



# Recalibrating the United Kingdom's Local Air Quality Management Regime to Deliver Desired Goals

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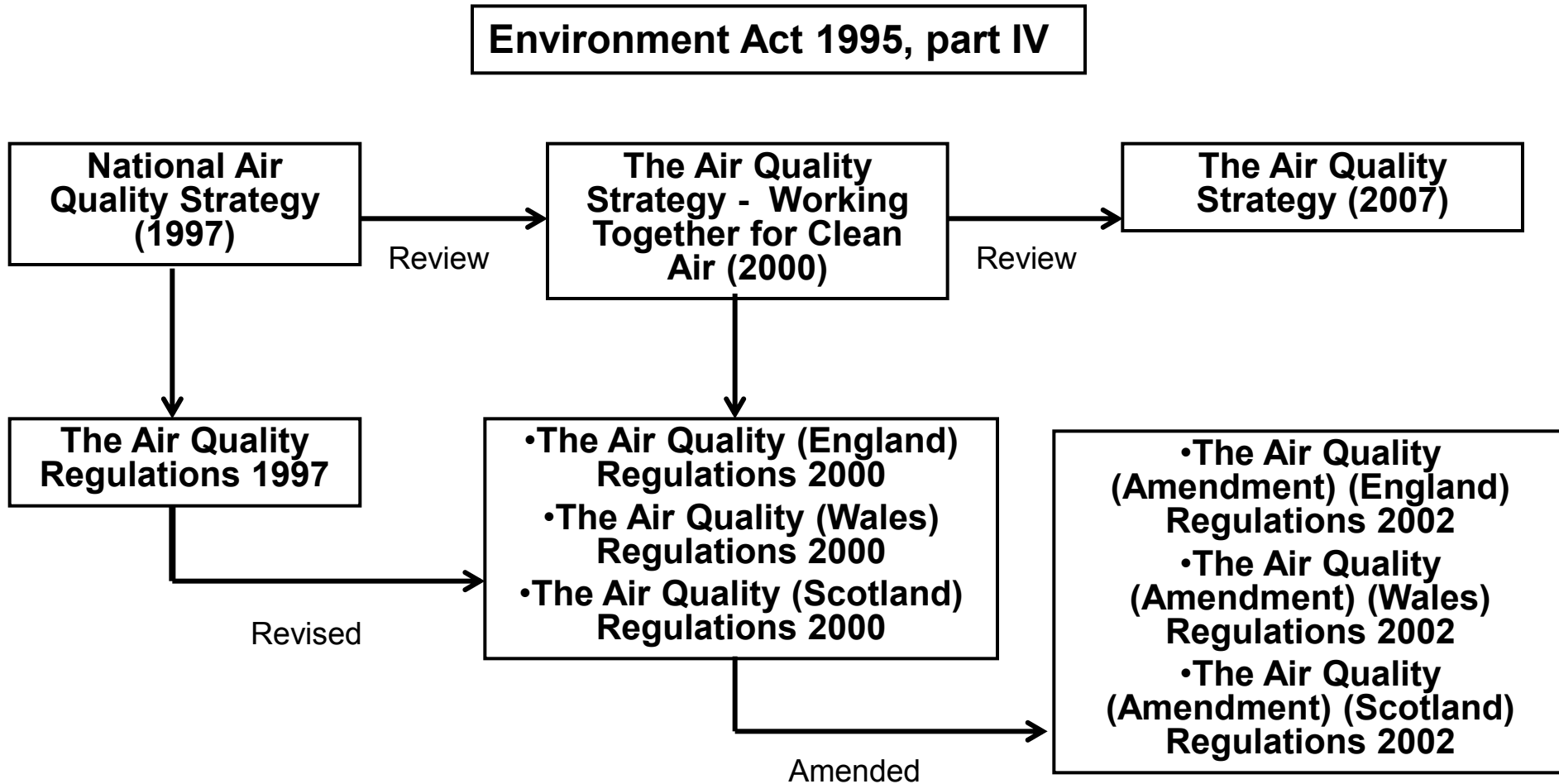
# Air Quality Management in the UK

- Air quality management in the UK is built upon an effects-based, risk management approach founded on a suite of Air Quality Objectives (AQOs) based on the recommendations of the Expert Panel on Air Quality Standards.
- The new framework was introduced in the Environment Act 1995 (Part IV, Air Quality) which set out responsibilities for central and local government.
- In drawing up the Act it was recognised that an approach solely based on point source control was no longer appropriate for the multi-sourced, multi-pollutant, air pollution situation of the 1990s
- The Act introduced a radical shift from source control policies to effects and source based control and introduced human health effects air quality objectives.
- The Act placed responsibilities on the local management whilst maintaining, at a national level, a critical role in co-ordination and direction of local actions and the undertaking of such duties most effectively discharged at the level of the nation state.

# Environment Act 1995

- The primary requirement of the 1995 Environment Act was the preparation of an Air Quality Strategy (AQS) by Government.
- The AQS which was first published in 1997, and reviewed, updated and amended in 2000 and 2007 (with an Addendum in 2003) laid out a new direction for the management of air quality in compliance with the requirements specified in the Environment Act.
- Together, the Environment Act, 1995 and AQS provide a framework in which national and local actions are required to identify and remediate areas of poor air quality.
- The Act places a series of duties and responsibilities upon local authorities to review and assess local air quality against specific Air Quality Objectives
- The AQS therefore sets out a series of objectives covering major pollutants with significant public health risks: lead, CO, 1, 3-butadiene, SO<sub>2</sub>, NO<sub>2</sub>, benzene and PM<sub>10</sub>.

# UK Air Quality Management Legislation

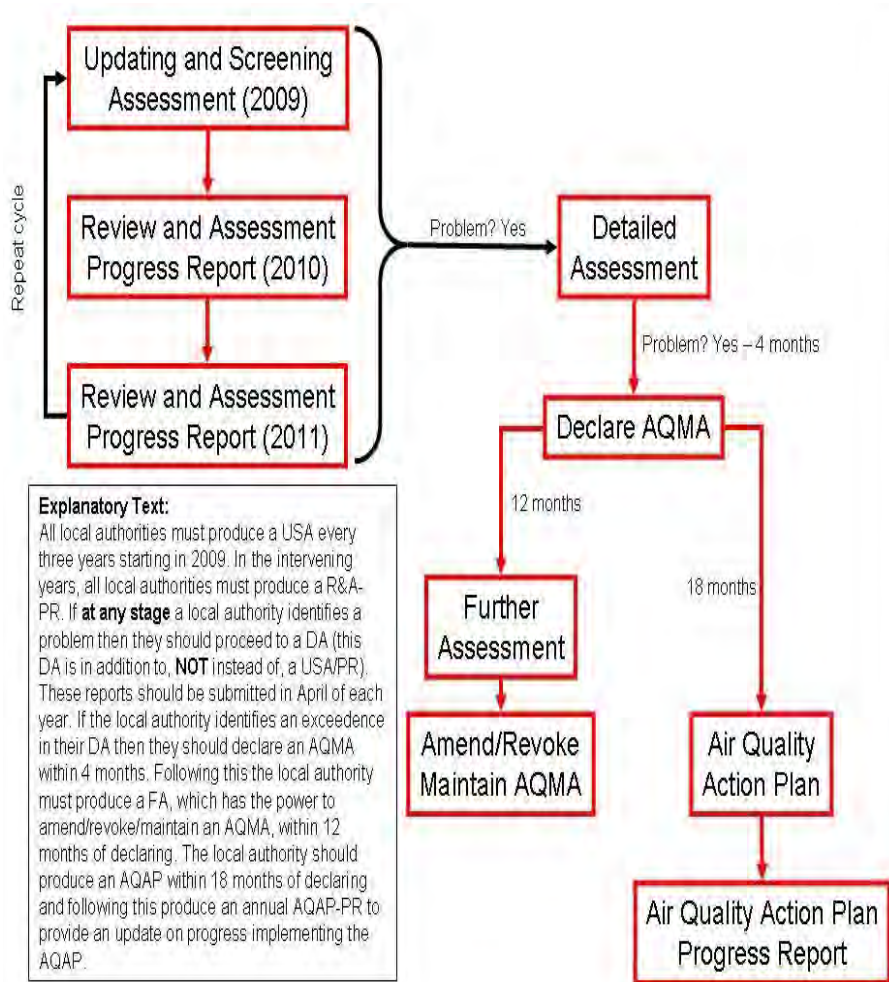


# Air Quality Objectives

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 $\mu\text{g m}^{-3}$	running annual mean	31.12.2003
	5 $\mu\text{g m}^{-3}$	annual mean	31.12.2010
Carbon monoxide	10.0 $\text{mg m}^{-3}$	maximum daily	31.12.2003
		running 8-hour mean	
1,3 Butadiene	2.25 $\mu\text{g m}^{-3}$	running annual mean	31.12.2003
Nitrogen dioxide	200 $\mu\text{g m}^{-3}$	1 hour mean	31.12.2005
	not to be exceeded more than 18 times a year 40 $\mu\text{g m}^{-3}$	annual mean	31.12.2005
Lead	0.5 $\mu\text{g m}^{-3}$	annual mean	31.12.2004
	0.25 $\mu\text{g m}^{-3}$	annual mean	31.12.2008
Particles (PM <sub>10</sub> ) (gravimetric)	50 $\mu\text{g m}^{-3}$ not to be exceeded more than 35 times a year	24 hour mean	31.12.2004
	40 $\mu\text{g m}^{-3}$	annual mean	31.12.2004
Sulphur dioxide	350 $\mu\text{g m}^{-3}$ not to be exceeded more than 24 times a year	1 hour mean	31.12.2004
	125 $\mu\text{g m}^{-3}$ not to be exceeded more than 3 times a year	24 hour mean	31.12.2005
	266 $\mu\text{g m}^{-3}$ not to be exceeded more than 35 times a year	15 minute mean	

Air Quality Objectives contained in the Air Quality (England) Regulations 2000 as amended

# Review and assessment process



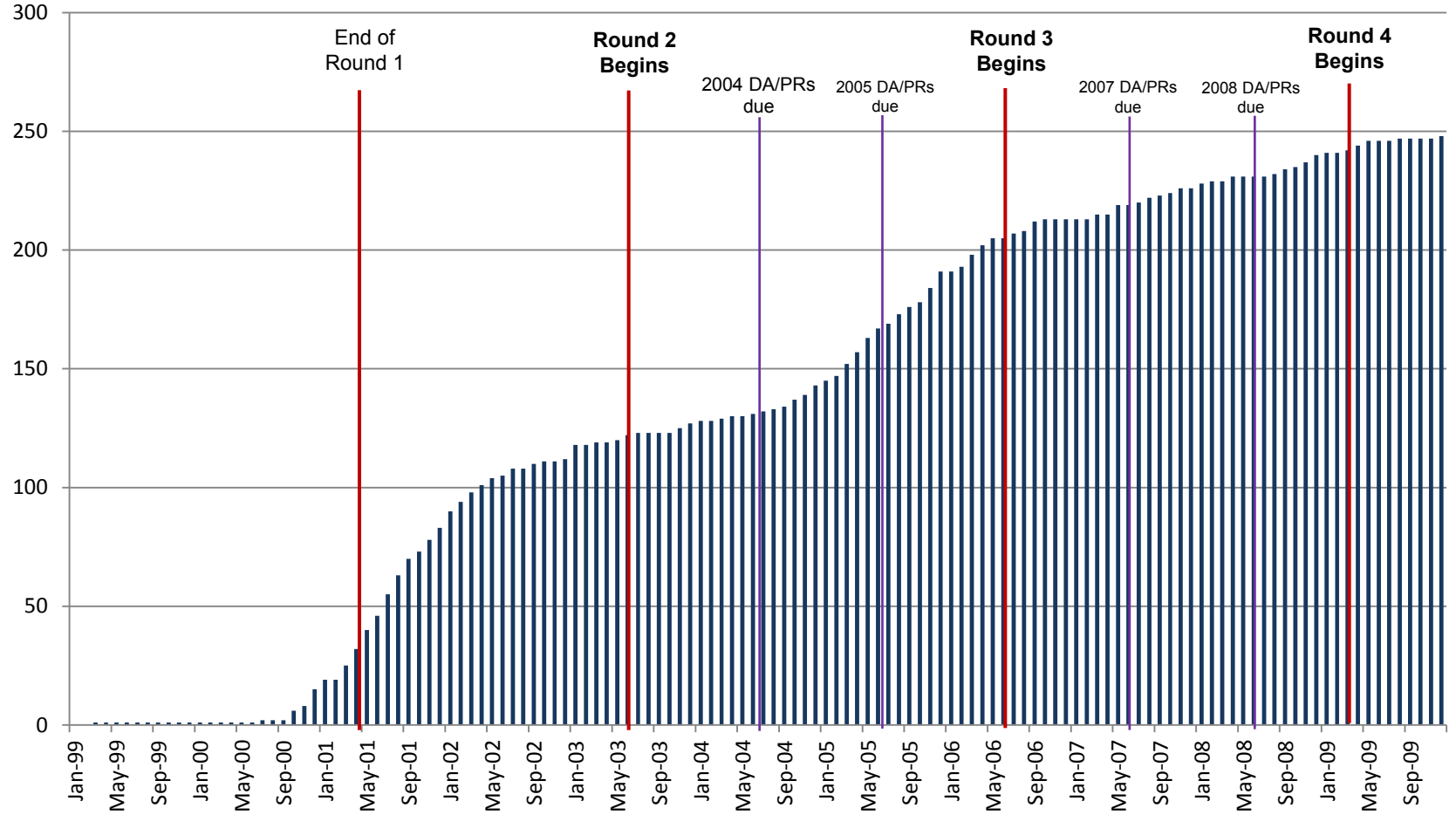
- Exceedence of an air quality objective is identified in any areas where public exposure exists
- Local authorities are required to designate areas of exceedence(s) as Air Quality Management Areas (AQMAs)
- An AQMA represents the conclusion of a technical assessment of air quality carried out in accordance with central government guidance against the air quality objectives.
- Following declaration of an AQMA a local authority is required to develop an **Air Quality Action Plan** to pursue the achievement of the AQOs detailing both the measures to be taken and the time-scale for their implementation

# AQMAs

- The Review and Assessment process began in 1998. Only a small number of AQMAs were anticipated.
- At the end of the 1st round 129 local authorities had declared one or more AQMAs.
- At the end of the 2<sup>nd</sup> round 192 local authorities had declared one or more AQMAs.
- At the close of the 3rd round more than 200 had declared one or more AQMAs.
- This number of local authorities with AQMAs at the start of 2010 is 235.

# Number of Local Authorities with AQMAs

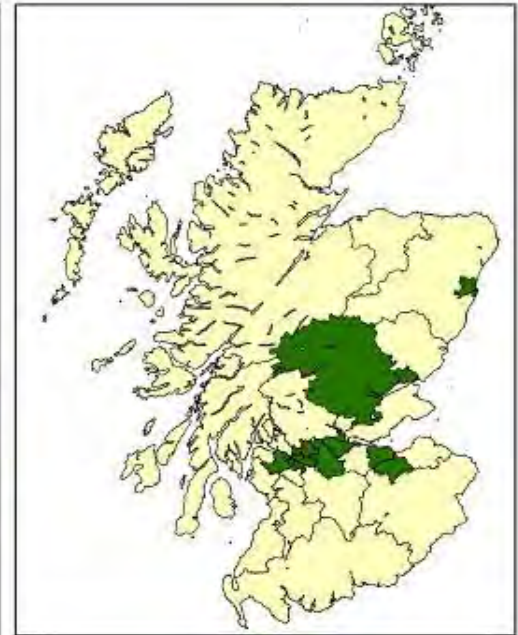
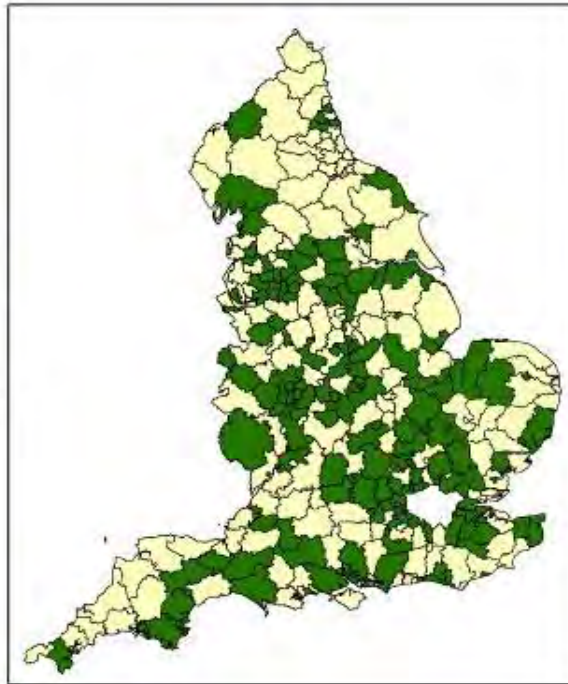
■ LAs with AQMAs





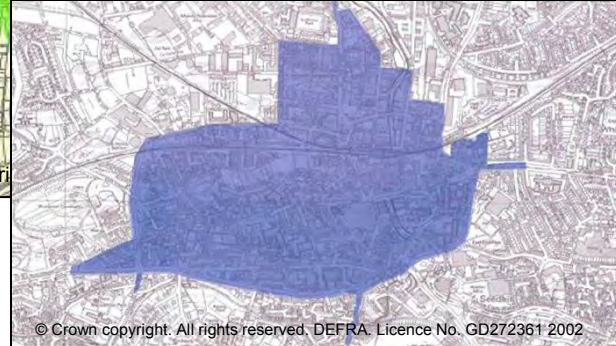
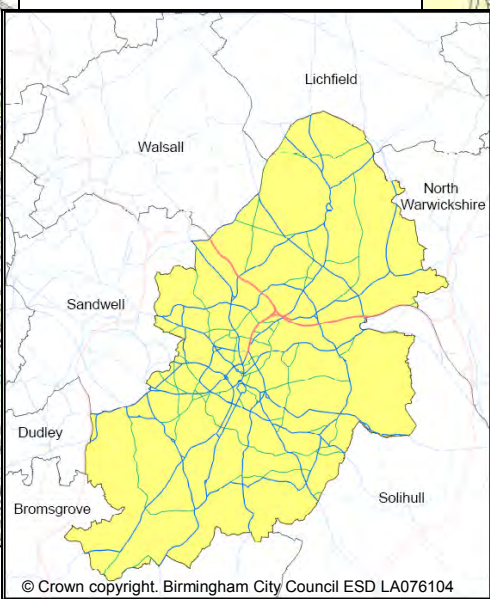
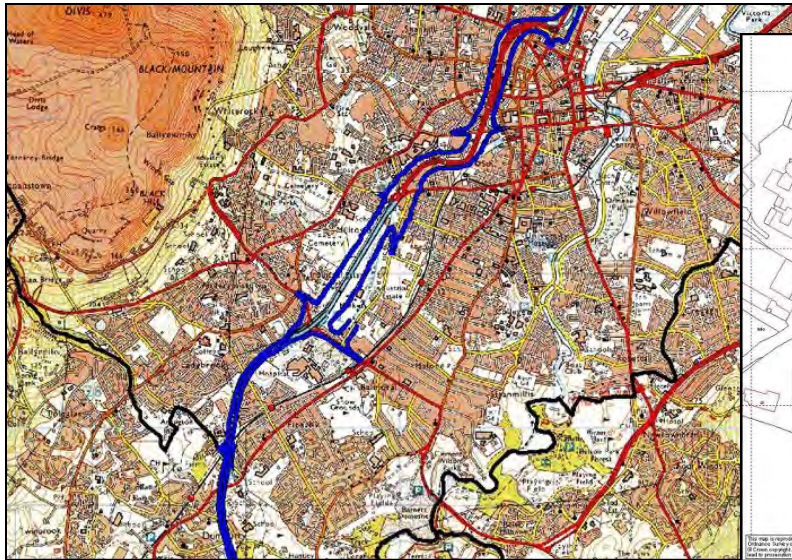
# Local authorities with AQMAs across UK

## End Round 3





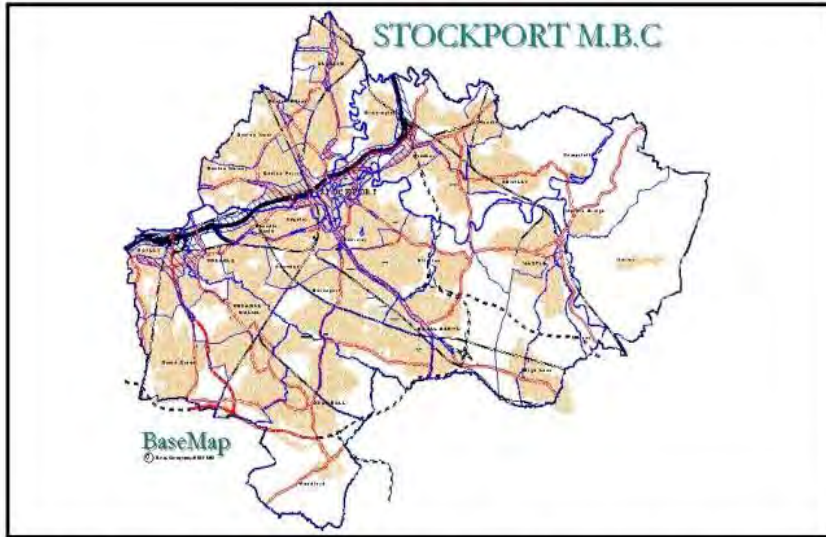
# AQMA delineations





# Traffic-related AQMAs

Source: [www.airquality.co.uk](http://www.airquality.co.uk)



The Air Quality Management Area in Stockport (Blue shading)



Source: City of York Council

- Over 90% of AQMAs declared are due to traffic-related emissions.
- These AQMAs have principally been declared for  $\text{NO}_2$ , with a significant number of  $\text{PM}_{10}$  and a smaller number of  $\text{SO}_2$  declarations.

# A Typical New AQMA

Public exposure

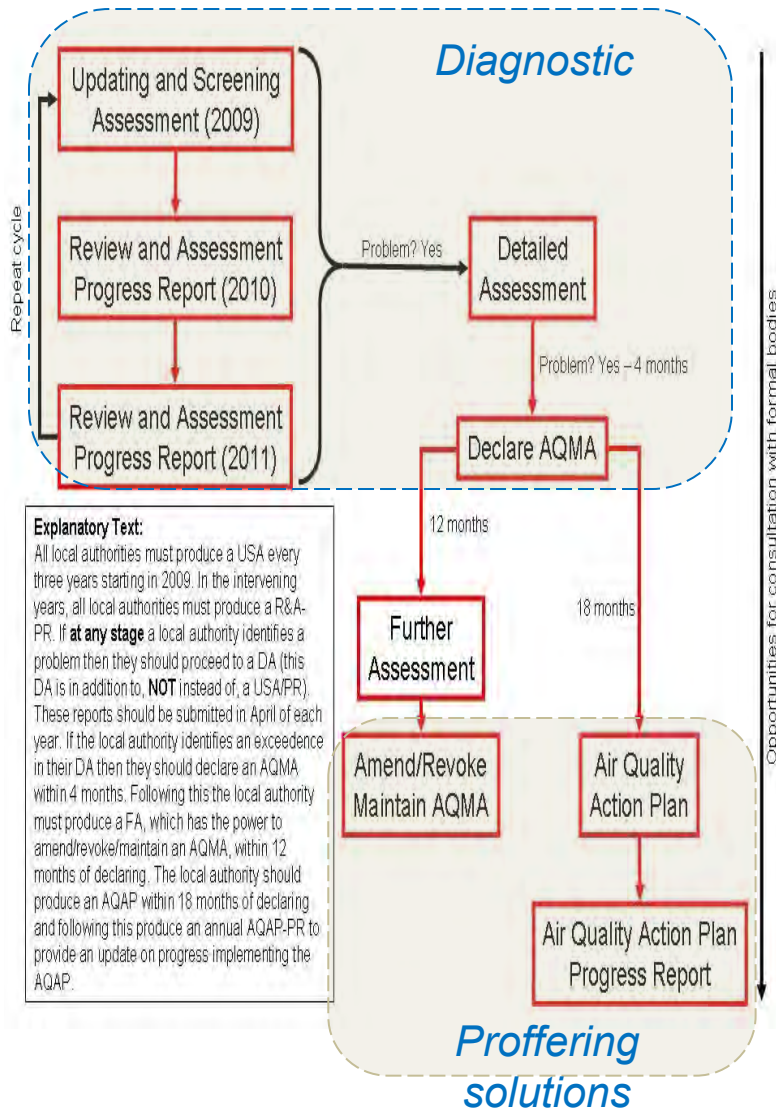


# Further Assessment and Action Plans

- Following the declaration of an AQMA, local authorities undertake a Further Assessment of air quality as required by Section 84 of the Environment Act.
- The assessment:
  - ✓ confirms the appropriateness of the original decision to declare the AQMA;
  - ✓ define the boundaries of the declared area;
  - ✓ and provide information on the emission sources contributing to the exceedences;
  - ✓ support the preparation of an Air Quality Action Plan
- The Air Quality Action Plan is expected within 12 to 18 months of the designation of the AQMA



# Defining the Policy Disconnects

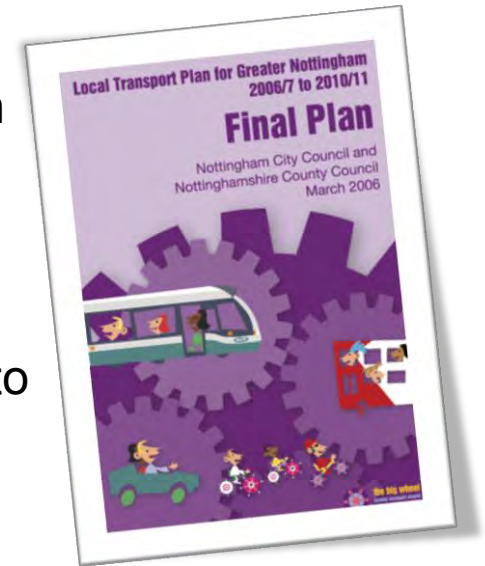


- In practice, the AQAP is developed at a much slower rate than the diagnostic Review and Assessment work
- LAQM regime has **not** led to the reduction of a high concentration of a named pollutant through the actions specified in the AQAP
- The success of the diagnostic capability within the LAQM regime has **not** been replicated when proffering solutions to diagnosed problems
- The challenges to overcome in implementing an AQAP also include political, economic, public opinion, communication and technical barriers and the organisational capacity and capability of the local authority

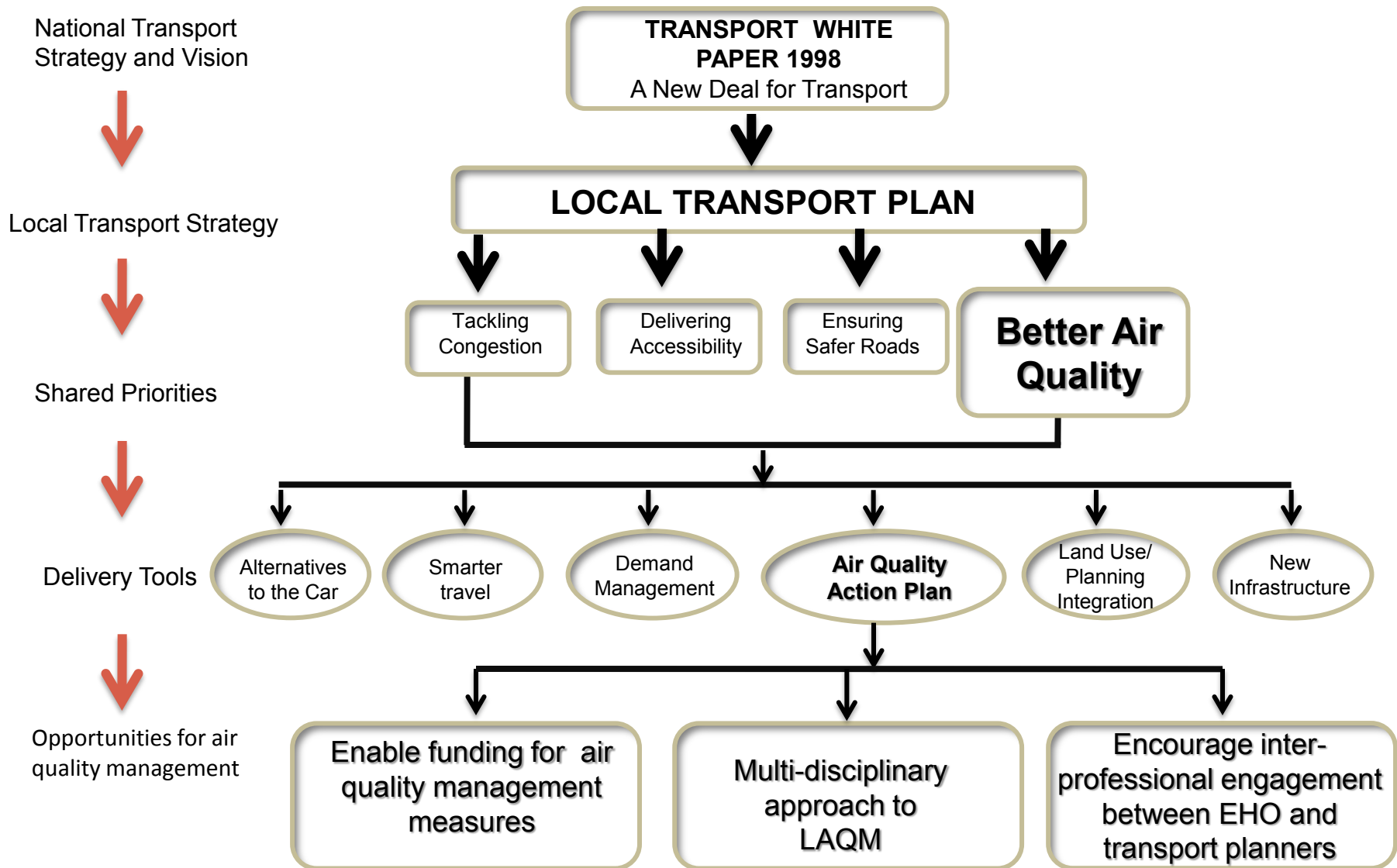


# The Opportunity Provided by the LTP

- The Local Government White Paper, *Strong Local Leadership – Quality Public Services*, provided English local authorities with traffic-related AQMAs the opportunity to incorporate their AQAP into their Local Transport Plan (LTP) process
- The LTP is a separate Government requirement, managed by the Department for Transport, operating to a different reporting timescale to that of LAQM and engaging with transport planning departments which may be in either local or county authorities.
- The LTP sets out plans and policies in relation to a suite of priorities identified by the central government.
- Thus the LTP appears to offer advantages in respect of calibrating and implementing an air quality improvement plan where transport is the cause of the air quality problem.
- The second round was submitted in March 2006 for the period 2006-07 to 2010-11.



# Air Quality as a shared priority in LTP2

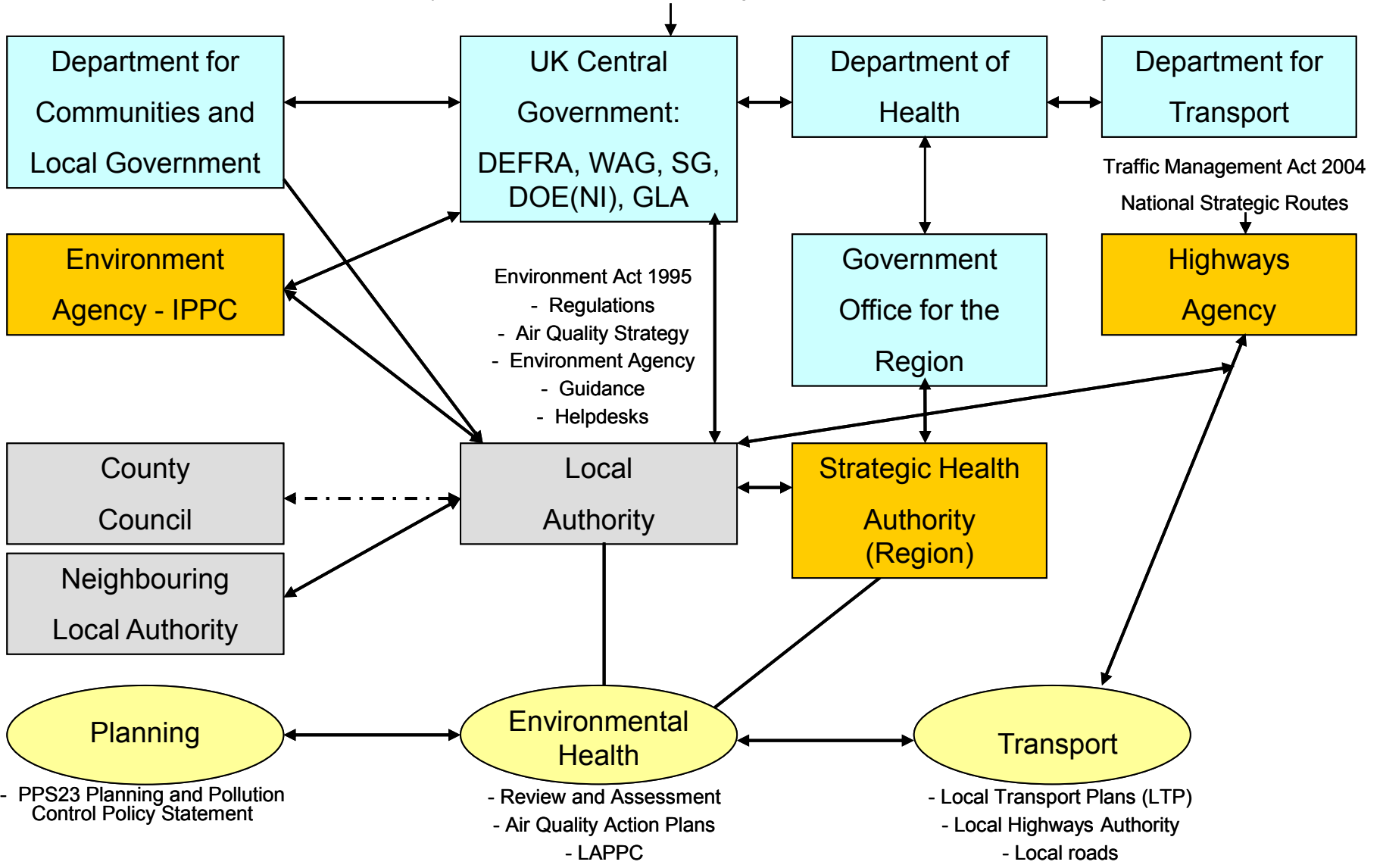






# European Union

## Directive on Ambient Air Quality Assessment and Management (96/92/EC) and Daughter Directives



# Has the LTP Delivered Improved Air Quality?

- The LTP has been no more successful a policy than the Air Quality Action Plan. The failure of this approach can perhaps best be seen in the decision to remove air quality as a priority for action in the next round of the LTP process.
- The success of LAQM would require connection between policies, adequate resourcing, clear communication of priorities and a shared ownership of responsibility for achieving outcomes between central and local government
- The interconnection between LAQM and other policy packages needs to be made explicit both nationally and locally.
- The communication of the rationale for LAQM and the necessity for action must be framed in acceptable ways for broad public consumption.
- Vested interests must be challenged
- Resourcing of the LAQM regime needs re-examination.

# Has the LTP Delivered Improved Air Quality?

- It is probable that the metrics used in explaining air quality are too technical for the majority of the population
- The current information campaigns through which the public and the local government elected members are engaged on the health, economic and social impacts of air pollution are not efficient for real political and social change
- Lack of visible air pollution and its relative intangibility compared to the other shared priorities contributed to the lower importance that was given to air quality within the LTP2 process
- If such political tangibility is to be increased, holistic approach to the management of air quality across various policy spheres needs to be taken.

# Reconnecting the Policies and Priorities. LTP3 A Missed Opportunity?

Tackle climate change	Support economic growth	Promote equality of opportunity	Contribute to better safety, security and health	Improve quality of life
<ul style="list-style-type: none"> <li>•GHG emissions reduction</li> <li>•Offset /reduce international transport emissions</li> </ul>	<ul style="list-style-type: none"> <li>•Transport industry</li> <li>•Journey times</li> <li>•Support delivery of housing</li> </ul>	<ul style="list-style-type: none"> <li>•Social inclusion</li> <li>•Accessibility</li> <li>•Reduce gap between economic growth rates for different region</li> </ul>	<ul style="list-style-type: none"> <li>•Road safety</li> <li>•<b>Air quality</b></li> <li>•Health</li> <li>•Reduce crime</li> <li>•Reduce vulnerability to terrorism</li> </ul>	<ul style="list-style-type: none"> <li>•Noise</li> <li>•Natural environment</li> <li>•Journey experience</li> <li>•Well-being and sense of community</li> </ul>

- Co-manage air quality and climate change by increasing synergies i.e. sustainable transport, smarter choices.
- Reduce burden on NHS due to air quality related illnesses; promote inward investment by improving local air quality.
- Reduce environmental inequality.
- Reduce impact of air pollution on the natural environment, improve quality of life.

# Concluding remarks [1]

- Since 1997 there has been a significant enhancement in the ability of decision makers to take account of air quality in routine decision making.
- The quality of information available to decision makers has improved as the LAQM process has developed appropriate methods for local, repetitive, comprehensive, and quality assured Review and Assessment procedures
- These reviews and assessments are able to draw upon high quality emissions and monitoring data via a number of specially commissioned web resources and support structures guiding the LAQM process.
- Local authorities have begun the difficult transition from simply defining the state of the local atmosphere towards securing AQAP goals representing a transition from procedural compliance with the diagnostic process of LAQM towards achievement of improved air quality outcomes.

# Concluding remarks [2]

- The challenge now is to extend the effective strategies delivering good air quality diagnosis into the Air Quality Action Plan phase so that information about the scale and complexity of local air quality problems is translated into effective delivery strategies for the timely improvement of air quality problems.
- A critical issue for the further development of air quality management policy and practice will be to ensure appropriate integration with other policies such as transport, health, land-use and climate change.
- These challenges must be confronted and overcome if the public health benefits of improved air quality are to be realised.