

## The Planning Inspectorate

# PINS NOTE 1188 (2<sup>nd</sup> revision)

To: All Inspectors

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## MANUAL FOR STREETS 2: WIDER APPLICATION OF THE PRINCIPLES

### Background

#### Status

- 1 Manual for Streets 2 ('MfS2') was published by the [Chartered Institution of Highways and Transportation \(CIHT\)](#) in September 2010. It is a companion guide to Manual for Streets (published by DfT in 2007: 'MfS1' in this note). MfS1 focuses on lightly-trafficked residential streets. MfS2 builds on the guidance contained in MfS1 and explores in greater detail how and where its key principles can be applied to busier streets and non-trunk roads. As such MfS2 fills the perceived gap between MfS1, which deals with residential streets and the Design Manual for Roads & Bridges (DMRB)<sup>1</sup>, which deals with trunk roads and motorways. MfS2 is endorsed by [DfT](#), the [Homes and Communities Agency \(HCA\)](#), [WAG](#), [CABE](#), the [Association of Directors of Environment, Economy, Planning and Transport \(ADEPT\)](#), and [English Heritage](#). MfS2 provides advice and does not set out any new policy or legal requirements.

#### Scope

- 2 Table 1.1 of MfS2 (reproduced in Annex 1) advises how the guidance in MfS1 may be applied. MfS1 and MfS2 are recommended as a starting point for any scheme affecting non-trunk roads. MfS2 aims to extend the advantages of good design to streets and roads outside residential areas and to provide an environment that improves the quality of life.

#### Context

- 3 MfS2 emphasises the importance to the design process of the characteristics of a street that together define the design context. It advises that streets are partly places and partly corridors for movement, and many different combinations of place type and movement type are possible, from (for example) high street to urban boulevard to

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<sup>1</sup> As stated in MfS2 'The strict application of DMRB to non-trunk routes is rarely appropriate for highway design in built up areas, regardless of traffic volume'.

country lane. MfS2 considers the movement and place functions of several types of street.

### **Detailed Design Issues**

4 Chapters in MfS2 provide summaries of good design practice for:

- Pedestrian needs and footways;
- Cycle facilities;
- Visibility;
- On-street parking and servicing;
- Bus facilities;
- Carriageways;
- Junctions, crossing and accesses;
- Street furniture and trees;
- Traffic signs and markings

Further information on visibility issues, which often arise in casework can be found at Annex 2.

### **Action**

- 5 MfS2 offers a “toolbox” approach to street design. Design elements should be deployed as appropriate to the context. Designers may be expected to be able to explain rationally and with reference to MfS1 and/or MfS2 and the site context, the design they have produced – **see Annex 4**.
6. The pdf version of MfS2 is normally ‘locked’ and cannot be printed or copied. However, CIHT has agreed to issue PINS with an ‘unlocked’ version, available on the library catalogue, that allows both printing and copying. Annex 5 sets out CIHT’s conditions of use which Inspectors must comply with. There is also a limited number of hard copies of MfS2 available for loan from the PINS Library .
7. Please contact XXXX if you have any queries on this Note.

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Director of Policy, Quality and Development Plans

## Annex 1

Table 1.1 of MfS2 – Application of key areas of MfS advice				
Speed Limit	20 mph	30 mph	40 mph	50+ mph
User Hierarchy	✓	✓	✓	✓
Design Team Working	✓	✓	✓	✓
Community Function	✓	✓	✓	O
Inclusive Design	✓	✓	✓	✓
Pedestrian/Cycle Support	✓	✓	✓	✓
Master Plans/Design Codes	✓	✓	✓	✓
Stopping Sight Distance	✓	✓	O	O
Frontage Access	✓	✓	✓	O
Minimise Signs and Street Furniture	✓	✓	✓	✓
Quality Audits	✓	✓	✓	✓
Connectivity/Permeability	✓	✓	✓	O
Note: ✓ = Yes. O = subject to local context.				

### Visibility Issues

- a) Visibility is an issue that often arises in casework. The Stopping Site Distance (SSD) of traffic determines the necessary visibility. SSD is a function of vehicle speed, driver perception-reaction time, deceleration, and longitudinal gradient<sup>2</sup>. MfS1 and MfS2 consider SSDs for streets where 85<sup>th</sup> percentile speeds are up to 60 kph (37 mph)<sup>3</sup>. This will generally be achieved in 30mph limits and might be achieved in some 40mph limits. Speed surveys can be undertaken to establish 85<sup>th</sup> percentile speeds. MfS1 estimates SSD on the basis of factors appropriate for cars and other light vehicles. MfS2 retains that approach where it is appropriate but offers the alternative of a lower deceleration rate for HGVs and buses, because they decelerate more gradually than light vehicles. MfS2 suggests<sup>4</sup> that HGV/bus deceleration checks should not be necessary where the combined proportion of HGV and bus traffic is less than 5% of traffic flow, subject to consideration of local circumstances.
- b) An unreferenced graph on page 75 of MfS2 gives SSDs for a range of vehicle speeds but the graph is small and possibly hard to read reliably. Calculation may be preferred. Annex 3 tabulates some SSDs for traffic on a level surface.
- c) Visibility at junctions is measured in terms of the X (minor road) and Y (major road) visibility distances. An X distance of 2.4 metres should normally be used in most built-up situations<sup>5</sup> but 2.0 metres may be considered in slow-speed situations when flows on the minor arm are low<sup>6</sup>. The Y distance should be based on the recommended SSD values but, unless there is local evidence to the contrary, a reduction in visibility below recommended levels will not necessarily lead to a significant problem<sup>7</sup>.

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<sup>2</sup>  $SSD = vt + \frac{v^2}{2(d+0.1a)}$ , where  $v$  = speed(m/s),  $t$  = driver perception-reaction time (seconds),  $d$  = deceleration (m/s/s),  $a$  = longitudinal gradient (%) (+ for upgrades or – for downgrades). See MfS2, para 10.1.5.

<sup>3</sup> MfS2, 10.1.3

<sup>4</sup> MfS2, 10.1.8

<sup>5</sup> MfS2, 10.5.6

<sup>6</sup> MfS2, 10.5.8

<sup>7</sup> MfS2, 10.5.9

## Annex 3

SSDs (rounded to nearest metre)				
Initial speed (kph)	<i>Safe Stopping Distance (m)</i>		<i>Safe Stopping Distance (m) with 2.4m allowance for bonnet (see Note 1)</i>	
	Light vehicle	HGV or Bus	Light vehicle	HGV or Bus
20	12	13	14	15
30	20	22	23	24
40	31	33	33	36
50	43	47	45	49
60	56	63	59	65
<p>Note 1 – MfS1 paragraph 7.6.4 recommends adding 2.4 m to the calculated SSD to allow for the distance between the driver and the front of the vehicle.</p> <p>Note 2 – The values shown are calculated from continuous functions and intermediate values may be calculated or interpolated.</p> <p>Note 3 – Values for light vehicles are from MfS1 Table 7.1. Values for HGVs/Buses are calculated by PINS from data in MfS2.</p>				

**The relaxation of visibility requirements in accordance with MfS2**

- a) Section B of MfS2 provides guidance on geometric and other parameters for new and improved highways. Although numerical values are given in Section B, designers are encouraged to take a flexible approach to its interpretation and application, thinking through for themselves the likely outcome of any course of action based on experience and local circumstances.<sup>8</sup>
- b) That flexibility gives designers an opportunity to relax visibility provision at priority junctions (for example) below that recommended in Chapter 10 of MfS2. For priority junctions, Chapter 10 recommends:
- i) The X-distance should normally be 2.4 metres in most built-up situations<sup>9</sup>, although a minimum X-distance of 2 metres may be considered as described in MfS2 paragraph 10.5.8.
  - ii) The Y-distance should be based on the recommended Stopping Sight Distance values (see Annex 2 of this note). MfS2 advises that, based on the research described at 10.4.2 of MfS2, unless there is local evidence to the contrary, a reduction in visibility below recommended levels will not necessarily lead to a significant problem<sup>10</sup>.
- c) The advice of MfS2 is therefore that it might be acceptable to reduce visibility below those recommended values, or it might not. Where a reduction is proposed, it is for the designer to think through for themselves how their design is satisfactory. If the results of such an approach are in dispute, then the designer's explanation might be sought as to the considerations that give confidence that the junction would function safely. Such information might be available in the Design and Access Statement, but if new evidence is sought that should be done in the usual way. Examples of evidence used in the preparation of the design might include:-
- o The surveyed 85<sup>th</sup> percentile wet weather speed<sup>11</sup> of traffic on the main road at the site of the junction.
  - o The accident history of the site, over at least the most recent 3 years<sup>12</sup>, with an analysis of the causes of reported accidents.
  - o The findings of a road safety audit of the proposal.
  - o Other relevant elements of the local context.
  - o If comparator sites are cited, similar data to that listed above for the comparator sites, and accident records with the comparator junction in place.

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<sup>8</sup> MfS2, page 42, Introduction to Section B.

<sup>9</sup> MfS2, 10.5.6

<sup>10</sup> MfS2, 10.5.9

<sup>11</sup> MfS2, 10.1.3. [DMRB Volume 5 Section 1 Chapter 3 \(TA 46/97\)](#) recommends this criterion for junction design. On single-carriageway roads, the wet weather speed is 4 kph lower than the surveyed dry weather speed.

<sup>12</sup> [DMRB Volume 5 Section 2 Chapter 2 \(HD 19/03\)](#) recommends the use of 36 months of accident data in Stage 4 road safety audit monitoring reports.

- If “engineering judgement” is cited, it may be appropriate to establish how that judgement has successfully been exercised in relevant design work elsewhere.

d) If there is not evidence that a proposed departure from MfS2’s specific numerical guidance has been satisfactorily thought through, it may be that the design should not be accepted.

## Printing or copying Manual for Streets 2: Conditions of use

CIHT have asked PINS to comply with the following conditions when printing or copying MfS2 in order to gain and continue this privileged access:

- (a) any copied or printed version of the Manual must only be distributed within PINS.
- (b) printing of the Manual must be for case work only. The printed document should not be retained once the case has been concluded.
- (c) the source material must be acknowledged if a quotation is made from the Manual.