

Pollution Control Team

The Borough Air **Quality Bulletin**



Winter 2002

A Local Agenda 21/Environment Group Initiative

Bad news for air quality as T5 gets approval

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Ealing Borough Air Quality Bulletin

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Edited by Richard Ward

Tel: 020 8758 5738 or 5633 Fax: 020 8758 8214 E-mail: wardr@ealing.gov.uk Web: www.ealing.gov.uk/pollcon

Heathrow airport. terminal at credibility of the Governments commitment to sustainable development. It certainly leaves Ealing with an even harder task of meeting its quality Objectives. Already air Heathrow is an air pollution hotspot with levels of particulates and nitrogen dioxide predicted to greatly exceed air quality objectives. Hounslow Council designated the area an Air Quality Management Area, but even this had no bearing on a decision that will significantly worsen pollution within it. The effect can be seen in Ealing with elevated nitrogen dioxide levels encroaching on Southall and exacerbating the effects of pollution from traffic on local roads.

Last year, Heathrow handled 62 million passengers. According to the British Airways Authority, T5 will increase capacity to 90 million passengers annually. BAA have admitted that this will lead to an extra 49,000 car trips to and from Heathrow per day, and that its Heathrow Express service is taking only 3000 cars off the roads between central London and Heathrow. Local Authorities around Heathrow were already struggling with the task of

fter the longest running public developing measures that could help them enquiry in British history, the meet their air quality Objectives, this Government has finally given decision makes that goal more elusive. To its approval for the building of a fifth address some of these environmental concerns, the Government has stipulated Opponents of the scheme say the the extension of the Heathrow Express and decision calls in to question the the Piccadilly line to T5 prior to its opening, forecast for 2007. There is also a cap on annual flight numbers at 480,000, which is only 20,000 up on last year. It remains to be seen how enforceable this figure actually is. When considering air quality, the planning inspector acknowledged that T5 would affect health, but the only conditions relating to air quality are to restrict the number of T5 car parking spaces and to require BAA to submit an air quality action plan, stating how they will reduce emissions. The number of car parking places has been reduced by 9% to 42,000 spaces, which stills leaves it as the biggest car park in the country. And things could get worse. Already there is pressure for the building of a third runway, something which the Transport Minister, Stephen Byers, has not ruled out. Ealing will continue to oppose such expansion.

> We aim to keep readers informed regarding air quality management in Ealing and to bring you up to date on general air quality issues. If you have any comments on how to improve this bulletin or if there are any topics you would like to see included, then please get in touch with the Editor.

Ealing Borough Air Quality Bulletin

Bonfire night alert

Bonfire night celebrations resulted in severe levels of PM₁₀ levels across the Capital and prompted the Government to issue 'very high' smog alerts across the region, advising asthmatics to carry inhalers. The worst areas were in south east London, where Bexley recorded an hourly PM₁₀ value of over $750\mu g/m^3$. This was largely regarded as a freak reading as there was a bonfire event near the monitor, however other monitors in the region were showing readings of $400\mu g/m^3$ and above. Ealing's Acton Town Hall site measured PM₁₀ values of over 300µg/m³ (see graph on back page), corresponding with readings of PM2.5 of around 280 μ m/m³. Calm weather conditions over that weekend allowed levels to build up. However, the increasing use of fireworks, with private individuals buying bigger and more powerful fireworks, can only worsen bonfire night smog problems in the future.

M4 speed limit to be lifted

The Government has decided to lift a speed restriction on the M4 despite air quality benefits resulting from lower traffic speeds. A bus lane was introduced two years ago and a 50 mph speed limit imposed to improve driver safety. A Transport Research Laboratory study found that the bus lane and speed limit added eight seconds to off-peak journey times and shortened peak time journeys by one minute. They estimated that fuel consumption and pollution would be reduced. The speed limit is to be raised to 60 mph "to improve road users journey times".

Air quality and planning

More and more developments around the country are being refused permission on air quality grounds. Greenwich Council objected to the development of a block of flats next to the busy A2 Blackheath Road that carries 60,000 vehicles a day. Like Ealing, the whole borough has been declared an Air Quality Management Area because of NO₂ and PM₁₀ exceedances. At appeal, the Inspector considered that such exposure to high levels of traffic noise and pollution would not provide a reasonable and acceptable living environment. He remarked that the development had not allowed for a suitable mechanical system that would provide adequate ventilation should the occupiers wished to keep their windows closed. Ealing's Unitary Development Plan is being updated to include policies that will enable the Council to limit individuals exposure to poor air quality and to ensure that developments do not result in a net increase in air pollutants.

New London Air Quality Network web site

The Environmental Research Group (ERG) at King's College London have launched a new London Air Quality Network website. This improved site allows users to get pollution levels in their areas, plot graphs and carry out statistical analysis of air quality measurements. Users can also compare levels to the Air Quality Strategy Objectives, Sustainability Indicators and the UK Air Quality Information System. www.erg.kcl.ac.uk/london/asp/home.asp

Air Quality on the Internet

Here is a selection of air quality sites on the Internet:-

- Ealing Council's Pollution Control Team www.ealing.gov.uk/pollcon
- Department for Environment, Food and Rural Areas
 - http://www.defra.gov.uk/environment/index.htm
- National Environmental Technology Centre <u>www.aeat.co.uk/netcen/airqual/welcome.html</u>
- National Society of Clean Air and Environmental Protection
- <u>http://www.nsca.org.uk</u>
 The Air Quality Management
- The Air Quality Management Site
 <u>http://www.ifi.co.uk/air.htm</u>
- Atmospheric Research & Information Centre (at Manchester Metropolitan University) http://www.docm.mmu.ac.uk/aric/eae/
- Friends of the Earth www.foe.co.uk
- Local Agenda 21 Pollution and Public Health Project Group www.LA21.org
- OMNI Ealing Council's new interactive website. www.seiph.umds.ac.uk/o2/ealing/index.htm
- Environmental Research Group Kings College London. London Air Quality Network. http://www.erg.kcl.ac.uk/london/asp/home.asp

Ealing Borough Air Quality Bulletin

Research Latest

Cooking causes NO_x peaks

Cooking by gas or electricity can cause huge peaks in nitrogen dioxide and NO_x concentrations in poorly ventilated kitchens. Scottish researchers compared gas and electric hobs, grills and cookers to compare emissions from different cooking procedures. They confirmed that large numbers of particles are emitted during cooking with gas, frying and cooking fatty foods. Electric rings and grills also generate particles from their elements. Using all four rings of a gas cooker for five minutes produced peaks of 1,000ppb for NO_2 and 2,000ppb for NO_x . The researchers concluded: "Cooking in a poorly ventilated kitchen may give rise to potentially toxic concentrations of particles and NO_x. With no extraction, concentrations may cause not just respiratory ill health, but also cardiac effects cannot be excluded."

Air Quality Management. November 2001. Issue number 71.

Diesel affects children

In what is thought to be the first conclusive evidence of its kind, research carried out by the Institute for Lung Health at the University of Leicester, has found that particulates in diesel exhaust fumes can penetrate deep into the lungs of children. Researchers looked for particles in cells sampled from the lungs of 22 healthy children and found evidence of diesel particles in all of them. The level of particles was significantly higher in children living on a main road, although there was no difference in the proportion of these particles in children of different ages. The lead researcher of the study said "This research, which shows particles in cells that are known to cause lung injury, supports epidemiological studies which demonstrate the adverse effect of particles on the respiratory health of children." Dr John Harvey of the British Thoracic Society, added: "This research is clear evidence that current levels of air pollution are damaging the lungs of children across the UK. We urge Government and other bodies to fund long-term studies so we can further probe avoidable causes of lung damage in children, and find solutions. We owe it to future generations to help them breathe easier."

Air Quality Management. December 2001. Issue number 72.

Pollution increases school truancy

Los Angeles researchers have raised the interesting possibility that increased air pollution can worsen

truancy dramatically. They logged ozone, nitrogen dioxide and particulate data for six months and compared them with school absenteeism rates among 9-10 year olds in 12 southern Californian communities. Researchers found that there were 'substantial' increases in school absences for short term changes in ozone, but not NO2 and particles. An increase of 20ppb ozone led to an increase of 63% for illness related absence rates, 83% for respiratory related absences, 45% for upper respiratory illnesses and 173% for lower respiratory illnesses with a wet cough. Such effects were found to be worse in communities with high long term average PM_{10} levels. Researchers concluded: "Because exposures at the levels observed in this study are common, the increase in school absenteeism from respiratory illnesses associated with relatively modest day to day changes in ozone concentrations is an important adverse effect of ambient air pollution worthy of public consideration."

Air Quality Management. January 2002. Issue number 73.

Fixed sites underestimating exposure?

Personal monitors fixed to London commuters have shown that their personal exposure to $PM_{2.5}$ is double that indicated by fixed site monitors. Researchers from Imperial College, undertaking a comprehensive $PM_{2.5}$ exposure assessment of transport users, compared users of different modes of transport including tube, car, bus and bicycle travelling to central London. They found that those using the road had double the exposure of urban centre fixed monitors, and those using the tube had up to eight times the exposure of $PM_{2.5}$. Higher wind speeds reduced exposure to pollutants, route was an important factor but mode was less important. Air Quality Management. October 2001. Issue number 70.

Pollen allergy worsened

Swiss researchers believe that pollution may worsen allergy to pollen. 15 subjects with no exposure to tobacco smoke kept diaries of symptoms during the spring and summer of 1998. Their allergic reactions were logged against pollen counts and pollution levels leading researchers to believe that there was increased susceptibility towards allergens in areas with increased levels of air pollutants.

Air Quality Management. January 2002. Issue number 73.

Air Pollution Results October to December 2001



Nitrogen dioxide (NO2) levels measured in Ealing



Levels measured at Ealing (O3) and Acton (CO) Town Halls



The biggest pollution incident by far over the past three months was the episode over the bonfire night weekend. PM₁₀ levels peaked at 320µg/m³ on Saturday 3rd November as calm weather conditions allowed pollution from fireworks and bonfires to build up in the atmosphere. There is a nice correlation with $PM_{2.5}$ which peaks at $277\mu g/m^3$.

The two large peaks monitored during the first week of December are a result of building work on the pavement outside of Acton Town Hall. The ratio between the fine $(PM_{2.5})$ and course (PM_{10}) particles is much lower here reflecting the nature of the work undertaken.

Other pollutants remained LOW for the three month period.

Daily Forecasts

A daily air pollution forecast is published every day on the Pollution Control website, as well as recent air pollution levels. You will also find details of Ealing's Air Quality Review and Assessment, the results of Ealing's public consultation on air pollution and other related topics, including back issues of the Air Quality Bulletin.

Pollution Bandings

			_	
	low	moderate	high	v.high
O ₃	<50	50-89	80-179	>180
СО	<10	10-14	15-19	>20
NO_2	<150	150-299	300-399	>400
PM ₁₀	<50	50-74	75-99	>100
Ozona	Measured as: (O) housely mean			

Ozone	(O_3)	hourly mean
Carbon monoxide	(CO)	running 8 hour mean
Nitrogen dioxide	(NO_2)	hourly mean
Particulates	(PM ₁₀)	running 24 hour mean

Winter 2002