Appendix 5

Descriptions of selected models and tools

CONTENTS

Simple Screening Models[a]

A5.1 Design Manual for Roads and Bridges (DMRB): This screening method was formulated by the former Department of Transport. The method gives a preliminary indication of air quality near roads. The DMRB method requires information on vehicle flow, HDV mix, vehicle speed and receptor-road distances. It contains a useful database of vehicular emission factors for future years.

The method adopts the annual mean concentration as the base statistic. Background pollutant levels are included explicitly in the calculations by adding an amount to the annual mean traffic contribution using the Air Quality Archive (paragraph 6.09) or default values. The model also estimates, from the annual mean PM_{10} prediction, the number of days where the PM_{10} concentration exceeds the 50 μgm^{-3} daily mean objective. The latest version of the DMRB nomogram (v1.02, dated February 2003) has been used for this assessment. Details of the road layout cannot be specified.

A5.2 Guidance for Estimating the Air Quality Impact of Stationary Sources (GSS): this guide provides precalculated dispersion results for stack emissions expressed as nomograms, was published by the Environment Agency (EA) in 1998. The nomograms are based on a large number of computations using ADMS. They cover 10 stack heights, 4 categories of surface roughness, 3 averaging times and 3 climate types. The predicted pollutant concentrations are comparable with the prescribed air quality objectives. The model is limited to a range of stack heights and exit velocities, and cannot treat building wake effects or non-buoyant source releases.

Where such point sources needed to be assessed, the **netcen** point source spreadsheet, based on this methodology has been used. This is available from: http://www.airquality.co.uk/archive/laqm/tools.php

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[a] The information on simple screening models has been taken from LAQM.TG(03) Review and Assessment: *Selection and use of dispersion models*.