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Reframing The United Kingdom's Local Air Quality Management: From Diagnosis To Solutions

Abstract #119

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Presentation Overview

- Introduction to UK Air Quality Management
- National vs local measures
- Review and Assessment
- Air Quality Action Planning
- Local Transport Plans
- Defining the policy disconnects
- Conclusions

Local Air Quality Management in the UK

- Introduced in the Environment Act 1995 (Part IV, Air Quality).
- Point source control no longer appropriate.
- Shift to effects- and source-based risk management control.
- Introduced human health effects-based Air Quality Objectives (AQOs).
- AQOs based on Expert Panel on Air Quality Standards' recommendations.
- Local management, nationally co-ordinated.

www.biofuelsnow.co.uk/img/traffic.jpg

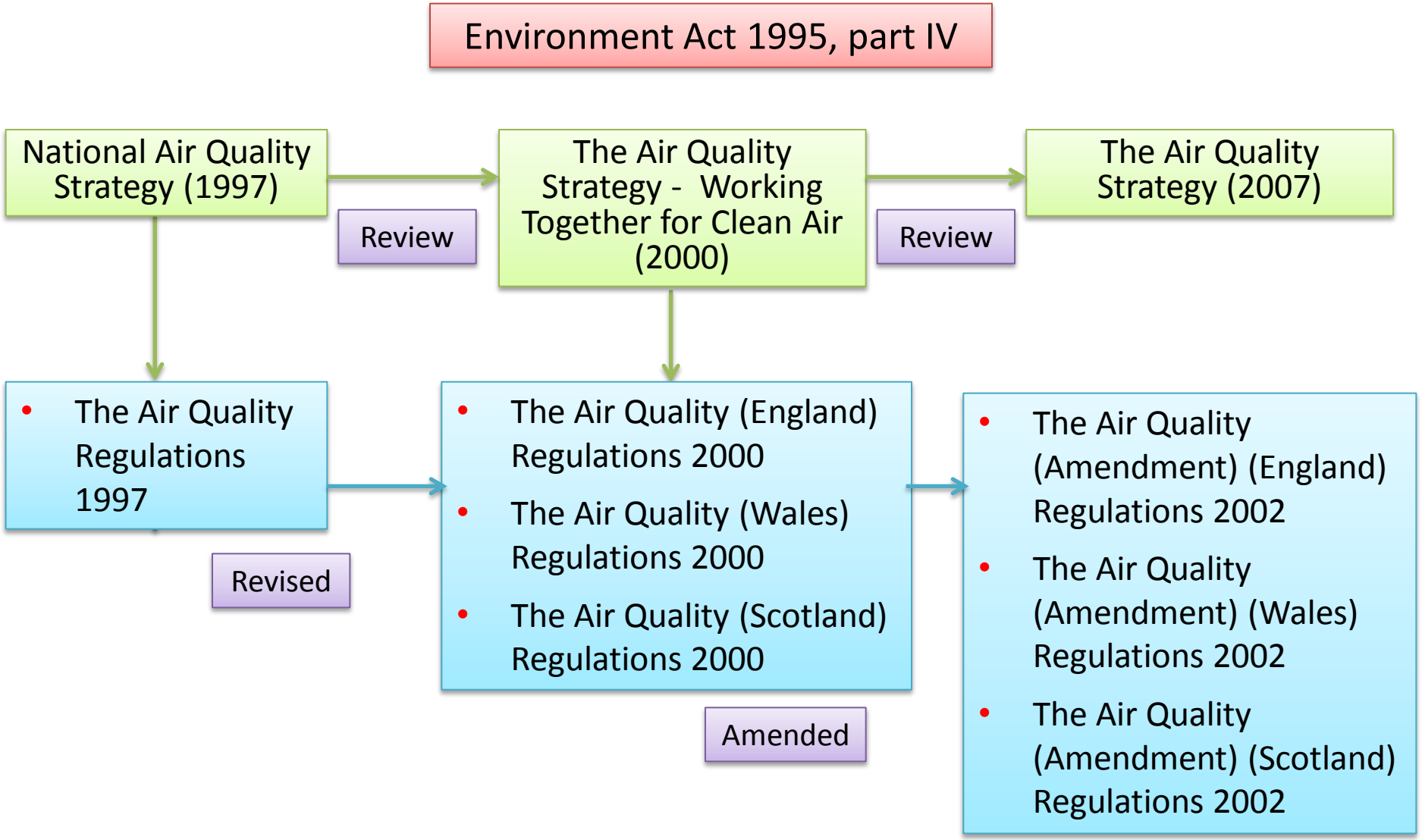
Environment Act 1995

- Air Quality Strategy (AQS) published in 1997, and revised in 2000, 2003 and 2007.
- Framework for identification and remediation of poor air quality at a national and local level.
- AQS sets out Air Quality Objectives (AQOs) for selected pollutants with significant public health risks.
- Local authorities (LAs) are required to review and assess local air quality against AQOs in Air Quality Regulations that are within their capability.

National vs Local Measures

- National measures intended to reduce background pollutant concentrations.
- Local measures intended to tackle local pollution hotspots.
- National measures focused on technical emissions reduction strategies, e.g. Euro standard vehicles.
- Nitrogen dioxide remains a significant problem – concentrations are not falling as expected due to national and EU measures.
- More emphasis on local measures to meet AQOs.

Air Quality Management Legislation



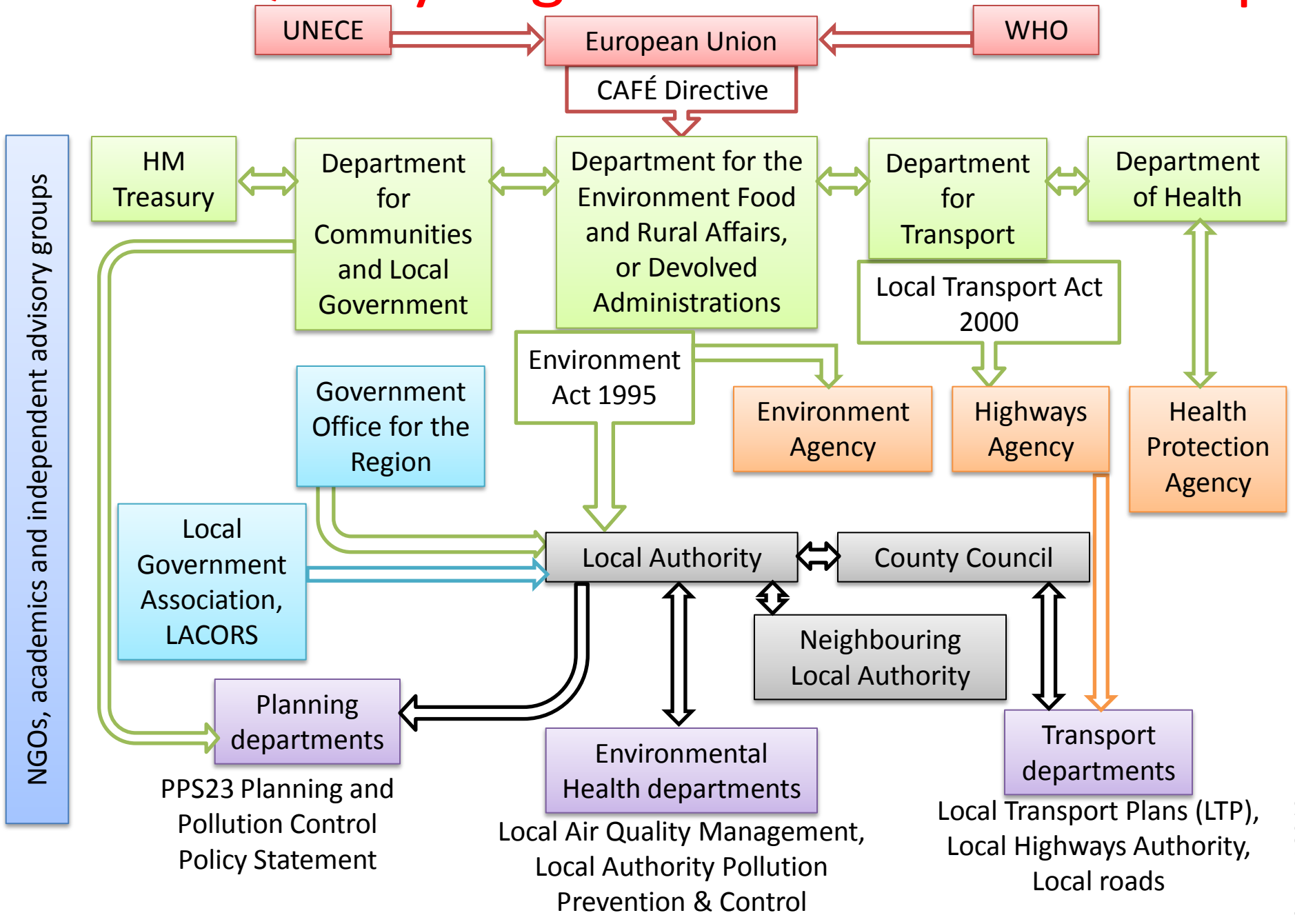
Air Quality Objectives (1)

Pollutant	Applies	Objective	Measured as	Date to be achieved by	European obligations		Date to be achieved by
Particles (PM_{10})	UK	50µg.m^{-3}not to be exceeded more than 35 times a year	24 hour mean	31 December 2004	50µg.m^{-3} not to be exceeded more than 35 times a year		1 January 2005
	UK	40µg.m^{-3}	annual mean	31 December 2004	40µg.m^{-3}		1 January 2005
	Indicative 2010 objectives for PM10 (from the 2000 Strategy and 2003 Addendum) have been replaced by an exposure reduction approach for PM2.5 (except in Scotland – see below)						
	Scotland	50µg.m^{-3}not to be exceeded more than 7 times a year	24 hour mean	31 December 2010			
	Scotland	18µg.m^{-3}	annual mean	31 December 2010			
Particles (PM2.5) Exposure Reduction	UK (except Scotland)	25µg.m^{-3}	annual mean	2020	Target value 25µg.m^{-3}		2010
	Scotland	12µg.m^{-3}		2020	Limit value 25µg.m^{-3}		2015
	UK urban areas	Target of 15% reduction in concentrations at urban background		Between 2010 and 2020	Target of 20% reduction in concentrations at urban background		Between 2010 and 2020
Nitrogen dioxide	UK	200µg.m^{-3} not to be exceeded more than 18 times a year	1 hour mean	31 December 2005	200µg.m^{-3} not to be exceeded more than 18 times a year		1 January 2010
	UK	40µg.m^{-3}	annual mean	31 December 2005	40µg.m^{-3}		1 January 2010

Air Quality Objectives (2)

Pollutant	Applies	Objective	Measured as	Date to be achieved by	European obligations	Date to be achieved by
Ozone	UK	100µg.m^{-3} not to be exceeded more than 10 times a year	8 hour mean	31 December 2005	Target of 120µg.m^{-3} not to be exceeded more than 25 times a year averaged over 3 years	31 December 2010
Sulphur dioxide	UK	266µg.m^{-3} not to be exceeded more than 35 times a year	15 minute mean	31 December 2005		
	UK	350µg.m^{-3} not to be exceeded more than 24 times a year	1 hour mean	31 December 2004	350µg.m^{-3} not to be exceeded more than 24 times a year	1 January 2005
	UK	125µg.m^{-3} not to be exceeded more than 3 times a year	24 hour mean	31 December 2004	125µg.m^{-3} not to be exceeded more than 3 times a year	1 January 2005
Polycyclic aromatic hydrocarbons	UK	0.25ng.m^{-3} B[a]P	as annual average	31 December 2010	Target of 1ng.m^{-3}	31 December 2012
Benzene	UK	16.25µg.m^{-3}	running annual mean	31 December 2003		
	England and Wales	5µg.m^{-3}	annual average	31 December 2010	5µg.m^{-3}	1 January 2010
	Scotland, Northern Ireland	3.25µg.m^{-3}	running annual mean	31 December 2010		
1,3- butadiene	UK	2.25µg.m^{-3}	running annual mean	31 December 2003		
Carbon monoxide	UK	10mg.m^{-3}	max. daily running 8 hour mean/in Scotland as running 8 hour mean	31 December 2003	10mg.m^{-3}	1 January 2005
Lead	UK	0.5µg.m^{-3}	annual mean	31 December 2004	0.5µg.m^{-3}	1 January 2005
		0.25µg.m^{-3}		31 December 2008		

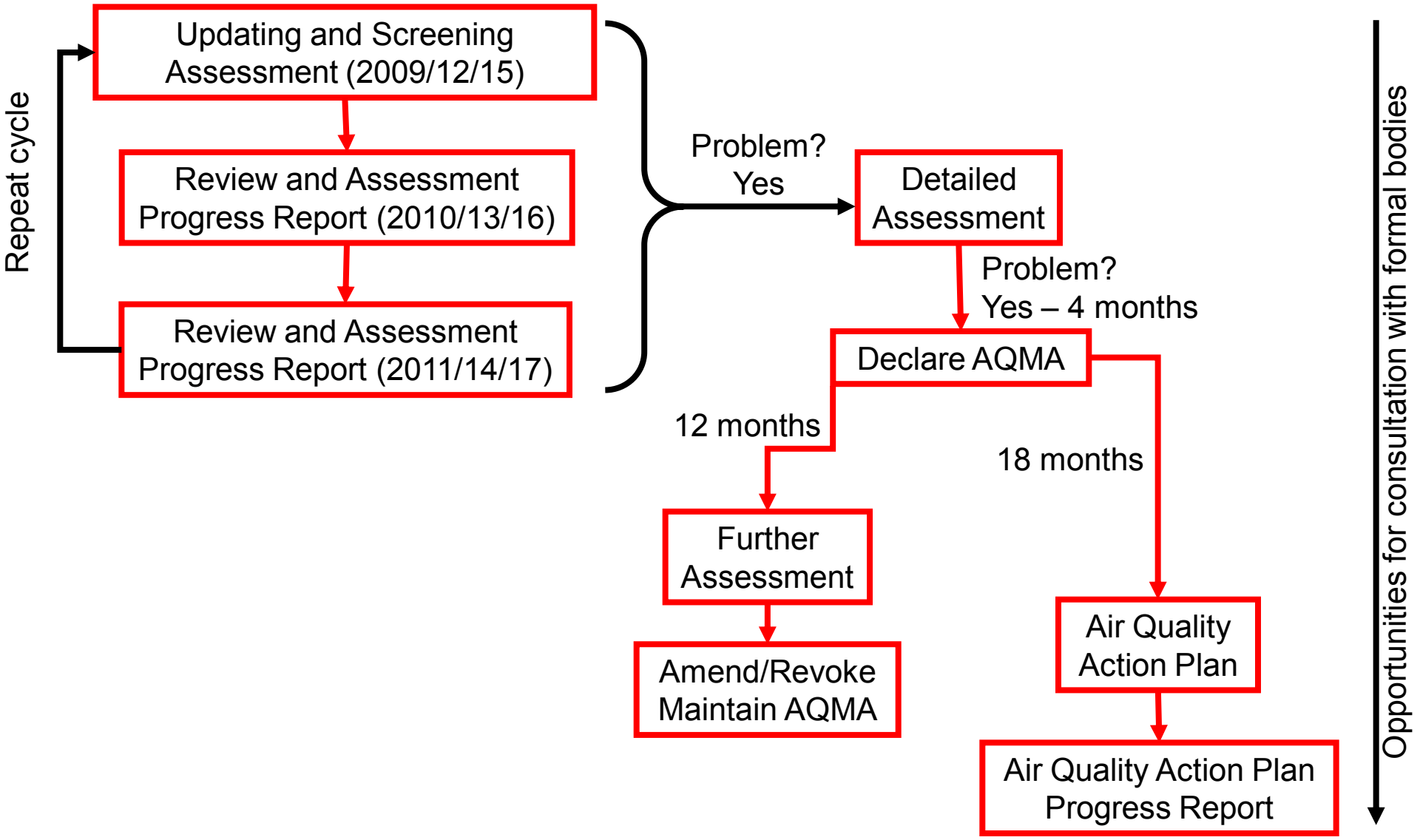
UK Air Quality Organisational Relationships



Review and Assessment Process (1)

- Review & Assessment (R&A) is undertaken by local authorities (LAs), centrally managed at a national level.
- Exceedences of Air Quality Objectives (AQOs) identified in areas of public exposure.
- LAs required to designate Air Quality Management Areas (AQMAs).
- AQMA follows detailed assessment of air quality in accordance with central government guidance.
- LAs required to develop an Air Quality Action Plan (AQAP) to pursue the achievement of the AQOs.
- AQAP should include measures to be taken and time-scale for implementation.

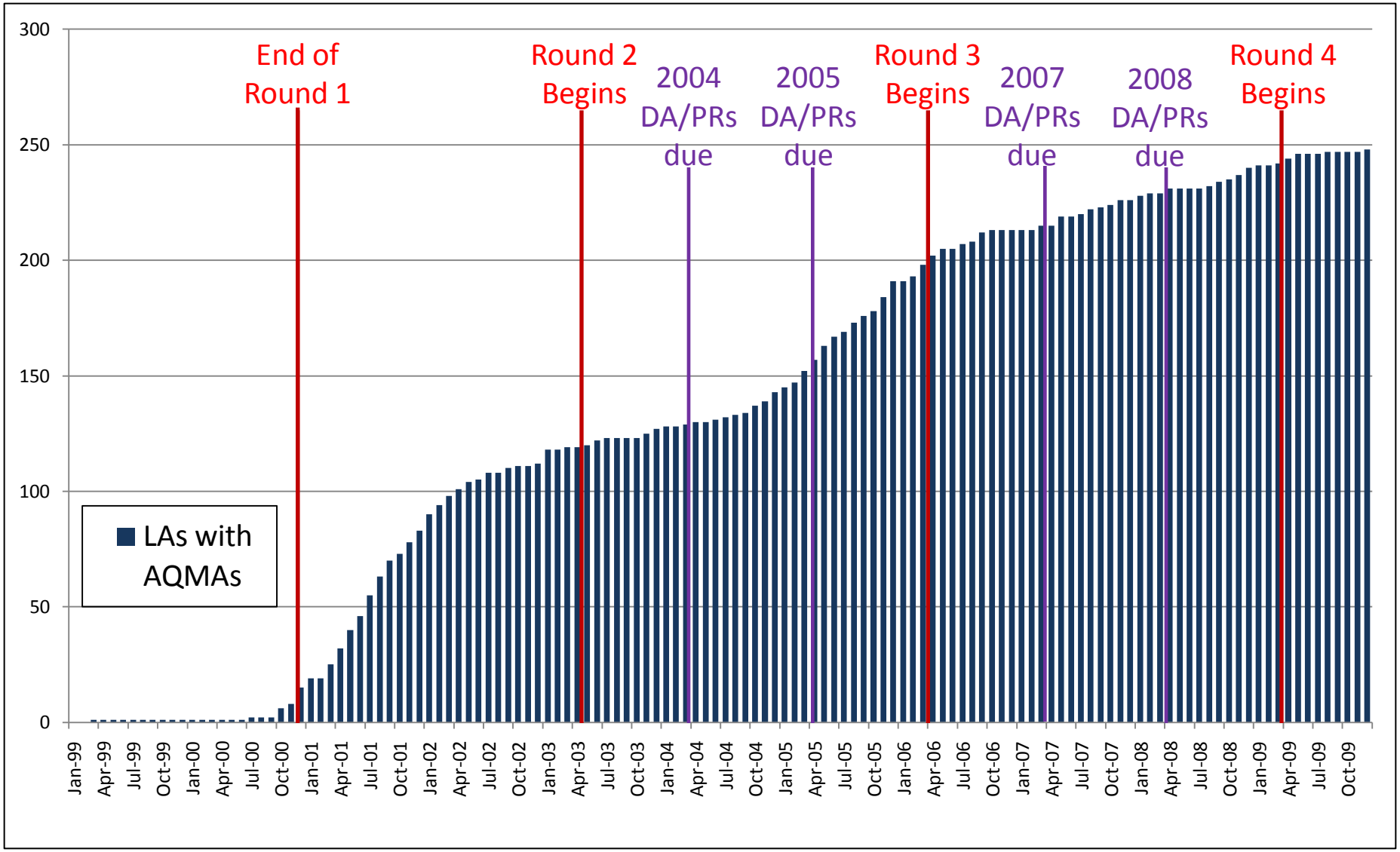
Review and Assessment Process (2)



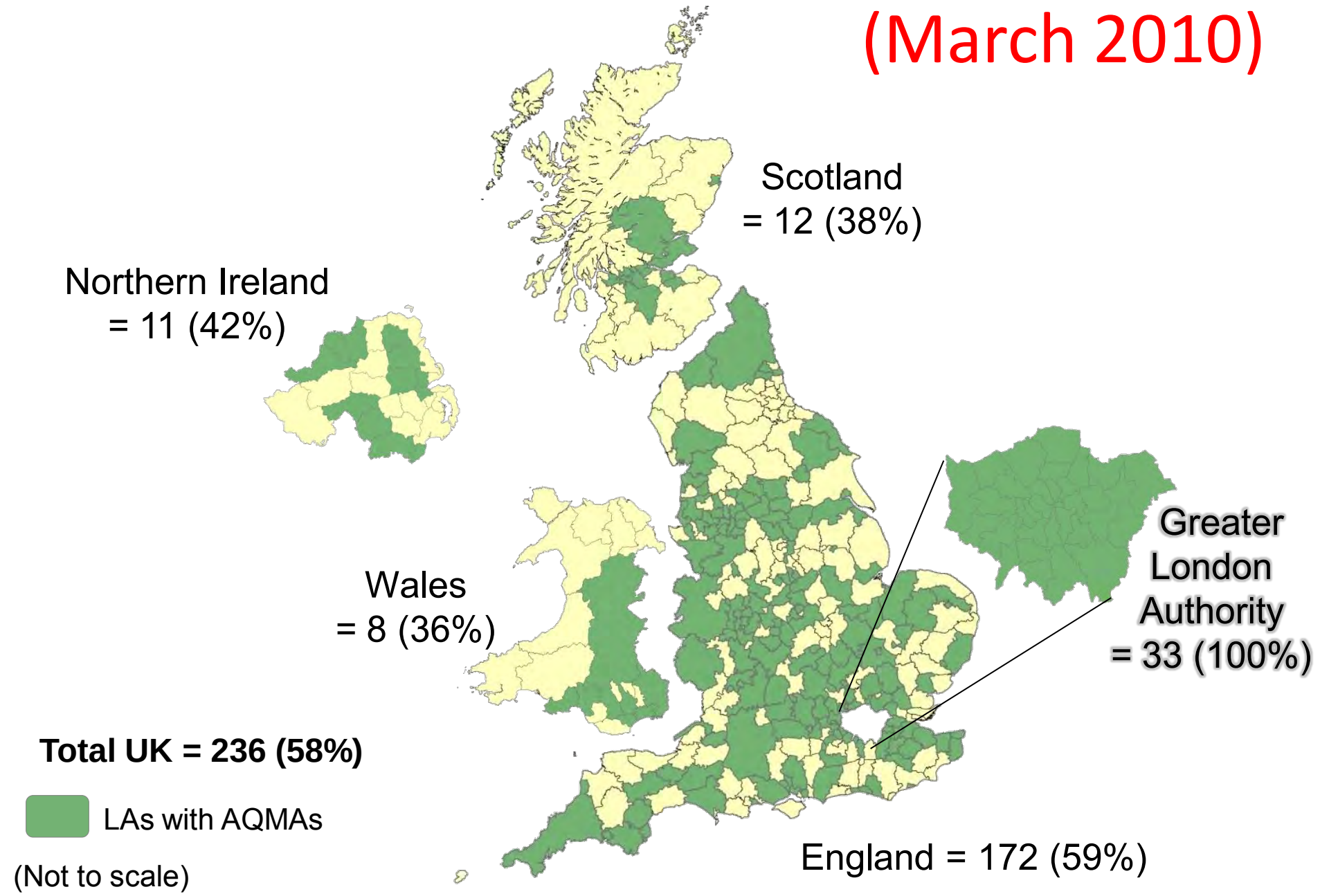
AQMAs

- Review and Assessment process began in 1998.
- Only a few AQMAs were anticipated.
  - End of the Round 1, 129 LAs had one or more AQMAs.
  - End of the Round 2, 192 LAs had one or more AQMAs.
  - End of Round 3, >200 LAs had one or more AQMAs.
- Currently 236 (58%) LAs with AQMAs (July 2010).
- 95% of AQMAs declared are due to traffic-related emissions.
- NO_2, PM_{10} and SO_2 exceedences account for all AQMAS.

Number of Local Authorities with AQMAs



Local Authorities with AQMAs across UK (March 2010)

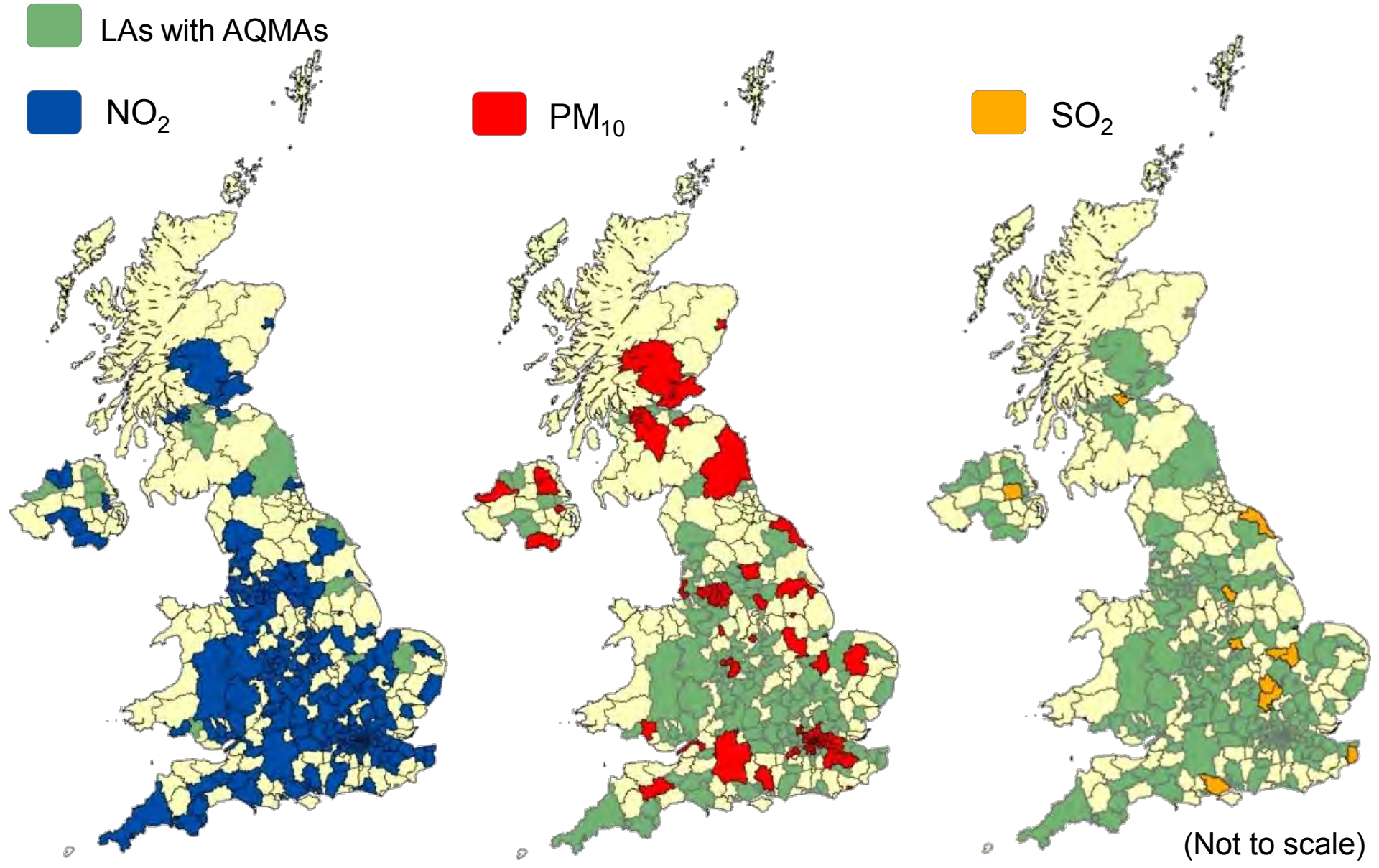


Total UK = 236 (58%)

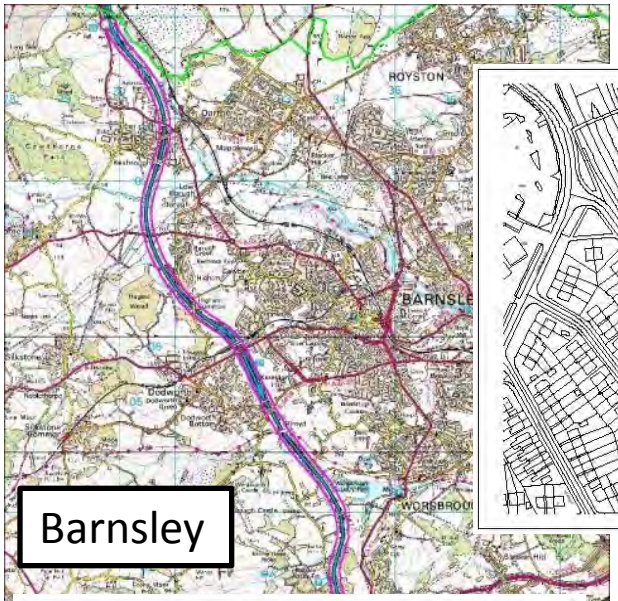
LAs with AQMAs

(Not to scale)

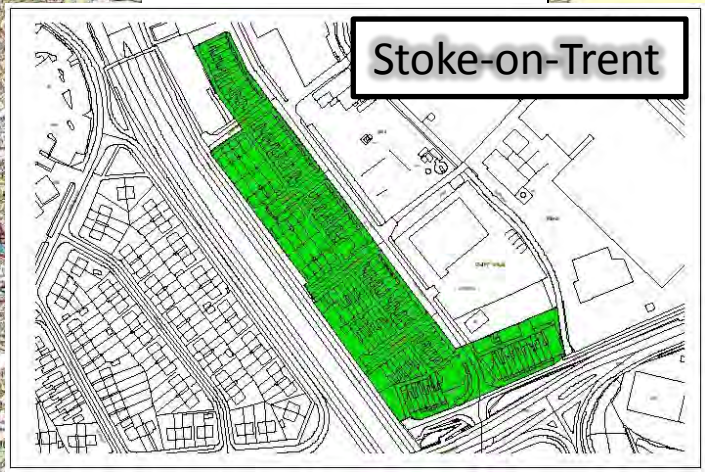
UK AQMAs by Pollutant

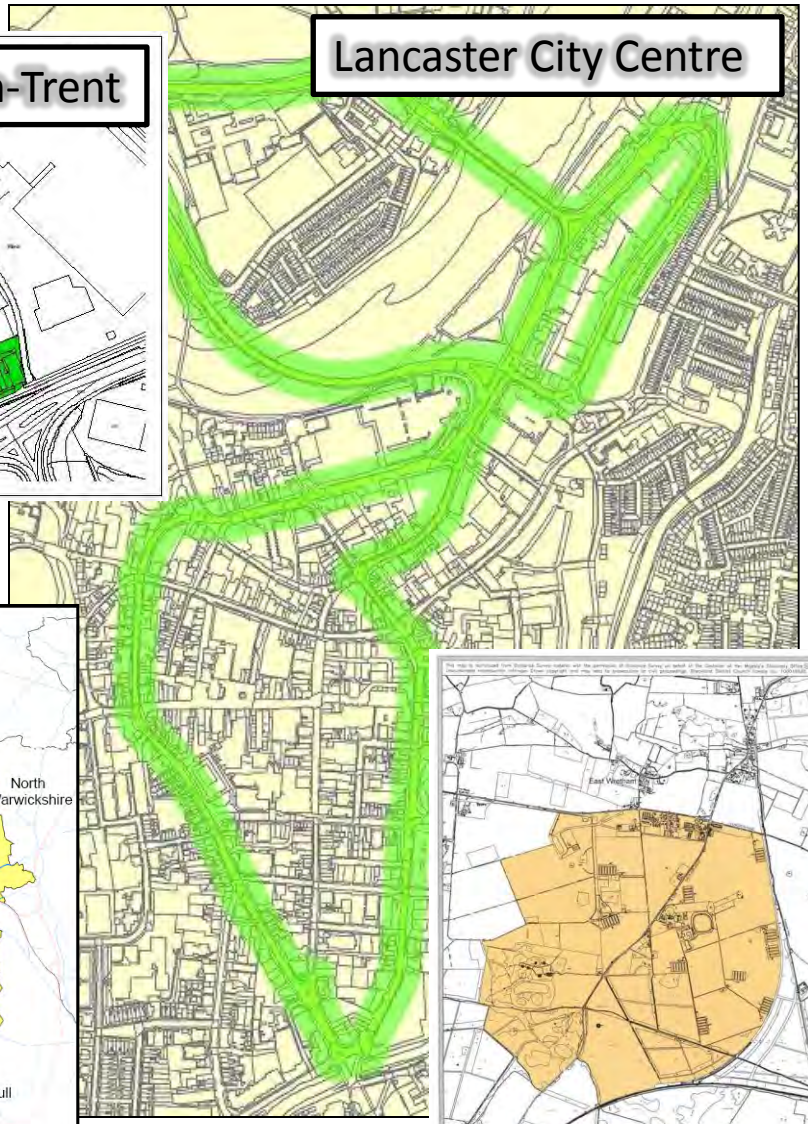


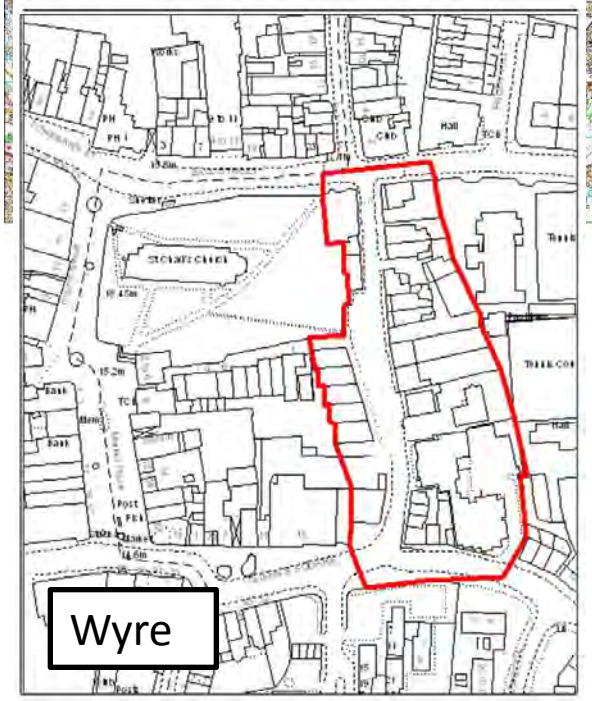
AQMA Delineations

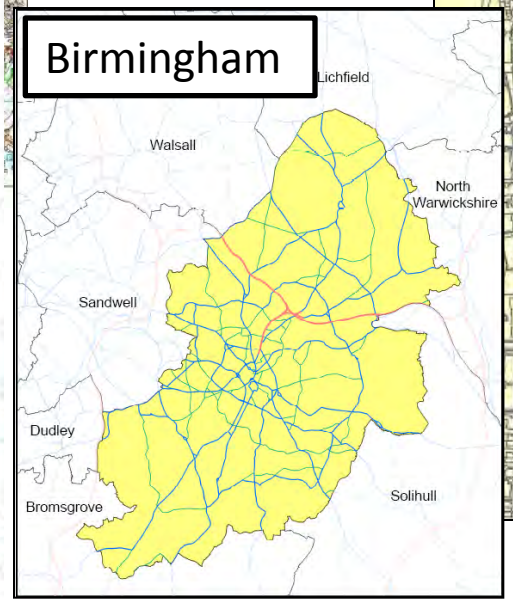


Barnsley


Stoke-on-Trent


Lancaster City Centre


Wyre



Breckland

A Typical AQMA

Further Assessment and Action Plans

- Further Assessment of air quality required by Section 84 of the Environment Act within 12 months of declaring AQMA. The assessment:
  - ✓ confirms the AQMA decision;
  - ✓ defines the AQMA boundaries;
  - ✓ calculates source apportionment;
  - ✓ supports Air Quality Action Plan

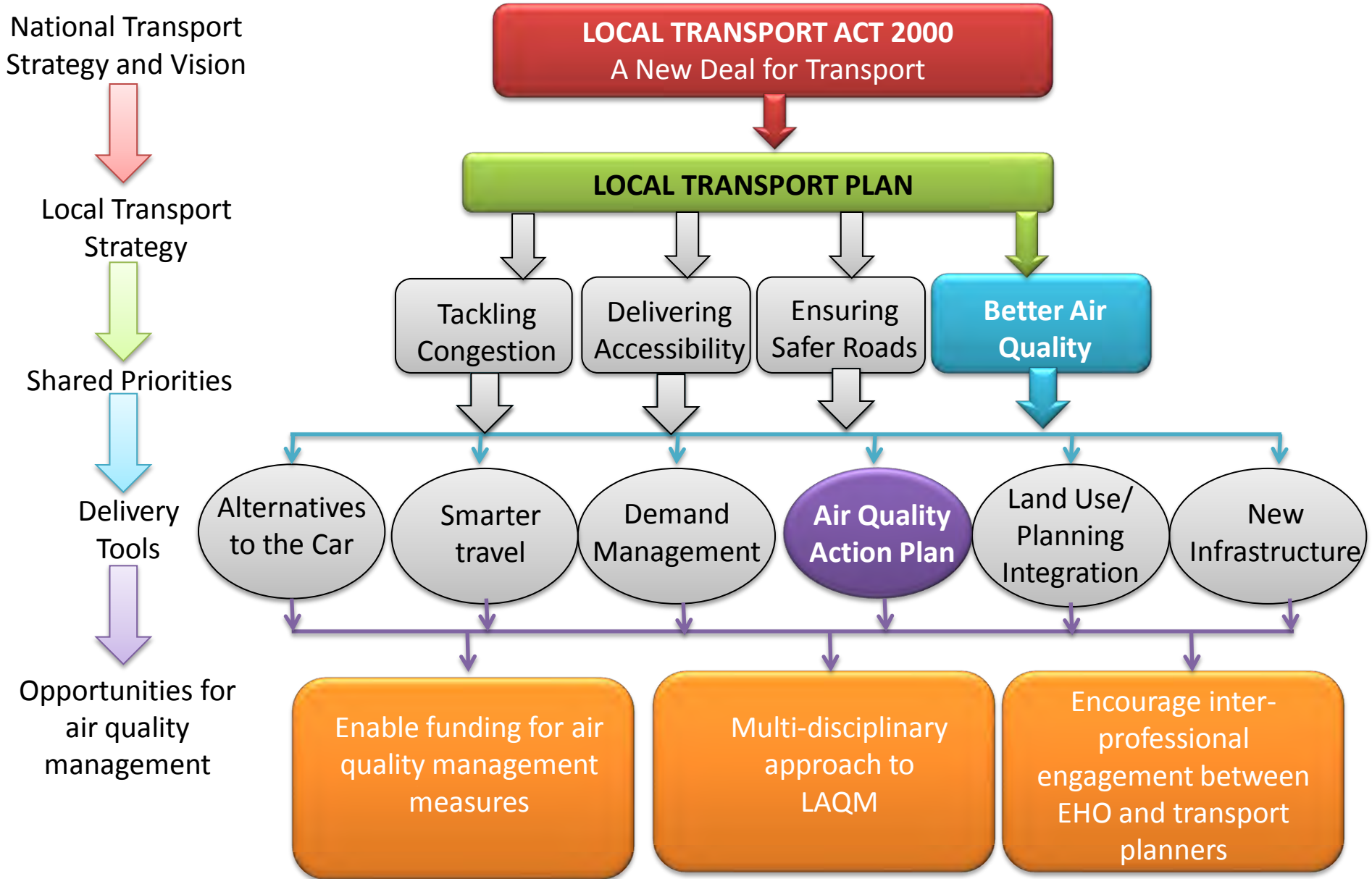
- The Air Quality Action Plan is expected within 12 to 18 months of the designation of the AQMA.

Local Transport Plan (LTP) in England

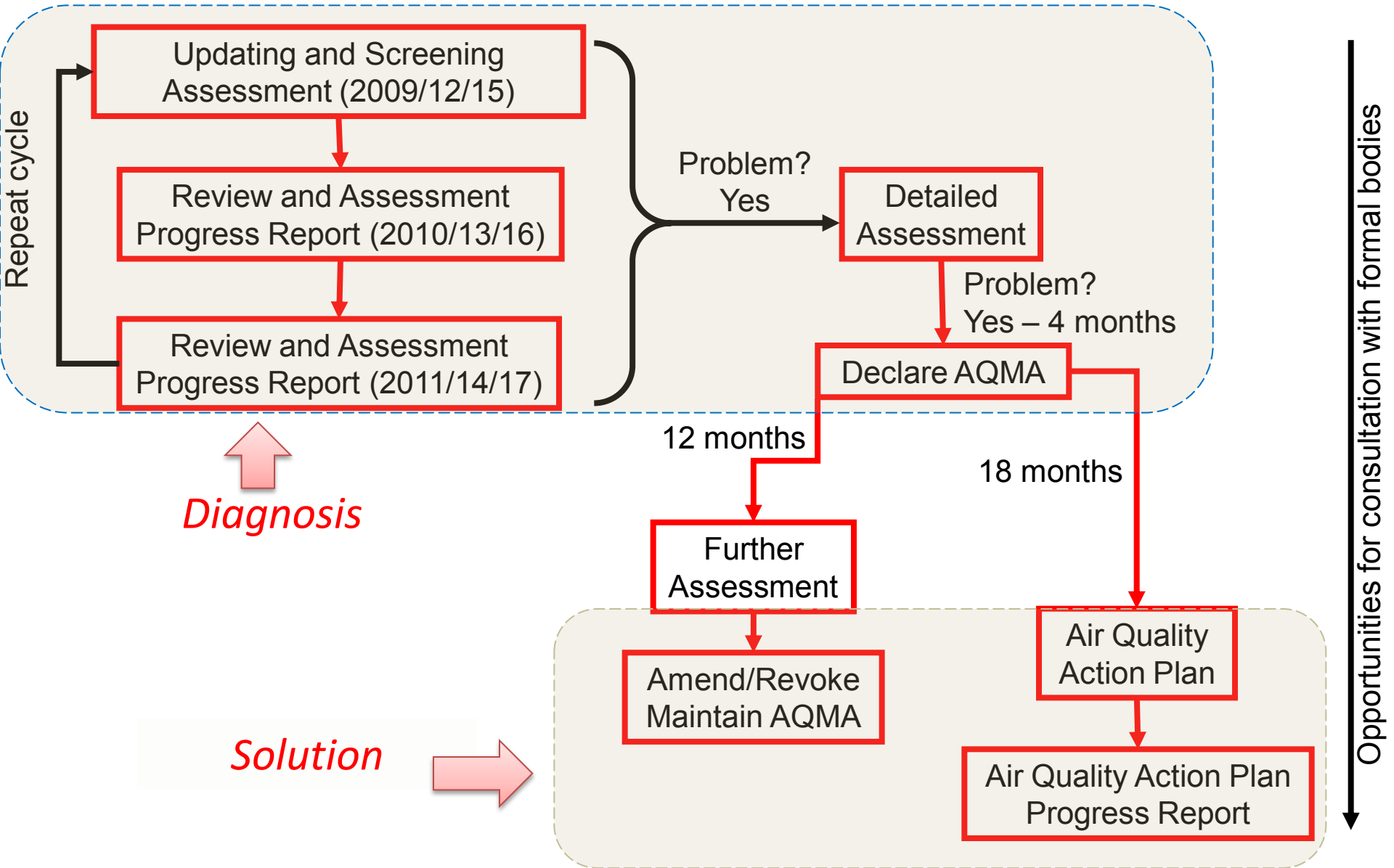
- The Transport Act 2000 requires most local transport authorities in England to produce and maintain an LTP.
- LTPs set out the authority's local transport strategies and policies, and an implementation programme.
- The second round was submitted in March 2006 for the period 2006-07 to 2010-11. Covers a five-year period.
- Used by the Department for Transport (DfT) to inform decisions on capital funding for local authorities.

Source: *www.nottinghamcity.gov.uk*

Air Quality as a Shared Priority in LTP2



Defining the Policy Disconnects (1)



Defining the Policy Disconnects (2)

- Review & Assessment is successful as a diagnostic tool.
- Air Quality Action Planning is less successful as a solution as there :
  - A lack of reduction in specific traffic-related pollutant concentrations;
  - An absence of AQMA revocations.
- AQAP failures may be caused by political, economic, technical, and communication barriers.

Explaining the Failure of AQAPs

- There is a lack of:
  - political support,
  - public awareness,
  - local financial and personnel resources,
  - internal collaboration locally and nationally,
  - external collaboration and communication.

Concluding Remarks

- The amount and quality of information about local air quality has improved as diagnostic Review and Assessment process has developed.
- Decision makers now have access to a wealth of information to inform transport and land-use planning.
- Insufficient utilisation of air quality information for these purposes to the detriment of public health.

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Thank you for your attention.

Any questions?

Please contact Jo Barnes using the details below:

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