

Air quality challenges for Brighton & Hove

Environment and Community
Safety Overview & Scrutiny
Committee

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Pollutants and their principal sources

- **Fine Particulates** - diesel traffic, combustion processes, demolition, fires
- **Nitrogen Dioxide** - burning of fuel (traffic) $(\text{NO} + \text{O}_2) = \text{NO}_2$
- **Ozone** – VOCs + NO_2 + sunlight = low altitude O_3
- **Sulphur Dioxide** – coal and oil combustion
- **Volatile Organic Compounds e.g benzene** – petrol vehicles, and industry
- **Carbon Monoxide** – incomplete combustion of carbon fuels
- **Lead** - traffic/incineration/metal processing
- **Toxic Organic Micro-Pollutants e.g benzo(a)pyrene** – incomplete fuel combustion, fires, domestic combustion
- **1,3 Butadiene** - synthetic rubber production, petrochemical plants, vehicles

National Air Quality Objectives

HUMAN HEALTH OBJECTIVES						
	Period	Limit/target	Allowance	Applies where	By when?	Changed?
Nitrogen dioxide	1hr mean	200µg/m ³	18 / year	UK	31 Dec 2005	no change
	Annual mean	40µg/m ³	–	UK	31 Dec 2005	no change
Sulphur dioxide	15 min mean	266µg/m ³	35 / year	UK	31 Dec 2005	no change
	1hr mean	350µg/m ³	24 / year	UK	31 Dec 2004	no change
	24hr mean	125µg/m ³	3 / year	UK	31 Dec 2004	no change
Ozone	8hr mean	100µg/m ³	10 / year	UK	31 Dec 2005	no change
Particles PM ₁₀	24hr mean	50µg/m ³	35 / year 7 / year 7 / year 10 / year	UK Scotland England London	31 Dec 2004 31 Dec 2010 31 Dec 2010 31 Dec 2010	no change no change dropped dropped
	Annual mean	40µg/m ³	–	UK	31 Dec 2004	no change
		20µg/m ³	–	England	31 Dec 2010	dropped
		23µg/m ³	–	London	31 Dec 2010	dropped
18µg/m ³		–	Scotland	31 Dec 2010	no change	
PM _{2.5}	Annual mean	25µg/m ³ (target) 12µg/m ³ (limit) 15% cut (target)	– – –	Rest of UK Scotland UK	2020 2020 2010-2020	new new new
	Annual average	0.25ng/m ³	–	UK	31 Dec 2010	no change
	Running ann. mean	16.25µg/m ³	–	UK	31 Dec 2003	no change
Benzene	Annual average	5µg/m ³	–	Eng & Wales Scot. & NI	31 Dec 2010	no change
	Running ann. mean	3.25µg/m ³	–		31 Dec 2010	no change
	Running ann. mean	2.25µg/m ³	–	UK	31 Dec 2003	no change
Carbon monoxide	Running 8hr mean	10mg/m ³	–	UK	31 Dec 2003	no change
Lead	Annual mean	0.5µg/m ³	–	UK	31 Dec 2004	no change
		0.25µg/m ³	–	UK	31 Dec 2008	no change
VEGETATION AND ECOSYSTEM OBJECTIVES						
NO _x	Annual mean	30µg/m ³	not sens. sites	UK	31 Dec 2000	no change
		30µg/m ³	sensitive sites	UK	2010	plans dropped
Sulphur dioxide	Annual mean	20µg/m ³	not sens. sites	UK	31 Dec 2000	no change
	Winter average	20µg/m ³		UK	31 Dec 2000	no change
	Annual mean	20µg/m ³	sensitive sites	UK	'long term'	plans dropped
Ozone	5yr average of summer 1hr values AOT 40	18mg/m ³		UK	1 Jan 2010	new

What is an AQMA?

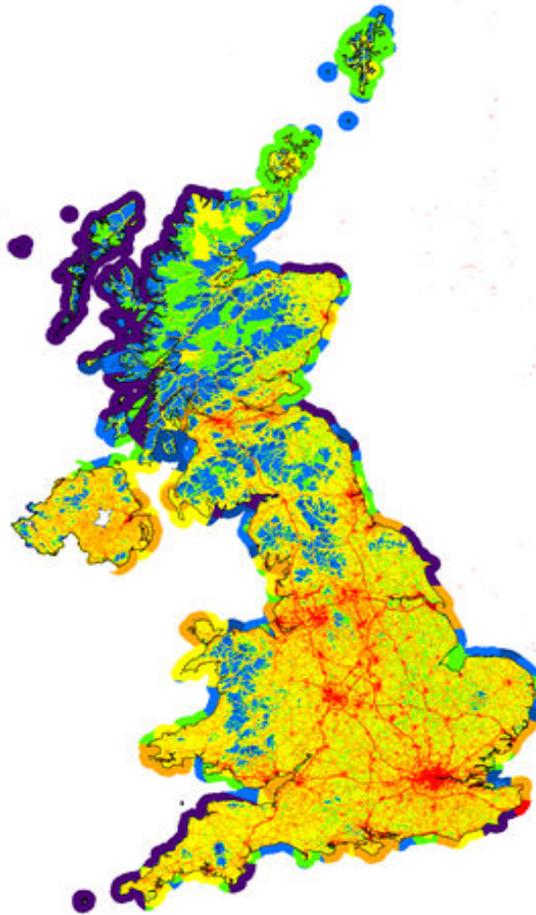
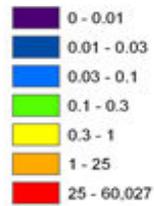
- Review and assessment of AQ required-1997
- Calculate existing/future AQ levels
- Assess against national objectives
- Declare AQMA if exceedances likely
 - Streets or areas
- B&H – Sept. 2004 and Nov. 2007
- Produce AQAP

GB AQMAs

- 223 authorities declared AQMAs
 - 198 Nitrogen Dioxide
 - 72 Particulates (PM₁₀)
 - 11 Sulphur Dioxide
- Adur/Chichester/Lewes/Hastings
- Bournemouth/Blackpool/Bristol/Exeter
- Norwich/Reading/York/New Forest
- !Fenland DC/Rotherham MBC!

GB Oxides of Nitrogen (NO_x)

UK Emissions Map of
NO_x 2006 t/1x1km



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2004 B&H AQMA



NO₂ improvements

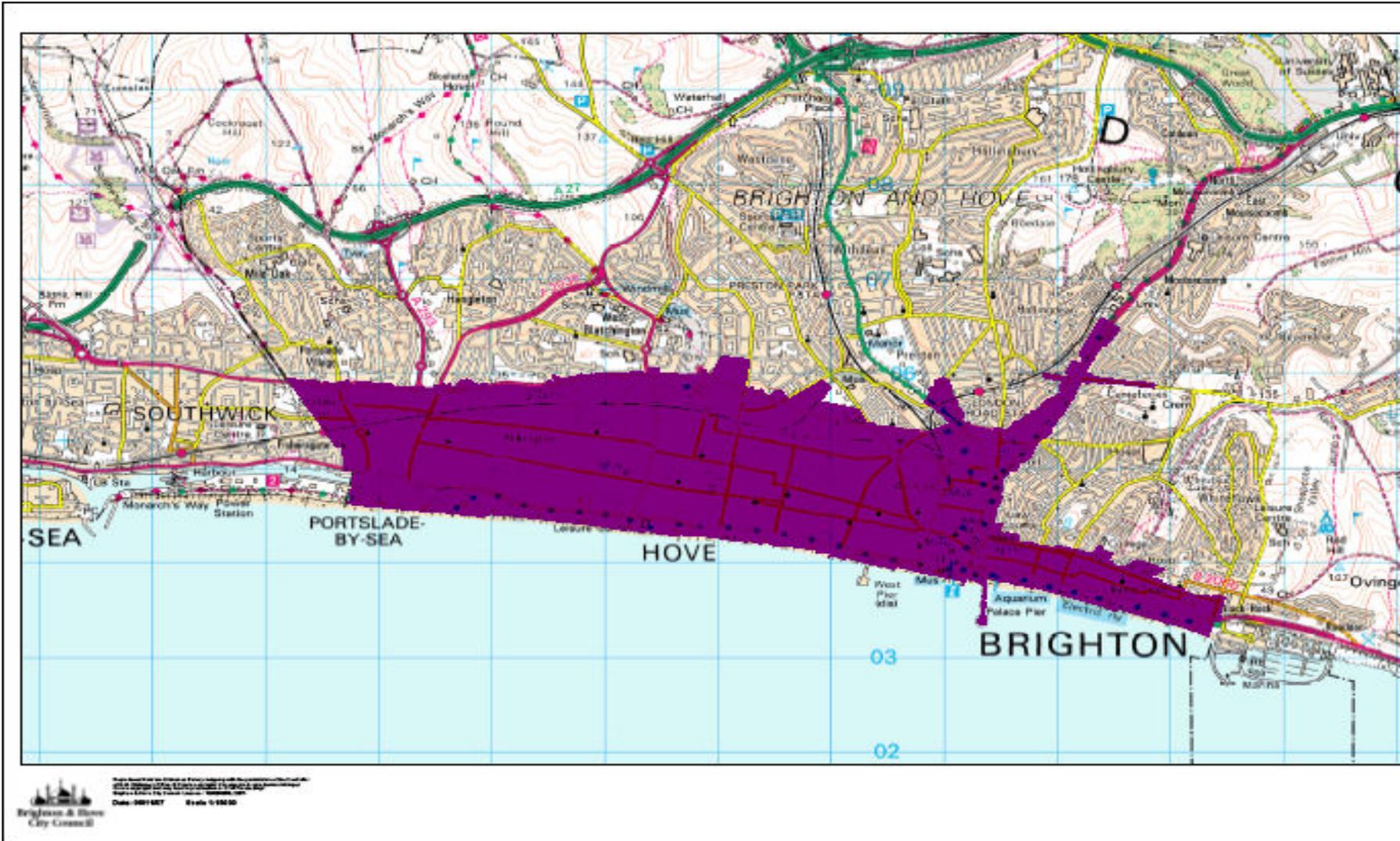
- Marlborough Place/Gloucester Place/York Place
- London Road
- Lewes Road
- Ditchling Road

NO₂ hotspots

- London Road-Preston Circus and Oxford Place to York Place
- North Street, and Western Road
- Lewes Road-Gladstone Terrace to Hollingdean Road
- Terminus Road, Queens Road-Clock Tower and West Street
- Marlborough Place, Gloucester Place and Grand Parade
- New England Road, Prestonville Terrace and Chatham Place
- Seven Dials, Buckingham Place and Dyke Road (nr to junction)
- Ditchling Road, Viaduct Road, Beaconsfield Road, Preston Rd
- St James's Street and Old Steine
- Sackville Road (localised)
- Eastern Road (localised)
- Church Road, Portslade and Wellington Road, Portslade (localised)

2008 B&H AQMA

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NO₂ Monitoring Results

III (a) - Diffusion tube results 1994 -2007

