VOLUME 0 INTRODUCTION AND

**GENERAL** 

REQUIREMENTS

SECTION 1 INDEX AND

INTRODUCTION

PART 2

GD 01/15

INTRODUCTION TO THE DESIGN MANUAL FOR ROADS AND BRIDGES (DMRB)

#### **SUMMARY**

This Introduction provides information on the use of the Manual for the development, maintenance and operation of motorway and all purpose trunk roads.

### **INSTRUCTIONS FOR USE**

- 1. Remove the existing GD01 dated May 2008 from Volume 1, Section 0, Part 2 and archive as appropriate. Insert the new GD 01/15, in Volume 0, Section 1, Part 2.
- 2. Please archive this sheet as appropriate.

Note: A quarterly index with a full set of Volume Contents Pages is available separately from The Stationery Office Ltd.



GD 01/15 Volume 0, Section 1,



TRANSPORT SCOTLAND



WELSH GOVERNMENT LLYWODRAETH CYMRU



THE DEPARTMENT FOR REGIONAL DEVELOPMENT NORTHERN IRELAND

# **INTRODUCTION TO** THE DESIGN MANUAL FOR **ROADS AND BRIDGES (DMRB)**

Summary:

This Introduction provides information on the use of the Manual for the development, maintenance and operation of motorway and all purpose trunk roads.

### REGISTRATION OF AMENDMENTS

Amend No	Page No	Signature & Date of incorporation of amendments	Amend No	Page No	Signature & Date of incorporation of amendments

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INTRODUCTION TO THE DESIGN MANUAL FOR ROADS AND BRIDGES (DMRB)

### **Contents**

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- 2. Use of the DMRB
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### 1. INTRODUCTION

### The Design Manual for Roads and Bridges

- 1.1 The "Design Manual for Roads and Bridges" (DMRB) is a comprehensive manual which contains requirements, advice and other published documents relating to works on motorway and all purpose trunk roads for which one of the Overseeing Organisations is highway authority. The DMRB has been developed as a series of documents published by the Overseeing Organisations of England, Scotland, Wales and Northern Ireland.
- 1.2 "Overseeing Organisation" refers to the following organisations (or their successors):

Highways England Company Limited

Transport Scotland

The Welsh Government

The Department for Regional Development (Northern Ireland)

For the avoidance of doubt, where any document within the DMRB refers to the Highways Agency, this shall be taken to mean Highways England or its successors.

Where a local highway/road authority decides to use the DMRB in whole or in part for development of its own highway/road network, the Overseeing Organisation shall be defined in accordance with their own procedures.

- 1.3 This Introduction provides information on the use of the DMRB for development, maintenance and operation of motorway and all purpose trunk roads. It sets out the basis on which documents within DMRB are prepared, how they should be used and how future additions and updating are to be handled.
- 1.4 Documents (new and amended) in the DMRB are generally published quarterly, together with an index containing revised volume contents pages and an alpha-numeric listing of the documents in the manual. The latest version of the DMRB is available electronically [Ref 1].
- 1.5 The documents in the DMRB have been prepared by the Overseeing Organisations specifically for maintenance, development and operation of motorway and all purpose trunk roads, subject to any restrictions contained in individual documents. Examples of such restrictions might be where a certain document is stated as not for use in Scotland, Wales or Northern Ireland, or where it is specific to a particular Overseeing Organisation. Refer to Chapter 3.
- 1.6 It should be noted that a motorway is a type of special road, as defined in:
  - a) the Highways Act 1980,
  - b) the Roads (Scotland) Act 1984 and
  - c) the Roads (NI) Order 1993

where restrictions on use by particular types of vehicle are imposed. Throughout the UK there are a small number of special roads and motorways which are not trunk roads and the DMRB only applies to trunk roads, in accordance with the laws listed above.

For the avoidance of doubt, this clarification does not prevent a local highway/road authority from using the DMRB on special roads or motorways which are not trunk roads in accordance with 1.2.

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### **Mutual Recognition**

- 1.7 Where there is a requirement in the DMRB for compliance with any part of a "British Standard" or other technical specification, that requirement may be met by compliance with:
  - a) a standard or code of practice of a national standards body or equivalent body of any EEA state or Turkey;
  - b) any international standard recognised for use as a standard or code of practice by any EEA state or Turkey;
  - c) a technical specification recognised for use as a standard by a public authority of any EEA state or Turkey; or
  - d) a European Technical Assessment issued in accordance with the procedure set out in regulation (EU) No. 305/2011;

provided that the relevant standard enables an equivalent level of performance and safety to be achieved to that provided for by the stated British Standard or technical specification.

"EEA State" means a state which is a contracting party to the European Economic Area Agreement.

"British Standard" means any standard published by the British Standards Institution including adopted European or other international standards.

### Use of DMRB by Other Highway/Road Authorities

- 1.8 The DMRB provides advice and sets requirements and has been developed principally for motorway and all purpose trunk roads. It may also be applicable in part to other roads with similar characteristics. Where it is applied to local roads it is for the local highway authority (local roads authority in Scotland and Northern Ireland) to decide on the extent to which these documents are appropriate in any given situation.
- 1.9 While the requirements given in the DMRB may be used by local highway/road authorities, such authorities should ensure that their application to local works does not increase safety risk, result in poor value for money, or have an unacceptable impact on the environment. It is recommended that any local authority making use of this manual should establish formal procedures for considering whether it is appropriate to relax or depart from particular requirements.

### **Implementation**

- 1.10 Individual documents shall be implemented as soon as they are published in the DMRB, except:
  - a) where otherwise stated in the introduction to, or instructions given with, a particular document;
  - b) where the procurement of works, at any stage from conception through design to completion of construction, has reached a stage at which, in the opinion of the Overseeing Organisation, use of a particular document would result in significant additional expense or delay progress (in which case the decision shall be recorded in accordance with the Overseeing Organisation's procedure); or
  - c) where an existing contract has terms which apply specifically to the implementation of new requirements.

### Manual of Contract Documents for Highway Works and TSS Plans Registry

- 1.11 There are links between the DMRB and the complementary "Manual of Contract Documents for Highway Works" (MCHW) [Ref 2], and the "Traffic Systems and Signing (TSS) Plans Registry [Ref 3]".
- 1.12 The MCHW contains the Specification for Highway Works (SHW), the Highway Construction Details (HCD), notes for guidance, methods of measurement for highway works and specialist activities, together with requirements and advice notes covering specific technical and procurement issues.
- 1.13 The TSS Plans Registry contains the specification for works, equipment and testing as well as technical drawings and diagrams covering technical and procurement issues associated with traffic control equipment.

### **Application of the DMRB**

- 1.14 The DMRB embodies the collective experience of the Overseeing Organisations, their agents and designers over many years. It provides requirements, advice and guidance resulting from research, practical experience of constructing and operating motorway and all purpose trunk roads, and from delivering compliance to legislative requirements. It is regularly reviewed to keep abreast of changes in legislation, working practices and technical developments, to improve health and safety, to reduce environmental impact and to give better value for money.
- 1.15 The DMRB has been prepared for use by appropriately qualified and experienced professional staff who are expected to apply their own skill and judgment when making decisions involving the information it contains. It is not a statutory or regulatory document or a training manual; neither does it cover every point in exhaustive detail.

### Legislation

1.16 In general the DMRB does not refer to National, UK and European legislative requirements on the basis that it is incumbent upon anyone engaged in works on or relating to motorway and all purpose trunk roads to understand the relevant legislation and to comply with this legislation.

### Requirements

- 1.17 Compliance with requirements in the DMRB is mandatory for all works undertaken on motorway and all purpose trunk roads, except where the Overseeing Organisation has either:
  - a) approved a Departure from Standard (see clauses 1.18 to 1.25); or
  - b) agreed that a new or revised document should not be implemented on an individual contract or scheme (see clause 1.9).

### **Advice and Guidance**

1.18 Many DMRB documents contain advice and guidance. Whilst advice and guidance do not constitute requirements, the Overseeing Organisations expect users of the DMRB to exercise professional judgement and skill and apply the advice and guidance as appropriate.

### **Departures**

1.19 Except where Relaxations are permitted, any variation or waiving of a requirement contained within a DMRB or MCHW document shall be considered to be a Departure from Standard.

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- 1.20 Departures from Standard may be appropriate in a variety of situations, including:
  - a) where it can be justified that a requirement is inappropriate in a particular situation;
  - b) where the application of a document would have unintended adverse consequences;
  - c) where innovative methods or materials are to be used:
  - d) where a document not in the DMRB or MCHW might be adopted if more appropriate in a particular situation; and
  - e) where an "Aspect not covered by Standards" is identified (see clause 1.30 below).
- 1.21 The responsibility for identifying circumstances where Departures may be appropriate rests with the designer. A clear and adequate justification for not adopting a requirement shall be submitted to the Overseeing Organisation when seeking approval for each proposed Departure. Further information on Overseeing Organisations' policies and procedures relating to Departures is available [Ref 4].
- 1.22 Applications for Departures shall be submitted in accordance with the procedures required by each Overseeing Organisation, and each Departure shall be approved in writing before the design is finalised and prior to its incorporation into the works. At the discretion of the Overseeing Organisation, the Departure approval process may be in stages reflecting the design progress.
- 1.23 An approved Departure shall be considered as meeting the Overseeing Organisation's requirements for that element of the works, provided that any mitigation measures proposed by the designer or conditional to that approval are also incorporated into the design and works.
- 1.24 The approval of a Departure, with or without comments, does not imply that the Overseeing Organisation relieves the designer of any responsibility for the design.
- 1.25 Departures are approved on a location-specific basis and relate to the particular circumstances identified in each submission. A similar Departure approval may be quoted to support a new application, but each case will be considered on its own merits.
- 1.26 Before submitting a number of individual Departures which share similar properties and justifications, the Design Organisation shall consider whether the Overseeing Organisation's procedures for submission of "bulk" Departures can be applied. Bulk Departures are Departures from a common clause or group of clauses in the DMRB or MCHW, which the design organisation has proposed for use at more than one location.

### Relaxations

- 1.27 A number of DMRB documents contain provision for Relaxations. A Relaxation means a permitted variation from particular requirements within defined limits and in defined situations. Where Relaxations are permissible, the circumstances will be defined in the document. Any further proposed variation beyond these limits requires a "Departure".
- 1.28 The responsibility for assessing the impact of a Relaxation rests with the designer. The designer shall record the assessment process. Where any residual risks become evident they shall be recorded and made known to the appropriate parties e.g. those undertaking the construction, operation, or maintenance of the asset or feature under consideration.

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- 1.29 The designer is responsible for the incorporation of the Relaxation into the design, except in the following circumstances:
  - a) where adoption of a Relaxation may affect a Departure from Standards, in which case the Overseeing Organisation shall be notified;
  - b) in Northern Ireland, where each Relaxation shall be formally approved by the Overseeing Organisation before it is adopted; and
  - c) elsewhere, where specifically agreed with the Overseeing Organisation.
- 1.30 A design incorporating a Relaxation that has been adequately justified in the particular circumstances for which it has been adopted remains a design in accordance with requirements.

### **Aspects not Covered by Standards**

1.31 In some situations, it may become evident that an aspect of the works is not covered by the DMRB and/or MCHW documents. In such situations, the designer shall submit a Departure application for an "Aspect not covered by Standards" in accordance with the Overseeing Organisation's procedure.

### **Justification for Departures and Relaxations**

- 1.32 The justification for a Departure or Relaxation shall include an assessment of the benefits, adverse impacts, hazards and risks associated with the design incorporating the Departure or Relaxation when compared with a design fully in accordance with requirements.
- 1.33 During the development of a Departure or a Relaxation, the designer shall undertake an evaluation of safety risks.

Where approved for use by the Overseeing Organisation, this evaluation shall be in accordance with GD 04 Safety Risk Assessment on the Strategic Road Network [Ref 5].

Otherwise this evaluation shall consider safety risk exposure throughout the whole asset lifecycle for the following populations:

- a) all classes of road user;
- b) road workers (eg those directly employed by the Overseeing Organisation or in a direct or indirect contractual relationship with the Overseeing Organisation, engaged in roadside and/or construction activities);
- c) other parties who could be affected by the works.
- 1.34 Other factors to be considered include, but are not limited to:
  - a) technical, programme, budget, environmental, innovation, durability/maintenance and network availability issues;
  - b) the cumulative effect of multiple Departures and/or Relaxations that may affect the particular submission;
  - any relevant research results and/or details of use in other countries (e.g. where innovative methods or materials are proposed);

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- d) constraints of the design brief; and
- e) any adverse impacts of the Departure or Relaxation over the entire asset lifecycle from construction through to demolition.
- 1.35 When seeking approval for a proposed Departure or Relaxation it is necessary for the designer to show that the benefits clearly outweigh any adverse impacts.

### **Non-Compliance with Requirements**

- 1.36 As required by clause 1.21 above, all Departures shall be approved before the design is finalised and prior to their incorporation into the works.
- 1.37 However, in the event that it is discovered that works have been carried out without approval having been sought or granted for the incorporation of any feature that should have given rise to a Departure, the organisation that would have been responsible for the Departure application (had it been made at the correct time) shall promptly notify the Overseeing Organisation with proposals for addressing this non-compliance.
- 1.38 Designers and contractors should be aware that the Overseeing Organisation is likely to require them to take any rectification actions that it may specify to address the non-compliance. The Overseeing Organisations also reserve the right to rectify non-compliances themselves and take the necessary measures to recover the costs incurred.

#### **Interactions with Local Roads**

- 1.39 Where works that will subsequently be adopted by a local highway/road authority (e.g. the diversion of a side road during construction on trunk roads or motorways) are to be carried out by an Overseeing Organisation, the requirements to be used shall be those agreed between the Overseeing Organisation and the adopting authority.
- 1.40 In such situations, any Departure applications shall first be submitted to the Overseeing Organisation for consideration of any adverse impacts that could affect the trunk road or motorway. The application will then be passed to the adopting authority for processing in accordance with their procedures. Finally, the outcome shall be recorded in accordance with the Overseeing Organisation's Departures approval procedure.

### **Interpretation of DMRB Documents**

- 1.41 The DMRB comprises various documents, the format of which has altered over time. Accordingly the expression of requirements differs between documents.
  - a) across all documents in the DMRB use of the terms 'must' or 'shall' indicates a requirement.
  - b) some documents use mandatory text boxes to highlight requirements. These are used as a means to emphasise a requirement to the reader but they do not confer any additional status.
  - c) There are many other ways of expressing requirements eg where a clear instruction is given and reasonable test of whether a given section of text could be interpreted as a requirement is whether in the professional judgement and skill of the designer the aspect, feature or asset in question would be deficient if that section of text was not implemented.
- 1.42 Notwithstanding the general requirements above, where DMRB documents contain specific requirements for Departures and Relaxations these shall be followed.

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### **Interim and Updated Documents**

- 1.43 When necessary the Overseeing Organisations may issue an interim document to supplement or supersede part(s) of the DMRB until such time as the manual can be formally updated. Such documents may contain requirements.
- 1.44 It is the responsibility of the designer to be aware of any updates, revisions or supplements to DMRB documents issued by the Overseeing Organisation from time to time. Updates, revisions or supplements are issued electronically [Ref 6].

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### 2. USE OF THE DMRB

#### General

- 2.1 The DMRB supports policy, administrative and technical procedures which are required to ensure that the Overseeing Organisations operate in an efficient and effective manner. It covers a wide range of topics, such as:
  - a) technical and other procedures and methods to be employed;
  - b) analytical criteria to be used;
  - c) appraisal and assessment requirements;
  - d) dimensional requirements; and
  - e) numerical and statistical data.
- 2.2 Individual documents set requirements and give advice and guidance based upon the health and safety, economic, environmental, engineering, social and aesthetic criteria which are an essential component in obtaining quality. They:
  - a) define the quality of motorway and all purpose trunk roads in terms of value for money consistent with adequate safety and durability, while taking into account of the impact on the environment, social responsibilities and the economic benefits they provide;
  - b) provide a sound and rational basis on which competitive tenders can be sought;
  - c) develop and promulgate good practice whilst encouraging innovation;
  - d) facilitate quality control of works;
  - e) define methods for assessing maintenance requirements when evaluating options;
  - f) facilitate the cost effective, safe and timely delivery of maintenance; and
  - g) define methods for monitoring the performance of the network.

### **Document Categories**

- 2.3 The documents in the DMRB fall into the following two categories:
  - a) 'Design' documents these set out the requirements applicable to works on motorway and all purpose trunk roads and are identified by a series code ending in "D", e.g. "TD", "GD" (refer to Chapter 4). Most design documents include advice, guidance, and requirements in a single document.
  - b) Advice documents these generally contain good practice, guidance and advice pertaining to works on motorway and all purpose trunk roads and are identified by a series code ending in "A", e.g. "TA", "GA". Some advice documents complement a particular design document.

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### **Department for Transport Documents**

- 2.4 In addition to the documents in the DMRB, the Department for Transport (DfT) prepares general advice, some of which is applicable to motorway and all purpose trunk roads. Of these documents the most relevant are Local Transport Notes (LTN), which in some cases refer to requirements having a statutory backing which apply fully or in part to motorway and all purpose trunk roads. Where these apply they are incorporated into the manual by reference. Copies of LTNs are not included in the DMRB but are available separately. Other documents, such as Traffic Advisory Leaflets, mostly cover topics which apply to local rather than strategic roads, but some are of general relevance.
- 2.5 The designer is responsible for identifying and using current publications, copies of which can be downloaded electronically [Ref 7].
- 2.6 The Transport Analysis Guidance web pages [Ref 8] also provide detailed guidance on the appraisal of transport projects and wider advice on scoping and carrying out transport studies.

### 3. COVERAGE OF THE DMRB

### **Pre-May 1992 Documents**

3.1 Certain pre-1992 documents still form part of the DMRB, although they pre-date the manual itself. While they may vary in appearance or terminology from newer documents they have equal status to any other DMRB document.

#### Addenda

3.2 Certain documents require specific changes when used by Overseeing Organisations in Scotland, Wales or Northern Ireland. These changes are published as Scottish, Welsh or Northern Ireland Addenda respectively. Such addenda are clearly identified in the volume contents pages.

### **Documents Not Applicable**

3.3 Where documents are not to be used by Overseeing Organisations for application in either Scotland, Wales or Northern Ireland these restrictions are clearly identified in the volume contents pages.

#### **Scottish Technical Memoranda**

- 3.4 In some cases documents marked as "Not applicable for use in Scotland" were replaced by specific Scottish Technical Memoranda. A number of these have been incorporated into the DMRB and are identified in the volume contents pages by the suffix "For use in Scotland only".
- 3.5 In addition to the above, certain other Scottish Technical Memoranda remain available but are not included in the DMRB. Details of these are listed in the quarterly index.

### Availability of Addenda

3.6 Most recent addenda applicable to Scotland, Wales or Northern Ireland (as appropriate) are included as annexes to the main DMRB document to which they refer. However, many older addenda were published as separate documents, and are listed in the alphanumeric index.

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### 4. STRUCTURE OF THE DMRB

4.1 The DMRB is made up of separate volumes with each being divided into a number of sections. Most sections are further sub-divided into parts. Documents are allocated to a volume, section and (for documents issued since 1992) part according to their subject matter.

### **Document Reference**

4.2 Each document is given a reference number prefixed by a series code, i.e. BD, BA, GD, GA, HD, HA, TD, TA, nominally:

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"B" for bridges and structures;
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"G" for general;

"H" for highways; and

"T" for traffic engineering and control,

### followed by:

"D" for Design Document; or

"A" for Advice Note.

NB – The series codes BE ("Technical Memoranda – Bridges") and SH ("Scottish Technical Memoranda – Highways") are also retained until such time as all these older-style documents become superseded.

- 4.3 The full document reference is suffixed by "/" and two digits indicating the year of publication (e.g. "/08" for documents published in 2008). Where the year suffix has been omitted, it should be assumed that the current iteration of the document should be used.
- 4.4 The DMRB also includes certain older documents that have not yet been assigned a document reference and will be retained until superseded.
- 4.5 The documents assigned to each volume, section and (where appropriate) part are also given a decimal reference to facilitate the location of specific documents within the DMRB. For example:

DMRB 2.3.1 indicates the document contained in Volume 2, Section 3, Part 1.

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### 5. DOCUMENT CONTROL

- 5.1 The manual system has been designed to ensure that publications can be used in a quality controlled environment.
- 5.2 Overall document control is provided through the volume contents pages and instruction sheets are provided when revised documents are issued.
- 5.3 Control within each document is achieved through the Registration of Amendments pages which list pages that have been amended (if any). Documents are deleted from the volume contents pages only when they have been withdrawn. When a document is superseded, the document reference will usually remain but the year suffix will change, e.g. BD 51/98 became BD 51/14 when it was revised in 2014.
- 5.4 DMRB documents should be archived in accordance with the organisation's quality management system. Organisations shall maintain archive sets of contract documents specific to each contract, and shall maintain access to their own archive of DMRB documents appropriate to their contracts.

### **Publication**

5.5 New and amended documents in the DMRB are normally published to a three-monthly cycle (February, May, August and November) unless there is a need to issue a particular document more quickly.

### **Volume Contents Pages**

5.6 These are available as a separate document entitled "DMRB – Volume Contents and Alpha-Numeric Index" (DMRB 0.1.1).

### **Alpha-Numeric Index**

5.7 A full alpha-numeric index based on the document reference is included with the volume contents pages (see clause 5.6). This allows users to easily locate particular documents which may be applicable to more than one subject area. The index also lists those documents added or withdrawn from the DMRB since the previous index was published.

### **New Documents**

- 5.8 New documents for both the DMRB and MCHW including interim documents (clause 1.42) are published on the Standards for Highways website [Ref 7]. The website also contains other information that may be relevant to the works.
- 5.9 The DMRB can also be purchased either in paper copy or on electronic media. The DMRB is updated on the internet at the same time as paper copies or electronic media are issued.
- 5.10 Once documents are downloaded or printed from the website they should be considered uncontrolled documents.

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### 6. REFERENCES

Note that the order is given as they occur in the document.

### **Normative References**

5 – Highways Agency, GD 04 Safety Risk Assessment on the Strategic Road Network

#### **Informative References**

1 – Electronic location of DMRB Department for Transport, Standards for Highways website http://www.dft.gov.uk/ha/standards/dmrb/index.htm

#### 2 – Electronic location of MCHW

Department for Transport, Standards for Highways website http://www.dft.gov.uk/ha/standards/mchw/index.htm

3 – Electronic location of TSS Plans Registry

Department for Transport, TSS Plans Registry Login.

Note that registration (free of charge) is required to access this site.

https://tssplansregistry.dft.gov.uk/login.asp

- 4 Overseeing Organisations' policy and procedures relating to Departures
- **4.1** Highways Agency, Departures from Standards Guidance Document
- **4.2** Welsh Government, Departure Guidance (contact Welsh Government)
- 6 Electronic locations of interim documents
- **6.1** Department for Transport, Standards for Highways website

http://www.dft.gov.uk/ha/standards/ians/index.htm

**6.2** – Transport Scotland Interim Amendments (TSIAs)

http://www.transportscotland.gov.uk/road/design-trunk-roads

7 – Electronic location of Standards for Highways

Department for Transport, Standards for Highways website

http://www.dft.gov.uk/ha/standards/

- 8 Overseeing Organisations' electronic locations of Guidance on Transport Analysis
- 8.1 Department for Transport, Transport Analysis Guidance: WebTAG

https://www.gov.uk/transport-analysis-guidance-webtag

**8.2** – Welsh Government Transport Assessment Guidance

http://wales.gov.uk/topics/transport/planning-strategies/weltag/

8.3 – Transport Scotland, Transport Appraisal Guidance (STAG)

http://www.transportscotland.gov.uk/stag

Note: web addresses are current at time of publication. The user should make every effort to ensure the currency of websites.

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## 7. ENQUIRIES

Approval of this document for publication is given by:

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7/1 August 2015