



Ricardo-AEA

Low Emission Strategies and Zones

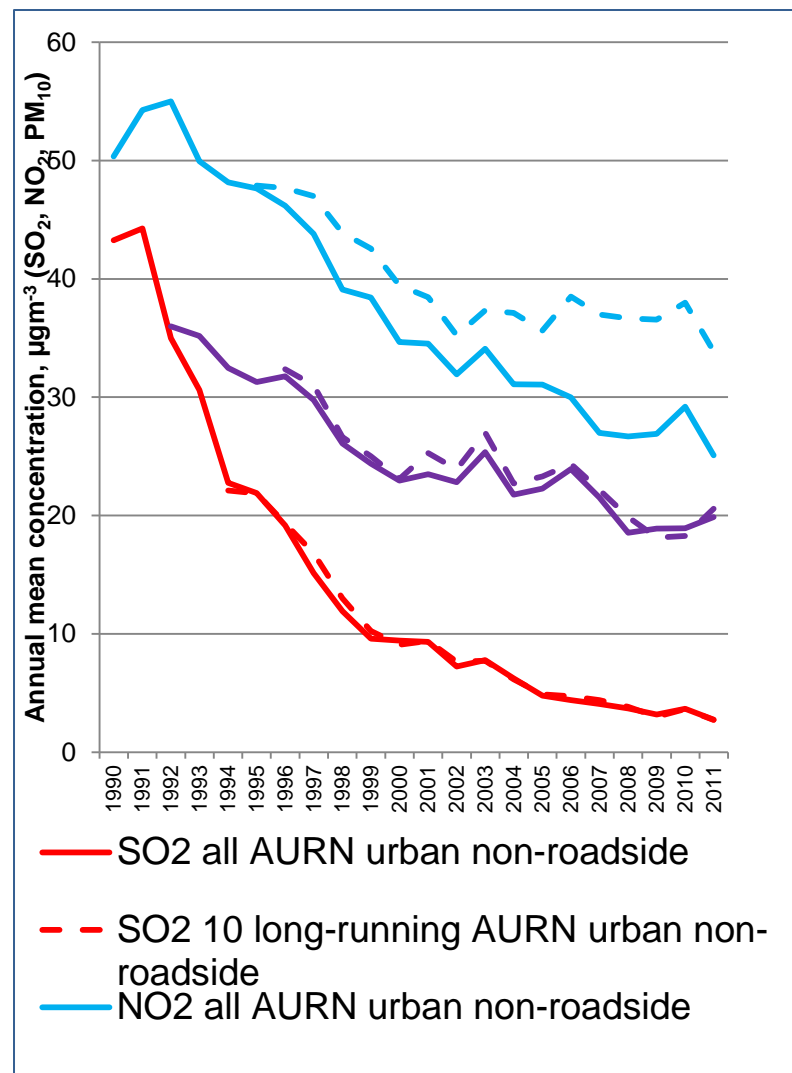
Dr Beth Conlan

Edinburgh

18th March 2013

in association with Andrew Whittles of LES Ltd

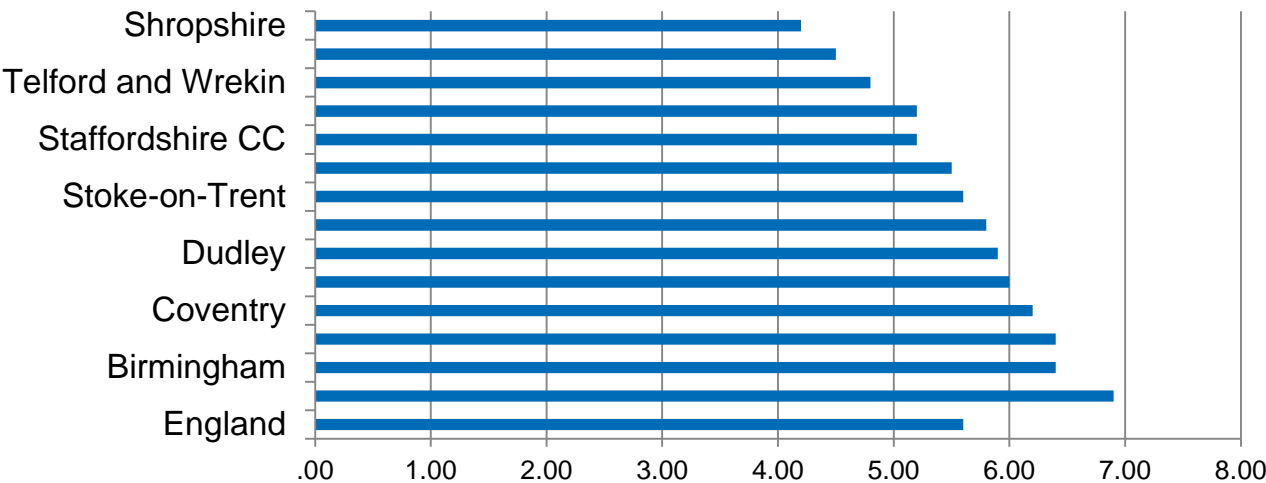
- No exceedances of Limits for SO₂, CO or benzene.
- Significant historic reductions in PM and NO_x But decline has levelled off in recent years.
- Concentrations of NO₂ remain above legal requirements in 40 of 43 zones, especially in urban areas such as London.
- Just meeting the PM₁₀ limit value for particulate matter.
- Long term Health impacts attributed to PM_{2.5} in 2008 were estimated to cause an average reduction in life expectancy of 6 months (an effect **equivalent** to 29,000 deaths each year)



Public Health Outcomes Framework

Air pollution is key health outcome indicator

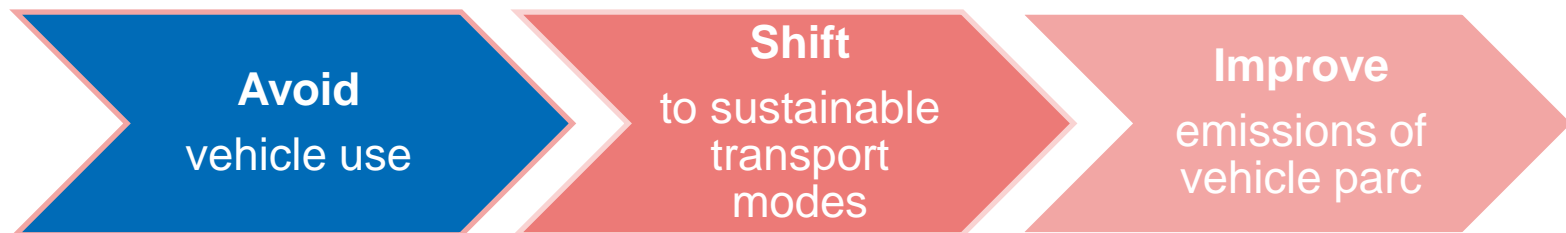
Fraction of all-cause adult mortality attributable to anthropogenic particulate air pollution (measured as fine particulate matter, PM2.5)



Low Emission Strategies

- Overarching strategy aligned with key local policies
- Raise awareness
- Accelerate uptake of cleaner fuels and technologies
- Build on best practice
- Optimise municipal policies
- Promote inward investment
- Public private partnerships

Emission Reduction Progression....



- City Wide LES – overarching, individual authority strategy eg. York, Bradford
- Regional LES – overarching strategy for group of authorities eg. West Midlands, Merseyside, Sussex, West Yorkshire
- Low Emission Zone – strategy applying to a specific geographic area
- Low Emission Scheme – planning development based LES
- Low Emission Corridor – key route LES
- Low Emission Enterprise Zone – LES combining emission reduction and economic development (funding platform)



Low Emission Strategy
Consultation Draft



Environmental Protection Unit
Communities and Neighbourhoods

March 2012

- Planning (land-use & transport)
- Procurement
- Parking
- Permitting
- Public Awareness
- Partnerships



www.defra.gov.uk

Low Emissions Strategies

using the planning system to reduce transport emissions

Good Practice Guidance

January 2010




Low Emission
Strategies
Building on Good Practice


defra
Department for Environment,
Food and Rural Affairs

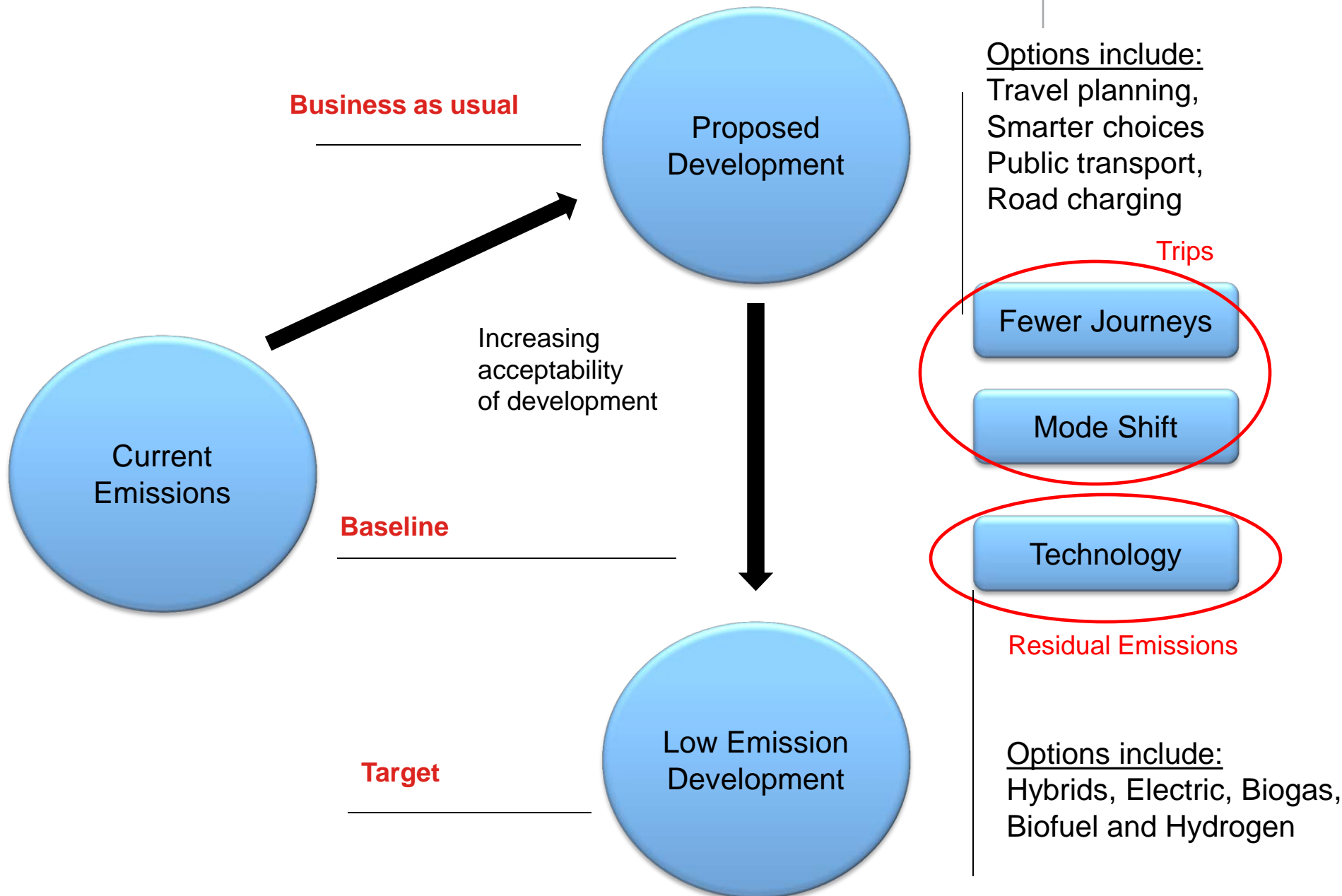
Low Emission Strategies

Best Practice Guidance

- National Planning Framework
- Avoid cumulative impacts
- Enable green vehicle choices
- Provide low emission vehicle infrastructure
- Discourage high emission vehicles

Using the planning system to reduce transport emissions

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- UK Public Sector procures £14b/annum vehicles & fuel
- EU Cleaner Vehicle Directive: - CRTV Regs 2011 - Whole Life Costs - Technology demonstrations
- Local Sourcing / Frameworks / Eco-labelling / Innovation
- Develop Public/private Partnerships

Sustainable Procurement Action Plan – Procuring the Future :

- ***‘Sustainable procurement is a process whereby organisations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organisation, but also to society and the economy, while minimising damage to the environment’***



Manchester City Council Policy on Sustainable Procurement

Manchester City Council spends around £600m in revenue and £250m in capital per annum on procurement of buildings, goods and services and is developing a **Sustainable Procurement Policy** that includes the following as an objective:

“Access local products and services to minimise the environmental impact associated with transportation and support the local economy”

For further information see www.manchester.gov.uk

- Parking SPDs – EV re-charging
eg Leicester, Merseyside, Dudley
- Differential Parking Rates
eg NCP Manchester
- Prioritised Parking



Leicester City Centre

- Local Transport Plan Initiative / Air Quality Action Plan
- Focussed activity / cost considerations
- Low Emission Bus Demonstration & Evaluation
- Strategic locations
- Vehicle displacement



- Recognise LES Scheme excellence ie BREEAM
- Provides clarity for developers
- Emission reduction based or based on pre-evaluated low emission mitigation intensity
- Define development scheme classifications and outline a suite of appropriate low emission measures applicable to each classification
- Supports National Planning Policy Framework principles



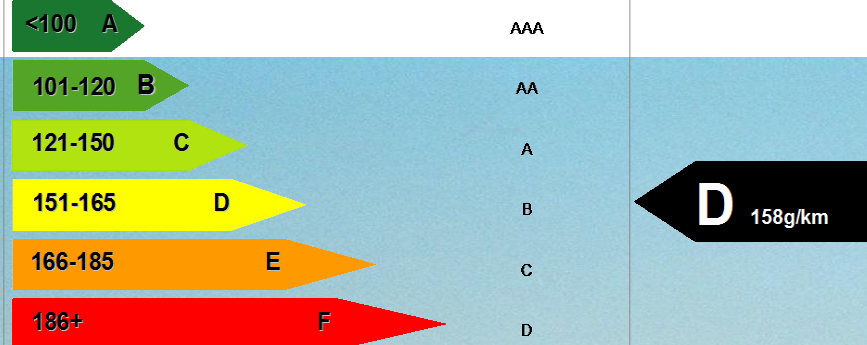
Fuel Economy

Ford Fiesta 1.4 ZETEC

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Carbon dioxide emissions CO2 grams per kilometre

VED bands equivalents



Running costs

Fuel cost for 10,000 miles (16,000 km)

Calculated on a combined (town centre and motorway) drive cycle with a base fuel price of 80 pence/litre. Fuel costs may differ from this due to driving behaviour as well as other non-technical factors.

£858

VED for 12 months

Vehicle excise duty (VED) or road tax is graduated according to the CO2 emissions of the vehicle and can be paid for 12 consecutive months.

£125

Environmental Information

A free guide on fuel economy and CO2 emissions which contains data for all new passenger car models is available at any point of sale and on the web at: www.vca.gov.uk. Some specifications of this make/model may have lower CO2 emissions than this. Check with your dealer. In addition to the fuel efficiency of a car, driving behaviour as well as other non-technical factors play a role in determining a car's fuel consumption and CO2 emissions. Carbon dioxide is the main green house gas responsible for global warming.

Make/Model	Ford Fiesta 1.4 ZETEC	Fuel type	Petrol
Engine capacity (cc)	1399	Transmission type	5 speed manual

Fuel Consumption

Measured according to Directive 93/116/EU

Drive cycle	litre/100km	mpg
Urban (e.g. town centre)	8.8	32.1
Extra-urban (e.g. motorway)	5.4	52.3
Combined (e.g. town centre and motorway)	6.7	42.2

Carbon Dioxide Emissions: 158g/km

Important note: Some specifications of this make / model may have lower CO2 emissions than this. Check with your dealer.



Low Emission Schemes

Development Classification		Development Size/Threshold			
UCO		Minor	Medium	Large	Major
A1	Food Retail	<150/200m ²	200- 500m ²	500-1,000	>1,000sqm
A1	Non-food Retail	<200m ²	200- 500m ²	500-1,000	>1,000sqm
A3	Restaurant/Café	<200/250m ²		250m ² to 2,500m ²	>2,500m ²
A4	Drinking Establishment	<200m ²		200/250m ² to 600m ²	>600m ²
A5	Hot Food Take-away	<200m ²		200/250m ² to 500m ²	>500 m ²
A2	Business inc offices	<200m ²	201m ² -1000m ²	1001 – 2,500m ²	2,500m ²
B1					
B2	General Industry	<500m ²			5,000m ²
B8	Distribution & Warehouse	<500m ²			
C1	Hotels	<10 rooms	10 to 30 rooms	30 to 70 rooms	>70 rooms
C2, D1	Hospitals & Health Centres				2,500m ²
C3	Residential	< 10 dwellings	10-30	30-50	>50 dwellings
D1	Higher & Further Education Ins				2,500m ²
D2	Cinemas & Conference facilities				1,000m ²
D2	Leisure facilities				1,000m ²
D2	Stadia	-			1,500 seats
Other	Petrol Stations				

Development Type	Required	Enhanced/Desired
Residential Development:		
Dwelling(s) with allocated parking	Single ¹ Phase	Single Phase
Dwelling(s) with unallocated parking	1 point per unit	1 point per unit
Nursing/Residential Homes	Single Phase	Single Phase
	1 point per 4 units	1 point per 2 units
	Single/3	Single/3 Phase/Accelerated
	Phase ² /Accelerated	Level to be determined and agreed with
	³	the Highway Authority
	Level to be determined and agreed with the Highway Authority	
Retail Development:		
All use types	Single/3 Phase/Accelerated	Single/3 Phase/Accelerated
	5% of required car parking provision	10% or more of required car parking provision in accordance with UDP Policy
	in accordance with UDP Policy T13	T13

- “A Low Emission Zone is where a Low Emission Strategy is implemented across a defined geographic area”

- **Off-Road Zones**

- Greenwich Peninsula, London Olympic Park,
- Greenwich Millennium Village



- **Road-Based Zones**

- London, Oxford, Norwich, Berlin, Bologna,
- Gothenburg & other European Cities
- (www.lowemissionzones.eu)



- Have been considered the most cost effective measure to reduce emissions and improve air quality – if assume retrofit
- Operate in 11 European Countries. First introduced in Sweden in 1996, first motorway LEZ in Austria in 2007.
- Apply to lorries, HDVs, vehicles with 4+ wheels, all vehicles, buses under local agreements, vans.
- Emission standard ranges from Euro 1 to Euro 4. In Oxford, standard is Euro 5 to come into effect 1/1/14.

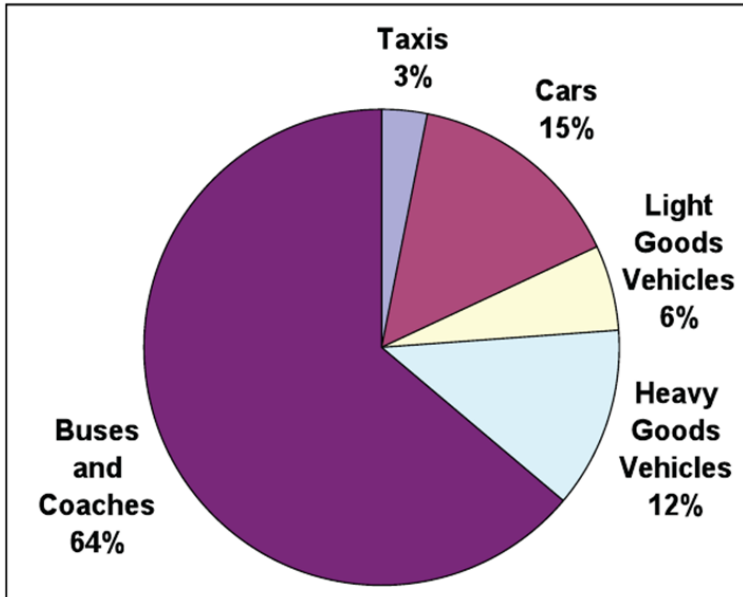


- Germany, Denmark, Sweden and Lisbon – need to buy a sticker to enter zone
- London and Netherlands – ANPR
- Italy and Austria – police controls vehicle papers
- Norwich and Oxford – local agreement with bus operators
- Budapest – differential parking charges (LEZ planned)

Legal Options – England

The two main legal options for implementing Low Emission Zones in the UK are

1. Traffic Regulation Orders under the Road Traffic Regulations Act 1984
(commonly introduced to manage traffic flow at specific locations, to define on-street parking conditions, or as part of a broader traffic management scheme)
2. Section 106 agreements as planning obligations for site usage

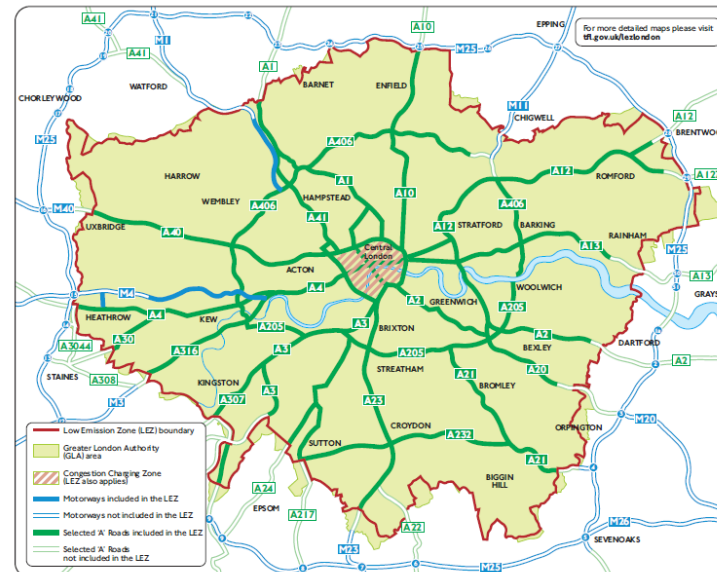


Following consultation with the major bus operators and further consideration by the steering group, it was agreed to extend the compliance date for the LEZ.

LEZ Standard-applying to PSV operators in central Oxford

100% achievement of Euro V standard by end of 2013

- The TfL database – VOSA, DVLA and SMMT
- Drivers need to be registered
- ANPR automatically checks vehicle against the database
- Buses, coaches and Lorries have to be Euro 3 for PM (since Jan 2012 now Euro 4)
- Since Jan 2012 larger vans and minibuses need to be Euro 3 for PM



VOSA test centres to fit and certify filters

- Proposals for Ultra LEZ from 2015
- All vehicles driving into the Congestion Charging zone will be low or zero emission
- More than 150,000 vehicles use the C-charge zone each week, about 95,000 are private cars which are expected to be exempt



- Low Emission Strategies bring a wider bearing to reducing emissions
- Use of existing controls within Planning, Procurement, Parking and Permitting
- Low Emission Zones – many shapes and sizes
- New approach to stakeholder engagement to raise public health



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