Appendix C

Integration of Air Quality Issues into the South Yorkshire LTP2

An Air Quality Strategy for LTP2

CONTENTS

Introduction

C.1 Air quality management policy within the UK is driven by the Air Quality Strategy of 2002[1], which is currently under review. Set within this strategy are seven pollutant specific air quality objectives with dates by which they should be attained.

C.2 Currently the pollutant of most concern in South Yorkshire is nitrogen dioxide (NO_2) which is a pollutant derived primarily from road traffic. The Air Quality Expert Group reported in 2004 that proximity to road traffic sources is the major factor influencing annual average NO_2 concentrations. Exceedences of the annual average air quality objective for NO_2 are widespread in urban centres across Europe[2], a fact mirrored in South Yorkshire.

C.3 In relation to fine particles (denoted as PM_{10}) it is likely that most urban and some rural areas in South Yorkshire will exceed the revised provisional objective under consideration[3]. Although currently there are only a small number of pollution hotspots for PM_{10}, when the provisional objective (which reflects the EU Limit Value) is adopted for attainment in 2010, this position will change giving rise to widespread predicted exceedences across the UK and South Yorkshire. The PM_{10} limit values have now been abandoned by the EU. The UK position regarding particulate matter (PM_{10} and $PM_{2.5}$) is currently being formulated by Defra.

C.4 The proposed new EU Ambient Air Quality Directive (published September 2005) would for the first time require reductions in average $PM_{2.5}$ concentrations throughout each member state and set a cap on concentrations in the most polluted areas. Two new objectives for $PM_{2.5}$ are an annual mean of 25 $\mu g/m^3$ and a 20% reduction of $PM_{2.5}$ levels between 2010 and 2020.

C.5 Defra published a review of the impact of the air quality strategy in January 2005[4]. The report showed that epidemiological studies provide convincing evidence that increases in the outdoor air pollution (especially particles and ozone) to which communities are exposed will lead to increases in health problems in those communities. The converse is also demonstrated: reductions in air pollution will lead to improvements in health.

C.6 In addition to the above review, an evaluation report on local road transport measures was also published in January 2005[5]. From this report two clear strategic objectives can be drawn. The report states that future air quality policy, where health improvement is the driving force behind air quality improvement, will be more effective where:

- Maximum health benefits are achieved across urban areas through targeted reductions in PM_{10}, even below the objective levels; and
- Greater health and environmental benefits are derived through considering different policy approaches that aim to reduce overall NO_x and secondary pollutant levels rather than focusing on NO_2 hotspots

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[1] National Air Quality Strategy for England, Scotland, Wales and Northern Ireland, Defra, 2002
[2] Nitrogen Dioxide in the United Kingdom, Air Quality Expert Group, 2004
[3] Local Air Quality Detailed Assessment Report, Sheffield City Council, August 2004
[4] An Evaluation of the Air Quality Strategy, Defra, December 2004
[5] An Evaluation of the Air Quality Strategy – Additional analysis: Local Road Transport Measures, Defra, 2005

C.7 The South Yorkshire air quality policy will be aligned to these strategic objectives. LTP2 will seek to achieve a local balance of measures, selected to achieve an enhancement in our environment through:

- The attainment of statutory pollutant objectives within the AQMAs in due course; and
- A programmed reduction in general pollutant levels across the region to maximise health benefits

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Statutory Requirement of Local Air Quality Management

C.8 The Environment Act 1995 (the Act) provides the framework for local air quality management across England and Wales. Part IV of the Act details local authorities' responsibilities to review and assess air quality, designate air quality management areas, and prepare air quality action plans. Further information on these responsibilities is given in Defra guidance documents LAQM.PG(03), LAQM.TG(03), LAQM.PRG(03) and LAQM.PGA(04).

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C.9 The Secretary of State for Environment, Food and Rural Affairs can act to ensure that English local authorities who are failing take the necessary action to improve air quality by issuing directions to complete any step of the process, including implementing action.

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C.10 Local authorities carried out the first round of reviews and assessments to identify areas where people could be exposed to pollution levels which exceed the national air quality objectives. These areas were designated as Air Quality Management Areas. During the first round, which was completed in 2002, nine AQMAs were declared in South Yorkshire.

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C.11 Since 2003, all local authorities have started the second round of review and assessment. All four local authorities in South Yorkshire completed the updating and screening assessment in 2003. Barnsley, Rotherham and Sheffield found potential new AQMAs and moved on to a detailed assessment of the air quality in these problem areas. Since publishing their detailed assessments, Rotherham has declared four new AQMAs (November 2004), Barnsley has declared two new AQMAs (June 2005) and Sheffield are consulting on amending their city centre AQMA to include a much larger area.

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Relevant air quality objectives for local road transport emissions

Description	Criteria	Value $\mu g/m^3$	Target Date
AQS Objective	Annual mean	40	31 December 2005
AQS Objective	1 hour mean (not to be exceeded more than 18 times a year)	200	31 December 2005

Table C.1 Nitrogen Dioxide

Description	Criteria	Value µg/m^3	Target Date
AQS Objective [1]	24 hour mean (not to be exceeded more than 35 times a year)	50	31 December 2004
AQS Objective [1]	Annual Mean	40	31 December 2004
Provisional AQS Objective [2]	24 hour mean (not to be exceeded more than 7 times a year)	50	31 December 2010
Provisional AQS Objective [2]	Annual Mean	20	31 December 2010

Table C.2 PM_{10}

[1] Measured gravimetrically
[2] England, Wales and Northern Ireland (apart from London) will not be included in the Regulations in the short term
Reference: The Air Quality (England) Regulations 2000 and The Air Quality (England) (Amendment) Regulations 2002

C.12 Although local authorities are not yet required to assess levels of particles for 2010, they were encouraged to consider the objective during the second round of review and assessment. Sheffield included a basic assessment which indicated that there would be widespread exceedence of the provisional 2010 objective. The implementation of the new EU Ambient Air Quality Directive for annual mean $PM_{2.5}$ objective in the UK is unlikely to lead to widespread exceedence in South Yorkshire.

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Other Quality of Life Issues

Greenhouse Gases

C.13 The UK Climate Change Programme, published in November 2000, identifies action available to local authorities to reduce emissions of greenhouse gases up to 2010.

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C.14 Measures that improve air quality are likely to affect greenhouse gas emissions and vice versa. Transport measures that achieve significant reductions in vehicles through encouraging a shift to public transport, walking and cycling will ultimately result in lower vehicle emissions, including greenhouse gases.

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C.15 Local authorities are expected to assess the impacts of air quality action plans on emissions of greenhouse gases. Current guidance advises that a qualitative assessment is sufficient. Where a quantitative assessment tool is available, it should be used and the results published within the air quality review and assessment process.

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Noise

C.16 Action that positively affects air quality and greenhouse gases will also affect ambient noise. Some action may be mutually beneficial; reducing the percentage of heavy duty

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vehicles on a busy urban road will reduce the noise level and the emissions of NO_x, PM_{10} and carbon dioxide, however increasing the average speed from 30mph to 50mph on the same road will increase noise levels, although emissions of air pollution will be further reduced.

C.17 The UK Road Noise Mapping Project is currently compiling ambient noise maps in thirteen conurbations across the UK (including Sheffield). When complete (expected late 2005), the maps will be available for use in the assessment of the noise impacts of transport measures amongst wider social, environmental and economic impacts.

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Assessment

C.18 The air quality assessment tool described in the Air Quality Assessment section can be used to determine the change in basic noise level and change in emissions of carbon dioxide in respect to LTP2 schemes. Implementing performance indicators for carbon dioxide emissions and change in road traffic noise level will ensure that schemes within LTP2 are assessed for their impact on climate change and ambient noise.

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Air Quality in South Yorkshire

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C.19 The first round of review and assessment in South Yorkshire resulted in nine air quality management areas being declared across the four districts. The second round of review and assessment has resulted in six new AQMAs being declared, and one existing AQMA being significantly amended to include additional areas of exceedence.

C.20 Of the AQMAs designated in South Yorkshire, 15 are due to exposure to emissions from road transport. Of these, 14 are due to exceedences of the NO_2 objectives. One area has been declared based on exceedence of the PM_{10} objective.

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C.21 In 2005, South Yorkshire is expected to have 16 Air Quality Management Areas because of road traffic emissions, 5 of these are due to emissions from motorways and trunk roads, and the other 11 are due to emissions from local roads.

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C.22 The number of AQMAs in a region does not reflect the size of the problem, as in the declaration of an AQMA there is no consideration of the number of people affected or how high the current pollution levels are. However, the relevant Defra policy guidance addendum[6] advises that, in future Air Quality Progress Reports (AQPR's), all local authorities should identify air quality problems in terms of:

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- The estimated number of people exposed to the exceedence of the pollutant, and
- The expected time by which the air quality objective will be met

C.23 In line with this guidance, and as this information becomes available from the local authorities in South Yorkshire, it will be presented in the LTP2 Annual Progress Report. The AQMAs declared within each local authority in South Yorkshire are detailed in Tables C.3 to C.6.

[6] LAQM.PGA(04) – Policy Guidance Addendum, Defra, November 2004

AQMA Ref	Description	Pollutant	Status
Barnsley 1	M1 through Barnsley	NO_2	Major source is M1 and an action plan was published in October 2004
Barnsley 2A	A628 from Junction 37 M1 to Barnsley Town Centre	NO_2	AQMAs declared June 2005, major source appears to be local road transport, although this will be established through the further assessment report
Barnsley 2B	A628 from Junction 37 M1 to Dodworth Level Crossing	NO_2	
Barnsley 3	Junction of A61 Wakefield Road and Burton Road	NO_2	

Table C.3 Summary of Air Quality Management Areas in Barnsley

AQMA Ref	Description	Pollutant	Status
Doncaster 1	Central Doncaster along A630	NO_2	Four AQMAs declared and Joint Air Quality Action Plan published in 2003
Doncaster 2	Area surrounding J36 of A1 and along A630 eastwards	NO_2	
Doncaster 3	A18 between A638/ Bawtry Road and A638 Trafford Way	NO_2	
Doncaster 4	Area where A638 crosses M18	NO_2	

Table C.4 Summary of Air Quality Management Areas in Doncaster

AQMA Ref	Description	Pollutant	Status
Rotherham 1	Areas of housing next to M1 in Rotherham	NO_2	Major source is M1 and an action plan was published in 2003
Rotherham 2	Housing in Brampton Brierlow	SO_2	Major source is domestic coal burning and an action plan was published in 2003

AQMA Ref	Description	Pollutant	Status
Rotherham – Fitzwilliam Road (NO_2)	Fitzwilliam Road between St Anns and Mushroom Roundabout	NO_2	Four AQMAs declared in Nov 2004. Major source appears to be local road transport, although this will be established through the further assessment report due in Nov 2005.
Rotherham - Wellgate	Wellgate between Clifton Bank and Hare Road	NO_2	
Rotherham – Wortley Road	Wortley Road between Old Wortley Road and Wilton Gardens	NO_2	
Rotherham – Fitzwilliam Road (PM_{10})	Fitzwilliam Road between St Leonards Road, Milton Road and Hatherley Road	PM_{10}	

Table C.5 Summary of Air Quality Management Areas in Rotherham

AQMA Ref	Description	Pollutant	Status
Sheffield – M1	Housing around M1 in Tinsley and Meadowhall	NO_2	2 AQMAs declared. Joint Air Quality Action Plan published in 2003 City Centre AQMA will be amended to include additional areas of exceedence and action plan will be revised
Sheffield – City Centre	An area covering city centre delineated by Ring Road	NO_2	

Table C.6 Summary of Air Quality Management Areas in Sheffield

Air Quality Action Plans

Introduction to Air Quality Action Plans

C.24 Each local authority in South Yorkshire has already prepared a Local Air Quality Action Plan (AQAP) which identifies action to be taken within each district to reduce pollution levels within the AQMAs declared during round one of the review and assessment.

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C.25 In 2004, four new AQMAs were declared in Rotherham, whilst two new AQMAs were declared in Barnsley. Sheffield City Council are currently consulting on amending their city centre AQMA to include one AQMA encompassing the whole of the Sheffield area, but excluding the Peak Park (rural) area. The AQMA will be designated for nitrogen dioxide.

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C.26 Under Section 84 of the Environment Act 1995, a further assessment of existing and likely future air quality within all new and significantly amended AQMAs should be prepared within 12 months of their declaration. The further assessment report is intended to supplement information the local authority already has and to identify the main contributors to pollution levels within the AQMAs.

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C.27 Local authorities that have designated AQMAs have to produce an AQAP that sets out the measures the authority intends to implement in pursuit of the air quality objectives. LAQM.PG(03) advises that action plans should be completed within 12-18 months after designation.

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C.28 The South Yorkshire AQAPs will:

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- Identify the main sources of pollution that need to be addressed to reduce pollution levels in the AQMA
- Evaluate all options and measures available in order to improve air quality
- Select measures for implementation based on cost-effective analysis considering wider social, environmental and economic impacts
- Quantify the potential for air quality improvement resulting from selected measures
- Identified the responsibilities for each action and an expected timetable showing when each measure will be implemented

C.29 The LTP2 guidance[7] advises:

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"*Where air quality issues are primarily transport issues, local Air Quality Action Plans should be integrated in to the LTP*".

C.30 The document LAQM.PGA(05)[6] provides guidance to local authorities on integrating AQAPs into the LTP2. The following sections consider the relevant sections of the guidance and the proposed structure for integrating AQAPs into LTP2 in South Yorkshire.

Guidance on Integrating Air Quality Action Plans

C.31 The advice on integrating AQAP into the LTP2 suggests:

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"*Local authorities responsible for local air quality management should integrate Air Quality Action Plans, where [local] transport is the primary factor, into the Local Transport Plan covering their area. The Government strongly recommends this approach, because this integration should enable air quality problems to be dealt with in a more corporate and multi-disciplinary way and will encourage transport planners to work more closely with environmental health departments and other colleagues in devising appropriate solutions.*"

C.32 The LAQM.PGA(05) states that plans are suitable for integration where AQMAs comply with the following criteria:

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"*Local road transport is identified as a major source of local air pollution concentrations (aside from background concentrations) within the AQMA, or where local road traffic is the major source of predicted exceedences of the air quality objectives*".

C.33 The six town centre AQMAs in Rotherham and Barnsley are located on busy roads under the local transport authority's control. When the further assessment report is published, the contribution from road transport for each AQMA will be identified within the source apportionment study. Each new AQMA will be assessed to ensure it complies with the guidance quoted above.

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[7] Full guidance on Local Transport Plans: Second Edition, Department for Transport, December 2004

C.34 For AQMAs, which have other significant sources in addition to transport sources:

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"T*hey should report on any other **key** non-transport measures by attaching an annex to the LTP. This annex should summarise the options that were considered, including costs and impacts, and list the chosen measures for implementation*."

"*For all other AQMAs, which primarily relate to industrial processes, other transport sources, ie shipping, motorways/trunk roads, or where road transport sources only form a small part of the air quality concentrations within the AQMA, those local authorities should continue to produce a stand-alone AQAP in accordance with the requirements …in LAQM.PG(03),… and produce an LTP which addresses, as far as possible, air pollution originating from local road transport."*

C.35 The guidance identifies that there may be some local authorities who have stand-alone AQAPs which relate to non-transport and motorway/trunk road problems, and integrated AQAPs which relate to local transport problems.

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C.36 For authorities which have already prepared AQAPs to address local road transport AQMAs, they can either integrate the action plan into the LTP2, superseding the existing plan, or revise the AQAP to reflect the new measures identified in LTP2. For authorities with action plans that address non-transport or motorway/trunk road problems, they are expected to retain the existing stand-alone plan and continue to report their progress to Defra.

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Implications for South Yorkshire

C.37 In South Yorkshire, the implications of this guidance are shown in Table C.7 as considerations for each authority in relation to existing plans and assessments.

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LA	Implications for existing and future air quality action plans	Timetable
Barnsley	Existing AQAP relates to Motorway and should be retained as stand-alone AQAP .	Now
	Two new AQMAs in Barnsley can be integrated into LTP2 when the further assessment reports have been agreed	Summer-Autumn 2006
Doncaster	Existing AQAP relates to local road and motorway AQMAs. It is advised that the existing AQAP is retained and revised to reflect the LTP2 process and any new measures likely to affect air quality that will be implemented.	Revised through air quality progress report
Rotherham	Existing Brierlow AQAP and M1 AQAP should be retained as stand-alone AQAP's Four new AQMAs in Rotherham can be integrated into LTP2 when the further assessment reports have been agreed	Continue to report progress as normal Spring-Summer 2006

LA	Implications for existing and future air quality action plans	Timetable
Sheffield	Existing AQAP relates to local road and motorway AQMAs, although the City Centre AQMA will be amended to include the whole of the urban Sheffield area. It is advised that the existing AQAP be retained and revised to reflect the LTP2 process and any new measures to address problems identified in the further assessment of the amended AQMA.	Continue to report progress as normal in 2005 and revise AQAP in 2006

Table C.7 Summary table showing implications of guidance on integration of air quality action plans into LTP2

Structure of LTP2

C.38 The structure of air quality action plans within LTP2 will have to be flexible in order to take account of new areas in South Yorkshire that are identified as breaching the air quality objectives as and when they are declared. A technical appendix to the LTP "Air Quality Action Plans for Local Road Transport AQMAs" will contain the following sections:

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- Existing relevant actions detailed in each district's AQAP
- Actions to reduce road emissions in wider urban areas
- Report on joint action devised to address motorways and trunk roads reported in stand-alone AQAPs
- Description of each new AQMA which has an integrated action plan, results of source apportionment, selection of measures, cost-effective analysis, wider environmental, social and economic impact assessment, air quality impact assessment, other key non-transport measures to address significant sources of pollution

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C.39 When a new AQMA is declared, a supplemental chapter will be published in the APR, which updates the information presented in the Technical Appendix.

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Timetable for LTP2

C.40 It is expected that the AQAPs for the town centre routes in Rotherham and Barnsley will be integrated into LTP2 when information on the major sources is available in early 2006. This will be done with the next LTP Annual Progress Report, through the publication of supplemental chapters to the technical appendix on air quality action plans.

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Performance Indicator

C.41 For LTP2 there are a series of mandatory indicators detailed in the technical guidance[8]. The air quality mandatory indicator, LTP8, applies to all authorities that have declared AQMAs for road transport which are not solely related to trunk roads. As all four local authorities in South Yorkshire have declared AQMAs on busy routes into their town centres, it is appropriate to monitor this mandatory indicator.

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[8] Technical guidance on monitoring the LTP2 mandatory indicators, DfT, 2004

C.42 The guidance describes LTP8 as ”pollutant concentrations within air quality management areas (AQMAs)” for the pollutants which triggered the designation. The indicator should be assessed against a baseline of 2004 with targets set for 2010 that are challenging but realistic. The use of pollution years (Jan-Dec) rather than financial years (Apr-Mar) is essential so that results are consistent with reporting under the Local Air Quality Management Regime.

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C.43 The South Yorkshire LTP will report the results from the district air quality review and assessment reports to show monitoring and modelling results indicating pollutant concentrations within AQMAs. The guidance suggests that no milestones are given for this indicator but that local authorities should measure annual progress against intermediate outcomes. However, given that monitoring of each AQMA is required for submission to Defra on an annual basis it is proposed to report within the APR the average of all non-trunk road AQMA’s in South Yorkshire each year.

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C.44 The LTP8 target in 2010 for all authorities in South Yorkshire will be the achievement of air quality objectives in AQMAs declared for road transport which are not solely related to trunk roads. Currently the relevant objectives for pollutants that have triggered designation in South Yorkshire are:

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- Annual mean nitrogen dioxide concentration of less than 40μg/m3
- 24-hour mean fine particles PM_{10} (gravimetric) concentration of 50 $\mu g/m^3$ not to be exceeded more than 35 times a year. This will need to be updated when Defra’s position on $PM_{2.5}$ becomes known

C.45 Five of the transport related AQMAs in South Yorkshire are solely related to the trunk road network (M1, M18 and A1(M)), particularly the M1 in the Don Valley area. Accordingly, these sites are not included within the LTP2 indicator as recommended by the guidance. However, levels of pollution within these AQMAs and any action that will be implemented, either by the local authority or by our partners, including the Highways Agency, will be reported in the LTP2 Annual Progress Report.

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Annual Progress Report

C.46 The Annual Progress Report published each summer will report on the achievements and progress made towards the annual milestones. The APR will also review progress of the LTP2 against our key objectives and performance indicators.

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C.47 Where local authority air quality action plans are integrated into the LTP2, a table showing the progress of the action plan will be included in the LTP Annual Progress Report, as detailed in Defra guidance document LAQM.PRG(03). Where existing action plans are not integrated into LTP2, for comparative purposes the APR will reference the latest air quality progress report of the relevant local authority.

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C.48 LAQM.PRG(03) advises on how to present monitoring results for comparison with the air quality objectives. Annual monitoring results within relevant AQMAs will be presented in this manner to show progress against LTP8 the mandatory air quality indicator.

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C.49 The APR will briefly report the results from the latest step in the local air quality review and assessment process for each local authority, summarising the results of updating and screening assessments, detailed assessments, further assessment and air quality progress reports which are due to be reported to Defra every April on a 3 yearly cycle.

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C.50 Where additional AQMAs have been declared and further assessments completed, updating of integrated air quality action plans will be reported through an appendix to the Annual Progress Report.

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Air Quality Assessment

C.51 Major schemes presented within LTP2 will be appraised according to "Detailed guidance on major scheme appraisal in local transport plans" as described in Unit 3.9 of Transport Appraisal Guidance, TAG[9]. This guidance advises that local air quality, noise and greenhouse gases are assessed using the standard methodologies described in TAG Unit 3.3.

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Mandatory Air Quality Indicator

C.52 The technical guidance advises that the air quality mandatory indicator LTP8 is 'pollutant concentrations within AQMAs'.

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C.53 This indicator will be calculated for each appropriate AQMA within LTP2 by using a combination of monitoring data and modelling if monitoring sites for example do not represent a worst case location in terms of exposure of the population. The AIRVIRO model is already used by each local authority's environmental health department in order to predict levels of air pollution across the region. This model could be used to assess road transport derived pollutant concentrations in each AQMA for a base year of 2004. This could also be done for all new and amended AQMAs as part of the further assessment report.

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C.54 The contribution from individual roads is not particularly large. From review and assessment work undertaken in South Yorkshire, the 'background' levels at any exceeding site may be in the order of 35 $\mu g/m^3$.

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C.55 The results of the monitoring and modelling will show the actual predicted levels of relevant pollutants within the designated air quality management areas. Year on year the maps will show changes in these pollutant levels due both to the impact of LTP schemes and national air quality policies.

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C.56 The mandatory indicator does not consider the link between concentrations of air pollutants and exposure within affected populations. Reporting pollution concentrations in AQMAs will allow such a linkage to be made. Further work will be undertaken by South Yorkshire Air Quality Officers to develop a robust and consistent way of reporting this, as there can be wide variations in air concentrations in AQMAs.

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C.57 The annual assessment of LTP8 could be affected more by meteorology than by a year's action through the LTP. For this reason, annual trajectories are not set for this indicator and the intermediate indicator and annual monitoring results are used to indicate the trends for change in air pollution levels. Trends need to be measured over several years to ascertain definite improvement.

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Climate Change Indicator

C.58 Climate change and greenhouse gases are an area highlighted in the LTP2 guidance as a quality of life issue. Local authorities are expected to take every reasonable opportunity to improve other aspects of quality of life in their communities. The UK government have committed to cutting carbon dioxide (CO_2) emissions by 12.5% below

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[9] Unit 1.4, Transport Appraisal Guidance, DfT, April 2004

1990 levels by 2008-12 under the Kyoto Protocol. Road transport currently produces about 20% of total UK CO_2 and is the fastest growing source of CO_2; measures to reduce emissions from transport are therefore vital if the UK is to meet its climate change objectives.

C.59 The spreadsheet tool calculates the transport schemes impact on CO_2 emissions based on traffic flow, average speed, traffic composition and link lengths.

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C.60 Transport Appraisal Guidance advises that change in CO_2 is only likely to be significant where the change in total distance travelled is more than 10%, where total distance travelled is the sum of each link vehicle flow multiplied by the link length.

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C.61 An appropriate target for 2010 is an aggregated position for all schemes assessed within LTP2 to reduce CO_2 emissions by 12.5%. Annual milestones should increase from 0% up to 12.5% by 2010. Further sensitivity analysis should be completed to determine whether this target is challenging and realistic.

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Road Noise Indicator

C.62 DMRB states that the method for predicting and measuring noise levels from traffic is the Calculation of Road Traffic Noise (CRTN), 1988. Section 1 of CRTN sets out a step by step method for predicting noise levels at a distance from the highway, taking into account factors such as traffic flow, speed and composition, road configuration, intervening ground cover between source and listener, screening (barriers, buildings and land form), angle of view and reflections from facades.

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C.63 Where total traffic flow, traffic composition (eg % heavy goods vehicles) and traffic speed are used to calculate the noise emission levels for different traffic scenarios applied to the same links, factors such as distance to receiver and screening effects can be ignored because they will not vary through implementation of transport scheme.

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C.64 To assess the likely change to existing ambient noise levels resulting from a local road transport scheme, Charts 3 and 4 of CRTN are employed in the spreadsheet tool to determine the change in the predicted basic noise level when traffic flow, average speed and traffic composition are affected.

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C.65 There are limitations to the use of the simple prediction method detailed in CRTN. Where traffic conditions do not comply with the criteria set out below the simple spreadsheet method cannot be used to determine change in ambient noise level:

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- Traffic flow more than 4000 veh/18hr or 200 veh/hr
- Average speed more than 20mph, as determined using criteria in CRTN, p6

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C.66 Transport Appraisal Guidance advises that a change that increases traffic flow by 25% or decreases by 20%, where speed and traffic composition remain the same, will only result in a change in noise level of 1dB. Therefore, the noise assessment should only be used when the following traffic conditions apply (Table C.8).

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Traffic Parameter	Significant Change	Not Significant Change
Traffic flow, 24 hr AADT	20% change	<20% change
Speed, kph	10kph	<10kph
% HDV	20% change	<20% change

Table C.8 Table showing significant changes to traffic parameters that could affect ambient noise level

C.67 For freely flowing traffic, a difference of about 3dB is required before there is a perceivable change in the noise level. Significant changes in traffic conditions are required to effect a change of 3dB. It is therefore reasonable for the LTP2 to achieve a less than 3dB increase in noise for all schemes assessed. With the annual position statement recording only the number of schemes where a change of more than 3dB is predicted, further sensitivity analysis should be completed to determine whether this target is challenging and realistic.

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Consultation

C.68 The protocols for assessing air quality, climate change and ambient noise were consulted on by LTP Partners. A stakeholder workshop was convened by Atkins and attended by transport planners, air quality specialists and community representatives from each of the four local authorities and the South Yorkshire Passenger Transport Authority.

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C.69 The performance indicators and approach to assessment were examined. Issues of data availability were highlighted as a potential problem for assessment. Data availability has been addressed in this report through the application of reasonable criteria of significance where transport measures are unlikely to affect air quality, climate change or noise. The limitations of the simplistic assessment method were also discussed and it was considered that although this method promotes involvement of transport planners in appraising air quality at the design stage, consultation with environmental health colleagues was essential to identify where the simplistic approach adopted is inappropriate. For all major schemes, a local air quality, noise and greenhouse gas assessment is required to comply with Transport Appraisal.

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