

**DEM TITLE: Design of minor changes associated with road maintenance schemes.**

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<b>Author :</b>	David McCullagh
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<b>Level 1 (Title / Key Words) :</b>	Design, Maintenance, DMRB
<b>Level 2 :</b> (Directorate/Owner):	Engineering
<b>Level 3: (DfI Roads HQ or HoBU Managed Function):</b>	ES – Engineering Approvals, Budget and Cost Management (EABCM)
<b>Level 4 : (Work Areas)</b>	Network maintenance, Highway Design/maintenance, Contracts

### **Purpose**

This Director of Engineering Memorandum sets out a policy to assist designers when designing minor changes associated with road maintenance schemes. It introduces a proportionate effort procedure to be followed for the recording and review of the design proposals for minor changes.

### **Definition**

For the purposes of this document the following definitions apply.

**Road maintenance scheme:** Planned (i.e. not reactive) structural maintenance works, where the aim of the scheme is to maintain the integrity of the existing road and footway structure, and to restore the asset to a serviceable condition, including the carrying out of appropriate minor changes to existing road features, where these can reasonably be incorporated within the intended scope of the road maintenance scheme.

**Minor change:** Changes which are normally considered to be within the scope of a road maintenance scheme (examples detailed in Appendix A)

**Minor improvement:** Improvements to the existing road network which are not normally considered to be within the scope of a road maintenance scheme. (examples detailed in Appendix B)

**Combined schemes:** Schemes which are being delivered as road maintenance schemes but also incorporate some minor improvement measures.

**Maintenance Design Overview (MDO) form:** To be used to document design proposals, justifications and decisions of those involved in the delivery of road maintenance schemes

## **Scope**

This DEM is aimed at all DfI Roads staff, consultant partner and developers consultant involved in road design and maintenance.

This DEM shall be applied on all road maintenance schemes which incorporate minor changes, including the road maintenance elements of schemes which are combined schemes.

This DEM shall not be applied to:

- (a) minor improvement measures/schemes.
- (b) the minor improvement element of a combined scheme.

In situations (a) and (b) above, the appropriate procedures to be followed are as set out in RSPPG E006 'Design Departures from Standard', RSPPG E007 'Design Relaxations of Standard' or DEM 162/16 'Scheme Design Approval Procedures for Non-Trunk Roads.'

Where the designer is unable to determine if this DEM is applicable to their scheme, then advice should be sought from the Divisional Client who, when necessary in consultation with Department for Infrastructure HQ, will make a decision.

## **Background**

RSPPG E003 sets out DfI Roads policy for the application of the DMRB to the various categories of roads in Northern Ireland.

In considering the characteristics of the existing road network in NI, compliance with the DMRB standards is often difficult to achieve due to the existing physical constraints.

Consultation with staff responsible for the delivery of 'road maintenance schemes', has highlighted the need for a proportionate and pragmatic process to be developed for the review of appropriate design proposals for typical minor changes to be incorporated into 'road maintenance schemes'.

RSPPG E003 has therefore been revised to allow the use of a proportionate design review procedure for road maintenance schemes incorporating minor changes.

## **Implementation**

The policy set out in this memorandum shall take effect from the date of issue.

It replaces the withdrawn DEM 177/18 - 'Design of minor improvements associated with road maintenance schemes on the Non-Trunk road network'.

## **Policy**

The design of road maintenance schemes incorporating minor changes should be guided by the principles of DMRB but should also embrace potential solutions/methodologies, based on 'engineering best practice' that have been successfully used by the Department.

The design of minor changes to existing road features as part of a road maintenance scheme shall be recorded and reviewed using the MDO form (Example form provided in Appendix C).

This procedure will enable the use of engineering judgement, where appropriate, as an alternative to formal calculations, in a way that is proportionate to the scale of the works, category of road and existing onsite constraints.

Examples of the type of works which are deemed minor changes, are provided in **Appendix A**,

Examples of the type of works which are not deemed minor changes, are provided in **Appendix B**.

Use of the MDO form does not remove the requirement to follow all other relevant policies and procedures in relation to road maintenance schemes, including those for pavement surfacing and the provision of road restraint systems.

Specifically, the procedure will;

- facilitate a proportionate effort design review and recording procedure for road maintenance schemes incorporating minor changes through the use of the MDO form.
- enable the road maintenance scheme design proposals for minor changes to be reviewed and accepted at Divisional Level<sup>1</sup>.
- facilitate the incorporation of appropriate minor changes to existing road features within road maintenance schemes, which whilst not meeting DMRB requirements, will deliver demonstrable 'betterment'.

**<sup>1</sup> For DfI Roads and Consultancy Service the MDO form shall be signed by PPTO for Trunk road schemes and by SPTO or above for schemes on other roads. Other consultants shall sign the MDO using their appropriate level of Chartered Engineer.**

## **Equality Impact Assessment Section 75 of the Northern Ireland Act 1998**

This guidance document has undergone EQIA screening and it was considered that a full Equality Impact Assessment was not required.

A copy of the completed 'Equality Screening Analysis Form' has been signed off and forwarded to the DfI Equality Unit.

P.B. Doherty  
Director of Engineering  
April 2019

All enquiries or comments to: EABCM Branch

**Appendix A – Examples of the type of minor changes which would normally be within the scope of a road maintenance scheme.**

- Localised widening eg. at areas of verge overrun
- Kerbing (i.e. installation of kerbs around the inside or a corner radius)
- Additional gullies identified at localised problem areas /low spots
- Creation of carriageway profile / crossfall within the existing carriageway to enhance riding quality or to aid the removal of surface water
- Traffic signal maintenance.
- Replacement/ refurbishment of existing road markings for a ghost island junction (i.e. where there are no changes to dimensions)

**The MDO form shall be used to record the minor changes to existing road.**

**Appendix B – Examples of the situations and type of works considered not to be minor changes but rather minor improvements, and which are sometimes combined with road maintenance schemes (combined scheme).**

- Provision of a new right turning pocket (ghost island junction), or alterations to an existing one, including where it only involves road marking.
- New drainage that requires a detailed design due to its length and/or complexity. eg where a new drainage line is required over the whole or significant length of the road maintenance scheme.
- Alteration to existing or provision of Road Restraint.
- Uniform widening of carriageway cross section over the whole or significant length of the road maintenance scheme eg. carriageway widening to provide hard strips.
- Designed changes to the vertical or horizontal alignment (this does not include the routine element of smoothing the ‘bumps’ when resurfacing)
- Any specific design requirement requested in a scheme brief to address an identified accident problem eg provision of superelevation around a bend with an accident history.

**For the above types of works, in circumstances where the requirements of the DMRB cannot be met, the relevant procedures to be followed are as set out in RSPPG E006 ‘Design Departures from Standard’, RSPPG E007 ‘Design Relaxations of Standard’ or DEM 162/16 ‘Scheme Design Approval Procedures for Non-Trunk Roads.’**

## Appendix C – Example of Maintenance Design Overview (MDO) form

### Maintenance Scheme Design Overview

Scheme name:		<u>Ref</u>
Contact details:	Name:	Tel no:

#### 1. Background details

Non-Trunk		Trunk	
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A	Description - Project Aims and Objectives		
B	Location		
C	Existing Conditions		
D	Speed		
E	Traffic and NMU flows		
F	3 yr Collision History/ Skidding related		
G	Flooding / Drainage History		

#### 2. Design issues to be Considered

A	Road Geometry	
B	Drainage	
C	Pavement Design	

D	Other (eg. VRS/ ground Conditions etc.)	
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**3. Proposed Design**

C	A	Key Design Features	
	B	Description of Constraints / Limiting Factors	
	C	Other Considerations	

**4. Approved by:**

Submissions from DFI Roads Design and Consultancy Services must be checked and signed by a SPTO or above for Non-Trunk Roads and by a PPTO for Trunk Roads. Other consultants shall sign the MDO using their appropriate level of Chartered Engineer.

Design organisation:	Grade:	Professional Qualification:
Signed:	Print name:	Date:

**5. Accepted by**

Comments:	
Signed:	Client SPTO or above for Non-Trunk Roads and Client PPTO for Trunk Roads
Print name:	Date: