

Part IV of the Environment Act 1995 Local Air Quality Management

Policy Guidance

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Local Air Quality Management Policy Guidance

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1: Introduction

Purpose of this guidance

1.1 This guidance is intended to help local authorities with their local air quality management duties under Part IV of the Environment Act 1995¹. It sets out:

- the statutory background and the legislative framework within which local authorities have to work;
- the principles behind reviews and assessments of air quality and the recommended steps that local authorities should take;
- how local authorities should handle the designation of Air Quality Management Areas (AQMAs) and the drawing up and implementation of action plans;
- suggestions for taking forward the development of local air quality strategies;
- suggestions on how local authorities should consult and liaise with others;
- the role of transport-related measures in improving air quality;
- the general principles behind air quality and land use planning;
- the effects of biomass on air quality; and
- the relationships between air quality and noise policy.

1.2 This guidance is issued by the Scottish Ministers under section 88(1) of the 1995 Act. Local authorities should have regard to it when undertaking their local air quality management duties, as required under section 88(2) of the Act. The guidance should be taken into account by all local authority departments involved in local air quality management (LAQM), including environmental health, corporate services, planning, economic development and transport planning. The guidance complements the information and advice contained in Cleaner Air for Scotland (CAFS)², which was published in November 2015, and the two documents should therefore be read in conjunction.

1.3 The guidance on air quality and land use planning, in particular, should be read together with Scottish Planning Policy (SPP)³ and Planning Advice Note (PAN) 51: *Planning, Environmental Protection and Regulation*⁴. The guidance may be material in preparing development plans and in determining planning applications. It will also be of interest to others involved with LAQM, and those whose actions may impact on local air quality.

¹ Separate policy guidance is issued in England and Wales, and in Northern Ireland. The technical guidance that accompanies this guidance covers the whole of the UK.

² <http://www.gov.scot/Publications/2015/11/5671>

³ <http://www.gov.scot/Resource/0045/00453827.pdf>

⁴ <http://www.scotland.gov.uk/Publications/2006/10/20095106/0>

1.4 The Scottish air quality website and database⁵ provides a wide range of resources to support local authorities in their LAQM work, and authorities are strongly encouraged to make full use of this.

1.5 SEPA has an important role to play in LAQM through the control of emissions to atmosphere from regulated industrial processes, the provision of information on these processes and as a statutory consultee on air quality review and assessment reports and action plans. In addition SEPA, acting with the approval of Scottish Ministers, has reserve powers under section 85 of the 1995 Act to require local authorities in Scotland to take action where they are failing to make sufficient progress. Subject to this approval SEPA may issue directions to local authorities requiring them to take any or all of the following steps:-

- Carry out an air quality review and assessment under section 82 of the 1995 Act;
- Repeat an air quality review and assessment in whole or in part;
- Make an order designating an AQMA;
- Revoke/modify any order;
- Prepare an action plan;
- Modify any action plan; and
- Implement any actions in an action plan.

The Scottish Government expects reserve powers to be put into effect only where local authorities are manifestly failing to carry out their LAQM duties. Although they have not been used to date, the possible implementation of such powers will not be ruled out in the future should circumstances suggest that they would be both appropriate and effective.

1.6 This policy guidance, the accompanying technical guidance (TG (16)) and CAFS are the primary guidance documents to which local authorities should have regard when carrying out their air quality review and assessment work. The guidance replaces the LAQM policy guidance published in February 2009.

Review of Local Air Quality Management

1.7 In 2013 the Scottish Government undertook a consultation⁶ on proposals to review the LAQM system, the first time such a comprehensive review has been undertaken since LAQM was introduced. The consultation was based on an earlier review⁷ carried out in 2010 on behalf of all four UK administrations, which concluded that the ability of LAQM to diagnose problems was effective, but the capacity to

⁵ www.scottishairquality.co.uk

⁶ <http://www.scotland.gov.uk/Resource/0042/00425194.pdf>

⁷ <http://www.scotland.gov.uk/Resource/Doc/211199/0096175.pdf>

deliver improvements was less so. The review resulted in a number of proposals and recommendations⁸ for overhauling LAQM to make it more fit for purpose. These recommendations are summarised below and covered in more detail at the relevant points in this guidance.

- Revised policy guidance, incorporating all the key comments and suggestions made by consultees
- LAQM and EU regulations to be kept separate
- All objectives currently in regulations will be retained
- A simplified annual report for all authorities – with options for more detailed work where necessary
- No reduction in current monitoring levels
- Consideration of how local authority data and action plan measures can be used more effectively in EU reporting
- Retention of AQMAs
- More focus on action planning and delivery
- Drawing together existing of guidance into a centralised resource and identify key gaps
- Development of a clear and focused message on the health impacts of air pollution, as the centrepiece of a national co-ordinated campaign involving the Scottish Government, Transport Scotland, Health Protection Scotland, SEPA and others

Resources

1.8 Since 1997/98, resources have been made available in the local government finance settlement to help local authorities with their duties under the 1995 Act. This provision is not ring fenced however and decisions on expenditure are entirely a matter for local authorities, in the light of their statutory duties and local circumstances. The amount of provision made available to each local authority varies depending on factors such as the population and area of the authority.

1.9 From 1 April 2008 a further non ring fenced allocation has been made as part of the General Capital Grant introduced following the signing of the Concordat between the Scottish Ministers and the COSLA Presidential Team in November 2007. This replaces the former air quality monitoring capital grant scheme. Additional funding support is provided, again from 1 April 2008, for work connected with AQMAs and action plans. This is allocated on an annual basis through an application system.

Air quality and health

1.10 Across the UK, the impact of poor air quality on health has been estimated to cost around £15 billion per year. The total annual cost of air pollution to the UK's economy may be as much as £54 billion. In Scotland in 2010 fine particulate matter was associated with around 2,000 premature deaths and around 22,500 lost life-

⁸ <http://www.scotland.gov.uk/Publications/2013/12/5214/downloads#res440953>

years across the population⁹. Detailed information on the relationships between air quality and health can be found in CAFS and in a briefing paper¹⁰ published in 2014 by Health Protection Scotland.

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https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/332854/PHE_CRCE_010.pdf

¹⁰ <http://www.documents.hps.scot.nhs.uk/environmental/briefing-notes/air-quality-and-mortality-2014-04.pdf>

2: Local Air Quality Management

2.1 Part IV of the Environment Act 1995 requires the UK Government and the devolved administrations to publish an Air Quality Strategy and establishes the system of LAQM.

Air quality objectives

2.2 The air quality objectives set out in the Air Quality (Scotland) Regulations 2000, the Air Quality (Scotland) Amendment Regulations 2002 and the Air Quality (Scotland) Amendment Regulations 2016 provide the statutory basis for LAQM. The regulations also prescribe the dates for meeting air quality objectives. The objectives are set out in Table 2.1.

2.3 Under the 1995 Act, local authorities are required to regularly review and assess air quality in their areas against these objectives. Local authorities have to consider the current and likely future air quality in their areas, and assess whether the objectives are likely to be achieved by the due dates. Local authorities also have a duty to continue to work towards meeting the air quality objectives beyond the deadlines set out in the regulations. For example an objective which was due to be met by 2005 must also be met in every subsequent year.

Table 2.1 – Air quality objectives prescribed in regulations for LAQM purposes in Scotland

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration ¹	Measured as	
Benzene	16.25 µg/m ³	running annual mean	31.12.2003
	3.25 µg/m ³	running annual mean	31.12.2010
1,3 Butadiene	2.25 µg/m ³	running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m ³	running 8-hour mean	31.12.2003
Lead	0.5 µg/m ³	annual mean	31.12.2004
	0.25 µg/m ³	annual mean	31.12.2008
Nitrogen dioxide ²	200 µg/m ³ not to be exceeded more than 18 times a year	1 hour mean	31.12.2005
	40 µg/m ³	annual mean	31.12.2005
Particulate matter (PM ₁₀)	50 µg/m ³ not to be exceeded more than 35 times a year	24 hour mean	31.12.2004
	40 µg/m ³	annual mean	31.12.2004

	50 µg/m ³ not to be exceeded more than 7 times a year 18 µg/m ³	24 hour mean annual mean	31.12.2010 31.12.2010
Particulate matter (PM_{2.5})	10 µg/m ³	annual mean	31.12.2020
Sulphur dioxide	350 µg/m ³ not to be exceeded more than 24 times a year 125 µg/m ³ not to be exceeded more than 3 times a year 266 µg/m ³ not to be exceeded more than 35 times a year	1 hour mean 24 hour mean 15 minute mean	31.12.2004 31.12.2004 31.12.2005

Review and assessment reporting

2.4 Local authorities are required to produce an annual progress report detailing their review and assessment work in the previous calendar year. This new approach, from 2016 onwards, replaces the previous three year reporting cycle, whereby in year one, all authorities were required to undertake an Updating and Screening Assessment (USA). Where an authority identified a risk that an air quality objective will be exceeded at a relevant location¹¹ the local authority was required to proceed to a Detailed Assessment (DA). In years two and three, local authorities were required to prepare progress reports, including those authorities proceeding to a DA.

2.5 The change to a single annual progress report is intended to simplify and streamline reporting requirements. Given that LAQM has now been in place for nearly 20 years, the assumption is that most hotspots will have been identified. However it is recognised that new issues will from time to time arise that require more detailed investigation. Local authorities are encouraged to incorporate such investigations into their routine review and assessment work and annual progress report as far as possible. If a local authority feels that this is not appropriate or feasible, the option to undertake a separate detailed investigation will still be available. The Scottish Government will consider these situations on a case by case basis, in discussion with the authority concerned. As with the previous reporting arrangements, a local authority should proceed to detailed investigation as soon as a new issue is identified and not wait until the next annual report.

¹¹ The air quality regulations require that likely exceedences of the objectives should be assessed at locations which are situated outside of buildings or other natural or anthropogenic structures, above or below ground and where members of the public are regularly present. LAQM.TG (16) provides further guidance on how local authorities should reach a decision as to whether a location should be considered relevant.

2.6 Local authorities are required to submit their annual progress report to the Scottish Government and to other statutory consultees¹² by the end of June each year. This is a change from the previous deadline of end April, to allow authorities more time to gather information and ratify data. All reports, except action plans, must be submitted electronically via the Report Submission Website.¹³ If the Scottish Government does not accept the conclusion of a local authority's report, then the authority will be invited to provide written comments justifying their decision within a specified deadline set out in the appraisal letter.

2.7 Local authorities who wish to seek clarification on the findings of the appraisal process should in the first instance contact the Helpdesk for further advice. The Helpdesk can discuss the details of individual cases and provide advice on responding to any points raised in the appraisal. Details are provided in Table 2.2.

Table 2.2 - Helpdesks for Local Authorities

Helpdesk	Operated by	Contact Details
Review & Assessment	Bureau Veritas	0800 032 7953 LAQMHelpdesk@uk.bureauveritas.com
Report Submission Website	Bureau Veritas	admin.rsw@uk.bureauveritas.com

Late submission of reports

2.8 Although a number of local authorities submit their review and assessment reports in line with the specified deadlines, many fail to do so. The Scottish Government accepts that there will often be legitimate reasons for late submission. In such cases, authorities should contact the Government at the earliest opportunity so that a revised submission date can be agreed. Where no such contact is made (and in cases where the revised deadline is missed with no further contact) from 2016 SEPA, with the support of the Scottish Government, will be introducing a new system of reminder and warning letters (Tables 2.3 and 2.4).

Table 2.3 – Reminder and warning letters for annual progress reports

Timescale	Month*	Enforcement level
Report two months overdue	August	Reminder
Report three months overdue	September	Warning letter
Report four months overdue	October	Final warning letter
Report six months overdue	December	Section 85 direction

* or agreed revised deadline

¹² Statutory consultees are: the Scottish Ministers; SEPA; Transport Scotland; neighbouring local authorities; any National Park authority; other public authorities; local business; and others as appropriate (including the public).

¹³ <http://laqm.defra.gov.uk/1rsw/>

Table 2.4 – Reminder and warning letters for action plans

Timescale	Month	Enforcement level
Action plan two months overdue	20 months post AQMA designation	Reminder
Action plan three months overdue	21 months post AQMA designation	Warning letter
Action plan four months overdue	22 months post AQMA designation	Final warning letter
Action plan six months overdue	24 months post AQMA designation	Section 85 direction

Action plans and further assessments

2.9 Whenever one or more of the air quality objectives has not been - or in the case of the new PM_{2.5} objective is unlikely to be - met by the required date, the local authority concerned must declare an AQMA, covering the area of concern. The authority must then prepare and implement an action plan outlining how it intends to tackle the issues identified. The plan should also include timescales to indicate by when the measures will be implemented. Local authorities are not legally obliged to meet the objectives but they must demonstrate that they are taking all reasonable steps in working towards them. The 1995 Act does not prescribe any timescale for preparing an action plan but the Scottish Government expects them to be completed within 12 months following the designation of any AQMAs.

2.10 Section 84(1) of the 1995 Act previously required local authorities to carry out a further assessment of existing and likely future air quality in an AQMA. This provision has now been revoked by section 49 of the Regulatory Reform (Scotland) Act 2014. Under section 84(2) (a) of the 1995 Act local authorities were required to report on the further assessment within 12 months of designating the AQMA. Further assessments played an important role in confirming that the initial decision to declare an AQMA was still valid and to obtain more detailed information to contribute to the action plan. This information is still required but it should now be gathered during, rather than prior to, action plan development. The intention is that this will speed up the action planning process.

Role of regional groupings

2.11 Under section 56 of the Local Government (Scotland) Act 1973, two or more local authorities can act jointly to manage air quality. For example, authorities can co-operate to carry out review and assessment across their combined areas. Subsequently they can declare a single AQMA made up from neighbouring areas of each authority and prepare a joint action plan. Where joint AQMAs are designated however, it may be appropriate for each participating authority to lay its own designation order. Authorities can also choose to carry out separate reviews and assessments but declare a joint AQMA. SEPA, with the agreement of the Scottish Ministers, may use the reserve powers in section 85 of the 1995 Act where co-operation between local authorities is essential for the purposes of LAQM but for whatever reason cannot be achieved.

2.12 The Scottish Government also attaches great value to the local pollution liaison groups. These groups play a vital role by allowing environmental health officers across authorities to work closely together, and share resources and best practice. The Scottish Pollution Control Co-ordinating Committee (SPCCC) is similarly important in acting as a national focus for the regional groupings.

3: Review and Assessment

3.1 Report templates are available on the Report Submission Website. Examples of completed reports are available on the Review and Assessment helpdesk web site at <http://laqm.defra.gov.uk/review-and-assessment/good-practice/examples.html>

New monitoring data

3.2 The progress report should provide a summary of all available monitoring data in a format suitable for comparison with the air quality objectives. For example nitrogen dioxide data should be reported as annual mean concentrations, and where possible as the number of exceedences of the 1-hour objective value of $200 \mu\text{g}/\text{m}^3$. Reporting full hourly data, or full monthly data for diffusion tubes, is not necessary.

3.3 To maximise the value of air quality monitoring, careful attention should be paid to the type of equipment used and the locations where the monitors are placed, as well as the QA/QC and data verification procedures. Detailed guidance on these issues is provided in LAQM.TG (16), and reference should be made to this when setting up and operating monitoring equipment. Particular matters to take account of when preparing and assessing monitoring results are set out in Box 3.1.

Other information to include in the progress report

3.4 When reporting the monitoring data the following should be included where possible:

- a map showing the monitoring locations. It may be possible to refer to a map in a previously published document, as long as it is readily available e.g. published on the web; and
- plots showing trends in concentrations e.g. plots of annual mean nitrogen dioxide concentrations for the last ten years.

Box 3.1: Matters to take into account when reporting monitoring data

- | | |
|---|--|
| 1 | When presenting automatic monitoring data, it should be made clear whether the results have been ratified. It may be necessary to report a combination of ratified and unratified data. The fully ratified data can then be updated in the next report. Information on data capture should also be provided. |
| 2 | Where data are available for fewer than nine months, then they should be adjusted to provide an estimate of the annual mean using the procedure set out in LAQM.TG (16). |

3	To help understand the results, the type of monitoring site should be specified. For roadside sites the distance from the kerb should be provided. For industrial sites the distance to the source(s) should be specified. This information could be provided as an Appendix to the report.
4	Where nitrogen dioxide diffusion tube data are provided, it should be made clear whether the results have been adjusted for laboratory bias. Where they have been adjusted, brief details should be provided of the adjustment factor used and its source. Details should also be provided of the laboratory being used, the tube preparation method and the exposure period.
5	Summary information should be provided on QA/QC. This can be by way of a reference to a previously published document, so long as the document is still readily available.
6	Where results are presented for new monitoring sites, a description of the sites should be provided. This should include the reason they were set up e.g. do they represent worst-case relevant exposure locations?
7	When describing sites, it should be made clear whether they represent relevant exposure. For instance, if the site is kerbside, it would be appropriate to say that "the nearest relevant exposure is residential properties set back 5 m from the kerb."
8	For short-term objectives, e.g. 1-hour for nitrogen dioxide, the results should be presented as number of hours (or 15-mins for sulphur dioxide, or days for PM ₁₀) above the objective value. This should only be done where data capture is >90% of a full year. If data capture is <90% or monitoring is for less than a full year, then it is only appropriate to present the results as percentiles. The following percentiles roughly equate to the objectives: 99.8 th percentiles for 1-hour nitrogen dioxide; 99.9 th percentiles for 15-min sulphur dioxide; 99.7 th percentiles for 1-hour sulphur dioxide; 99.2 nd percentile for 24-hour sulphur dioxide; and 90 th percentile for PM ₁₀ . Guidance on calculating percentiles is available in LAQM.TG (16).
9	When reporting results a note should be made of any local circumstances that may have affected the results e.g. construction activities close to a PM ₁₀ monitor, or temporary changes in traffic flows during road works.

3.5 The progress report should also draw attention to:

- results for new monitoring sites and whether they reveal any new information about air quality; and
- evidence of any trends over recent years. Care should be exercised in discussing trends, as changes in concentrations occur from year to year due to weather conditions. It is normal practice to only consider a trend as being significant when five years' worth of data are available, although a longer timescale may be appropriate for some pollutants e.g. PM₁₀.

Progress on implementation of action plans

3.6 Although local authorities can submit separate action plan progress reports, they are strongly advised to submit a single combined report.

Assessment of monitoring data

3.7 The minimum requirement is to report monitoring data and trends over recent years. It will also prove helpful to project the measured concentrations forward, using the guidance in LAQM.TG (16). This will provide early warning of likely exceedences that may not have been previously identified and also help to gauge progress on when the objectives are likely to be complied with.

Box 3.2: Progress Report Checklist		
Item	Minimum Requirement	Recommended Additional Elements
New Monitoring Results	Data	
	Present a map showing monitoring locations Present summary tables of concentrations of regulated pollutants in a format to allow comparison with the objectives Provide plots of summary data to show annual trends	Project forward results using LAQM.TG (16) guidance
	Report	
	Highlight results for new sites Discuss trends. Take account of number of years of available data	
New Local Developments	Identify and list new developments that may affect air quality	
Action Plans		List measures in action plan and implementation timescales Provide update on progress implementing measures

<p>Local Air Quality Strategy</p>		<p>Summarise Strategy or progress on preparing a Strategy or reviews of the Strategy</p> <p>Describe consultation/publicity for Strategy</p> <p>Report on progress on implementing measures within strategy</p>
<p>Planning and Policies</p>		<p>Log planning applications for new developments for which air quality assessment is being provided</p> <p>List local policies that relate to air quality and any changes that may have been introduced</p>
<p>Regional Transport Strategies and Local Transport Plans</p>		<p>Summarise measures in the Strategies that have a direct bearing on air quality</p> <p>Report on progress with implementing these measures</p>

4: Air Quality Management Areas

4.1 Local authorities have a duty under section 83(1) of the 1995 Act to designate AQMAs where the air quality objectives are unlikely to be met by or beyond the required date. AQMAs must be designated officially by means of an order.

Setting the boundaries of AQMAs

4.2 Setting the boundary of an AQMA involves an element of judgement. Boundaries can range from isolated buildings to the entire local authority area. Some local authorities have chosen to designate several AQMAs, each covering an area of concern, whereas others have included all such areas within one overall AQMA. It is thus for local authorities to decide on the boundaries for an AQMA, taking all relevant considerations into account and consulting as appropriate.

4.3 In deciding where to draw the boundaries of an AQMA, local authorities might wish to consider some of the following points:

- It may be administratively much simpler to designate a wider area, based on existing boundaries and natural features. This avoids the need to draw artificially precise lines on maps and also allows a more strategic approach to be taken;
- Wherever the boundaries of the AQMA are drawn, the action plan is likely to need to cover a wider area;
- Designating a number of smaller AQMAs, rather than one single large area, can allow an authority to demonstrate progress by removing individual areas as air quality improves there;
- Declaring smaller AQMAs may also provide a clear focus on the hot spot locations within a local authority. This may prove particularly important for informing local authority planning processes; and
- A more focused approach to declaring AQMAs may provide a better indication of where resources need to be allocated in terms of policy interventions.

What should an AQMA order look like?

4.4 The exact wording to be included in an order is at the discretion of the individual local authority. It is recommended that local authorities include a map showing the area to be designated and to include a description of the area. For example, a larger AQMA may be described according to its boundaries near to major roads/motorways. A smaller AQMA may need a more detailed description listing individual streets or other physical features. In some cases it may be appropriate to list the individual properties affected, but there is no legal requirement to do this.

4.5 It is also recommended that the order should include the date on which the AQMA comes into force and the objective/s for which the AQMA has been

designated. Local authorities should notify the Scottish Government by submitting a copy of the order. Authorities should ensure that the information is easily accessible for members of the public and other interested parties. Some include AQMAs within local land searches. Authorities should also provide an indicative timescale for production of the action plan as part of this process.

Further assessment of air quality within an AQMA

4.6 As outlined in section 2.9, the legal requirement to undertake a further assessment has been removed. Local authorities are however still expected to collect information such as source apportionment as part of the action planning process. More detail on this is provided in chapter 5.

Amendment to and revocation of an AQMA

4.7 Local authorities are able to amend or revoke an existing AQMA order at any time as set out under section 83 (2) of the 1995 Act. Where an authority considers it necessary to do this, the Scottish Government expects the authority to consult SEPA and all the other statutory consultees, businesses, members of the public and other interested parties. All available supporting information to justify the amendment or revocation should be provided to the Scottish Government before any changes take effect. A local authority may submit this evidence at any time and does not need to wait until the next annual report.

4.8 There are no set criteria on which a revocation decision will be based, and the Scottish Government considers each request on a case by case basis. A minimum requirement however will normally be at least three consecutive years where the objectives of concern are being achieved.

4.9 Where the proposed revocation or amendment is accepted by the Scottish Government, local authorities will be expected to take the necessary action within four months following receipt of comments. Where an AQMA is revoked, the authority should consider drawing up or modifying an existing local air quality strategy for the affected area(s) to ensure air quality issues maintain a high profile locally and to respond to any public expectations. Such a strategy could incorporate measures designed to tackle climate change, or be incorporated into a local climate change strategy. It could also cover the linkages between air quality and wider environmental sustainability issues.

Notification of amendment or revocation of an AQMA

4.10 Once an amendment or revocation has taken place, the local authority should submit the order to the Scottish Government for information. Local authorities should also notify SEPA and other statutory consultees and publicise the amendment or revocation widely through local media so as to ensure that the public and local businesses are fully aware of the situation.

5: Air quality assessment following AQMA declaration

Overview

5.1 Once an AQMA has been declared, an assessment to provide the technical justification for the measures an authority intends to include in its action plan will normally be required. This will allow authorities to:

- calculate more accurately how much of an improvement in air quality will be needed to achieve the air quality objectives within the AQMA;
- refine their knowledge of the sources of pollution so that air quality action plans can be properly targeted;
- take account of national policy developments which may come to light after the AQMA declaration;
- take account as far as possible of any local policy developments which are likely to affect air quality and which were not fully factored into earlier assessment. These might include, for example, changes to national or local planning policy, the implications of any new transport schemes that are likely to be implemented in or close to the AQMA, or of any new major housing or commercial developments;
- carry out new or additional real time monitoring; and
- respond to any comments made by statutory consultees on any aspect of the AQMA declaration process, particularly where these have highlighted that insufficient attention has been paid to, for example, the validation of modelled data.

5.2 In many cases, authorities will already have done some of the necessary work as part of routine review and assessment or specific studies undertaken to inform AQMA declaration. They may already have a reasonably clear idea of which sources are responsible for the problem, and may already have calculated how much of an emissions reduction from each would be necessary to achieve compliance with the objectives of concern. In these cases, relatively little additional work will be required, although authorities will still be required to show that they have considered the possible impact on the AQMA of subsequent local and national developments.

5.3 This assessment work should be taken forward in parallel with the development of the action plan, allowing authorities to model the likely effects of particular policy measures, such as the introduction of a low emission zone or other traffic management scheme. As well as modelling the impact of particular measures on emissions and ambient air quality, authorities should also show that they have given due consideration to their likely costs and benefits. The assessment should demonstrate that authorities have considered a range of options and chosen the most cost effective solutions.

Calculating how much of an improvement is necessary inside an AQMA

5.4 A local authority must also show that it has calculated the reduction in emissions required to achieve the objective/s of concern. Having done this, the authority will be better placed to consider whether the measures proposed to achieve these reductions are proportionate and cost effective. It is important to note that a reduction of 10% in total emissions will not necessarily result in a 10% improvement in ambient air quality, because this fails to take account of background concentrations and also the complex atmospheric chemistry involved in, for example, the conversion of NO_x to NO₂.

Source apportionment

5.5 One of the most important elements of the technical assessment is the consideration of the extent to which different sources contribute to the problem. Is road transport entirely to blame for the exceedence of an NO₂ objective, or is there a significant contribution from an industrial source? To what extent do other sources contribute (for example, aircraft or train movements)? Within the road transport sector, to what extent are different classes of vehicle responsible for the emissions? Does the traffic in the whole urban area contribute more to the exceedence than the nearby road? Are sources outside the authority's immediate area contributing to any significant extent?

5.6 Only when an authority has a reasonably clear idea of the total breakdown of emissions from all sources can it draw up a sensibly targeted action plan. It will not always be possible to do this with absolute precision, and between year meteorological conditions will also have an effect on the relative contribution from different sources. But authorities must show that they have calculated, in percentage terms, the extent to which different sources are responsible for any forecast exceedences. This will allow consultees to form a view on whether the action plan is proportionate and properly targeted.

5.7 If a source over which an authority has little control (such as aircraft movements within the periphery of an airport) is responsible for a significant percentage of local emissions, an authority should not demand disproportionate emissions reductions from other sources in pursuit of the objectives. Instead it should note in its action plan that it has done all it reasonably can to bring about reasonable and proportionate emissions reductions from those sources over which it has any influence, but that further emissions reductions are required from other sources before the objectives can be achieved.

Taking account of policy changes

5.8 In many cases, central government policy developments may affect the designation of an AQMA or the extent to which local actions are necessary to achieve the prescribed air quality objectives. Possible examples include:

- changes to nationally prescribed air quality objectives, which may themselves reflect changes to European Union limit values;

- scientific and technical developments, such as changes to the emissions factors to be used in certain calculations;
- major policy developments such as those encouraging take up of renewable energy or new planning policies;
- the introduction of new powers for local authorities;
- measures to promote the use of cleaner fuels, which might affect the composition of the total vehicle fleet by the compliance date;
- decisions on major planning cases, such as the location of a new bypass, or the siting of new airports or runways; and
- developments in the industrial pollution control framework.

Further monitoring

5.9 In many cases, local authorities will have based their AQMA designation on the results of a relatively short monitoring period, or entirely on the results of their modelling. In practice, even where at least twelve months' worth of monitoring data were available at the time of designation, there may still be uncertainties associated with the results (were the meteorological conditions typical, for example?). Sometimes, authorities will have diffusion tube data covering a long period, but only a limited set of results from a continuous monitor. Local authorities may therefore wish to carry out additional monitoring at key points to validate earlier findings and/or commit to ongoing monitoring as part of the action plan.

5.10 Following on from this, the designation of an AQMA will often have been based on a large number of assumptions (such as that traffic flows along a particular road are at a particular level). Additional assessment during action plan preparation is an opportunity to test these assumptions, in order to ensure that they are as accurate as possible.

Costs and benefits

5.11 A key element of the action plan will be an estimate of the costs, benefits and feasibility of different abatement options to allow for the development of proportionate and effective measures. The cost benefit analysis should cover both health and environmental considerations, besides the financial cost of any measures for the local authority and other affected parties. The options selected for taking forward in the plan should be reported on in action plan progress reports.

6: Air quality action plans

6.1 Air quality action plans must focus on effective, feasible, proportionate and quantifiable measures as the top priority. Lengthy descriptions of the LAQM system are not necessary and action plans should be as concise as possible. What matters is that appropriate measures are taken to improve air quality, and that progress on these measures can be reported on quantitatively as well as qualitatively. Besides the fundamental role of action plans in improving local air quality, the Scottish Government and the other UK administrations must demonstrate to the European Commission the measures that are being taken to meet EU Limit Values. Local authority action has an important role to play here.

What to include in an action plan

6.2 There is no need to provide detailed background on the local authority's duties under Part IV of the Environment Act 1995 in the introduction to the action plan. It is enough to simply state that 'this action plan has been developed in recognition of the legal requirement on the local authority to work towards air quality objectives under Part IV of the Environment Act 1995 and associated regulations.' The statutory background should already have been adequately covered in review and assessment reports, which can be referenced in the plan. The action plan itself should have a more practical focus – detailing measures to improve air quality and quantifying their impact over time. An air quality action plan must include the following:

- demonstration that the local air quality issues are clearly understood;
- an explanation of how the action plan will help to deliver the aims and objectives of CAFS:
- quantification of the source contributions to the predicted exceedences of the objectives; this will allow the action plan measures to be effectively targeted;
- evidence that all available options have been considered on the grounds of cost effectiveness and feasibility;
- how the local authority will use its powers and also work in conjunction with other organisations in pursuit of the air quality objectives;
- clear timescales in which the authority and other organisations and agencies propose to implement the measures within its plan;
- quantification of the expected impacts of the proposed measures and, where possible, an indication as to whether the measures will be sufficient to meet the objectives; and
- how the local authority intends to monitor and evaluate the effectiveness of the plan.

The 1995 Act does not prescribe any timescale for preparing an action plan. However, the Scottish Government expects plans to be completed within 12 months of AQMA designation.

Partnership working

6.3 Local authorities should take a joined up approach towards the action planning process, which should involve environmental health, planning, transport and corporate services departments, besides any other parts of the authority that may have a role to play. Some local authorities will also need to work with neighbouring authorities due to the nature of the air quality problem, or because measures they wish to take may have effects elsewhere. In such cases, the Scottish Government strongly recommends that consideration be given to developing regional air quality action plans. Action plans should also take account of other related plans such as Local Transport Strategies and Environmental Noise Action Plans.

Setting up a steering group

6.4 Local authorities may wish to set up a steering group to take forward the development of an action plan. The members of the steering group should include representatives from all the relevant departments and may include officers from different local authorities, or other organisations such as Transport Scotland, Health Protection Scotland and SEPA. The steering group should also decide on how to engage support from local businesses, community groups, the public and other interested parties to take the process forward.

6.5 All local authority departments with an interest in air quality or the measures proposed for the plan should be identified and constructively engaged in the process, particularly:

- transport planners;
- land use planners and town centre managers;
- environmental protection and energy management officers;
- waste managers;
- economic development, regeneration and tourism departments; and
- corporate policy and resources.

6.6 A number of commercially available models exist to help local authorities to develop integrated action plans. Details of these are held by the helpdesk (contact details in paragraph 2.7), which can advise on their applicability and relevance to authorities' individual circumstances.

Actions outside a local authority's control

6.7 Some of the actions needed to improve air quality may be outside the local authority's direct control. This is the case where, for example, an industrial process regulated by SEPA is contributing to air quality exceedences, or where high levels of pollutants exist as a result of motorways or trunk roads, regulated by Transport

Scotland. Both SEPA and Transport Scotland are committed to the LAQM process and both are required to help local authorities develop their action plans.

6.8 Some local authorities may have air quality problems around airports located within or close to their areas. As well as tackling pollution from the traffic flowing to and from an airport, in some cases there may be a need to address pollution from the airport itself. Local authorities in this situation will have to liaise closely with the airport operators in considering solutions and measures in pursuit of the air quality objectives.

6.9 Local authorities should make clear any limitations in their action plans and show the extent to which they rely on actions by others, such as SEPA, Transport Scotland and the Scottish and UK Governments, to work towards meeting the objectives. The plan should show how other bodies have been involved in its development.

Keeping the action plan under review

6.10 Local authorities have a duty to keep their action plans up to date. Section 84(4) of the 1995 Act states that an authority may from time to time revise an action plan. Whenever an action plan is revised, local authorities must consult the Scottish Ministers and other statutory consultees (see Schedule 11(1) (c) of the 1995 Act).

6.11 In order to ensure that local authorities implement the measures within an action plan by the timescales indicated within that plan, the Scottish Government expects authorities to submit annual progress reports once the final action plan has been implemented. These progress reports list the measures within the action plan and include the timescales by when they are/were due to be implemented and give an update on progress in terms of implementation.

6.12 The progress report should be submitted by the end of June each year, ideally combined with the annual review and assessment progress report.

Strategic Environmental Assessment

6.13 When developing an action plan, local authorities have to consider whether it falls within the scope of the Environmental Assessment (Scotland) Act 2005 and therefore whether a Strategic Environmental Assessment (SEA) is required. An important means to gauge if an SEA of an action plan will be required, is to consider the likely environmental effects of implementing the action plan and whether they are likely to be significant. Further guidance is available on the Scottish Government's website¹⁴

6.14 As a simple guide, local authorities could take the following into consideration:

- Will the plan include conditions which will influence a development plan or other consent framework in ways which are likely to have significant

¹⁴ <http://www.scotland.gov.uk/Topics/Environment/environmental-assessment/sea>

environmental effects (for example, will the action plan require or preclude certain projects at certain locations)? If so, an SEA may be required; or

- Does the plan only set out specific air quality measures such as traffic management schemes, parking controls and so, and there is no intention of including conditions to influence planning or development consents? If so, it is unlikely to require an SEA.

6.15 It is important to remember that in each scenario, if the local authority judges that the environmental effects of implementing the action plan are likely to be greater than minimum, a screening request has to be submitted to the Consultation Authorities (Scottish Natural Heritage, SEPA and Historic Scotland) identified in the 2005 Act. This can be done via the SEA Gateway. It is also important to note that the SEA process must be carried out during an action plan's preparation, beginning at an early stage prior to any public consultation, and the findings taken into account when the plan is being finalised.

7: Consultation

Background and statutory requirements

7.1 The Environment Act 1995 provides the statutory basis for consultation and liaison. The Scottish Government expects local authorities to continue to work closely and exchange data with other authorities, agencies, businesses and the local community to improve air quality.

7.2 Schedule 11 of the 1995 Act requires local authorities to consult:

- Scottish Ministers;
- SEPA;
- all neighbouring local authorities;
- any National Park authority within or adjacent to the local authority area;
- other public authorities as appropriate; and
- bodies representing local business interests and other organisations as appropriate.

7.3 For the purposes of the 1995 Act, authorities should consult on their air quality review and assessment reports, AQMA declaration proposals and preparation or revision of an action plan.

Consultation on review and assessment reports

7.4 For progress reports and any more detailed work, local authorities will need to consult the Scottish Ministers and other statutory consultees as listed above. They will not need to consult more widely i.e. there is no need for a full public consultation at this stage, but they should make these assessments available to the public.

Consultation on action plans

7.5 Local authorities must consult on their preparation of an action plan, ideally in both draft and final form. Finalisation of the plan should take account of consultees' comments on the draft. Action plans may operate over long timescales and authorities may only be able to specify broad proposals in the first draft. It is therefore an important principle that they carry out a further consultation if the initial proposals are revised while implementing the plan.

7.6 Consultation on a draft action plan should include:

- details of which pollutants the authority will look at and an indication of where they come from;
- the timescales for implementing each proposed measure; and
- details of other organisations or agencies whose involvement is needed to meet the plan's objectives and what the authority is doing to get their co-operation.

Local authorities should decide the timescale for consultation. The Scottish Government recommends, however, that no consultation exercise should last for fewer than six weeks.

Consultation/liaison across local authority departments

7.7 It is important that there is effective consultation/liaison across local authority departments. Steering groups and committee meetings should have the support of the Chief Executive. This should help to ensure that air quality is dealt with consistently across the authority.

Co-operation between authorities

7.8 Co-operation between authorities has been greatly helped by the local pollution liaison groups. These groups can assist with the exchange of information and ideas in carrying out the LAQM duties.

Consultation with the public/local businesses

7.9 Local authorities need to look for innovative ways of engaging with local resident/community groups and local businesses because, if people feel personally involved in air quality issues, they are more likely to be receptive to any proposed actions to improve air quality.

7.10 It is important that local authorities provide information on local air quality in a clear and accessible way. Authorities are ideally placed to tell people about the causes and effects of air pollution. Many local authorities have experience of health education and they should consider exploring links with health boards and NHS bodies. They should use their local contacts e.g. websites, local newspapers, radio, libraries to reach as wide an audience as possible. Some local authorities have already developed local air quality information strategies and make review and assessment reports publicly available.

7.11 Day to day information on local air pollution levels and advice to the public when pollution is high can be important catalysts for changes in behaviour. The terminology used to describe levels of air pollution should be consistent to avoid confusion. The Scottish Government advises local authorities to adopt the banding system it uses, i.e. the pollution bands are described against a numerical index as follows: 1-3 (low), 4-6 (moderate), 7-9 (high) and 10 (very high). An explanation of the banding system can be found on the Scottish Air Quality website:
<http://www.scottishairquality.co.uk>

Public access to information

7.12 The 1995 Act also provides for public access to information. As well as the reports on which they are required to consult, local authorities should make available copies of:

- orders designating an AQMA; and

- action plans.

7.13 Nothing in the 1995 Act requires a local authority to make available all the material it collected for its review and assessment of air quality. Local authorities only have to make available a summary report. It is for individual authorities to decide on the scope of these reports and how widely to distribute them. They should consider the most appropriate targeting of information and how best to make it easily accessible and widely available. In any event, information which the local authority holds on air quality is subject to the Environmental Information (Scotland) Regulations 2004 (SSI 520). These Regulations oblige local authorities to deal with requests for environmental information.

8: Local and regional air quality strategies

8.1 Local authorities do not have a statutory obligation to prepare or adopt a local air quality strategy. The Scottish Government, however, recommends that all authorities, particularly those that have not had to designate AQMAs but have areas close to the exceedence levels, should consider drawing up such a strategy. The Government considers it important that all authorities commit themselves to ensuring that air pollution remains below objective levels. Even local authorities with very good air quality may wish to develop local air quality strategies in order to maintain these standards.

Why adopt a local air quality strategy?

8.2 A local air quality strategy can:

- emphasise the local authority's role in delivering cleaner air and, by setting an example, can encourage others to take action;
- raise the profile of air quality within a local authority, thus keeping key issues high on the agenda of elected members;
- help authorities handle air quality in a corporate and multi-disciplinary way - allowing authorities to take air quality considerations properly into account in all their wider policy areas, such as land use planning, transport planning, energy efficiency, waste management, economic development, and regeneration;
- raise the profile of air quality in the local community;
- help to encourage co-ordination between air quality and climate change policies;
- be linked to other local initiatives such as community plans;
- help authorities build up partnerships with local businesses, industry and the community;
- encourage people to do their bit to improve local air quality;
- lead to greater co-operation with neighbouring authorities and strengthen the role of regional groupings; and
- support and feed into any action plans that might be needed in future.

How to develop a local air quality strategy

8.3 In developing a local air quality strategy, local authorities will wish to follow the same principles for developing an air quality action plan. Local authorities should therefore read this chapter in conjunction with chapter 6 on action plans.

Setting up a steering group

8.4 As with developing an action plan, the Scottish Government recommends that local authorities should set up a steering group to take forward the process of drawing up a local air quality strategy. This group should consist of officers from relevant council departments and may include officers from other local authorities (where a regional air quality strategy is being drawn up).

Co-operation and liaison within an authority

8.5 The Scottish Government recommends that local authorities should take a multidisciplinary approach to LAQM. There should be effective links between all the relevant local authority departments, in particular those covering:

- Environmental health;
- Land use planning;
- Transport planning;
- Energy;
- Waste management;
- Economic development;
- Regeneration; and
- Town centre management.

8.6 The environmental health department should co-ordinate liaison with other relevant departments and set up meetings to discuss how air quality considerations can be taken into account in other policy areas, including development plans, local transport plans, economic development plans and strategies, and sustainable development strategies.

Local authority's own contributions to improving air quality

8.7 Many local authorities already run at least some of their vehicles or those of their contractors on alternative fuels and can use vehicle purchase or hire agreements to specify emissions standards. Authorities can also lead the way in developing travel plans for their staff by encouraging them to use public transport, where possible, instead of travelling to work by car.

8.8 Local authorities can use green purchasing policies to specify the use of locally sourced products, thereby reducing transport requirements. They can also increase their energy efficiency by reducing emissions from large boiler plants in their buildings and set environmental conditions in their service contracts with outside contractors.

8.9 The Scottish Government is keen that local authorities should continue to act as a catalyst in this way and to communicate their commitment to delivering cleaner air in their local air quality strategy. This will be the basis for encouraging other organisations and businesses in the area to develop their own strategies to bring about improvements in air quality.

Co-operation between local authorities

8.10 Even where the effects of air pollution are localised, the solution may need to operate at a larger scale and therefore involve more than one local authority. Where strategic planning or traffic management is the answer to an air quality problem, different departments of local authorities will need to co-operate. There will also be cases where the activities of one local authority (for example, in traffic management or land-use planning) may have air quality implications not just for neighbouring authorities but also for others situated further away.

8.11 It is therefore important when developing a local air quality strategy to discuss it with neighbouring authorities or those within any regional grouping. Other authorities in the region may have already drawn up an air quality strategy and it can be useful to share experience. This level of co-operation can help strengthen links between authorities in regional groupings. The Scottish Government recommends that local authorities should look to support from neighbouring authorities in drawing up their local air quality strategies and should consider developing joint air quality strategies, where appropriate.

Co-operation with outside bodies

8.12 Local air quality problems cannot be solved by local authority action alone. The success of a local strategy depends upon co-operation with other sectors. Local authorities may wish to include in their strategies a framework for co-operation with:

- the Scottish Government;
- SEPA;
- Scottish Natural Heritage;
- Transport Scotland;
- Regional transport partnerships;
- Health boards and NHS bodies;
- businesses and other interested parties; and
- community representatives.

Format of a local air quality strategy

8.13 The format of a local air quality strategy is entirely up to the local authority. Air quality strategies can address a range of pollutants and not just those where exceedences are forecast. Local authorities could include other pollutants such as ozone or look to tackle pollutants prominent in their area, such as emissions from particular industrial or domestic sources. Authorities could also consider taking a broader issues based approach rather than focusing on individual pollutants incorporating the principles of wider environmental sustainability.

8.14 The air quality strategy should start by setting out the problems associated with air pollution and its impact on human health, ecosystems, vegetation and buildings etc., in order to focus people's minds on what the risks are and why action needs to be taken. It might also be useful to explain what work the authority has been doing as part of its air quality review and assessment.

8.15 The local authority should set out its intentions in the strategy or what action needs to be taken to reduce levels of air pollution, such as increased use of public transport, implementation of information campaigns to bring about changes in behaviour etc. It might also be useful to explain how the actions will be carried out and if possible include any timescales. It is important to explain what actions the local authority is already undertaking itself, such as using alternatively fuelled vehicles in its own fleet, or reducing emissions from its own boilers.

8.16 The strategy should show how local authorities will take air quality into account in wider policy areas, for example land use planning and traffic management. It should also be linked to other plans, such as the regional and local transport strategy, development plan and, where the authority has declared an AQMA, the strategy could feed into the air quality action plan. Authorities should also indicate within the strategy what co-operation they need or have secured from other sources, such as neighbouring authorities and outside organisations – SEPA, local businesses and community groups.

9: Relationships between Local Air Quality Management and EU air quality legislation and policy

Local Air Quality Management and Directive 2008/50/EC – key differences

9.1 Although LAQM and Directive 2008/50/EC¹⁵ on ambient air quality have the shared aim of improving human and environmental health through reducing air pollution, the rationale and approach employed in each system have some quite important differences.

Definitions

9.2 Under LAQM the standards are defined as objectives, whereas in the Directive they are limit or target values. This different wording reflects the differing legal status of the standards, as outlined in the following paragraph.

Legal responsibility

9.3 As explained in chapter 1 of this guidance, under the Environment Act 1995 and associated regulations, local authorities are required to review and assess air quality in their areas against objectives for several air pollutants of particular concern for human health. Authorities are not legally obliged to achieve the objectives by the required dates, but to demonstrate they are doing all that is reasonably possible to work towards them. This is because some pollution sources are outwith direct local authority control, for example Transport Scotland controlled trunk roads and SEPA regulated processes. However authorities are expected to liaise with these and other relevant organisations when developing action plan measures.

9.4 In contrast, the Scottish Government and the other UK administrations are responsible for securing compliance with the Directive limit values. In this case, the requirements are legally binding and EU Member States are potentially liable to infraction if any limit value is not achieved by the required date and a time extension has not been agreed. Local authorities have no legal responsibility in relation to the Directive, even though the work undertaken by authorities through LAQM makes an important contribution to actions being implemented by central government.

Attainment dates

9.5 In most cases, the attainment dates are identical for LAQM objectives and Directive limit values. There are some differences, most notably for the Scottish PM10 objectives, however as these attainment dates are now passed the differences are largely academic.

Scope of assessment

9.6 Under LAQM, assessment is required in locations where members of the public are regularly present and there is exposure to the pollutant in question over the timescale for which the objective is defined. The Directive requirements are

¹⁵ <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32008L0050&from=EN>

slightly different and assessment is undertaken anywhere the public has access, irrespective of whether this is regular access. The exceptions are workplaces which are covered by health and safety legislation, locations with no fixed habitation, and road carriageways and central reservations (unless there is public access to the central reservation).

Assessment methodology

9.7 Monitoring requirements are defined more precisely in the Directive than for the purposes of LAQM. The Directive requires Scotland to be divided into zones and agglomerations based on population (an agglomeration is defined as a zone if it is a conurbation of greater than 250,000 inhabitants). Within each zone/agglomeration there is a minimum number of sampling points for each pollutant and also a provision for reducing these by up to 50% if modelling can be shown to provide equivalent data of a sufficient quality. In addition, there are detailed criteria for sampling locations, including that traffic related sites should be representative of air quality for a street segment no less than 100m in length. Finally, there is a requirement to use reference monitoring equipment as specified in the Directive, or alternatively equipment that can be shown to be equivalent to the reference methods.

9.8 For LAQM monitoring, although detailed requirements are set out in the technical guidance TG (16), there is more flexibility as to where monitoring sites can be located and greater scope for tailoring monitoring to specific local circumstances. Also, there is no legally defined requirement to use reference or equivalence methods although this is strongly encouraged and is the Scottish Government's preferred approach.

9.9 These differences in assessment methodology are why it is difficult to directly compare LAQM review and assessment with work undertaken by central government to assess compliance with the Directive. It is also the reason why it is not always possible to incorporate local authority monitoring sites into the AURN. The two systems are set up for different purposes, with LAQM by definition focusing much more on the local situation. The apparent anomaly between the large number of AQMAs which remain in Scotland and the conclusion that we are almost fully compliant with the Directive requirements is simply a reflection of these differences. Using LAQM data to supplement UK Government submissions to the European Commission also requires careful consideration due to the very specific requirements of the Directive and explains why, historically, this has only been done in a very limited way.

	LAQM	Directive 2008/50/EC
Responsibility	Local authorities	Central government
Legal status	Achievement of objectives not legally binding, but review and assessment process is mandatory	Achievement of limit values legally binding
Scope	Relevant public exposure	Anywhere with public access
Methodology	Reference or equivalence monitors recommended	Reference or equivalence monitors mandatory
Monitor number	Undefined, depends on local circumstances	Defined number of monitors, or modelling equivalent for up

		to 50% of monitoring points, based on population
Monitor locations	Defined in guidance	Defined in legislation, supplemented by guidance
Scale	Designed to assess local circumstances	Designed to give a broad overview

EU Clean Air policy package

9.10 At the conclusion of the 2013 EU Year of Air, during which a comprehensive review of legislation and policy was undertaken, the European Commission announced details of its clean air policy package¹⁶. Although implementation of this package falls largely on central government, there may be some implications for and input requirements from local authorities. Authorities should therefore familiarise themselves with the details of the package, which are summarised below.

9.11 Directive 2008/50/EC on ambient air quality and clean air for Europe will not be revised in the short term, therefore there will be no changes to current limit and target values. Instead, the focus is on ensuring that full compliance with the Directive is secured as soon as possible. A new Clean Air Programme for Europe contains measures to ensure that existing targets are met in the short term. The package also includes support measures to help cut air pollution, with a focus on improving air quality in cities, supporting research and innovation, and promoting international co-operation.

9.12 The National Emission Ceilings Directive will be updated to incorporate the new targets agreed under the revised Gothenburg Protocol to the Convention on Long Range Transboundary Air Pollution. Increasingly stringent emissions ceilings will also be proposed for 2025 and 2030. Finally, there is a new Directive to control emissions from small and medium sized combustion plants between 1 and 50MW.

¹⁶ http://europa.eu/rapid/press-release_IP-13-1274_en.htm

10: Air quality and transport

Background

10.1 Cleaner Air for Scotland (CAFS) sets out the policy framework for air quality and transport, and describes the key responsibilities of central and local government. The guidance in this chapter supplements the information contained in CAFS, and the Scottish Government expects local authorities to ensure that both documents are taken into account by all relevant departments.

10.2 Road transport is a major source of local air pollution, particularly in our towns and cities. In urban areas, road traffic accounts for a major part of the total emissions of nitrogen dioxide and particles – the objectives of most concern for human health. This has been borne out by the fact that, with one exception (the Grangemouth industrial complex, declared on the basis of sulphur dioxide), all the AQMAs currently in place in Scotland are based on nitrogen dioxide and/or particles concentrations related to transport activities.

10.3 In 2014 there were around 2.8 million road vehicles licensed in Scotland, of which 84% were cars. In the same year, 69% of Scottish households had access to a car, compared with 57% in 1990¹⁷. This steady increase in car ownership, together with the car's flexibility and convenience, has enabled more people to travel further, with a corresponding increase in vehicle usage. Emissions from buses, taxis and goods vehicles can also make significant contributions to poor local air quality in some urban areas.

10.4 Cutting road transport emissions is therefore a key part of LAQM. Local authority officers dealing with air quality duties should liaise regularly with transport and planning colleagues, and with Transport Scotland where the pollution arises from trunk roads and motorways.

Scottish and UK context

10.5 The policy framework at both Scottish and UK level has already led to significant improvements in local air quality and will continue to do so in the future. Key transport initiatives include:-

- The development of integrated transport strategies that support sustainable development;
- Regulatory measures and standards to reduce vehicle emissions and improve fuels;
- Tax-based measures that encourage people to supply and use cleaner fuels and also encourage them to buy more environmentally-friendly vehicles; and
- Research and development to reduce emissions from HDVs (especially public transport).

¹⁷ <http://www.transportscotland.gov.uk/statistics/j389989-00.htm>

Regulatory measures to cut vehicle emissions

10.6 Overall emissions of key air pollutants from road transport have fallen by about 50% over the last 20 years, despite increases in traffic, and are expected to reduce further over the next decade. This is mainly a result of progressively tighter vehicle emission and fuel standards agreed at European level and set in UK regulations - the Euro standards. Euro standards control the emissions level of vehicles when new. Over time the Euro standards have become progressively tougher and apply to new vehicles manufactured on or after specific dates¹⁸. At the same time there is now a substantial body of evidence suggesting that real world emissions are not decreasing as rapidly as predicted for some vehicle classes.

10.7 There are systems in place to ensure compliance with vehicle emission standards. Through its Type Approval work, the Vehicle Certification Agency ensures that all new models of cars coming onto our roads meet EU emissions standards. Almost all types of vehicles must go through an emission check as part of the annual MOT testing procedures. In service testing is one of several measures designed to reduce pollution from vehicle emissions. The MOT tests are kept under review in response to developments in vehicle technology to ensure an appropriate framework.

10.8 The Road Traffic (Vehicle Emissions) (Fixed Penalty) (Scotland) Regulations 2003 allow local authorities to adopt powers for undertaking roadside vehicle emissions testing. These powers are optional, but provide authorities with a useful additional tool for addressing air quality issues in their areas. Currently 13 local authorities are making use of the powers, supported by Scottish Government funding. Guidance and further information is available on the Government's website¹⁹.

National Transport Strategy

10.9 Scotland's National Transport Strategy²⁰ was originally published in 2006 and sets out the Government's long term vision for transport, together with objectives, priorities and plans. It focuses on three strategic outcomes which will set the context for transport policy making over the next 20 years:

- improve journey times and connections between Scotland's cities and towns and global markets to tackle congestion and provide access to key markets;
- reduce emissions; and
- improve quality, accessibility and affordability of transport.
-

A refreshed version of the National Transport Strategy was published in 2015²¹.

¹⁸ http://en.wikipedia.org/wiki/European_emission_standards

¹⁹ <http://www.scotland.gov.uk/Publications/2003/04/16984/21398>

²⁰ <http://www.scotland.gov.uk/Topics/Transport/NTS>

²¹ <http://www.transport.gov.scot/strategy/national-transport-strategy>

10.10 The National Transport Strategy is supported by the Strategic Transport Projects Review (STPR)²², published in 2008, which recommends 29 investment priorities for delivery in the next 20 years.

The Transport (Scotland) Act 2001

10.11 The provisions of the Transport (Scotland) Act 2001 are arranged in five Parts:

- *Part I* – Joint Transport Strategies.
- *Part II* – Bus Services.
- *Part III* – Road User Charging.
- *Parts IV and V* – Miscellaneous and Supplementary, containing various measures not related to the other main Parts of the Act, and also the usual supplementary provisions including the territorial extent, and short title of the Act.

The key elements relevant to local authorities' LAQM duties are contained in parts I, II & III of the Act²³.

The Transport (Scotland) Act 2005

10.12 The Transport (Scotland) Act 2005²⁴:

- sets out provisions for Regional Transport Partnerships and Regional Transport Strategies (see paragraph 9.19 for further information);
- enables a national concessionary travel scheme;
- creates new procedures for tackling roadworks;
- transfers to the Scottish Ministers certain rail functions; and
- creates the Office of Scottish Road Works Commissioner.

Transport Scotland

10.13 Transport Scotland²⁵ was established in 2006 as an agency of the Scottish Government. Its key responsibilities are:

- management of the Scottish trunk road and rail networks;
- delivery of major transport infrastructure projects; and
- operation of the national concessionary travel scheme.

Low emission vehicles

10.14 In 2013, Transport Scotland published Switched On Scotland: A Roadmap to Widespread Adoption of Plug-In Vehicles²⁶. The Roadmap sets out a vision for Scotland's towns and cities to be free from the effects of petrol and diesel fuelled vehicles by 2050. It also outlines the roles and responsibilities of all who have a part

²² <http://www.transportscotland.gov.uk/strategic-transport-projects-review>

²³ http://www.opsi.gov.uk/legislation/scotland/acts2001/asp_20010002_en_1

²⁴ http://www.opsi.gov.uk/legislation/scotland/acts2005/asp_20050012_en_1

²⁵ <http://www.transportscotland.gov.uk/>

²⁶

http://www.transportscotland.gov.uk/sites/default/files/documents/rrd_reports/uploaded_reports/j272736/j272736.pdf

to play in this process, and local authorities should have regard to the Roadmap when developing and updating their air quality action plans.

Road Traffic Reduction Act

10.15 The Road Traffic Reduction Act 1997 requires local traffic authorities to review and report on existing and forecast levels of traffic on local roads. This information should be included in Local Transport Strategies.

Emissions from shipping

10.16 Ships release a significant fraction of the total emissions of man-made air pollutants. These include NO_x, sulphur oxides (SO_x), particulate matter (PM), and volatile organic compounds (VOC), which all affect local air quality. Emissions from shipping can be an issue for local authorities with major ports. Also, as emissions from other sources decline, global emissions from shipping are becoming more and more significant.

10.17 The global nature of shipping makes the International Maritime Organisation (IMO) a natural forum through which to agree a global policy response to air pollution from ships. This is covered by Annex VI of the Convention on Marine Pollution (MARPOL), which was revised in 2008.

10.18 Marine fuels used within the EU are currently regulated by the Sulphur Content of Marine Fuels Directive 2012/33/EC²⁷ which amends the Sulphur Content of Liquid Fuels Directive 99/32/EC. This Directive implements the revised MARPOL Annex VI within the EU, as well as containing additional measures to control the sulphur content of marine fuels used by ships in EU waters.

Local transport measures

10.19 Traffic management and other local transport schemes are likely to be key elements in any air quality action plan or local air quality strategy. This section summarises some of the measures available to local authorities.

Local roads

10.20 Local authorities, in their role as highways authorities, have a range of powers, including compulsory purchase of land for road building and restrictions on and the stopping up of roads.

10.21 Funding for local roads, both capital and revenue, is provided through the overall local government finance settlement, under formula arrangements agreed with COSLA. This funding is not ring fenced and it is for each local authority to decide the priorities for local roads and bridges as part of overall spending plans.

²⁷ <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32012L0033&from=EN>

Regional Transport Partnerships and Strategies

10.22 Regional Transport Partnerships (RTPs)²⁸ were established in 2005 to strengthen the planning and delivery of regional transport in Scotland so that it better serves the needs of people and business. The main task of each RTP is to prepare a Regional Transport Strategy. Some RTPs are also responsible for the delivery of transport services, and all RTPs will be able to seek additional powers if required to deliver their strategies.

Local Transport Strategies

10.23 Local Transport Strategies are significant for LAQM as they set out local authorities' plans and priorities for the development of an integrated transport policy within their area of responsibility. They cover all forms of local authority provided transport and set out how authorities plan to tackle the associated problems, including those related to poor air quality. Among other things, Strategies may contain any proposals to utilise the road user charging powers, promote Green Transport Plans, and provide the context for Quality Bus Partnerships and walking and cycling strategies. The Scottish Government considers it important that air quality action plans and local air quality strategies are consistent with, and where appropriate linked to, Local Transport Strategies.

10.24 The Scottish Government and Transport Scotland work closely with local authorities to ensure that Local Transport Strategies are properly co-ordinated with Regional Transport Strategies.

Scottish Government Emissions Reduction Register

10.25 The Scottish Government, in partnership with the Energy Saving Trust, provides funding for local authorities to retrofit vehicles in their fleets with emissions reducing equipment²⁹, as part of the air quality action plan grant fund. The Energy Saving Trust has developed a register of approved suppliers and equipment which are available for potential funding under the scheme.

Road user charging

10.26 The Transport (Scotland) Act 2001 introduced discretionary powers for local authorities to bring in road user charging schemes. All the revenue raised by any charging schemes can be recycled locally. These powers therefore create a new, additional source of income to fund improvements to local transport. Before any schemes can be introduced, local authorities will have to demonstrate that they have improved public transport in advance to ensure that people have good alternatives to car use.

Traffic regulation

²⁸ <http://www.transportscotland.gov.uk/public-transport/regional-transport-partnerships>

²⁹ Further details can be found at:

http://www.energysavingtrust.org.uk/scotland/scotland/local_authorities_housing_building_professionals/the_scottish_government_emissions_reduction_register

10.27 Sections 1, 6 and 9 of the Road Traffic Regulation Act 1984 (RTRA) give traffic authorities extensive powers to make traffic regulation orders (TROs). These can prohibit, restrict or regulate traffic or particular types of vehicle. They may apply to part of a road, a single road, or a number of roads. They may be in force all the time or only for specified periods. Traffic authorities may exempt some classes of vehicle or permit holders.

10.28 Paragraph 36 of Schedule 22 to the 1995 Act extended powers for making TROs to include pursuit of the air quality objectives outlined in the Air Quality Strategy. TROs made on air quality grounds cannot normally restrict access to premises for more than eight hours in any 24. Schedule 22 also ensures that authorities must take explicit account of the Air Quality Strategy when using their traffic regulatory powers.

Low Emission Zones

10.29 A Low Emission Zone (LEZ) allows only vehicles meeting minimum emissions standards to enter pollution hotspots in towns and cities. The main purpose of an LEZ is to improve air quality, though it may deliver additional congestion and quality of life benefits by reducing traffic noise and overall traffic volume. No LEZs have been introduced in Scotland to date. CAFS sets out initial proposals for a national low emission framework in Scotland and local authorities should refer to this for more detailed information.

Home Zones

10.30 A Home Zone is a residential area that seeks to meet the needs of all road users equally, where pedestrians, cyclists and vehicles share the road space. Section 74 of the Transport (Scotland) Act 2001 enables local authorities to designate roads for which they are the transport authority as Home Zones. Regulations came into force in 2002 setting out the procedure to be followed in the designation process and also published guidance³⁰.

Access restriction

10.31 Local authorities can use the Roads (Traffic Calming) (Scotland) Regulations 1994 to create narrow gateways to urban centres. This technique may discourage car access to particular areas, as long as there are suitable alternative routes for through traffic. But if traffic must queue at the gateway, there could be an increase in local emissions. Authorities could use the same technique at the entrance to bypassed communities to discourage drivers from taking a short cut. Authorities may not, however, use traffic calming techniques by themselves to prevent access by any class of vehicle - this requires a TRO.

Traffic calming

10.32 The Roads (Traffic Calming) (Scotland) Regulations 1994 and the Road Humps (Scotland) Regulations 1998 allow authorities to introduce a wide range of

³⁰ <http://www.scotland.gov.uk/Publications/2002/08/15174/9427>

physical measures to slow traffic. Traffic calming schemes not only have the direct effect of slowing vehicles, but also the indirect effect of deterring traffic from using residential roads as a short cut. It is important that traffic authorities design schemes to encourage a smooth driving style that avoids repeated acceleration and deceleration. The spacing between each calming feature, whether vertical or horizontal deflections, will greatly influence driving style. Spacing of between 40m and 90m should provide the smoothest flow.

Reallocation of road space

10.33 Local authorities may also make TROs to introduce bus or cycle lanes. Conventional with-flow bus lanes, with setbacks at signal-controlled junctions, will normally have less of an effect on junction capacity than contra-flow lanes. Reallocating space to buses and cycles can make these forms of transport more attractive. Authorities can also create advisory cycle lanes (which would not require TROs), but these might not be as effective. Authorities must be careful not to increase congestion and pollution when reducing capacity, particularly during the short term while travel patterns adjust.

High occupancy vehicle lanes

10.34 A significant proportion of vehicles contains only one occupant. This is particularly so during peak periods. High occupancy vehicle (HOV) lanes are, in principle, a means of using the road network more efficiently and encouraging car sharing. Traffic authorities can make a TRO to authorise them. They can introduce HOV lanes by creating an additional lane or by converting an existing one. HOV lanes might, in some circumstances, be able to share bus lanes. There has been no use of HOV lanes to date in Scotland, and little experience elsewhere in the UK, but they may be an appropriate measure to reduce traffic levels, with a consequent reduction in emissions, on some road networks. Effective enforcement of HOV lanes also requires careful consideration.

Pedestrian/vehicle restricted areas

10.35 A local authority may wish to restrict access to a road or area to some or all vehicles at different times of the day. The Environment Act 1995 added 'improving air quality' as a reason for making TROs under the Road Traffic Regulation Act 1984. Where there are objections to an order which would have the effect of restricting or prohibiting access outside peak hours, the local authority would first need to hold a public enquiry. The reason for restricting vehicle access may be to create a pedestrianised area. Typically these allow vehicular access for all or some parts of the day. In any case, authorities will need to ensure that delivery and service vehicles have suitable access.

10.36 Restricting access to town centres has been shown to improve the local environment. There are plenty of examples of pedestrianisation schemes that have maintained or improved local economic activity. But this does not happen automatically - people must still be able to get to the area by other means. These could include:

- good public transport, perhaps with park and ride;
- facilities for cyclists and pedestrians;
- peripheral car parking;
- access for people with limited mobility; and
- access for taxis, where appropriate.

Parking controls

10.37 A big influence on whether people drive is whether they can park. The Road Traffic Regulation Act permits local authorities to determine where motorists can park and how much it will cost them. They may also restrict parking in other ways. Residents' parking schemes, for example, can be a good way of encouraging non-residents to find other ways of travelling into town centres. Authorities can also use the planning process to regulate the amount of private non-residential parking (PNR) associated with a new development.

10.38 Parking restrictions need the right level of enforcement. Effective enforcement of parking restrictions allows more efficient use of existing parking provision and can improve parking flow as drivers have to spend less time finding a parking space. The Road Traffic Act 1991 provided for the decriminalisation of most non-endorsable parking offences. Decriminalisation transfers responsibility for enforcing most parking restrictions from traffic wardens to parking attendants employed by the local authority and funded out of revenue received from penalty charges and from paid parking. This gives local authorities greater control over enforcement.

Traffic control systems

10.39 Before doing anything to improve traffic flow, highway authorities should think carefully about what to do with the road capacity they will release. Authorities should consider re-distributing it in favour of buses, cyclists and pedestrians. Where signals control junctions, a SCOOT³¹ traffic control system, which responds automatically to changing conditions, will give better traffic flow than an older Urban Traffic Control system and a much better flow than uncoordinated signals.

10.40 SCOOT systems can hold queues outside an area when congestion exceeds a pre-set threshold. Overall journey times might well remain similar, but drivers would queue for longer while approaching the area, then make faster progress through it. This method may be appropriate if the queue is where relatively few people are exposed to any increased emissions.

10.41 When a SCOOT system detects buses, either through an accurate automatic vehicle location system, or by transponders and special loops, it can give them priority. This cuts delay to buses and makes bus journey times more predictable, although it does not help as much as dedicated bus lanes.

10.42 Where coordinated traffic signal operation is not required, traffic signals will operate in an isolated control mode. Isolated operation can provide quicker

³¹ the SCOOT ("split cycle and offset optimisation technique") urban traffic control system.

responses to rapidly changing traffic conditions and reduce unnecessary delays, particularly during quiet periods. A SCOOT or Urban Traffic Control system may revert to isolated operation at night. If the signals are to operate efficiently, it is important that the relevant vehicle detectors are installed and working correctly. Traffic signal controllers incorporating the MOVA (Microprocessor Optimised Vehicle Actuation) control strategy can improve flows and reduce delays at traffic signal controlled junctions.

10.43 Other traffic management measures may also help improve traffic flow at junctions, such as TROs to ban right turns, with traffic signs reinforced in some cases by physical measures. Introducing parking restrictions can reduce exit blocking at junctions.

Speed limits

10.44 Local authorities can set speed limits by making orders under the Road Traffic Reduction Act. Reducing maximum speeds is likely to do more to improve flow and capacity on roads outside towns and cities than in urban areas, but it may still have some benefit.

10.45 Some authorities have piloted experimental variable mandatory speed limits on road safety grounds. For instance, some authorities have cut speed limits outside schools from 30mph to 20mph when children are arriving or departing. These very low speeds are unlikely to reduce emissions significantly, however, and may actually increase emissions of some pollutants. However, traffic calmed 20mph zones have proved to be very effective in reducing road traffic casualties. Guidance for local authorities on setting appropriate general speed limits was issued in 2006³²

Rail

10.46 Rail-based park and ride depends on there being enough secure off-street parking at stations. Local authorities also have to consider the capacity of the road network around the station. A further issue is that informal rail-based park and ride can lead to conflict between commuters and residents and increased illegal or inconsiderate parking. Authorities may need to boost enforcement efforts to deal with these side effects. Co-operation between neighbouring authorities is important, as park and ride schemes often originate in one local authority area and terminate in another.

Buses

10.47 Buses provide the sustainable mass public transport necessary to support economic growth, accessibility and reduce emissions, meeting the Government's strategic objectives of a wealthier, fairer and greener Scotland. There was a total of 420m journeys made on local bus services in 2014-15. The Bus Action Plan sets out a vision for Scotland to develop a comprehensive bus network where sustainable services are delivered to a high quality. Since the Plan was issued in 2006, a series

³² <http://www.scotland.gov.uk/Publications/2006/08/14134225/0>

of bus policy guidance documents³³ has been produced, intended to support improvements in bus services.

10.48 The use of measures such as Statutory Quality Partnerships is being actively taken forward by some local authorities, which can play an important role in improving air quality. Local authorities can also use the planning and traffic management processes to help to increase bus speeds reducing the amount of emissions through the use of increased bus priority.

Scottish Green Bus Fund

10.49 The Scottish Green Bus Fund³⁴ was launched in 2010 and has provided funding for 209 low emission buses. In 2014/15, £3.7m was awarded to nine operators for 83 vehicles. Transport Scotland is working with local authorities and operators to review and improve the scheme, taking account of technological and market developments since 2010.

Scottish Traffic Commissioner

10.50 The post of Traffic Commissioner is a cross border public authority with both devolved and reserved responsibilities. The Traffic Commissioner enforces good practice from bus service operators, ensuring that services are introduced, varied or cancelled in an orderly fashion. The Traffic Commissioner's responsibilities include the licensing of bus operators and registration of local bus services. Further information can be found on the Traffic Commissioners' website³⁵.

10.51 In January 2008, the Public Service Vehicles (Traffic Regulation Conditions) Amendment (Scotland) Regulations came into force. An amendment to the Transport Act 1985 by the Transport (Scotland) Act 2001 allows any local authority to ask the Traffic Commissioner to attach a Traffic Regulation Condition (TRC) to an operator's Public Service Vehicle licence for the purposes of reducing or limiting air pollution. There is a power in the 1985 Act to add, by regulations, new matters that can be covered by TRCs. The 2008 regulations allow the Traffic Commissioner to set TRCs regulating emissions from buses.

10.52 The 2008 regulations have been introduced primarily for addressing poor air quality. In Scotland, all but one of the AQMAs declared to date has been based on transport emissions. In many areas, buses can be a significant contribution to these emissions. A TRC covering emissions standards for buses therefore provides local authorities with an additional measure to be considered as part of an air quality action plan. However, any application made by a local authority to have a TRC imposed must satisfy the Traffic Commissioner that there is a compelling case for doing so.

10.53 The Traffic Commissioner would need to weigh any potential costs, such as a reduced service for passengers if services are withdrawn or rerouted as a result of a TRC being imposed, against the environmental benefits of improved air quality and

³³ <http://www.transportscotland.gov.uk/public-transport/bus/bus-policy-and-guidance>

³⁴ <http://www.transportscotland.gov.uk/public-transport/scottish-green-bus-fund>

³⁵ <https://www.gov.uk/government/organisations/traffic-commissioners>

reduced emissions. A transport authority or bus company with services that are, or will be, operated in the area affected by a TRC can ask the Traffic Commissioner to hold an enquiry.

10.54 The 2008 regulations do not specify how bus emissions should be regulated, but the most straightforward method would be to specify the minimum Euro standard that vehicles affected by the TRC would have to meet. The Scottish Government has produced guidance for local authorities intending to submit an application to the Traffic Commissioner³⁶.

Park and ride

10.55 Local authorities need to design park and ride schemes carefully and should see them as just one measure in an integrated transport policy. Without complementary measures such as reductions in town centre parking or pedestrianisation, park and ride may not significantly affect town centre traffic levels. Park and ride with a dedicated bus service may result in fewer cars on the urban network, but more buses. This may increase overall emissions in town centres, especially if the park and ride buses are older models. Overall emissions may also increase if older, higher emitting buses are used on park and ride routes. Park and ride schemes will generally be most successful where:

- they are some distance from the town centre, ideally where radial and orbital routes intersect;
- the town centre is served by a number of high quality sites on the outskirts, with lighting, staff, information for users and CCTV; and
- bus priority measures complement park and ride services, while cars are restricted in the town centre.

HGVs/Freight

10.56 HGVs are required to meet Euro standards and their emissions are regularly tested. In many areas, HGVs can account for a high percentage of total road transport emissions and authorities may wish to consider measures such as freight quality partnerships to tackle this. The Scottish Government actively encourages the transfer of freight from road to rail and water. Further information on freight can be found in Cleaner Air for Scotland.

Airports

10.57 Airports operators are responsible for setting up Airport Transport Forums (ATFs), the objective of which is to improve public transport access to airports. They are also responsible for preparing airport surface access strategies (ASAS), which feed into Local Transport Strategies. ASAS should include challenging short and long term targets for increasing the proportion of journeys made to airports by public transport, strategies to achieve these targets and system to oversee implementation

³⁶ <http://www.gov.scot/Topics/Environment/waste-and-pollution/Pollution-1/16215/7608>

of the strategy. ATFs should include representatives from local authorities, transport operators, local people and other interested parties.

Walking

10.58 Walking is an ideal activity for both health and transport purposes. The National Walking Strategy³⁷ was published in 2014 and outlines the Scottish Government's vision of a Scotland where everyone benefits from walking.

Cycling

10.59 The Scottish Government is keen to increase cycling levels and in 2010 published the Cycling Action Plan for Scotland³⁸. Amongst a series of actions, commitments and outcomes, the Plan encourages local authorities to develop cycling strategies as part of their Local Transport Strategies, and to link these with education and health improvement initiatives. It also provides support to local authorities for cycling projects through dedicated allocations for cycling, walking and safer streets projects. Funding for the National Cycle Network in Scotland is provided through sustainable transport charity Sustrans³⁹ and there is also provision of core funding to Cycling Scotland⁴⁰.

Safer Routes to School

10.60 The Scottish Government has made available to local authorities the Cycling, Walking and Safer Streets allocation to help encourage more children to cycle, walk or take public transport to school instead of private car. The Government has also provided funding for 20mph zones around primary schools and related safety projects, School Travel Coordinator places in all local authorities and the Sustrans Safe Routes to School team. Some local authorities have successfully introduced parking restrictions on streets in the vicinity of schools at the start and end of the school day.

³⁷ <http://www.gov.scot/Publications/2014/06/5743>

³⁸ <http://www.gov.scot/resource/doc/316212/0100657.pdf>

³⁹ <http://www.sustrans.org.uk/scotland>

⁴⁰ www.cyclingscotland.org

11: Air quality and planning

Background

11.1 The land use planning system is integral to improving air quality. Local authorities need to understand the links between air quality and land use planning policies if the planning system is to contribute to improving air quality. This guidance should be read in conjunction with Scottish Planning Policy (SPP) and Planning Advice Note (PAN) 51: *Planning, Environmental Protection and Regulation*. PAN 51 advises on the policies and practices that should be adopted by planning authorities and others involved in planning new developments and redevelopments.

11.2 The Scottish Government expects local authorities to ensure that this guidance, the placemaking sections and actions in CAFS and the advice in SPP and PAN 51 and the letter sent by the Chief Planner to all authorities in 2004⁴¹ are taken into account by relevant departments. The guidance is designed to help planning departments within local authorities to carry out their functions and may be material in preparing development plans and in determining planning applications. It will also help businesses, SEPA and the public, and anyone else involved in the planning process.

Modernising the planning system

11.3 Scotland's planning system has undergone its most significant modernisation in over 60 years. The National Planning Framework (NPF)⁴² provides the context for development planning in Scotland and provides a framework for the spatial development of Scotland as a whole. It sets out the Government's development priorities over the next 20-30 years.

The land use planning context

11.4 Local authorities should integrate air quality considerations within the planning process at the earliest possible stage. To facilitate this they should consider developing supplementary planning guidance or protocols. Although the land use planning system does not offer any quick-fix solutions to areas of poor air quality, it can do much to improve local air quality in the longer term, as well as ensuring in the short term that existing air quality does not deteriorate.

11.5 In addition to PAN 51, planning policies relevant to local authorities' air quality responsibilities are outlined in Scottish Planning Policy (SPP)⁴³. The SPP sets out the Government's policies on land use planning and explains how the planning system can help meet the Scottish Ministers' priorities for operation of the planning system, and land use and development.

⁴¹ <http://www.scotland.gov.uk/Publications/2004/03/19036/34118>

⁴² <http://www.gov.scot/Topics/Built-Environment/planning/National-Planning-Framework>

⁴³ <http://www.scotland.gov.uk/Publications/2014/06/5823>

11.6 Planning authorities should also be aware of the guidance produced by Environmental Protection UK, *Development Control: Planning for Air Quality*. The guidance was updated in 2015⁴⁴.

Planning and pollution control

11.7 PAN 51 explains the relationship between the land use planning and pollution control systems. The systems are separate but complementary. Close co-ordination between planning authorities and pollution control regulators helps to minimise unnecessary duplication of effort.

11.8 If a proposed emission source does not require a pollution control permit (e.g. if the source is not regulated under Integrated Pollution Prevention and Control (IPPC), or if only some of its emissions are regulated under the Clean Air Act 1993) then planning authorities might, in some circumstances, consider adding conditions to the planning permission to tackle the source's possible effect on local air quality. These conditions might require a scheme of monitoring and mitigation, covering planning concerns to be approved by planning authorities before any development goes ahead. In these cases, planning authorities should work closely with SEPA and/or the environmental health department, as appropriate. Where conditions are not enough to overcome the planning objection to a development proposal, it may be appropriate for the parties to enter into a planning agreement. Section 75 of the Town and Country Planning (Scotland) Act 1997 enables any person interested in land in the area of a planning authority to enter into a planning agreement with the authority. Planning authorities should, however, avoid unnecessary conditions or agreements that duplicate the effects of other controls. Also, conditions that conflict with other controls would be *ultra vires* (beyond the authority's powers) because they are unreasonable.

Development plans

11.9 Some issues that should be considered in the preparation of development plans, and may also be material in the consideration of individual planning applications, are as follows:

- Ensuring that the land use planning system makes an appropriate contribution to the achievement of air quality objectives;
- the need to identify land, or establish criteria, for the location of potentially polluting developments and the availability of alternative sites;
- inclusion of policies on the appropriate location for new development, including reducing the need to travel and promoting public transport;
- the potential effects of particular types of developments on existing and likely future air quality, particularly in and around AQMAs; and
- the requirements of air quality action plans.

⁴⁴ <http://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf>

Environmental impact assessment and the planning process

11.10 Environmental impact assessment (EIA) is an important procedure for ensuring that potentially significant environmental effects (direct and indirect) of a proposed development are fully understood and taken into account before the development is approved or refused. The types of development for which an EIA may be required are given in the Environmental Impact Assessment (Scotland) Regulations 1999.

11.11 The developer of a project which is subject to EIA is required to prepare an environmental statement describing the likely effects of the project. The planning authority must take this into account when considering the planning application. The information to be included in the environmental statement is described in Schedule 4 to the Regulations. It must include a description of the development, potentially significant environmental effects (including air quality before and after the proposed development), mitigating measures envisaged, a description of any alternatives considered by the applicant and the reasons for the final choice, and a non-technical summary.

Air quality as a material consideration

11.12 Air quality is capable of being a material planning consideration, in so far as it affects land use. Whether it actually is will depend upon the facts of the case. Wherever a proposed development is likely to have significant air quality impacts, close co-operation will be essential between planning authorities and those with responsibility for air quality and pollution control. The impact on ambient air quality is likely to be particularly important where:

- the proposed development is inside or adjacent to an AQMA;
- the development could result in designation of a new AQMA; and
- the granting of planning permission would conflict with, or render unworkable, elements of a local authority's air quality action plan.

11.13 This does not mean that all planning applications for developments inside or adjacent to AQMAs should automatically be refused if the development is likely to affect local air quality. Such an approach could sterilise development, particularly where authorities have designated large areas as AQMAs. All such applications will continue to be considered according to their individual merits on the basis of all available information. It may mean, however, that consideration of planning conditions could be required in some circumstances.

11.14 In considering whether a site inside an AQMA is an appropriate location for new housing, planning authorities should consider where within the AQMA likely exceedences have been identified, how great these exceedences are and when it is forecast that the objectives will be met. It should also consider the potential effect on air quality of the new housing development.

Summary

11.15 This guidance is intended to serve only as a brief summary of some of the main ways in which land use planning can help deliver air quality objectives. It builds

on the detailed advice contained in the SPP and PAN 51, but is not intended to serve as a substitute for them.

12: Air quality and biomass

Background

12.1 The Scottish Government encourages the adoption of biomass combustion in order to reduce greenhouse gas emissions, mitigate against climate change effects and improve energy security and rural development. However biomass combustion contributes to emissions of air pollutants that are potentially harmful to human health, especially particulate matter. Concerns have thus been raised at the possible widespread adoption of biomass in urban areas with existing air quality issues.

12.2 The Scottish Government's 2020 Routemap for Renewable Energy in Scotland⁴⁵ sets out the Government's policy on all aspects of renewable energy development, including biomass. The use of biomass to generate energy should not have a detrimental impact on air quality, particularly where this would significantly affect public health or compromise the ability to meet legal obligations under air quality legislation. However, the Scottish Government recognises that renewable heat technologies can benefit air quality in situations where they replace oil and coal heating.

Biomass impact on air quality in urban areas

12.3 A research project was undertaken by the Scottish Government in 2008⁴⁶, which looked at emissions of PM₁₀ and PM_{2.5} from wood burning biomass boilers. Detailed measurements were made of particulate emissions from a range of typical small scale biomass boilers installed and operational in urban areas throughout Scotland. Additionally, the potential cumulative impact of biomass boilers on particles concentrations in urban areas was evaluated, using Dundee and Edinburgh as case studies.

12.4 The study demonstrated that biomass boilers will not be the major source of PM₁₀ or PM_{2.5} in urban areas. However, in areas that are already close to the 2010 PM₁₀ objective, the additional contribution of biomass may lead to exceedences at some urban background locations. Higher concentrations may be seen in areas close to specific sources. The study also shows that large scale uptake of biomass in urban areas could increase the difficulty in achieving the PM_{2.5} exposure reduction target of 15% by 2020 in urban background areas.

Biomass and planning applications

12.5 As part of the study, screening tools have been developed to help local authorities assess the impact of both individual and multiple boiler applications. The revised technical guidance TG (16) contains updated guidance on assessing biomass impacts across the UK. The Scottish screening tools build on this and are designed to take account of the more stringent particles objectives in Scotland.

⁴⁵ <http://www.gov.scot/Resource/0044/00441628.pdf>

⁴⁶ <http://www.scotland.gov.uk/Publications/2008/11/05160512/0>

12.6 The individual installation tool will allow authorities to make informed judgements on the impact of biomass combustion on air quality and the potential need to specify control measures. The combined tool will help to identify high density or industrial areas where single large district or community heating schemes may be more appropriate and have less impact on air quality than numerous individual small boilers. For example, at one large proposed housing development in Edinburgh, the study shows that use of a small number of centralised biomass boilers may contribute 0.5-1.0 $\mu\text{g m}^3$ to PM_{10} and $\text{PM}_{2.5}$ concentrations, compared to 2.0-5.0 $\mu\text{g m}^3$ for individual heating systems.

12.7 When considering planning applications for biomass boilers, local authorities should as a first step apply the new screening tools to assess the possible impact. If this assessment indicates that any individual boiler, or group of boilers in a specific area, has the potential to contribute to an exceedence of the PM_{10} objectives, the local authority should give careful consideration as to whether the application should be approved.

12.8 Whilst determination of a planning application is a matter for the local planning authority, taking all relevant considerations into account, attention is drawn to chapter 11 of this guidance on air quality and planning, and to the letter sent by the Chief Planner to all local authorities in 2004 confirming that air quality is capable of being a material planning consideration. The impact on ambient air quality is likely to be especially important where:

- the proposed development is inside or adjacent to an AQMA;
- the development could result in designation of a new AQMA; and
- the granting of planning permission would conflict with, or render unworkable, elements of a local authority's air quality action plan.

Biomass and air quality policy co-ordination

12.9 In 2012, the then Minister for Environment and Climate Change wrote to the Chief Executive of COSLA setting out the Scottish Government's policy position on air quality and biomass⁴⁷. The information set out in this letter should also be taken into account by local authorities when considering biomass related planning applications. Useful information can also be found in Biomass and Air Quality Guidance for Scottish Local Authorities published by Environmental Protection UK in 2010⁴⁸, and in a guidance note published by the Scottish Government and Forestry Commission Scotland in 2015⁴⁹.

12.10 Use of abatement technology can reduce PM_{10} and $\text{PM}_{2.5}$ emissions and, depending on the nature of the development and the type of boiler and abatement equipment, may help to ensure that there is no significant contribution to overall particles concentrations from a development or group of developments. Most larger new automatic boilers are fitted with some kind of flue gas cleaning device. Smaller boilers are generally not fitted with such devices and thus appropriate equipment will

⁴⁷ <http://www.scottishairquality.co.uk/assets/documents/news/letter.pdf>

⁴⁸ http://www.iaqm.co.uk/text/guidance/epuk/biomass_guidance_scotland.pdf

⁴⁹ <http://www.gov.scot/Resource/0049/00490442.pdf>

need to be identified. Ideally, any abatement technology chosen should have undergone some form of independent and generally recognised testing to ensure that it will have the desired effect.

12.11 Emissions can also be reduced by controlling stack heights. The Scottish Government's study suggests that a stack height sufficient to limit the individual ground level contributions to annual mean concentrations from each boiler to less than $1 \mu\text{g m}^3$ is likely in most cases to protect public health without requiring excessive stack heights. Other features such as boiler design, specification, efficiency, fuel type, fuel quality and the suitability of the boiler to match the fuel load applied at the site should also be taken into account when considering the acceptability of proposals.

12.12 If, after taking all relevant considerations into account, a local authority decides to grant planning permission to a boiler in an area where air quality objectives are likely to be exceeded, or in other areas where human health may be significantly affected, it is strongly recommended that some form of mitigation - whether through abatement technology, appropriate stack height, specific system design features or a combination of these - is included in a planning condition to minimise the impact of such developments.

Clean Air Act

12.13 The Clean Air Act regulates emissions from commercial and domestic premises in Smoke Control Areas. However, this legislation was developed in the 1960s, primarily aimed at coal combustion, and is not appropriate for the current pollution situation and control of fine particulate emissions. Of specific concern is the fact that most existing boilers in urban areas are now gas fuelled and hence emissions are significantly lower than the Act's requirements. Therefore although biomass boilers may meet Clean Air Act standards, in many circumstances they still have the potential to produce PM_{10} emissions that are worse than the current gas equivalent.

12.14 At the time of writing, a comprehensive review of the Clean Air Act was underway. This process commenced at the start of 2013 with a questionnaire circulated to local authorities, industry and other interested parties seeking views on how the Act should be revamped, and information on evidence gaps. The questionnaire responses were used as the basis for a focus group workshop run by Defra, which was followed later in 2013 by a call for evidence seeking additional input. This material is being used as the basis for reviewing the Act, which will progress during 2016.

12.15 In advance of the main review of the Act, sections 20 and 21 have been amended to remove the need for authorised fuels and exempt appliances to be notified by Statutory Instrument. Instead, this has become an administrative procedure which will make the notification process much quicker and more efficient, and will result in a significant resource saving. These amendments were made through the Regulatory Reform (Scotland) Act 2014. The Scottish Government, in partnership with the other UK administrations, has developed an online notification system for authorised fuels and exempt appliances.

13: Air quality and climate change

13.1 The Scottish Government considers it particularly important that climate change and air quality policies are properly integrated. Some air pollutants, notably black carbon, also make a significant contribution to atmospheric warming. It thus follows that there will be situations where policies to reduce greenhouse gas emissions will have benefits for air quality, and vice-versa; such situations should be fully exploited.

13.2 CAFS acknowledges that there will often be co-benefits for air quality and climate change policies where certain measures are taken, such as reduced consumption of fossil fuel. An integrated approach is also likely to be more cost effective and deliver greater health and environmental benefits. The transport sector serves as a good example of where joined-up policy can secure co-benefits. Improved fuels and vehicle technologies in conjunction with effective land use planning should help improve air quality as well as contribute to climate change mitigation. However, without proper consideration, there is the possibility that some policies to mitigate climate change will have a negative impact on air quality. The Climate Change (Scotland) Act 2009⁵⁰ creates a long term framework for ensuring a reduction in Scottish emissions of 80% by 2050.

13.3 The Scottish Government therefore expects local authorities to consider the impact on greenhouse gas emissions of the measures they propose to implement in their air quality action plans and in any local air quality strategies. Authorities might also wish to consider including policies to reduce greenhouse gas emissions in their local air quality strategies. The Scottish Government and the other UK administrations' joint approach for addressing linkages between air quality and climate change policy is set out in Air Pollution: Action in a Changing Climate⁵¹. Local authorities should refer to this document for further background information and also when developing their own policies and strategies to jointly tackle air pollutants and greenhouse gases.

13.4 The Scottish Government expects local authorities to take an integrated approach to dealing with environmental issues such as climate change and air quality. For example, it may be possible to use data gathered during reviews and assessments to provide information on greenhouse gas emissions, particularly carbon dioxide. Emissions inventories could be especially useful for this, and further information can be found in the technical guidance.

13.5 Such information will be of use in assessing the impact on greenhouse gas emissions of air quality action plans and local air quality strategies. It will also be useful for assessing the impact of other policy areas, such as land use planning, transport planning and community strategies. The Scottish Government therefore encourages local authorities to make use of air quality information gathered within these other policy areas.

⁵⁰ <http://www.scotland.gov.uk/Topics/Environment/climatechange/scotlands-action/climatechangeact>

⁵¹ <http://www.scotland.gov.uk/Resource/Doc/211199/0095731.pdf>

14: Air quality and noise

Integrating air quality and traffic noise management

14.1 Air pollution and noise are often emitted from the same sources (notably road traffic) and locations of poor air quality can coincide or overlap with locations subject to high noise levels. Even where they do not, poor air quality at one location and high noise levels at a neighbouring location may be related through the way in which traffic is managed across the wider area. In aiming for the most beneficial outcome for members of the public, it is important to seek measures that both improve air quality and reduce noise levels – for example speed restrictions – and avoid measures that worsen one while seeking to improve the other. Local authorities should ensure that an integrated approach to managing air quality and noise is taken across all departments, and when working with external partners.

14.2 Directive 2002/49/EC on assessment and management of environmental noise aims to define a common approach to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, resulting from exposure to environmental noise. The Directive is transposed by the Environmental Noise (Scotland) Regulations 2006. The regulations assigned the role of competent authority for preparing noise maps and action plans under the Directive to the Scottish Ministers.

14.3 The Scottish Government has produced strategic noise maps and noise action plans for major roads, major railways, Aberdeen, Dundee, Edinburgh, Glasgow agglomerations and for Edinburgh, Glasgow, Aberdeen and Dundee Airports, all as required by the Directive. Local authorities may be aware of additional areas not covered by the Directive requirements where transportation noise is known to be an issue.

Traffic noise and health

14.4 According to preliminary results from a World Health Organisation study⁵², air pollution and noise are estimated to be the leading factors influencing the environmental burden of disease in Europe. In 2010 the Health Protection Agency (now part of Public Health England) published Environmental noise and health in the UK⁵³ which concluded that:

Environmental noise is a problem in the UK today and many people are concerned about its possible effects on health. In terms of wellbeing we have little doubt that a significant number of people are adversely affected by exposure to environmental noise. If it is accepted that health should be defined in such a way as to include wellbeing then these people can be said to suffer damage to their health as a result of exposure to environmental noise. There is increasing evidence that environmental noise, from both aircraft and road traffic, is associated with raised blood pressure and with a small increase in the risk of coronary heart disease.

⁵² <http://www.euro.who.int/en/health-topics/environment-and-health/pages/evidence-and-data/environmental-burden-of-disease-ebd>

⁵³ <http://www.apho.org.uk/resource/item.aspx?RID=83405>

14.5 In 2011 the World Health Organisation published Burden of disease from environmental noise: Quantification of healthy life years lost in Europe⁵⁴. The report estimated that at least one million healthy life years are lost every year from traffic related noise in western Europe, specifically:

- 61,000 years for ischemic heart disease;
- 45,000 years for cognitive impairment in children;
- 903,000 years for sleep disturbance;
- 22,000 years for tinnitus;
- and
- 654,000 years for annoyance.

14.6 Scottish Transport Appraisal Guidance⁵⁵ (STAG) contains information on assessing the impact of environmental noise in relation to new transport projects. Tools developed by bodies such as the UK Government's Interdepartmental Group on Costs and Benefits⁵⁶ and the European Environment Agency⁵⁷ may be of use in providing indicative monetary valuations of noise related health effects. This guidance can be used in cost benefit analyses for options appraisal, provided that the uncertainties and assumptions behind the methodologies are taken into account. Transport Scotland and Scottish Government are working with local authorities to develop and apply an appropriate Appraisal and Test of Reasonableness tool for ranking effective Noise Management Area interventions.

Air quality action planning and noise

14.7 As stated elsewhere in this guidance, air quality action plans must include evidence that all available options have been considered in relation to cost effectiveness and feasibility. Cost beneficial measures should be given priority, although there will be circumstances when cost effective measures are required for working towards air quality objectives.

14.8 Whenever air quality action plans prioritise measures in terms of costs and benefits, traffic noise should receive due consideration, qualitatively if not quantitatively. Special consideration should be given to noise management areas identified by the noise action plans, and any other areas where a local authority considers traffic noise to be a matter of concern, particularly where proposed air quality measures may potentially impact on noise levels. Such an impact could occur over a wide area, for example if diverting traffic from one location leads to noise increases elsewhere. Therefore, when developing an action plan, local authorities should bear in mind that there may be consequential effects of introducing a specific measure.

⁵⁴ <http://www.euro.who.int/en/health-topics/noncommunicable-diseases/cardiovascular-diseases/publications/2011/burden-of-disease-from-environmental-noise.-quantification-of-healthy-life-years-lost-in-europe>

⁵⁵ <http://www.transportscotland.gov.uk/stag>

⁵⁶ <https://www.gov.uk/guidance/noise-pollution-economic-analysis>

⁵⁷ <http://www.eea.europa.eu/publications/good-practice-guide-on-noise>

14.9 Authorities must make a judgement in each case as to whether the impacts of action plan measures on traffic noise need to be quantified or whether they can be treated qualitatively when prioritising measures. The noise assessment should reflect local circumstances and should not be disproportionate to the scale of change proposed.

14.10 Certain measures, particularly those concerned with reducing local traffic flows, may benefit both air quality and noise, although in some cases this may only hold true when speeds are not permitted to increase. Other potential measures that can reduce both air pollution and noise include restrictions on heavy vehicles, reducing speeds on motorways and dual carriageways, and strategies to increase the separation between the source and sensitive receptors, for example by building a bypass. However, measures to lower average speeds of traffic in urban areas, whilst usually benefitting noise, may increase air pollutant emissions. Modelling may be required to determine the optimum public health outcome for a given locality. The level of detail sought should sensibly reflect the scale of changes proposed.

14.11 Containment of air pollution and noise through the use of tunnels, cuttings or barriers may worsen air quality for road users. This should be taken into account when considering options. Ensuring compliance with EU air quality limit values or domestic objectives may result in negative noise outcomes in some instances. Where this occurs, it should be recorded clearly so as to inform the prioritisation of any future noise improvement initiatives.



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