
Waterloo Road
Dublin 4



.....
Pat Maher
Head of Network Management,
Engineering Standards & Research

6 HD 18/12 Road Safety Impact Assessment



Volume 5 Section 2
Part 2
NRA HD 18/12

Road Safety Impact Assessment

June 2012

St. Martin's House, Waterloo Road, Dublin 4. Tel:+353 1 660 2511 Fax +353 1 668 0009
Email : info@nra.ie Web : www.nra.ie

Summary:

This Standard covers the requirements for Road Safety Impact Assessment on National Road Schemes. It describes the stage at which the assessment shall be carried out and the procedures to be followed.

Published by National Roads Authority, Dublin 2012

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

**SECTION 2 PREPARATION AND
IMPLEMENTATION**

PART 2

NRA HD 18/12

ROAD SAFETY IMPACT ASSESSMENT

Contents

Chapter

1. Introduction
2. Road Safety Impact Assessment
3. Road Safety Impact Assessment Process
4. References
5. Enquiries

1 INTRODUCTION

General

1.1 The objective of this Standard is to ensure that the implications on road safety of different planning alternatives are fully assessed as part of both feasibility study and route selection process. This assessment shall indicate the road safety considerations which contribute to the choice of the proposed solution.

Scope

1.2 This Standard sets out the procedures required to implement Road Safety Impact Assessments on National Road Schemes including work carried out under agreement with the Overseeing Organisation resulting from developments alongside or affecting the national roads. It defines the relevant schemes and stages in the design at which assessment shall be undertaken.

1.3 The Standard is commended to other roads authorities for use in the preparation of their own road schemes.

Definitions

1.4 *Road Safety Impact Assessment:*
The strategic comparative analysis of the impact of different planning alternatives for a new road or a substantial modification to the existing network on the safety performance of the road network.

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

1.6 *Road Schemes:*
All works that involve new road construction or a substantial modification to the existing road layout.

1.7 *Employer:*
The organisation managing the various phases of scheme preparation and supervision of construction or as defined in the Contract.

1.8 *Design Team*
The Design Team undertaking the various phases of scheme preparation and supervision of construction.

1.9 *Design Project Manager*
The leader of the Design Team undertaking the various phases of scheme preparation and supervision of construction.

1.10 *Impact Assessment Team:*
An Assessment team consists of a minimum of two persons appointed by the Design Project Manager.

1.11 *Overseeing Organisation:*
For National Road Schemes the Overseeing Organisation is the NRA. Where the scheme is not on a National Road, then the appropriate overseeing organisation shall be substituted for NRA.

2 ROAD SAFETY IMPACT ASSESSMENT

Schemes to be Assessed

2.1 Road Safety Impact Assessment shall apply to all new major infrastructure projects on national roads, or a substantial modification to the existing national road network.

The requirements for road safety audit are set out in HD19.

Scope of the Impact Assessment

2.2 The primary purpose of a Road Safety Impact Assessment is to demonstrate, on a strategic level, the implications on road safety of different planning alternatives of an infrastructure project.

2.3 The Road Safety Impact Assessment shall indicate the road safety considerations which contribute to the choice of the proposed solution. It shall further provide all relevant information necessary for the selection of the solution, including a comparative analysis of the road safety implications of each alternative considered and an evaluation of the road safety benefits and disbenefits arising from each alternative.

Safety Health and Welfare at Work Act

2.4 It is important to ensure that the Assessment Team complies with current legalisation and best practice in relation to safety and health while undertaking Road Safety Impact Assessments.

Stage of Impact Assessment

2.5 Road Safety Impact Assessment shall be carried out at the initial planning stage of a project and shall be continually reviewed through the design phases until scheme approval.

2.6 The alternatives presented and considered at this stage can vary widely and should include the Do Minimum proposal. For instance, a large scheme for a proposed town bypass presented at Feasibility Stage could include not only the Do Minimum but also a wide range of potential alternatives.

2.7 Road Safety Impact Assessment does not replace or preclude Road Safety Audit, which is done by a team independent of the design process.

3 ROAD SAFETY IMPACT ASSESSMENT PROCESS

3.1 The Road Safety Impact Assessment is an integral part of the design process and is to be produced by the Design Team.

Impact Assessment Team

3.2 The Project Manager of the Design Team, in consultation with the overseeing organisation, shall appoint a competent Road Safety Impact Assessment Team from within the Design Team.

3.3 Current NRA training and experience requirements for Road Safety Impact Assessment Teams are subject to change and are downloadable on NRA website.

www.nra.ie/Publications/RoadSafety

Impact Assessment Elements

3.4 The list below describes some, but not all of the elements that should be considered by the road safety impact assessment team.

- Problem definition, defining the objectives of the scheme
- Drawings of each alternative proposal
- Existing cost benefit type analysis for each alternative
- Collision data, analysis of same
- Traffic surveys, including pedestrian and cycle movements
- Surrounding road network
- Topography
- Local amenities and centres of activity
- Local meteorological conditions and seismic activity
- Previous Road Safety Reviews
- Anticipated date of completion.

Site Visits

3.5 A site visit shall be carried out by all members of the assessment team at the same time.

Road User Role Play

3.6 Road safety issues affecting all road users must be considered. In general pedestrians and other vulnerable road users are affected more acutely than other road traffic by changes in road alignment and/or changes to available routes. The road safety impact assessment shall include an assessment of the impact of the scheme on all road users including vulnerable road users.

Impact Assessment Report

3.7 The Road Safety Impact Assessment Team shall prepare a written report, which shall cover all road safety impact assessments done throughout the planning and design stages of the project. This report shall be forwarded directly to the Design Project Manager who shall copy the report to the NRA Road Safety Section. The report must clearly identify the scheme and the Road Safety Impact Assessment Team membership.

3.8 The following items should be included in the Road Safety Impact Assessment Report:

- Problem definition, defining the objectives of the scheme
- Road Safety Objectives of the proposed scheme, highlighting any specific scheme objectives to remove a particular road safety problem on the existing road network;
- The date of the site visit and the weather at the time;
- A list of the Road Safety Impact Assessment Team members;
- Extents of the entire area of the road network where route choice and traffic patterns would be affected by the proposed scheme;
- Existing road safety problems on the current road network within the defined extents;
- Analysis of the collision history for at least five years;
- Road safety consequences of a 'Do Minimum' scenario;
- Description of each alternative proposal;
- Assessment of impacts on road safety of the proposed alternatives;
- Comparison of alternatives, including cost benefit type analysis from a safety perspective;

- The NRA strategy for provision of safe rest stops for drivers in the wider region surrounding the proposed scheme location should be consulted;
- Ranking of route options.

3.9 The main element of the report is the comparative road safety impact assessment of the effects of each alternative proposal. The following points should be borne in mind when writing this section:

- Where proposed alternatives differ in scale and cover differing lengths or areas of the existing network, a common assessment area must be defined for all options being compared and all impacts within this area considered;
- An assessment of the effects of each alternative must be made in terms of predicted collisions. Quantitative indicators can be used such as collision rates, collisions per junction type etc.

3.10 All effects on traffic flow and traffic patterns must be considered. Any projected change in modal split as a consequence of the proposals is important as this may not only affect the mix of vehicle category within the traffic flow, but may also impact on patterns of pedestrian and cycle travel and locations where conflicts with other vehicles occur.

3.11 The likely range of seasonal and climatic conditions should be considered.

3.12 A cost benefit type assessment of the road safety benefits and disbenefits of each option shall be produced to compare to the 'Do Minimum' situation.

3.13 The options, including the Do Minimum option, should be ranked in terms of road safety considerations, giving an order of preference and an indication of the magnitude of difference between options. If one option, or a group of options, show considerably more or less benefit than the others then this should be highlighted. Conversely, if there is little difference in road safety terms between two or more of the proposals then these should be given the same ranking.

3.14 Appendices shall include all data necessary to understand the Road Safety Impact Assessment as a separate document without the need to reference other reports on the scheme.

This is likely to necessitate inclusion of drawings, photographs and a summary of collision records.

Subsequent Actions to the Report

3.15 The recipient of a Road Safety Impact Assessment report will be the Design Project Manager who shall use it to inform the option selection stage to minimise the risk of collisions occurring in the future as a result of planning decisions and/or as a result of unintended effects of the design of road schemes.

3.16 The Road Safety Impact Assessment shall also be submitted to Overseeing Organisation as it will contribute to the determination of the project objectives.

4 REFERENCES

NRA Design Manual for Roads and Bridges, Volume 5: *HD 19, Road Safety Audits*.

Institution of Highways and Transportation. *Road Safety Audit Guidelines*. IHT, London, 2008

National Roads Authority. *NRA Design Manual for Roads and Bridges: NRA TD 19, Safety Barriers* (NRA DMRB 2.2.8A).

European Transport Safety Council. *Road Safety Audit and Safety Impact Assessment*

National Roads Authority. *2010 Project Management Guidelines*

5 ENQUIRIES

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

Head of Network Management, Engineering Standards & Research
National Roads Authority
St Martin's House
Waterloo Road
Dublin 4



.....
Pat Maher
Head of Network Management,
Engineering Standards & Research

8 HD 19/12 ROAD SAFETY AUDIT

Volume 5 Section 2

Part 2

NRA HD 19/12



Road Safety Audit

June 2012

Summary:

This Standard covers the requirements for Road Safety Audit 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.

Published by National Roads Authority, Dublin
2012

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

**SECTION 2 PREPARATION AND
IMPLEMENTATION**

PART 2

NRA HD 19/12

ROAD SAFETY AUDIT

Contents

Chapter

1. Introduction
2. Road Safety Audit
3. Road Safety Audit Process
4. Road Safety Audit Issues
5. References
6. Enquiries

Appendix

- A. Road Safety Audit Flow Chart
- B. Audit Feedback Form
- C. Exception Report Decision Form

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.

Revisions since HD 19/04

1.2 This Standard supersedes NRA HD 19/09 Road Safety Audits. This standard has been updated and minor revisions have been made throughout. The principal changes are as follows:

- Mandatory boxes have been removed as it is necessary to comply with the entire standard.
- The definitions of Road Safety Audit and Infrastructure Project have been revised to reflect the definition in Directive 2008/96/EC, the Road Infrastructure Safety Management Directive (paragraphs 1.5 to 1.7).
- The definition of Director has been changed (paragraph 1.12).
- Stage 4 Road Safety Audits (Early operation) has been introduced (paragraphs 2.11 to 2.17 and 4.8).
- Stage 3 is required on part of a Scheme prior to the opening (paragraph 2.12)
- The recommended audit stages for the different scheme types have been revised (Table 2/1).
- The requirements for site visits have been revised to include Stage 4 (paragraphs 3.11 and 3.12)
- The requirements for collision monitoring have been deleted (paragraphs 3.48 to 3.50). The requirements for collision monitoring are now set out in NRA HD 15/12 Network Safety Ranking.

Appendix A outlines the Road Safety Audit Process by means of an Audit Flow Chart for Schemes designed by the Employer (**A1**) and those designed by the Contractor. (**A2**)

Scope

1.3 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.

1.4 The Standard is commended to other Roads Authorities for use in the preparation of their own road schemes on Regional and Local Roads.

Definitions

1.5 *Road Safety Audit:*

This is an independent detailed systematic and technical safety check relating to the design characteristics of a road infrastructure project and covering all stages from planning to early operation.

1.6 *Infrastructure Project:*

A project for the construction of new road infrastructure or a substantial modification to the existing network which affects the traffic flow.

1.7 *Employer:*

The organisation managing the various phases of scheme preparation and supervision of construction or as defined in the Contract.

1.8 *Employer's Representative*

The Engineer or other person appointed by the Employer as its representative in accordance with the construction contract.

1.9 *Designer*

The Design Team undertaking the various phases of scheme preparation and supervision of construction.

1.10 *Audit Team:*

A competent Audit team consists of a minimum of two persons, independent of the Designer and approved by the Overseeing Organisation. Current NRA training and experience requirements for Audit Teams are available on the NRA website.

www.nra.ie/Publications/RoadSafety

For schemes designed by the Contractor the Audit Team shall be from a completely separate

organisation to the Contractor or Designer (employed by the Contractor).

1.11 *Audit Team Leader (ATL):*

The person appointed as Audit Team Leader

1.12 *Director:*

The Senior Project Manager (Safety) or equivalent in the Overseeing Organisation.

1.13 *Exception Report:*

A report submitted by the Employer / Employer's Representative to the Director. Each report covers an item in the Audit Report where the Design Team and the Audit Team cannot agree appropriate means of addressing an underlying safety problem identified by the Audit.

1.14 *Overseeing Organisation:*

For National Road Schemes the Overseeing Organisation is the NRA. Where the scheme is not on a National Road, then the appropriate overseeing organisation shall be substituted for NRA.

1.15 *NRA Road Safety Audit Approvals System*

<https://nraaudit.nra.ie/NRARoadSafetyAudits/Default.aspx>

2 ROAD SAFETY AUDIT

Schemes to be Audited

2.1 Except as noted in Paragraph 2.3 this Standard shall apply to all National Road Infrastructure Projects. This includes work carried out under agreement with the Overseeing Organisation resulting from developments alongside or affecting the national roads.

Application to Planned Temporary Diversions

2.2 This Standard applies to planned temporary diversions associated with Major National Road schemes, whose impact is likely to be significant.

Exemption

2.3 Schemes may be given exemption from auditing requirements by the Director where specialist consideration has already been given to safety issues and a formal audit would merely duplicate that work.

Scope of the Audit

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

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

2.6 For certain categories of scheme it may be necessary to confine the scope of the audit so that only particular pre-defined elements of the road layout are assessed. For example a scheme to replace direction signs over a length of road; in this case the road safety audit would be confined to examining only the signage element of the road layout. Specification of these "Confined Road Safety Audits" is at the discretion of the Employer in consultation with and with the approval of the Director.

2.7 This standard applies to arrangements between developers and Road Authorities regarding road safety audits of the road and traffic elements of development planning proposals. Further information on this issue is provided in Chapter 4.

2.8 During the course of scheme preparation and construction personnel within the Designer and Audit Team may change. Where possible, the same Audit Team should be used throughout the scheme delivery for each stage of audit to ensure a consistent approach. Each stage of audit is a separate entity i.e. a Stage 1 Audit is a separate unique audit from a Stage 2 Audit. Personnel are approved to carry out an Audit; they are not approved to carry out all audits relating to an individual scheme.

2.9 Each Audit requires closure before proceeding to the subsequent stage of audit i.e. the feedback forms and sign off by the designer must be completed for each audit report; otherwise the audit is not in compliance with the standards.

2.10 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. Recommendations requiring major changes in these areas are therefore unlikely to be practicable to implement, particularly after Stage 1 of the road safety audit process

Safety Health and Welfare at Work Act

2.11 It is important to ensure that the Audit Team complies with current legislation and best practice in relation to safety and health while undertaking Road Safety Audits. It will be important to ensure that Stages F, 1 and 2 road safety audits are received by the relevant Project Supervisor for Design Process for the scheme prior to invitation to tender, and placed within the Safety File. Stage 3 and Stage 4 (post-construction) road safety audits should also be placed within the Safety File.

Stages of Audit

2.12 Road safety audits and subsequent actions shall in general be completed at five specific stages in the preparation of the scheme. 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, or part of the scheme to traffic wherever possible).
- Stage 4: Early operation at 2 to 4 months post road opening with live traffic.

2.13 In the case of minor schemes or temporary works some of the stages may be omitted or combined. An indication of requirement of audit stage by scheme type and complexity is shown in Table 2/1.

2.14 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.

2.15 Where stages 1 and 2 are combined there will be only one design stage audit before construction. It is therefore necessary that the level of detail in design submitted for a stage 1/2 audit is the same as that expected for a stage 2 audit.

2.16 Where a choice of routes is available, Stage F audits shall be carried out in two phases. Phase 1 shall be a comparative assessment of the routes from a road safety point of view. Once the route has been chosen, Phase 2 of the audit shall be carried out on the chosen route, in the standard problem and recommendation format.

2.17 Stage 4 audits require an assessment of road safety in the light of actual behaviour of road users during early operation. Approval process for Stage 4 audit team is the same as per all other audit stages. A Stage 4 audit report, feedback form and Exception Report are required as necessary.

2.18 During a Stage 4 audit, the auditor should observe any signs of collisions since opening. It will not be necessary to seek PC16s from An Gardaí for a Stage 4 RSA.

Table 2/1: Stages of Road Safety Audit and Type of Scheme

Type and Complexity of Scheme	Stage					
	F	1	2	1/2	3	4
Major Scheme	X	X	X	-	X	X
Minor Improvement Scheme #	-	X	X	(X)	X	-
Major Development +	X	X	X	-	X	-
Minor Development	-	-	-	X	X	-
Junction / Traffic Scheme	-	X	X	(X)	X	-
Planned diversions *	-	-	-	X	X	-

See NRA TA 85/11.

+ Meets criteria in NRA Traffic and Transport Assessment Guidelines Table 2.2

*For planned diversions of significant impact, associated with NRA Major Road projects See paragraph 2.2.

3 ROAD SAFETY AUDIT PROCESS

Project Management

3.1 **Appendix A** outlines the Road Safety Audit Process by means of a Audit Flow Chart for road Schemes designed by the Employer (A1) and those designed by the Contractor (A2). In the interest of brevity the process described hereunder is for road schemes designed by the Employer.

3.2 The Employer shall provide the link between the Audit Team Leader and Designer for dealing with queries or requests for additional information.

3.3 The Employer shall liaise with the Designer 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.

3.4 The Employer 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.

3.5 The Employer Representative 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 and given reasonable notice to attend.

Audit Team and Audit Team Leaders

3.6 The Employer shall register the scheme and Audit Stage on the NRA Road Safety Audit Approvals System prior to seeking approval of the NRA to appoint a competent Audit Team.

3.7 The Audit Team shall be independent of the scheme design.

3.8 The current NRA training and experience requirements for Road Safety Audit Teams are subject to change and is downloadable on NRA website, www.nra.ie/Publications/RoadSafety

Audit Brief

3.9 The Employer shall appoint the road safety audit team and shall prepare an Audit Brief. The checklist given in paragraph 3.10 must be completed in preparing the brief.

3.10 The list below describes the items that should be provided to the road safety audit team.

- Design Brief;
- Departures from Standard;
- Scheme Drawings;
- Other scheme details, e.g. signs schedules, traffic signal staging;
- Collision data for existing roads affected by the scheme;
- Traffic surveys;
- Previous Road Safety Audit Reports and Designer Responses /Feedback Form
- Previous Exception Reports;
- Start date for construction and expected opening date;
- Any elements to be excluded from audit;
- Any other information (list separately).

Site Visits

3.11 A site visit shall be carried out at the first audit stage being undertaken by an audit team. Site visits shall also be carried out at Stage 2, unless otherwise agreed with the Employer, and always at Stage 3 and Stage 4. These shall be carried out by all members of the audit team together at every stage requiring a site visit. The team shall take into account the topography, local amenities, tie-ins of the scheme and any other relevant details.

3.12 The Stage 3 and Stage 4 site visits shall be made during both daylight and darkness conditions. The Employer's Representative shall invite a representative of the Gardaí to attend the visits, along with a representative of the local road authority.

Checklists

3.13 Road safety auditors may use checklists. However checklists should be used intelligently, and not simply as a “tick box” system. It is recommended that they be used at the end of the process, to ensure that no major potential safety issue has been overlooked.

Road User Role Play

3.14 One of the most important checks carried out involves assessing the safety of the scheme from different potential road users' perspectives. The road safety auditor should always be asking the question: “What is it about this scheme that will lead road users to fail to cope with the road environment?”

3.15 During the design stages the auditor has to imagine what it would be like to walk, cycle and drive the scheme. "Driving" should include cars, vans, trucks and buses. "Walking" should be considered from the perspective of the elderly, the child, the wheelchair user and those with sight impairment. Cycling includes children, leisure cycling, and utility or commuter cycling. Where appropriate, the needs of the equestrian should be considered.

Methodology for Design Stage Audits

3.16 The section below describes a working method for carrying out design stage (F, 1, and 2) Audits. It is assumed that the audit team consists of two members.

- The Audit Team looks through plans provided by the Designer to understand the scheme concept;
- Consideration should be given to a meeting between the Audit Team, the Employer, the Employer's Representative and the Designer particularly on larger or more complex schemes;
- The Audit Team visits the site. Photographs should be taken, which can be used for later reference;
- Both team members systematically and independently examine all plans and other information provided and write down any comments;

- The team members discuss their individual findings;
- The Audit Team decides which comments are related to safety and discuss possible recommendations. Any comments recorded by team members that do not go forward to the final report should be noted, together with a reason stating why that issue is not to be included;
- One team member produces a draft Audit Report;
- The second team member checks the report and edits if necessary.

Methodology for Stage 3 Audits

3.17 At Stage 3 it is recommended that the Employer Representative, the Employer, and a representative of the organisation responsible for future road maintenance should be available for consultation with the Audit Team as required on the day of the audit. The Gardaí may have specific local information and knowledge of safety issues. The Garda District Superintendent should be notified by the Employer's Representative in advance of the Stage 3 audit. The Gardaí are thus given the option of sending a representative to meet the audit team on the day of the audit.

3.18 The road safety audit team observers do not sign the audit report.

3.19 A suggested working method for Stage 3 road safety audits is as follows:

- The Audit Team visits the site during daylight;
- The Audit Team walks, drives and, where appropriate, cycles along and across the scheme;
- One team member takes notes of all the possible safety points;
- The other team member takes photographs of all the possible safety points;
- Before leaving the site a team meeting is held to ensure that the note-taker has covered all safety points;
- The Audit Team visits the site during darkness;
- One team member produces a draft Audit Report and circulates it to all present at the site visit;
- The report is edited following comments from the other team members and observers.

3.20 There is often pressure to open new road schemes as soon as they are completed. This makes it difficult to carry out the process described above and provide an immediate report. On these occasions it is recommended to undertake a "pre-Stage 3" audit shortly before completion. If the recommendations from the pre-Stage 3 audit are acted upon, the final Stage 3 audit will be less onerous. It may also be possible to provide the Employer's Representative with a copy of the hand-written notes taken during the Stage 3 visit, or with a typed up version shortly afterwards. The Designer can then start to act upon these notes prior to receiving the formal Stage 3 audit report.

3.21 Particular care should be taken in examining the tie-ins to the existing alignment, both for the final alignment and for temporary traffic management arrangements. Because of the difficulty of seeing these areas in operation before road opening it may be necessary to return immediately after opening to complete the audit.

Audit Report

3.22 At each stage, the Audit Team shall prepare a written report, which shall be forwarded directly to the Employer who shall copy the report to the Designer, the Employer's Representative and upload the report on the NRA Road Safety Audit Approvals System. The report must clearly identify the scheme, the audit stage, the letter of approval from the NRA approving the Employer to appoint the Audit Team, and the Audit Team membership, including the names of others contributing at Stage 3 and Stage 4 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.

3.23 The report shall contain a signed statement by each Audit Team member confirming team membership and independence from the Designer.

3.24 The following items should be included in the audit report:

- A brief description of the scheme being audited, and the audit stage;

- The dates when the audit was carried out, the date of the site visit and the weather at the time;
- A list of the Audit Team members and any other personnel attending the site visit;
- A series of road safety problems and recommendations for action. It may be useful to include a plan showing the locations of the problems;
- A statement signed by the Audit Team members to certify that they have examined the scheme;
- For design stage audits, a list of all plans and other information examined;
- Feedback Form for completion by the Design Team Leader and the Audit Team Leader.

3.25 The main element of the report is the section on problems and recommendations. The following points should be borne in mind when writing this section:

- All problems identified in the Audit Report must relate to road safety problems within the audited scheme. Non-safety items or safety items beyond the scope of the road scheme can be itemised in a separate report or letter;
- All safety problems highlighted should be stated as clearly as possible. A clear identification of a problem will help the Employer and Designer to consider not only the recommendations in the report but also to consider alternative ways to overcome the safety problem.

3.26 Road safety audit teams should exercise caution in documenting differences in the potential severity of problems, as a problem would not be described in the report unless it were considered to affect the safety of the scheme to some extent. It is recommended that the meeting between Audit Team, Designer, and Employer be used as the primary means to discuss the relative importance of issues raised in the draft report.

3.27 Recommendations should be as practical as possible and be relative to the overall scheme cost. There is little value in putting forward a recommendation that will add more than a small percentage increase to the cost of a scheme.

3.28 It must be recognised that the implementation of certain measures, such as a change to design standards or policy will be outside the authority of the Designer and the Employer. Recommendations to implement such measures should not be included, although such measures may be discussed in the report.

3.29 Safety problems that remain unaddressed throughout the audit process should be repeated at subsequent audit stages. Recommendations may change as appropriate to the stage the design has reached. For example, a Stage 1 audit on a realignment scheme might identify problems with the position of a particular junction, and would consequently recommend either closure or relocation. At Stage 2, if the design shows the junction in its originally proposed location the auditors should note this and recommend alternative measures to mitigate the problem such as additional signing, road markings, change of road surface, etc.

Subsequent Actions to the Report

3.30 The recipient of a road safety audit report will be the Employer who shall decide whether or not to act on the recommendations contained in the report.

3.31 On receipt of the report the Employer shall forward it to the Designer

3.32 If following the road safety audit, discussion or clarification of any issues is required by the Audit Team, the Designer or the Employer, the Employer shall convene a meeting between the Audit Team, the Designer and the Overseeing Organisation to resolve as many of the audit issues as possible.

3.33 For Stage 1 and 2 Audits this meeting may take place some days after the audit and after a draft report has been completed. Due to time pressures for Stage 3 audits it is suggested that the meeting, if needed, takes place immediately after the Stage 3 site visit.

3.34 The purpose of the meeting is to clarify issues raised in the draft audit report. The auditors should be prepared to indicate the importance of issues raised in the report, and to justify why the problems are genuine safety issues. They should not be under external pressure to change their

report. However, once issues have been clarified the auditors may feel that they can amend sections of the report; for example a recommendation within their report may be amended in the light of new information that demonstrates that their original ideas could not be implemented. As long as the auditors accept that the new recommendation will have a genuine safety benefit, they can change their draft report, and produce a final version.

Designer Response on Feedback Form

3.35 The Designer shall consider the Audit Report and prepare a Designer Response to each of the recommendations, using the Feedback Form included in **Appendix B**. The response shall state clearly whether the recommendations are accepted, rejected, or whether an alternative recommendation is proposed. Copies of the Designer Response shall be sent to the Employer and the Audit Team.

3.36 In most cases the Employer will instruct the Designer to make the recommended changes to the scheme in response to the audit report. Where these are major changes it may be necessary to carry out a re-audit of that part of the scheme. Where there is a proposal to provide an alternative means of addressing a particular problem, the alternative should be described on the Feedback Form.

3.37 The Audit Team shall consider the Designer's response and reply to the Employer indicating acceptance or otherwise of the response to each item.

3.38 The Audit Team's response shall take one of the following forms:

- Acceptance of the proposed alternative measure;
- Following discussions with the Employer and the Designer an acceptance of a modified version of the proposed alternative measure;
- Following discussions with the Employer and the Designer, an agreement that in light of further information the audit team no longer considers the stated problem to be an issue;
- Rejection of the proposed alternative measure.

3.39 On completion, the Feedback Form shall be signed by all three parties involved: Designer, Audit Team Leader and Employer. **Completion of this process is required prior to any section being opened to traffic.**

Table 3/1: Feedback Form Responses, Requirement for Exception Report

Problem accepted	Recommended measure accepted	Alternative measures or reasons accepted by auditors	Exception report needed
Yes	Yes	-	NO
Yes	No	Yes	NO
Yes	No	No	YES
No	No	Yes	NO
No	No	No	YES

Exception Report

3.40 For those cases where the Designer and the Audit Team cannot agree appropriate means of addressing an underlying safety problem identified by the audit an Exception Report must be prepared on each disputed item in the audit report. Table 3/1 indicates those circumstances where an exception report will be needed.

3.41 The Exception Report should be submitted by the Employer. It must address only those items in the Audit Report for which an Exception Report is necessary.

3.42 An Exception Report will take one of the two following forms:

- Where the Designer accepts an identified problem, but the Designer and Audit Team cannot agree on an appropriate recommendation, the Exception Report should describe the reasons why the audit team recommendation cannot be implemented, and outline the alternatives considered and the difficulties involved in implementing them.
- Where the Designer does not accept that the identified problem exists, the Exception Report should produce some evidence as to why the problem is not valid. It may be that the Audit Team did not have all information available, or that the scheme design has changed since the plans used in the audit were prepared.

3.43 Exception Reports must be sent to the Director of the Overseeing Organisation for decision. The final decision to accept or reject the disputed recommendations rests with the Overseeing Organisation. For National Roads this is the NRA. The Exception Report Decision Form, given in **Appendix C**, must be returned to the Employer/Employer's Representative for action on the decision.

3.44 After the Director's decision, copies of the Exception Report and the Exception Report Decision Form must be sent to the Employer, the Employer's Representative, the Audit Team Leader and the Designer.

3.45 The Employer shall instruct the Designer in respect of any changes required during the preparation, design and construction of the scheme resulting from audit.

3.46 The Employer shall send copies of the Final Audit Report to the following:

- Designer
- Employer's Representative
- Audit Team Leader
- NRA Road Safety Section

Digital copies must be submitted via the NRA Road Safety Audit Approvals System.

Final Audit Report

3.47 The Final Audit Report shall contain:

- The Audit Brief
- Letter of approval from NRA approving the Employer to appoint the Audit Team
- Audit Report
- Designer Response/Feedback form
- Exception Report if applicable
- Director's decision if applicable

4 ROAD SAFETY AUDIT ISSUES

Risk Assessment

4.1 A road safety auditor may sometimes comment on a safety issue and make a recommendation that has only a small safety benefit, the cost of implementation of which far outweighs any benefit to be gained. It is therefore suggested that auditors carry out an informal risk assessment of each problem documented, assessing both the probability of such a collision occurring and the severity of outcome of the predicted collision. This should be done for both possible situations, with and without the recommendation implemented, so that the expected reduction in risk resulting from implementing each recommendation can be obtained.

4.2 The post-audit meeting between Audit Team, Designer, Employer and Employer's Representative can be used as the primary means to discuss the relative importance of issues raised within the draft report.

4.3 The information from the risk assessment can be used by the Employer to help decide whether or not to implement the recommendations.

Auditing Development Schemes

4.4 The auditing of any changes to the road layout that are development-led within the local authority planning process is another area that needs clarification.

4.5 A road safety audit is a requirement for any development scheme that results in a permanent change to the road layout on a national road, whether inside or outside urban areas.

4.6 Guidance on the preparation of Traffic and Transport Assessments of developments of schemes is available in the 'Traffic and Transport Assessment Guidelines published by the NRA.

4.7 Many Roads and Planning Authorities require a road safety audit too late in the planning process to address fundamental safety issues.

Once planning approval has been given it is difficult to require developers to make significant changes to schemes, especially if they are costly or reduce the amount of land available for development. It is important therefore that the road safety audit process is built into the planning procedure of each authority so that audit reports and their responses can be given due consideration by the Planning Authority.

4.8 The five stages of Road Safety Audit are summarised in Table 4/1. Whether all these stages are necessary depends on the size and impact of the development concerned.

Stage F:	Preplanning, concept stage
Stage 1:	Completion of preliminary design
Stage 2:	Completion of detailed design
Stage 3:	Completion of construction.
Stage 4:	Early operation at 2 to 4 months post opening with live traffic

Table 4/1: Road Safety Audit Stages

4.9 In the case of large developments a Stage F audit should be submitted during preplanning talks, and Stage 1 and 2 audits as part of the planning application. In the case of small developments a combined Stage 1/2 road safety audit should be submitted as part of the planning application. In all cases the planning application should contain the report from at least one stage of road safety audit. Any relevant Audit Report and Audit Response can then be considered by the Local Authority before planning permission is granted.

4.10 The findings of the road safety audit may possibly lead to the refusal of the planning application but it is more likely that the developer would be given planning permission conditional on specific requirements resulting from the road safety audit report recommendations. Although the developer, as instigator of the scheme and commissioner of the audit, takes on the role of the Employer in the road safety audit process, it is up to the Road Authority to ensure that the resulting road layout is acceptable and safe for public use.

Discussions in preplanning and use of planning conditions provide methods of ensuring that the developer implements the recommendations of the road safety audit report.

4.11 The following are examples of requirements that can be included as conditions to a planning approval.

- *The agreed recommendations from the road safety audit process must be completed by the developer to the satisfaction of County Council, as the Road Authority, before the public road hereby permitted is taken into charge by County Council.*
- *The development shall not open for the approved use intended by the developer until the road safety audit process has been complied with by the developer in accordance with NRA HD19 and the agreed recommendations from the road safety audit report have been completed by the developer to the satisfaction of County Council, as the Road Authority.*

4.12 The following is an example of a statement of grounds for refusal of planning approval.

- *The development is not permitted because, following the adherence of the road safety audit process, fundamental road safety issues remain. These issues have not been resolved and it is, therefore, considered that were the development to go ahead in its proposed form it would pose a significant traffic hazard to road users.*

4.13 If a developer refuses to implement a certain recommendation in the road safety audit report then an Exception Report would be required. The final decision to reject or accept the Exception Report, i.e. to either implement the disputed recommendation or not, rests with the Planning Authority and Roads Authority.

4.14 Once the change in road layout is completed, a subsequent Stage 3 road safety audit should be carried out. The requirement for this can either be enforced through planning condition or reached by agreement between the Planning and Roads Authority and the developer.

4.15 It must be stressed that currently the road safety audit procedure is not easily facilitated within the planning process. In many Local

Authorities at present continual requests for “Further Information” are necessary to ensure that a road safety audit is done on every change to the National Road layout proposed as part of a development scheme. The process would be very much eased if in-house planning application processes were reviewed within each Local Authority, so that the requirement for road safety audit on applications affecting National Roads is included within each county and city development plan.

5 REFERENCES

NRA Design Manual for Roads and Bridges, Volume 5: *HD 19, Road Safety Audits*.

6 ENQUIRIES

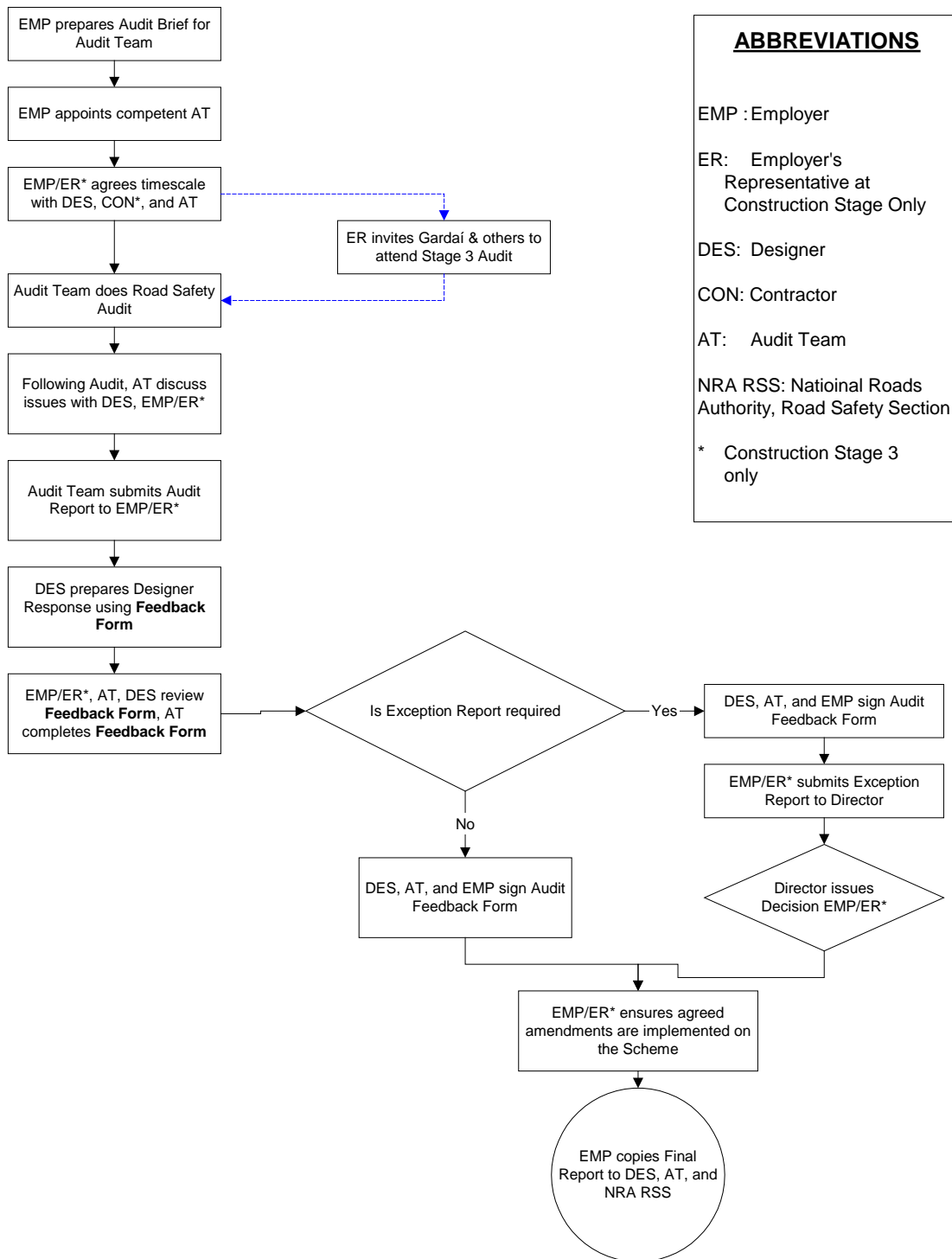
All technical enquiries or comments on this Standard should be sent in writing to:

Head of Network Management, Engineering Standards & Research
National Roads Authority
St Martin's House
Waterloo Road
Dublin 4

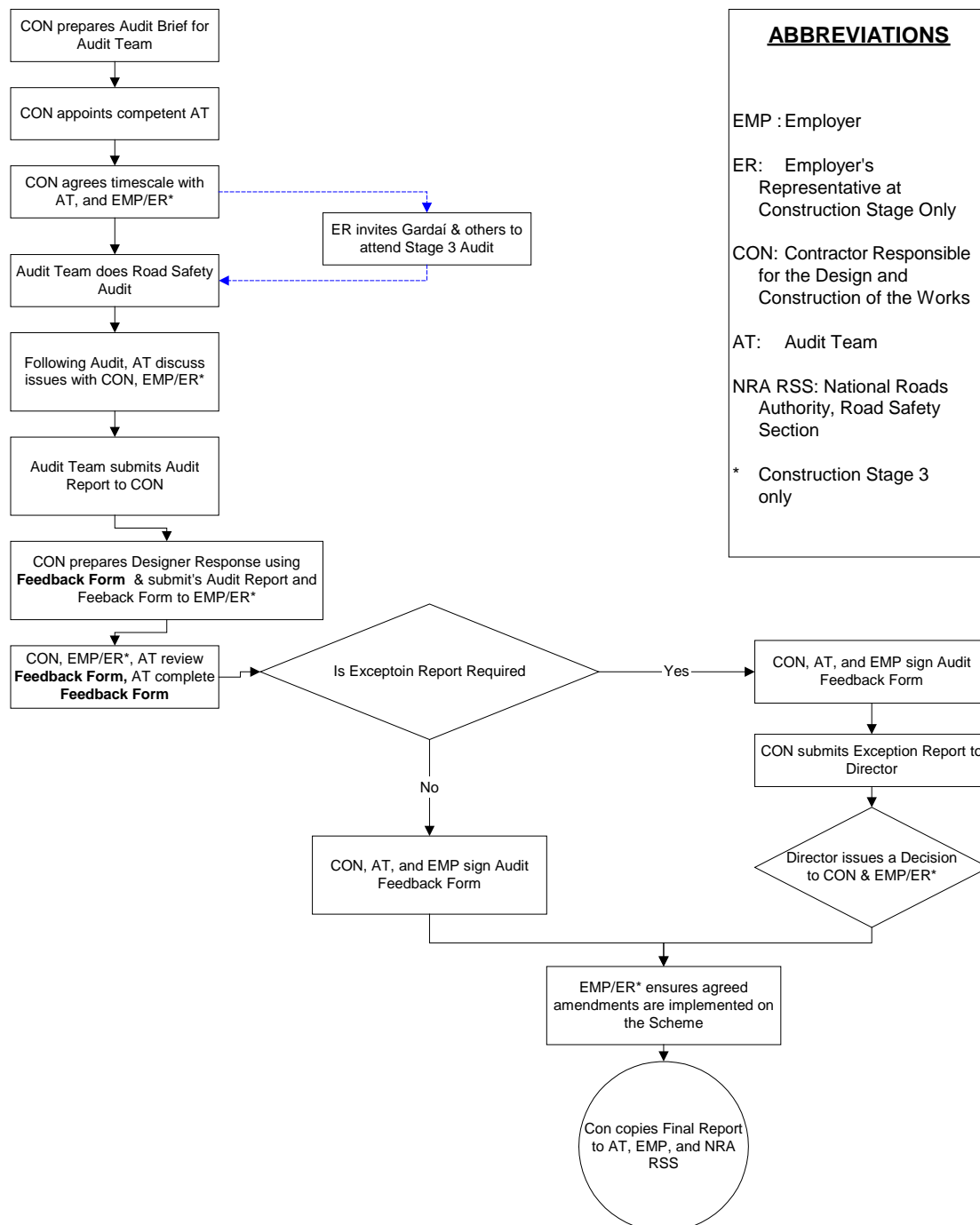


.....
Pat Maher
Head of Network Management,
Engineering Standards & Research

APPENDIX A1: AUDIT FLOW CHART for Road Schemes DESIGNED by the EMPLOYER



APPENDIX A2: AUDIT FLOW CHART for Road Schemes DESIGNED by the CONTRACTOR



APPENDIX B: AUDIT FEEDBACK FORM

Road Safety Audit Feedback Form

Scheme: _____ Route No. _____

Audit Stage: _____

Date Audit Completed: _____

Paragraph No. in Safety Audit Report	To Be Completed By Designer			To Be Completed by Audit Team Leader
	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Describe alternative measure(s). Give reasons for not accepting recommended measure	Alternative measures or reasons accepted by auditors (yes/no)

Signed: _____ Designer Date _____

Signed: _____ Audit Team Leader Date _____

Signed: _____ Employer Date _____

APPENDIX C:

EXCEPTION REPORT DECISION FORM

Road Safety Audit Exception Report Decision Form

Scheme: _____ Route No. _____

(If NRA scheme) NRA Project Ref No.: _____

Audit Stage: _____ Date Audit Completed: _____

Exception Report Item	Paragraph No. in Road Safety Audit Report	Decision by Director (Accept / Reject Exception Report)

Signed: _____ Director of Overseeing Organisation Date _____

Part B: For Information Only

A. CHAPTER 8 TRAFFIC SIGNS MANUAL

**B. GUIDANCE FOR THE CONTROL AND
MANAGEMENT OF TRAFFIC AT ROAD WORKS**

C. CORRELATION WITH DIRECTIVE

The following table details the correlation of each item raised in the EU Directive 2008/96/EC on Road Infrastructure Safety Management (RISM) with the relevant Irish standard or procedure.

EU DIRECTIVE		CORRELATION IN IRELAND	
No.	Text	Compliance Measures	Action
1	Article 1 Subject matter and scope		
1.	This Directive requires the establishment and implementation of procedures relating to road safety impact assessments, road safety audits, the management of road network safety and safety inspections by the Member States.	NRA currently carries out these four procedures, either as part of Road Safety Audit, NRA Road Safety Remedial Measures programme, or NRA/LA maintenance & inspection programmes on the whole of the national network. In accordance with Preamble (6) of this Directive, countries that already possess well functioning road infrastructure safety management systems 'should be permitted to continue using their existing methods, as far as they are consistent with the aims of this Directive'. New standards have now been put in place to formalise the procedures on any of the above that were previously lacking formal standards.	With the introduction of these new standards, Ireland is deemed to comply with the Directive.
2.	This Directive shall apply to roads which are part of the trans-European road network, whether they are at the design stage, under construction or in operation.	The Directive text is self-explanatory.	See S.I. No of 472/2011 in Part B—these regulations give effect to the EU Directive in Ireland and confirm that the Directive shall apply to the TERN network.
3.	Member States may also apply the provisions of this Directive, as a set of good practices, to national road transport infrastructure, not included in the trans-European road network that was constructed using Community funding in whole or in part.	The legislation will only apply the Directive to the TERN Network, but in practice, Ireland currently apply RSIA, RSA and NSM to all National roads, and plan to extend RSI to all National roads.	With the introduction of these new standards, Ireland is deemed to comply with the Directive.
4.	This Directive shall not apply to road tunnels covered by Directive 2004/54/EC.	The Directive text is self-explanatory.	No further action required.
2.	Article 2 Definitions		
	For the purposes of this Directive, the following definitions shall apply:		
(1)	"trans-European road network" means the road network identified in Section 2 of Annex I to Decision No 1692/96/EC;	The Directive text is self-explanatory.	No further action required.
(2)	"competent entity" means any public or	The competent entity is the National	No further action

National Roads Authority
Road Safety Management Procedures for National Roads in Ireland

EU DIRECTIVE		CORRELATION IN IRELAND	
No.	Text	Compliance Measures	Action
	private organisation set up at national, regional or local level, involved in the implementation of this Directive by reason of its competences, including bodies designated as competent entities which existed before the entry into force of this Directive, insofar as they meet the requirements of this Directive;	Roads Authority in respect of Article 3 RSIA, Article 4 RSA, Article 5 Network Safety Management, and Article 6 Safety Inspection. An Gardaí (the Irish police) are the competent entity in respect of Article 7.1. The Road Safety Authority is the competent entity in respect of Article 7.2.	required.
(3)	"road safety impact assessment" means a strategic comparative analysis of the impact of a new road or a substantial modification to the existing network on the safety performance of the road network;	The activities that this describes are currently undertaken as part of a Constraints study on all projects for the construction of new road infrastructure on National roads. New standard HD 18/12 sets out the requirements for RSIA on National roads.	Ireland is 'deemed to comply' with this point with the introduction of this new standard.
(4)	"road safety audit" means an independent detailed systematic and technical safety check relating to the design characteristics of a road infrastructure project and covering all stages from planning to early operation;	Road Safety Audit has been implemented on all National roads in Ireland since 2001. Practice is established in existing standards and procedures (HD19/12 and associated procedure documents).	Ireland is 'deemed to comply' with this point.
(5)	"ranking of high accident concentration sections" means a method to identify, analyse and rank sections of the road network which have been in operation for more than three years and upon which a large number of fatal accidents in proportion to the traffic flow have occurred;	The management of accident remedial measures and high-risk road sections has been an integral part of the work of the NRA since the mid 1990's. The practice is well established with existing procedures, which have now been formalised in to new standard HD 15/12 Network Safety Ranking. Safety Ranking is carried out annually in Ireland, so Ireland currently exceeds the minimum requirement procedurally.	Ireland is 'deemed to comply' with this point with the introduction of this new standard.
(6)	"network safety ranking" means a method for identifying, analysing and classifying parts of the existing road network according to their potential for safety development and accident cost savings;	The management of accident remedial measures and high-risk road sections has been an integral part of the work of the NRA since the mid 1990's. The practice is well established with existing procedures, which have now been formalised in to new standard HD 15/12. Safety Ranking is carried out annually in Ireland, so we exceed the minimum requirement procedurally.	Ireland is 'deemed to comply' with this point.
(7)	"safety inspection" means an ordinary periodical verification of the characteristics and defects that require maintenance work for reasons of safety;	New NRA DMRB standards have been prepared as follows in respect of Road Safety Inspection: <ul style="list-style-type: none"> • new HD 17 Road Safety Inspection, 	Some pilot RSIs have already taken place. Standards have now been prepared and formal RSI is due to commence this year (2012).
(8)	"guidelines" means measures adopted by Member States, which lay down the steps to be followed and the elements to be considered in applying the safety procedures set out in this Directive;	The Directive text is self-explanatory.	No further action required.

EU DIRECTIVE		CORRELATION IN IRELAND	
No.	Text	Compliance Measures	Action
(9)	"infrastructure project" means a project for the construction of new road infrastructure or a substantial modification to the existing network which affects the traffic flow.	Regarding the term 'Substantial Modification', it is proposed to use the criteria as per Road Safety Audit standards (NRA HD 19/12), and in particular the definitions in Table 2/1 (Stages of RSA and Type of Scheme) in Ireland. This would mean that RSIA would be required for Major Schemes and Major Developments, which is 'consistent with the aims of this Directive' (Preamble 6).	No further action required.
3. Article 3 Road safety impact assessment for infrastructure projects			
1.	Member States shall ensure that a road safety impact assessment is carried out for all infrastructure projects.	Road Safety Impact Assessment (RSIA) is carried out at present as part of Constraints Study, Planning Permission, Cost Benefit Analysis and general road design work by the project design team. RSIA had been included in NRA Project Management Guidelines (PMG), which were updated in Jan 2010. This reference will now be updated to reflect the new DMRB standard HD 18/12 which sets out the requirements for RSIA on National roads.	With the introduction of this new standard, Ireland is deemed to comply with the Directive.
2.	The road safety impact assessment shall be carried out at the initial planning stage before the infrastructure project is approved. In that connection, Member States shall endeavour to meet the criteria set out in Annex I.	The Directive text is self-explanatory and aligns well with existing procedures.	With the introduction of this new standard, Ireland is deemed to comply with the Directive.
3.	The road safety impact assessment shall indicate the road safety considerations which contribute to the choice of the proposed solution. It shall further provide all relevant information necessary for a cost-benefit analysis of the different options assessed.	New DMRB standard HD 18/12 sets out the requirements for RSIA on National roads	With the introduction of this new standard, Ireland is deemed to comply with the Directive.
4. Article 4 Road safety audits for infrastructure projects			
1.	Member States shall ensure that road safety audits are carried out for all infrastructure projects.	Road Safety Audit has been mandatory since 2001 on ALL Irish National Road projects and the Authority has instructed all local authorities that they must comply with the Standards as set out in the DMRB for all National Roads and also for all works on non-National roads funded by the National Roads Authority. In accordance with Preamble (6) of this Directive, Ireland will continue to use current RSA standards, as they are 'consistent with the aims of this Directive'. The current standard is HD 19/12 Road Safety Audit.	No further action required.

EU DIRECTIVE		CORRELATION IN IRELAND	
No.	Text	Compliance Measures	Action
	When carrying out road safety audits the Member States shall endeavour to meet the criteria set out in Annex II.	The Directive text is self-explanatory and aligns well with existing procedures.	No further action required.
	Member States shall ensure that an auditor is appointed to carry out an audit of the design characteristics of an infrastructure project.	The Directive text is self-explanatory and aligns well with existing procedures.	No further action required.
2.	The auditor shall be appointed in accordance with the provisions of Article 9(4) and shall have the necessary competence and training provided for in Article 9. Where audits are undertaken by teams, at least one member of the team shall hold a certificate of competence as referred to in Article 9(3).	University College Dublin (UCD) runs a course for road safety audit, which leads to an exam and a 'Certificate of Competence' award. This is a professional certificate (Special Purpose Award) which is UCD level 3 and is equivalent to level 8 on the National Framework of Qualifications. Syllabus/course content has been agreed with NRA and is included in Appendix B. The register of qualified personnel is to be kept by the Authority (NRA). NRA will still insist on 5 audits as trainee and 5 as team member before one can become an Audit Team Leader. Other universities / organisations are free to offer a course based on the agreed syllabus, if they can arrange accreditation.	A syllabus of the course is included in Part B. Ireland is 'deemed to comply' with this point.
3.	Road safety audits shall form an integral part of the design process of the infrastructure project at the stage of draft design, detailed design, pre-opening and early operation.	The Directive text is self-explanatory and aligns well with existing procedures.	No further action required.
4.	Member States shall ensure that the auditor sets out safety critical design elements in an audit report for each stage of the infrastructure project. Where unsafe features are identified in the course of the audit but the design is not rectified before the end of the appropriate stage as referred to in Annex II, the reasons shall be stated by the competent entity in an annex to that report.	The Directive text is self-explanatory and aligns well with existing procedures.	No further action required.
5.	Member States shall ensure that the report referred to in paragraph 4 shall result in relevant recommendations from a safety point of view.	The Directive text is self-explanatory and aligns well with existing procedures.	No further action required.
5. Article 5 Safety ranking and management of the road network in operation			
1.	Member States shall ensure that the ranking of high accident concentration sections and the network safety ranking are carried out on the basis of reviews, at least every three years, of the operation of the road network. In that connection, Member States shall endeavour to meet the criteria set out in Annex III.	Network Safety Ranking has been an integral part of the work of the NRA for many years. The management of accident remedial measures and high-risk road sections has been an integral part of the work of the NRA for many years now. The work of identification of collision clusters throughout the network using different GIS procedures is recognised as best practice. The analysis is carried out on an annual	Aligns well with existing procedures.

EU DIRECTIVE		CORRELATION IN IRELAND	
No.	Text	Compliance Measures	Action
		basis. However, the focus has been on the worst collision clusters on the national network, not specifically on the TERN network. Strategies are set out in new standard HD 15/12 to identify and prioritise works on TERN routes.	
2.	Member States shall ensure that road sections showing higher priority according to the results of the ranking of high accident concentration sections and from network safety ranking are evaluated by expert teams by means of site visits guided by the elements referred to in point 3 of Annex III. At least one member of the expert team shall meet the requirements set out in Article 9(4)(a).	Aligns well with existing procedures. However, it will be a challenge to ensure that this concentration on the TERN network will not draw resources away from the worst collision clusters, which for the most part are not on the TERN network.	Aligns well with existing procedures.
3.	Member States shall ensure that remedial treatment is targeted at the road sections referred to in paragraph 2. Priority shall be given to those measures referred to in point 3(e) of Annex III paying attention to those presenting the highest benefit-cost ratio.	The Directive text is self-explanatory and aligns well with existing procedures.	Aligns well with existing procedures.
4.	Member States shall ensure that appropriate signs are in place to warn road users of road infrastructure segments that are undergoing repairs and which may thus jeopardise the safety of road users. These signs shall also include signs which are visible during both day and night time and set up at a safe distance and shall comply with the provisions of the Vienna Convention on Road Signs and Signals of 1968.	The Directive text is self-explanatory and aligns well with existing procedures. Chapter 8 of the <i>Traffic Signs Manual</i> , and the recent <i>Guidance for the Control and Management of Traffic at Road Works</i> , both of which are linked in Part B of this document, set out the necessary guidelines for sign placement. In accordance with Preamble (6) of this Directive, Ireland will continue to use current standards, as they are 'consistent with the aims of this Directive'.	Aligns well with existing procedures.
5.	Member States shall ensure that road users are informed of the existence of a high accident concentration section by appropriate measures. If a Member State decides to use signposting, this shall comply with the provisions of the Vienna Convention on Road Signs and Signals of 1968.	Existing signing practice will continue, namely the use of signs to warn of specific hazards using the advice contained in the <i>Traffic Signs Manual</i> . There are no plans to use specially authorised signs to warn of accident hotspots. A web based version of the EuroRap 'Star Rating' map has been published, as well as An Gardaí (Irish police) maps of speeding hot-spots and Road Safety Authority maps of collisions.	Aligns well with existing procedures.
6. Article 6 Safety inspections			
1.	Member States shall ensure that safety inspections are undertaken in respect of the roads in operation in order to identify the road safety related features and prevent accidents.	NRA currently carry out inspections, firstly as part of the annual Signing and Lining inspections, secondly using data from the annual Road Surface Profilimeter (RSP) /ARAN surveys, scrim and dynaflect surveys, and thirdly it is supplemented by EuroRap Star rating surveys for their Safety	Some pilot RSIs have already taken place. Standards have now been prepared and formal RSI is due to commence this year (2012).

EU DIRECTIVE		CORRELATION IN IRELAND	
No.	Text	Compliance Measures	Action
		<p>Inspections.</p> <p>On foot of the new Directive, NRA DMRB standards have been prepared as follows in respect of formal Road Safety Inspection:</p> <ul style="list-style-type: none"> new HD 17 Road Safety Inspection. 	
2.	<p>Safety inspections shall comprise periodic inspections of the road network and surveys on the possible impact of road works on the safety of the traffic flow.</p>	<p>New NRA DMRB standard HD 17/12 Road Safety Inspection has been prepared to address the periodic inspections of the road network.</p> <p>The new standard on safety at road works has been prepared, along with the inspection regime, to be implemented in 2012. Surveys on the possible impact of road works will flow from these inspections.</p>	<p>Some pilot RSIs have already taken place. Standards have now been prepared and formal RSI is due to commence this year (2012).</p> <p>The new standard on safety at road works has been prepared, along with the inspection regime, to be implemented in 2012.</p>
3.	<p>Member States shall ensure that periodic inspections are undertaken by the competent entity. Such inspections shall be sufficiently frequent to safeguard adequate safety levels for the road infrastructure in question.</p>	<p>HD 17/12 road safety inspection standard has been prepared to facilitate periodic road safety inspections on the network. HD 16 /12 Temporary Safety Measures Inspection has been prepared for the periodic inspection of roadwork sites which shall ensure compliance with the Directive.</p>	<p>Standards have been prepared to facilitate periodic road safety inspections and inspection of roadwork sites which shall ensure compliance with the Directive.</p>
4.	<p>Without prejudice to the guidelines adopted pursuant to Article 8, Member States shall adopt guidelines on temporary safety measures applying to road works. They shall also implement an appropriate inspection scheme to ensure that those guidelines are properly applied.</p>	<p>Chapter 8 of the <i>Traffic Signs Manual</i>, and the recent <i>Guidance for the Control and Management of Traffic at Road Works</i>, set out the necessary guidelines for temporary safety measures applying to road works and are recognised as best practice for signing of road works sites.</p>	<p>The new standard on safety at road works has been prepared, along with the inspection regime, to be implemented in 2012, the new standard is HD 16/12 Temporary Safety Measures Inspection.</p>
7.	Article 7 Data management		
1.	<p>Member States shall ensure that for each fatal accident occurring on a road referred to in Article 1(2), an accident report is drawn up by the competent entity. Member States shall endeavour to include in that report each of the elements listed in Annex IV.</p>	<p>The collection of data from fatal collisions is the responsibility of An Gardaí (Irish police). The current reporting form is the Garda CT68 form which meets the majority of the requirements set out in Annex IV. In</p>	<p>No further action required. Ireland is 'deemed to comply' with this point.</p>

EU DIRECTIVE		CORRELATION IN IRELAND	
No.	Text	Compliance Measures	Action
		fact this CT 68 form is filled out by An Gardai for all injury accidents.	
2.	Member States shall calculate the average social cost of a fatal accident and the average social cost of a severe accident occurring in its territory. Member States may choose to further differentiate the cost rates, which shall be updated at least every five years.	The calculation of the average social cost of a fatal accident and the average social cost of severe accidents is carried out periodically by the Road Safety Authority.	No further action required. Ireland is 'deemed to comply' with this point.
8. Article 8 Adoption and communication of guidelines			
1.	Member States shall ensure that guidelines, if they do not already exist, are adopted by three years from the entry into force of this Directive, in order to support the competent entities in the application of this Directive.	Ireland currently applies RSIA, RSA and NSM and an Inspection regime on all National roads. New standards have been put in place to formalise the procedures on any of the above that were previously lacking formal standards.	Ireland is now 'deemed to comply' with this point, with the introduction of these new standards.
2.	Member States shall communicate these guidelines to the Commission within three months of their adoption or amendment.	The Directive text is self-explanatory. This document, <i>Road Safety Management Procedures for National Roads in Ireland</i> , notifies the Commission of the existence of the standards and guidelines.	This document went through a consultation phase, and will be formally submitted to the EU in Q2 2012.
3.	The Commission shall make them available on a public website.	The Directive text is explanatory and does not require action by Ireland.	No further action required.
9. Article 9 Appointment and training of auditors			
1.	Member States shall ensure that, if they do not already exist, training curricula for road safety auditors are adopted by three years from the entry into force of this Directive.	University College Dublin (UCD) runs a course for road safety audit, which leads to an exam and a 'Certificate of Competence' award. This is a professional certificate (Special Purpose Award) which is UCD level 3 and is equivalent to level 8 on the National Framework of Qualifications. Syllabus/course content, which is included in Appendix B, has been agreed with NRA. The register of qualified personnel is to be kept by the Authority (NRA). NRA will still insist on 5 audits as trainee and 5 as team member before one can become an Audit Team Leader. Other universities/organisations are free to offer a course based on the agreed syllabus, if they can arrange accreditation.	A syllabus of the course is included in Part B. Ireland is 'deemed to comply' with this point.
2.	Member States shall ensure that where road safety auditors carry out functions under this Directive, they undergo an initial training resulting in the award of a certificate of competence, and take part in periodic further training courses.	NRA will still insist on 5 audits as trainee and 5 as team member before one can become an Audit Team Leader. NRA proposes to hold workshops / seminars as periodically further training for auditors.	No further action required.

EU DIRECTIVE		CORRELATION IN IRELAND	
No.	Text	Compliance Measures	Action
3.	Member States shall ensure that road safety auditors hold a certificate of competence. Certificates awarded before the entry into force of this Directive shall be recognised.	University College Dublin (UCD) run a course for road safety audit which leads to an exam and a 'Certificate of Competence' award. All existing auditors who wish to carry out audits on TERN network will have to attend course and sit the exam to obtain certificate of competence.	No further action required.
4.	Member States shall ensure that auditors are appointed in compliance with the following requirements:		
(a)	they have relevant experience or training in road design, road safety engineering and accident analysis;	University College Dublin (UCD) runs a course for road safety audit which leads to an exam and a 'Certificate of Competence' award. All existing auditors who wish to carry out audits on TERN network will have to attend course and sit the exam to obtain certificate of competence. NRA will still insist on 5 audits as trainee and 5 as team member before one can become an Audit Team Leader.	No further action required.
(b)	from two years after the adoption by the Member States of the guidelines pursuant to Article 8, road safety audits shall only be undertaken by auditors or teams to which auditors belong, meeting the requirements provided for in paragraphs 2 and 3;	The Directive text is self-explanatory and aligns well with existing procedures.	No further action required.
(c)	for the purpose of the infrastructure project audited, the auditor shall not at the time of the audit be involved in the conception or operation of the relevant infrastructure project.	The Directive text is self-explanatory and aligns well with existing procedures.	No further action required.
10. Article 10 Exchange of best practices			
	In order to improve the safety of roads within the European Union that are not part of the trans-European road network, the Commission shall establish a coherent system for the exchange of best practices between the Member States, covering, inter alia, existing road infrastructure safety projects and proven road safety technology.	NRA is very involved in European Road Safety Groups like CEDR TG Road Safety Group, EuroRAP, as well as FEHRL. NRA is also involved in the new ERA-NET forgiving roads, self-explaining roads project, as well as SUPREME. The Road Safety Authority are members of FERSI, IRTAD and CARE. An Gardai are members of TISPOL.	Ireland to continue with existing involvement in information exchange. Ireland is 'deemed to comply' with this point.
Article 11 Continuous improvement of safety management practices			
1.	The Commission shall facilitate and structure the exchange of knowledge and best practices between Member States, making use of the	The Directive text is self-explanatory.	No further action required.

EU DIRECTIVE		CORRELATION IN IRELAND	
No.	Text	Compliance Measures	Action
	experience gained in existing relevant international forums, with a view to achieving continuous improvement of safety management practices concerning road infrastructures in the European Union.		
2.	The Commission shall be assisted by the Committee referred to in Article 13. Insofar as the adoption of specific measures is required, such measures shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 13(3).	The Directive text is self-explanatory.	No further action required.
3.	Where appropriate, relevant non-governmental organisations, active in the field of safety and management of road infrastructures, may be consulted on matters related to technical safety aspects.	The Directive text is self-explanatory.	No further action required.
12. Article 12 Adaptation to technical progress			
	The Annexes to this Directive shall be adapted to take account of technical progress in accordance with the regulatory procedure with scrutiny referred to in Article 13(3).	The Directive text is self-explanatory and does not require action by Ireland.	No further action required.
13. Article 13 Committee procedure			
1.	The Commission shall be assisted by a Committee.	The Directive text is self-explanatory and does not require action by Ireland.	Ireland are members of the Committee and have attended two meetings.
2.	Where reference is made to this paragraph, Articles 5 and 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.	The Directive text is self-explanatory and does not require action by Ireland.	No further action required.
3.	The period laid down in Article 5(6) of Decision 1999/468/EC shall be set at three months.	The Directive text is self-explanatory and does not require action by Ireland.	No further action required.
4.	Where reference is made to this paragraph, Article 5a(1) to (4) and Article 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.	The Directive text is self-explanatory and does not require action by Ireland.	No further action required.
14. Article 14 Transposition			
1.	Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by two years after the entry into force of this Directive. They shall forthwith communicate to the Commission the text of those provisions.	The implementation date of the Directive is 19th Nov 2008. Member states then have 2 years to comply with the legal requirements of the Directive, and 3 yrs for the guidelines and training criteria of the auditors. Ireland currently carries out the necessary procedures to	It is proposed to submit the draft documents by Mid March, and the final documents following public consultation will be

EU DIRECTIVE		CORRELATION IN IRELAND	
No.	Text	Compliance Measures	Action
		<p>comply with this Directive, even if it is not formally identified as being for that reason.</p> <p>In accordance with Preamble (6) of this Directive, countries that already possess well functioning road infrastructure safety management systems 'should be permitted to continue using their existing methods, insofar as they are consistent with the aims of this Directive'.</p> <p>However, for ease of reference to this Directive, this document, <i>Road Safety Management Procedures for National Roads in Ireland</i>, notifies the Commission of the existence of the guidelines and standards which are in place or have been put in place to formalise infrastructure safety management systems.</p>	submitted in May 2012.
2.	Member States shall communicate to the Commission the text of the main provisions of national law which they adopt in the field covered by this Directive.	The Directive text is self-explanatory. On the 23rd September 2011, S.I. No. 472/2011, European Communities (Road Infrastructure Safety Management) Regulations 2011 were made which gave effect to the EU Directive in Ireland. A copy of this SI is contained in Part B.	It is proposed to submit the draft documents by Mid March, and the final documents following public consultation will be submitted in May 2012.
15. Article 15 Entry into force			
	This Directive shall enter into force on the twentieth day following the day of its publication in the Official Journal of the European Union.	The Directive text is self-explanatory and does not require action.	No further action required.
16. Article 16 Addressees			
	This Directive is addressed to the Member States. Done at Strasbourg, 19 November 2008	The Directive text is self-explanatory and does not require action.	No further action required.

D. S.I. NO. 472 OF 2011 & EU DIRECTIVE 2008/96/EC

S.I. No. 472/2011 — European Communities (Road Infrastructure Safety Management) Regulations 2011.

*Notice of the making of this Statutory Instrument was published in
“Iris Oifigiúil” of 23rd September, 2011.*

I, LEO VARADKAR, Minister for Transport, Tourism and Sport, in exercise of the powers conferred on me by [section 3](#) of the [European Communities Act 1972](#) (No. 27 of 1972) and for the purpose of giving effect to Directive 2008/96/EC of the European Parliament and of the Council of 19 November 2008¹, hereby make the following regulations:

Citation

1. These Regulations may be cited as the European Communities (Road Infrastructure Safety Management) Regulations 2011.

Interpretation

2. (1) In these Regulations—

“Act of 1993” means the [Roads Act 1993](#) (No. 14 of 1993);

“Act of 2007” means the [Roads Act 2007](#) (No. 34 of 2007);

“Authority” means the National Roads Authority established under section 16 of the Act of 1993;

“Directive” means Directive 2008/96/EC of the European Parliament and of the Council of 19 November 2008¹;

“infrastructure project” means a project for the construction of new road infrastructure or a substantial modification to the existing road network which affects the traffic flow;

“Minister” means the Minister for Transport, Tourism and Sport;

“network safety ranking” means a method for identifying, analysing and classifying parts of the existing road network according to their potential for safety development and accident cost savings;

“national framework of qualifications” means the framework established and maintained pursuant to [section 7](#) of the [Qualifications \(Education and Training\) Act 1999](#) (No. 26 of 1999);

“National Qualifications Authority of Ireland” means the body established under [section 5](#) of the [Qualifications \(Education and Training\) Act 1999](#) (No. 26 of 1999);

“national road” means a public road or a proposed public road which is classified as a national road under section 10 of the Act of 1993, as amended by section 11 of the Act of 2007;

“ranking of high accident concentration sections” means a method to identify, analyse and rank sections of the road network which have been in operation for more than three years and upon which a large number of fatal accidents in proportion to the traffic flow have occurred;

“road authority” means a road authority within the meaning assigned to that term in the Act of 1993 and which has the function of maintaining and constructing national roads in accordance with Section 13 of that Act, as amended by section 6 of the Act of 2007;

“road safety audit” means an independent detailed systematic and technical safety check relating to the design characteristics of a road infrastructure project and covering all stages from planning to early operation;

“road safety auditor” means a person qualified to operate as a road safety auditor under these Regulations, pursuant to Regulation 6;

“Road Safety Authority” means the Road Safety Authority established under [section 3](#) of the [Road Safety Authority Act 2006](#) (No. 14 of 2006);

“road safety impact assessment” means a strategic comparative analysis of the impact of a new road or a substantial modification to the existing road network on the safety performance of the road network;

“safety inspection” means an ordinary periodical verification of the characteristics and defects that require maintenance work for reasons of safety;

“trans-European road network” (TERN) means the road network identified in section 2 of Annex 1 to Decision No. 661/2010/EU of the European Parliament and of the Council of 7 July 2010².

(2) A word or expression which is used in these Regulations and which is also used in the Directive has, unless the context otherwise requires, the same meaning in these Regulations as it has in the Directive.

(3)(a) A reference in these Regulations to a Regulation is to a Regulation of these Regulations, unless it is indicated that reference to some other Regulations is intended.

(b) A reference in these Regulations to a paragraph or subparagraph is to the paragraph or subparagraph of the provision in which the reference occurs, unless it is indicated that reference to some other provision is intended.

(4) These Regulations shall only apply to roads in the State which are part of the trans-European road network (TERN), whether they are at the design stage, under construction or in operation.

(5) These Regulations do not apply to road tunnels covered by Directive 2004/54/EC of the European Parliament and of the Council of 29 April 2004³.

Directions and guidelines

3. (1) The Authority may give a direction in writing to a road authority in relation to any matter arising under these Regulations or the Directive and a road authority issued with such a direction shall comply with same.

(2) Before issuing a direction to a road authority under paragraph (1), the Authority shall consult with such road authority.

(3) A direction under paragraph (1) may specify the time within which such direction is to be complied with and such other matters as the Authority considers necessary.

(4) The Authority may by direction revoke or amend any direction given by it under these Regulations.

(5) The Minister may give a direction in writing to the Authority in relation to any matter arising under these Regulations or the Directive and the Authority shall comply with such direction.

(6) The Minister may by direction revoke or amend any direction given by him under these Regulations.

(7) The Authority may, at any time, issue guidelines in relation to any matter arising under these Regulations or the Directive.

(8) The Authority shall consult with the Minister, road authorities, the Road Safety Authority and An Garda Síochána, as appropriate, prior to the issuing of any guidelines under paragraph (7), including material amendments to previous guidelines.

(9) The Authority shall publish or cause to be published, in such manner as it considers appropriate, guidelines issued under paragraph (7).

(10) The Authority may revoke or amend guidelines issued under paragraph (7).

(11) Any person or body carrying out activities covered by these Regulations or the Directive shall ensure that those activities are carried out in accordance with guidelines issued by the Authority

under paragraph (7).

(12) Any direction issued by the Minister and any directions or guidelines issued by the Authority relating to matters arising under these Regulations or the Directive, which were issued by the Minister or the Authority prior to the commencement of these Regulations and remained in force immediately before such commencement, shall be deemed to be directions or guidelines under these Regulations.

Road safety impact assessments

4. (1) Any person or body undertaking an infrastructure project shall ensure that a road safety impact assessment is carried out for that project, in accordance with guidelines issued by the Authority.

(2) The road safety impact assessment shall be carried out at the initial planning stage of the infrastructure project, before—

(a) in the case of an infrastructure project coming within Part IV of the Act of 1993, submitting a scheme to An Bord Pleanála, pursuant to sections 47 and 49 of the Act of 1993, as amended by sections 9 and 11 of the Act of 2007, or

(b) in any other case, submitting an application for consent for the infrastructure project under the [Planning and Development Act 2000](#) (No. 30 of 2000) and Regulations made under Part XI of that Act.

(3) Any road safety impact assessment being carried out shall—

(a) indicate the road safety considerations which contribute to the choice of the proposed solution, and

(b) provide all relevant information necessary for a cost-benefit analysis of the different options assessed.

(4) In issuing guidelines referred to in paragraph (1), the Authority shall endeavour to meet the criteria set out in Annex 1 to the Directive.

Road safety audits

5. (1) Any person or body undertaking an infrastructure project shall ensure that—

(a) a road safety audit is carried out for that project, in accordance with guidelines issued by the Authority;

(b) road safety audits form an integral part of the design process of the infrastructure project at the stage of draft design, detailed design, pre-opening and early operation, and

(c) an audit report is produced setting out—

(i) safety critical design elements for each stage of the infrastructure project, and

(ii) relevant recommendations from a safety point of view.

(2) Where unsafe features are identified in the course of a road safety audit but the design has not been rectified before the end of the appropriate stage, the reasons for same shall be stated in an annex to the audit report completed by the competent entity assigned for that purpose by the Authority in the guidelines issued under paragraph (1).

(3) Road safety audits shall be carried out by road safety auditors. Where a road safety audit is carried out by a team, at least one member of that team shall be a road safety auditor.

(4) A road safety auditor appointed to carry out a road safety audit shall not, at the time of the audit, be involved in the conception or operation of the infrastructure project being audited.

(5) Teams carrying out road safety audits shall comply with guidelines or directions issued by the Authority in respect of composition, membership and experience.

(6) In issuing guidelines referred to in paragraph (1), the Authority shall endeavour to meet the criteria set out in Annex II to the Directive.

Road safety auditors

6. A road safety auditor shall—

(a) have relevant experience or training in road design, road safety engineering and accident analysis,

(b) from 19 December 2013, be in possession of a valid certificate of competence, being one of the following—

(i) a professional certificate (Special Purpose Award) equivalent to level 8 on the national framework of qualifications,

(ii) an equivalent award validated by another member state of the European Union, or

(iii) an equivalent award validated in a state other than a member state of the European Union and recognised by the National Qualifications Authority of Ireland,

whether awarded before or after the coming into force of the Directive, and

(c) take part in periodic further training courses in accordance with guidelines issued by the Authority.

Safety ranking

7. (1) On the basis of reviews of the road network undertaken at least every three years, the Authority shall carry out—

(a) ranking of high accident concentration sections, and

(b) network safety ranking.

(2) In carrying out the rankings referred to in paragraph (1), the Authority shall endeavour to meet the criteria set out in Annex III to the Directive.

(3) In respect of road sections showing higher priority according to the results of rankings carried out pursuant to paragraph (1), the Authority shall—

(a) appoint expert teams, comprising at least one member with relevant experience or training in road design, road safety engineering and accident analysis, to evaluate the said sections by means of site visits guided by the elements referred to in point 3 of Annex III to the Directive; and

(b) target remedial treatment at the said sections, prioritising those measures referred to in point 3(e) of Annex III to the Directive and paying attention to those presenting the highest benefit-cost ratio.

(4) The Authority shall ensure that road users are informed of the existence of high accident concentration sections by appropriate measures.

Safety inspections

8. (1) The Authority shall ensure that safety inspections in respect of roads in operation are undertaken in accordance with guidelines issued by the Authority for that purpose.

(2) Safety inspections carried out under paragraph (1) shall—

(a) comprise periodic inspections of the road network, and

(b) be sufficiently frequent to safeguard adequate safety levels for the road infrastructure in question.

(3) The Authority shall ensure that surveys are undertaken on the possible impact of roadworks on the safety of traffic flow.

Repairs and roadworks

9. (1) Any person or body undertaking roadworks shall ensure that any temporary safety measures applying to roadworks are in accordance with guidelines issued by the Authority.

(2) Appropriate signs, warning road users of roads undergoing repairs, shall be put in place by those carrying out the said repairs. The signs shall be in accordance with directions given by the Minister under [section 95](#) (16) of the [Road Traffic Act 1961](#) (No. 24 of 1961).

(3) The Authority shall prepare and publish, in a manner it considers appropriate, an appropriate inspection scheme on the implementation of guidelines issued under paragraph (1).

(4) Where designated by an inspection scheme published by the Authority under paragraph (3), a person or body shall carry out inspections of roadworks in accordance with that inspection scheme and in accordance with guidelines issued by the Authority under paragraph (1).

(5) The Authority shall consult with the Minister, road authorities, the Road Safety Authority and An Garda Síochána, as appropriate, prior to the publication of an inspection scheme under paragraph (3), including material amendments to previous inspection schemes.

(6) The Authority may revoke or amend an inspection scheme published under paragraph (3).

Data management

10. (1) In respect of each fatal accident occurring on a road to which these Regulations apply, a member of An Garda Síochána shall complete an accident report form, which shall, where possible, include each of the elements listed in Annex IV to the Directive.

(2) The Road Safety Authority shall, at least every five years, calculate the average social cost of a fatal accident and the average social cost of a severe accident occurring in the State.



GIVEN under my Official Seal,

21 September 2011.

LEO VARADKAR,

Minister for Transport, Tourism and Sport.

EXPLANATORY NOTE

(This note is not part of the Instrument and does not purport to be a legal interpretation).

These Regulations give effect to Directive 2008/96/EC of the European Parliament and of the Council of 19 November 2008 on road infrastructure safety management.

These Regulations may be cited as the European Communities (Road Infrastructure Safety Management) Regulations 2011.

1 OJ L 319, 29.11.2008, p. 59.

2 OJ L 204, 5.8.2010, p. 1.

3 OJ L 167, 30.4.2004, p. 39.

**Directive 2008/96/EC of the European Parliament and of the Council
of 19 November 2008
on road infrastructure safety management**

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 71(1)(c) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Economic and Social Committee [1],

After consulting the Committee of the Regions,

Acting in accordance with the procedure laid down in Article 251 of the Treaty [2],

Whereas:

(1) The trans-European road network defined in Decision No 1692/96/EC of the European Parliament and of the Council of 23 July 1996 on Community guidelines for the development of the trans-European transport network [3], is of paramount importance in supporting European integration and cohesion as well as ensuring a high level of well-being. In particular, a high level of safety should be guaranteed.

(2) In its White Paper of 12 September 2001 "European transport policy for 2010: time to decide" the Commission expressed the need to carry out safety impact assessments and road safety audits, in order to identify and manage high accident concentration sections within the Community. It also set the target of halving the number of deaths on the roads within the European Union between 2001 and 2010.

(3) In its Communication of 2 June 2003 "European Road Safety Action Programme, Halving the number of road accident victims in the European Union by 2010: A shared responsibility" the Commission identified road infrastructure as the third pillar of road safety policy, which should make an important contribution to the Community's accident reduction target.

(4) In recent years, major advances have been made in vehicle design (safety measures and the development and application of new technologies) which have helped to reduce the number of people killed or injured in road accidents. If the target set for 2010 is to be achieved, action must be taken in other areas too. Managing the safety of road infrastructure offers plenty of scope for improvement, which must be used to advantage.

(5) The setting up of appropriate procedures is an essential tool for improving the safety of road infrastructure within the trans-European road network. Road safety impact assessments should demonstrate, on a strategic level, the implications on road safety of different planning alternatives of an infrastructure project and they should play an important role when routes are being selected. The results of road safety impact assessments may be set out in a number of documents. Moreover, road safety audits should identify, in a detailed way, unsafe features of a road infrastructure project. It therefore makes sense to develop procedures to be followed in those two fields with the aim of increasing safety of road infrastructures on the trans-European road network, whilst at the same time excluding road tunnels which are covered by Directive 2004/54/EC of the European Parliament and of the Council of 29 April 2004 on minimum safety requirements for tunnels in the trans-European road network [4].

(6) Several Member States already possess well functioning road infrastructure safety management systems. These countries should be permitted to continue using their existing methods, in so far as they are consistent with the aims of this Directive.

(7) Research is vital to improving safety on the roads within the European Union. Developing and demonstrating components, measures and methods (including telematics) and disseminating research results play an important part in increasing the safety of road infrastructure.

(8) Safety performance of existing roads should be raised by targeting investments to the road sections with the highest accident concentration and/or the highest accident reduction potential. To be able to adapt their behaviour and increase compliance with traffic rules, in

particular speed limits, drivers should be made aware of road sections with a high accident concentration.

(9) Network safety ranking has a high potential immediately after its implementation. Once road sections with a high accident concentration have been treated and remedial measures have been taken, safety inspections as a preventive measure should assume a more important role. Regular inspections are an essential tool for preventing possible dangers for all road users, including vulnerable users, and also in case of roadworks.

(10) Training and certification of safety personnel by means of training curricula and tools for qualification validated by the Member States should ensure that practitioners get the necessary up-to-date knowledge.

(11) With a view to improving safety on the roads within the European Union, arrangements should be made for more frequent and more consistent exchanges of best practices among the Member States.

(12) In order to ensure a high level of road safety on the roads within the European Union Member States should apply guidelines on infrastructure safety management. The notification of those guidelines to the Commission and regular reporting on their implementation should pave the way for the systematic improvement of infrastructure safety at Community level and provide a basis for the evolution towards a more effective system over time. The reporting on their implementation should, furthermore, allow other Member States to identify the most effective solutions, while the systematic collection of data from before/after studies should allow selecting the most effective measure for future action.

(13) The provisions of this Directive which relate to investment in road safety should apply without prejudice to the Member States' powers as regards investment in the upkeep of the road network.

(14) Since the objective of this Directive namely the establishment of procedures to ensure a consistently high level of road safety throughout the trans-European road network cannot be sufficiently achieved by the Member States and can therefore, by reason of the effects of the action, be better achieved at Community level, the Community may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. In accordance with the principle of proportionality, as set out in that Article, this Directive does not go beyond what is necessary in order to achieve that objective.

(15) The measures necessary for the implementation of this Directive should be adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission [5].

(16) In particular the Commission should be empowered to adopt the criteria necessary for the improvement of road safety management practices and the adaptation of the annexes to technical progress. Since those measures are of general scope and are designed to amend non-essential elements of this Directive, inter alia, by supplementing it with new non-essential elements, they must be adopted in accordance with the regulatory procedure with scrutiny provided for in Article 5a of Decision 1999/468/EC.

(17) Sufficient roadside parking areas are very important not only for crime prevention but also for road safety. Parking areas enable drivers to take rest breaks in good time and continue their journey with full concentration. The provision of sufficient safe parking areas should therefore form an integral part of road infrastructure safety management.

(18) In accordance with point 34 of the Interinstitutional Agreement on better law-making [6], Member States are encouraged to draw up, for themselves and in the interest of the Community, their own tables, which will, as far as possible, illustrate the correlation between this Directive and their transposition measures, and to make them public,

HAVE ADOPTED THIS DIRECTIVE:

Article 1

Subject matter and scope

1. This Directive requires the establishment and implementation of procedures relating to road safety impact assessments, road safety audits, the management of road network safety and safety inspections by the Member States.
2. This Directive shall apply to roads which are part of the trans-European road network, whether they are at the design stage, under construction or in operation.
3. Member States may also apply the provisions of this Directive, as a set of good practices, to national road transport infrastructure, not included in the trans-European road network, that was constructed using Community funding in whole or in part.
4. This Directive shall not apply to road tunnels covered by Directive 2004/54/EC.

Article 2

Definitions

For the purposes of this Directive, the following definitions shall apply:

1. "trans-European road network" means the road network identified in Section 2 of Annex I to Decision No 1692/96/EC;
2. "competent entity" means any public or private organisation set up at national, regional or local level, involved in the implementation of this Directive by reason of its competences, including bodies designated as competent entities which existed before the entry into force of this Directive, in so far as they meet the requirements of this Directive;
3. "road safety impact assessment" means a strategic comparative analysis of the impact of a new road or a substantial modification to the existing network on the safety performance of the road network;
4. "road safety audit" means an independent detailed systematic and technical safety check relating to the design characteristics of a road infrastructure project and covering all stages from planning to early operation;
5. "ranking of high accident concentration sections" means a method to identify, analyse and rank sections of the road network which have been in operation for more than three years and upon which a large number of fatal accidents in proportion to the traffic flow have occurred;
6. "network safety ranking" means a method for identifying, analysing and classifying parts of the existing road network according to their potential for safety development and accident cost savings;
7. "safety inspection" means an ordinary periodical verification of the characteristics and defects that require maintenance work for reasons of safety;
8. "guidelines" means measures adopted by Member States, which lay down the steps to be followed and the elements to be considered in applying the safety procedures set out in this Directive;
9. "infrastructure project" means a project for the construction of new road infrastructure or a substantial modification to the existing network which affects the traffic flow.

Article 3

Road safety impact assessment for infrastructure projects

1. Member States shall ensure that a road safety impact assessment is carried out for all infrastructure projects.
2. The road safety impact assessment shall be carried out at the initial planning stage before the infrastructure project is approved. In that connection, Member States shall endeavour to meet the criteria set out in Annex I.
3. The road safety impact assessment shall indicate the road safety considerations which contribute to the choice of the proposed solution. It shall further provide all relevant information necessary for a cost-benefit analysis of the different options assessed.

Article 4

Road safety audits for infrastructure projects

1. Member States shall ensure that road safety audits are carried out for all infrastructure projects.

2. When carrying out road safety audits the Member States shall endeavour to meet the criteria set out in Annex II.

Member States shall ensure that an auditor is appointed to carry out an audit of the design characteristics of an infrastructure project.

The auditor shall be appointed in accordance with the provisions of Article 9(4) and shall have the necessary competence and training provided for in Article 9. Where audits are undertaken by teams, at least one member of the team shall hold a certificate of competence as referred to in Article 9(3).

3. Road safety audits shall form an integral part of the design process of the infrastructure project at the stage of draft design, detailed design, pre-opening and early operation.

4. Member States shall ensure that the auditor sets out safety critical design elements in an audit report for each stage of the infrastructure project. Where unsafe features are identified in the course of the audit but the design is not rectified before the end of the appropriate stage as referred to in Annex II, the reasons shall be stated by the competent entity in an Annex to that report.

5. Member States shall ensure that the report referred to in paragraph 4 shall result in relevant recommendations from a safety point of view.

Article 5

Safety ranking and management of the road network in operation

1. Member States shall ensure that the ranking of high accident concentration sections and the network safety ranking are carried out on the basis of reviews, at least every three years, of the operation of the road network. In that connection, Member States shall endeavour to meet the criteria set out in Annex III.

2. Member States shall ensure that road sections showing higher priority according to the results of the ranking of high accident concentration sections and from network safety ranking are evaluated by expert teams by means of site visits guided by the elements referred to in point 3 of Annex III. At least one member of the expert team shall meet the requirements set out in Article 9(4)(a).

3. Member States shall ensure that remedial treatment is targeted at the road sections referred to in paragraph 2. Priority shall be given to those measures referred to in point 3(e) of Annex III paying attention to those presenting the highest benefit-cost ratio.

4. Member States shall ensure that appropriate signs are in place to warn road users of road infrastructure segments that are undergoing repairs and which may thus jeopardise the safety of road users. These signs shall also include signs which are visible during both day and night time and set up at a safe distance and shall comply with the provisions of the Vienna Convention on Road Signs and Signals of 1968.

5. Member States shall ensure that road users are informed of the existence of a high accident concentration section by appropriate measures. If a Member State decides to use signposting, this shall comply with the provisions of the Vienna Convention on Road Signs and Signals of 1968.

Article 6

Safety inspections

1. Member States shall ensure that safety inspections are undertaken in respect of the roads in operation in order to identify the road safety related features and prevent accidents.

2. Safety inspections shall comprise periodic inspections of the road network and surveys on the possible impact of roadworks on the safety of the traffic flow.

3. Member States shall ensure that periodic inspections are undertaken by the competent entity. Such inspections shall be sufficiently frequent to safeguard adequate safety levels for the road infrastructure in question.

4. Without prejudice to the guidelines adopted pursuant to Article 8, Member States shall adopt guidelines on temporary safety measures applying to roadworks. They shall also implement an appropriate inspection scheme to ensure that those guidelines are properly applied.

Article 7

Data management

1. Member States shall ensure that for each fatal accident occurring on a road referred to in Article 1(2) an accident report is drawn up by the competent entity. Member States shall endeavour to include in that report each of the elements listed in Annex IV.

2. Member States shall calculate the average social cost of a fatal accident and the average social cost of a severe accident occurring in its territory. Member States may choose to further differentiate the cost rates, which shall be updated at least every five years.

Article 8

Adoption and communication of guidelines

1. Member States shall ensure that guidelines, if they do not already exist, are adopted by 19 December 2011, in order to support the competent entities in the application of this Directive.

2. Member States shall communicate these guidelines to the Commission within three months of their adoption or amendment.

3. The Commission shall make them available on a public website.

Article 9

Appointment and training of auditors

1. Member States shall ensure that, if they do not already exist, training curricula for road safety auditors are adopted by 19 December 2011.

2. Member States shall ensure that where road safety auditors carry out functions under this Directive, they undergo an initial training resulting in the award of a certificate of competence, and take part in periodic further training courses.

3. Member States shall ensure that road safety auditors hold a certificate of competence. Certificates awarded before the entry into force of this Directive shall be recognised.

4. Member States shall ensure that auditors are appointed in compliance with the following requirements:

(a) they have relevant experience or training in road design, road safety engineering and accident analysis;

(b) from two years after the adoption by the Member States of the guidelines pursuant to Article 8, road safety audits shall only be undertaken by auditors or teams to which auditors belong, meeting the requirements provided for in paragraphs 2 and 3;

(c) for the purpose of the infrastructure project audited, the auditor shall not at the time of the audit be involved in the conception or operation of the relevant infrastructure project.

Article 10

Exchange of best practices

In order to improve the safety of roads within the European Union that are not part of the trans-European road network, the Commission shall establish a coherent system for the exchange of best practices between the Member States, covering, inter alia, existing road infrastructure safety projects and proven road safety technology.

Article 11

Continuous improvement of safety management practices

1. The Commission shall facilitate and structure the exchange of knowledge and best practices between Member States, making use of the experience gained in existing relevant international forums, with a view to achieving continuous improvement of safety management practices concerning road infrastructures in the European Union.

2. The Commission shall be assisted by the Committee referred to in Article 13. In so far as the adoption of specific measures is required, such measures shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 13(3).

3. Where appropriate, relevant non-governmental organisations, active in the field of safety and management of road infrastructures, may be consulted on matters related to technical safety aspects.

Article 12

Adaptation to technical progress

The Annexes to this Directive shall be adapted to take account of technical progress in accordance with the regulatory procedure with scrutiny referred to in Article 13(3).

Article 13

Committee procedure

1. The Commission shall be assisted by a Committee.

2. Where reference is made to this paragraph, Articles 5 and 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

The period laid down in Article 5(6) of Decision 1999/468/EC shall be set at three months.

3. Where reference is made to this paragraph, Article 5a(1) to (4) and Article 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

Article 14

Transposition

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 19 December 2010. They shall forthwith communicate to the Commission the text of those provisions.

2. Member States shall communicate to the Commission the text of the main provisions of national law which they adopt in the field covered by this Directive.

Article 15

Entry into force

This Directive shall enter into force on the 20th day following the day of its publication in the Official Journal of the European Union.

Article 16

Addressees

This Directive is addressed to the Member States.

Done at Strasbourg, 19 November 2008.

For the European Parliament

The President

H.-G. Pöttering

For the Council

The President

J.-P. Jouyet

[1] OJ C 168, 20.7.2007, p. 71.

[2] Opinion of the European Parliament of 19 June 2008 (not yet published in the Official Journal), and Council Decision of 20 October 2008.

[3] OJ L 228, 9.9.1996, p. 1.

[4] OJ L 167, 30.4.2004, p. 39.

[5] OJ L 184, 17.7.1999, p. 23.

[6] OJ C 321, 31.12.2003, p. 1.

ANNEX I

ROAD SAFETY IMPACT ASSESSMENT FOR INFRASTRUCTURE PROJECTS

1. Elements of a road safety impact assessment:

- (a) problem definition;
- (b) current situation and "do nothing" scenario;
- (c) road safety objectives;
- (d) analysis of impacts on road safety of the proposed alternatives;
- (e) comparison of the alternatives, including cost-benefit analysis;
- (f) presentation of the range of possible solutions.

2. Elements to be taken into account:

- (a) fatalities and accidents, reduction targets against "do nothing" scenario;
- (b) route choice and traffic patterns;
- (c) possible effects on the existing networks (e.g. exits, intersections, level crossings);
- (d) road users, including vulnerable users (e.g. pedestrians, cyclists, motorcyclists);
- (e) traffic (e.g. traffic volume, traffic categorisation by type);
- (f) seasonal and climatic conditions;
- (g) presence of a sufficient number of safe parking areas;
- (h) seismic activity.

ANNEX II

ROAD SAFETY AUDITS FOR INFRASTRUCTURE PROJECTS

1. Criteria at the draft design stage:

- (a) geographical location (e.g. exposure to landslides, flooding, avalanches), seasonal and climatic conditions and seismic activity;
- (b) types of and distance between junctions;
- (c) number and type of lanes;
- (d) kinds of traffic admissible to the new road;
- (e) functionality of the road in the network;
- (f) meteorological conditions;
- (g) driving speeds;
- (h) cross-sections (e.g. width of carriageway, cycle tracks, foot paths);
- (i) horizontal and vertical alignments;
- (j) visibility;
- (k) junctions layout;
- (l) public transport and infrastructures;
- (m) road/rail level crossings.

2. Criteria for the detailed design stage:

- (a) layout;
- (b) coherent road signs and markings;
- (c) lighting of lit roads and intersections;
- (d) roadside equipment;
- (e) roadside environment including vegetation;
- (f) fixed obstacles at the roadside;
- (g) provision of safe parking areas;

- (h) vulnerable road users (e.g. pedestrians, cyclists, motorcyclists);
 - (i) user-friendly adaptation of road restraint systems (central reservations and crash barriers to prevent hazards to vulnerable users).
3. Criteria for the pre-opening stage:
- (a) safety of road users and visibility under different conditions such as darkness and under normal weather conditions;
 - (b) readability of road signs and markings;
 - (c) condition of pavements.
4. Criteria for early operation: assessment of road safety in the light of actual behaviour of users.
- Audits at any stage may involve the need to reconsider criteria from previous stages.

ANNEX III

RANKING OF HIGH ACCIDENT CONCENTRATION SECTIONS AND NETWORK SAFETY RANKING

1. Identification of road sections with a high accident concentration

The identification of road sections with a high accident concentration takes into account at least the number of fatal accidents that have occurred in previous years per unit of road length in relation to the volume of traffic and, in case of intersections, the number of such accidents per location of intersections.

2. Identification of sections for analysis in network safety ranking

The identification of sections for analysis in network safety ranking takes into account their potential savings in accident costs. Road sections shall be classified into categories. For each category of roads, road sections shall be analysed and ranked according to safety-related factors, such as accidents concentration, traffic volume and traffic typology.

For each road category, network safety ranking shall result in a priority list of road sections where an improvement of the infrastructure is expected to be highly effective.

3. Elements of evaluation for expert teams' site visits:

- (a) a description of the road section;
- (b) a reference to possible previous reports on the same road section;
- (c) the analysis of possible accident reports;
- (d) the number of accidents, of fatalities and of severely injured persons in the three previous years;
- (e) a set of potential remedial measures for realisation within different timescales considering for example:
 - removing or protecting fixed roadside obstacles,
 - reducing speed limits and intensifying local speed enforcement,
 - improving visibility under different weather and light conditions,
 - improving safety condition of roadside equipment such as road restraint systems,
 - improving coherence, visibility, readability and position of road markings (incl. application of rumble strips), signs and signals,
 - protecting against rocks falling, landslips and avalanches,
 - improving grip/roughness of pavements,
 - redesigning road restraint systems,
 - providing and improving median protection,
 - changing the overtaking layout,
 - improving junctions, including road/rail level crossings,
 - changing the alignment,

- changing width of road, adding hard shoulders,
- installing traffic management and control systems,
- reducing potential conflict with vulnerable road users,
- upgrading the road to current design standards,
- restoring or replacing pavements,
- using intelligent road signs,
- improving intelligent transport systems and telematics services for interoperability, emergency and signage purposes.

ANNEX IV

ACCIDENT INFORMATION CONTAINED IN ACCIDENT REPORTS

Accident reports include the following elements:

1. precise as possible location of the accident;
2. pictures and/or diagrams of the accident site;
3. date and hour of accident;
4. information on the road such as area type, road type, junction type incl. signalling, number of lanes, markings, road surface, lighting and weather conditions, speed limit, roadside obstacles;
5. accident severity, including number of fatalities and injured persons, if possible according to common criteria to be defined in accordance with the regulatory procedure with scrutiny referred to in Article 13(3);
6. characteristics of the persons involved such as age, sex, nationality, alcohol level, use of safety equipment or not;
7. data on the vehicles involved (type, age, country, safety equipment if any, date of last periodical technical check according to applicable legislation);
8. accident data such as accident type, collision type, vehicle and driver manoeuvre;
9. whenever possible, information on the time elapsed between the time of the accident and the recording of the accident, or the arrival of the emergency services.

E. SYLLABUS OF ROAD SAFETY AUDIT COURSE.

Certificate in Road Safety Audit Syllabus

The new EU Directive on Road Infrastructure Safety Management, which will be implemented into Irish Law in November 2010, will mean that all road safety audits undertaken on the trans-european road network (TERN) shall be carried out by qualified audit teams holding certificates of competence. This certificate will require training and assessment in accordance with the modular syllabus described below:

The 10 day course has 60 contact hours.

In addition the project work is estimated at 20 hours, with a further 30 hours private study required for a final exam of 2 hours duration.

Week 1 - Unit 1

Day 1 – Introduction to Road Infrastructure Safety Management in Ireland

Scale of the collision problem in Ireland
Road Safety in Ireland – national and local roles and responsibilities
Collision causation
Collision causation workshop
Collision data recording
Collision data systems

Day 2 – Collision data recording and initial analysis

The Road Safety Engineering process
Ranking high risk locations inc frequency rates, exposure based rates, road risk mapping
Collision location (stick diagram) workshop
Statistics in road safety engineering
Statistics workshop – defining problems

Week 2 - Unit 2

Day 1 – Evaluation of options and Economic Assessment

The importance of the site visit
Conflict studies and other data
Conflict study site visit
Collision Savings & Economic Assessment
Economic Assessment Workshop – deciding on solutions
Prioritisation of works programmes

Day 2 – Scheme options for design

Sites and routes - a review of Irish Schemes
Irish Traffic Management Guidelines
Urban traffic calming guidelines and case studies
Irish rural traffic calming guidelines and case studies
Irish cycle design guides
Workshops

Week 3 – Unit 3

Day 1 – Preparation for Project Work

Introduction to case study location
Preparation of collision data in groups

Day 2 – Site visit

Site visit in groups
Format of report

Following this unit delegates will have two weeks to complete a road safety engineering case study report, which should be brought along to the start of Unit 4.

Week 6 – Unit 4

Day 1 – Introduction to Road Safety Audit

Principles of Road Safety Audit/ Irish Standard and Guidelines
Checklist exercise
Examples of good and bad practice
Legal implications of Road Safety Audit
Road Safety Audit report writing
Road Safety Audit response

Day 2 – Design Stage Audits

Feasibility Stage Audit workshop
Feasibility Stage Audit Feedback
Stage 1 Audit workshop
Stage 1 Audit Feedback
Safety issues within junction design
Stage 2 Audit workshop
Stage 2 Audit Feedback

Following this unit delegates will be required to write up a design stage 3 RSA report and bring it to the start of Unit 5.

Week 7 – Unit 5

Day 1 – Post-opening Stage Audits

Preparation for Stage 3 Audit workshop
Stage 3 Audit workshop - site visit
Stage 3 Audit workshop – report writing
Stage 3 Audit workshop – risk assessment
Stage 3 Audit workshop – feedback

Day 2 – AM

The role of Safety Assessments and other audits in the design process
European and Irish Guidelines on Road Safety Impact Assessments
Workshop - comparative assessment of scheme options
European and Irish Guidelines on Road Safety Inspections
Workshop to assess risk from site visit (or video footage)

Day 2 – PM

20 Questions multiple choice knowledge test (45 minutes)
2 question exam paper (75 minutes)