

## **Bad Air in East Greenwich** *(Part 1 – a Diagnosis and Prognosis)*

### **The wider context**

Air pollution is killing many Londoners. About 9,500 deaths a year are attributable to it according to a path-breaking study by [Kings College London](#) (KCL) and published by the Greater London Authority (GLA) and Transport for London (TfL). The same report indicates that as many as 1 in 5 premature deaths in Greenwich may be linked to the effects of pollution by particulates (i.e. small soot particles) or nitrous oxides (especially nitrogen dioxide).

Air quality monitoring reveals the extent of pollution. We have a good set of monitoring results across Greenwich from the Council, from TfL and from the No to Silvertown Tunnel campaign (NtST). There are also clear limits, set by the European Union (EU), for different types of air pollution, of which the critical ones are now particulates and nitrogen dioxide. Strikingly, air pollution throughout much of East Greenwich exceeds the annual average limit for nitrogen dioxide (NO<sub>2</sub>) which is 40 microgrammes per cubic metre of air (µgram/cu metre).

What has been done? Until April 2015 the answer to this was “very little”. Essentially the GLA, with the agreement of the national government, admitted the breach. The GLA, or the national government, could be forced to pay fines for breaking European Union Directive 2008/50/EC. What the EU expected to happen, when it issued this mandate was that national governments would draw up action plans by 2010 to reduce air pollution to the acceptable limits. Alternatively the national government could have requested a deferral to 2015.

The British government did neither and so it was taken to court by [ClientEarth](#) in 2011. After protracted proceedings ClientEarth received a judgement in our Supreme Court in its favour in April 2015. This has forced the government to produce an action plan by the end of 2015, as the official press release ([https://www.supremecourt.uk/decided-cases/docs/UKSC\\_2012\\_0179\\_PressSummary.pdf](https://www.supremecourt.uk/decided-cases/docs/UKSC_2012_0179_PressSummary.pdf)) shows. The action plan has to satisfy both our Supreme Court and the European Court of Justice. The Department of Environment and Rural Affairs (DEFRA) issued a consultation on a new [air quality action plan](#) in September 2015. EGRA responded to this, and so can you by 6 November 2015.

Every one of us must hope that this avoidance by government of an issue that is clearly killing its citizens will end soon. It is, however, a wicked issue. Politicians want to avoid it since to tackle it is thought to incur unpopularity. It is also, unlike the great London pea-soupers of the 1950s, largely invisible. Furthermore, the causes of the new pollution are multiple. In London the KCL study suggested that about half of background pollution comes from outside London. Local pollution is emitted by homes (mainly from gas central heating), industry and commerce, but above all by traffic.

The air quality action plan recognises that 80%, and [Cleaner Air for London](#) accepts that about two thirds, of air pollution is caused by vehicular traffic. The vast majority of this is caused by diesel engines, and the European emissions testing system has failed to control such pollution. The recent VW diesel engine scandal has dramatised the importance of diesel vehicles in emitting both NO<sub>2</sub> and particulate pollution.

### **Air pollution in East Greenwich**

Greenwich is a delightful spot on the Thames. (*‘Greenwich possesses the best air, the best prospect and the best conversation’*, Defoe) Many day-trippers know that. Few know that the eastern part of Greenwich, on the wrong side of the Royal Park and Royal Naval College, has been an historic centre for industry. The Bessemer steel converter, the cables for the first transatlantic telegraph, the biggest gasworks in Britain, a major Siemens factory, specialist sugar works and much else were all located along the riverside together with the docks to service them all. Much of that has closed. What is replacing the industry are retail sheds, a

cruise liner terminal, a huge vehicle river crossing and 20,000 new flats to help solve London's housing crisis (IKEA, Sainsbury, Cruise Liner Terminal, Cathedral, Knight Dragon).

Old industry polluted. But the 1956 Clean Air Act eventually ended most of the most serious air emissions. The new developments, often called "regeneration", tend to bring a new threat – from motor vehicles. One development alone, near the O2, is estimated to increase traffic along East Greenwich's main road by between 5 and 9 percent. Doubling the capacity of the river crossing could double local traffic. The proposed cruise liners may consume as much diesel as 400 idling HGVs 24 hours a day. Ship's diesel is dirtier than that of road vehicles and the emissions are usually untreated.

Yet even before all this planned development, air quality (AQ) in East Greenwich is poor. The East Greenwich Residents Association (EGRA) wanted its own measure of exactly how poor. It conducted a baseline survey of NO<sub>2</sub> in Spring and Autumn 2015 and has compared those results to other surveys before the possible main traffic generation projects come on stream. This short paper documents that effort and future work. It draws some key conclusion and tries to dispel some myths.

### **How we are monitoring air quality**

EGRA was re-formed as a citizen organisation in 2014. Its founders realised that traffic poses a serious threat to both local air quality and the civility of East Greenwich. Noting the work already done by a campaigning organisation, the No to Silvertown Tunnel (NtST) campaign which was fighting plans to double the river tunnels from East Greenwich, EGRA decided to conduct its own AQ surveys. It chose not to work with the tunnel campaigners but with [Clean Air UK](#) instead. They advised EGRA to monitor nitrogen dioxide levels at key points in the area.

Nitrogen dioxide is relatively easy to monitor and is regulated by law. It is also relatively cheap to measure. But monitoring is not free, and EGRA has few funds. The solution was to ask residents to "sponsor a pollution tube". The sponsorship proved popular. At the meeting that launched the citizen science effort sufficient sponsorship was forthcoming for an initial survey. By Spring there were enough funds for a second survey in 2015 and to partly fund another in 2016.

Individual sponsorship also provides publicity. Each sponsor was allocated a monitoring site and given preview results. They were encouraged to tell family and friends and so build a local network of concern. With the advice of Clean Air UK EGRA chose to monitor 10 sites. Three of these were selected as "controls" at Background sites. Here AQ was likely to be better than along main roads. The other 7 were at those Roadside sites already surveyed in the NtST study.

A small group from EGRA decided on the final locations. This small group included a local councillor, who had sponsored a tube, and who belonged to the ruling party on Greenwich Council. From the beginning EGRA wished to work with the local authority, even though many Council decisions were believed to be adversely affecting AQ.

We followed DEFRA guidelines and discussed our initial results with the Council. EGRA also co-ordinated with an adjacent association, the Westcombe Society and both sampled over March 2015. Training and back-up were provided by Clean Air UK and four volunteers offered to do the work. It took less than two hours to mount the tubes on Council road furniture. The Council was informed of the work in advance, reinforced by information from the participating councillor. Each site was photographed. No tubes were lost, or apparently tampered with. Taking them down, recording the details and dispatching to an accredited laboratory was very easy.

## **Our results compared with others**

Clean Air UK sent the results within a fortnight in easily read tabular form.

When these results were plotted they immediately revealed that:

- nitrogen dioxide (NO<sub>2</sub>) limits, for the month, were breached along most main roads, in some cases badly
- even the control sites indicated elevated levels of NO<sub>2</sub>
- the worst result was, predictably, at the flyover junction of the main through road and the feeder road to the existing Blackwall tunnel.

The first results were publicised through local press releases, social media and the EGRA website. The news hit the website and was publicised by a local twitter network the day before the ruling by the UK Supreme Court on the Client Earth case. Trying to mesh local results to regional or national news is important in raising the profile of a very local initiative.

EGRA also discussed its results with the [air quality management team of the Council](#). All Greenwich is an Air Quality Management Area and it monitors AQ extensively. It has done so since 2005. The Borough's 58 AQ monitoring sites compare favourably with the 2 in Newham. Our results did not differ significantly with the Borough's monitoring and were unsurprising to the air quality team.

An autumn survey was undertaken by EGRA just 6 months after the first. This included 7 rather than the original 3 Background sites to test the hypothesis that Background levels of NO<sub>2</sub> are low.

Annex 1 shows the annualised values of the EGRA sample NO<sub>2</sub> surveys and those of the Borough Council as well as the recent No and TfL Tunnel campaigns. The NtST conducted surveys in the summer of 2013 and winter, beginning, of 2014. Given that seven of the EGRA sites were those used by the NtST studies in 2014, a comparison is useful. The survey was undertaken in January/February rather than March/April.

The evidence questions some of the answers often given to improve air quality in East Greenwich. Much of the evidence is only now becoming apparent. But one fact is certain: 2015 is the year that much of the evidence became public and transparent.

## **Questioning some answers to reducing air pollution**

A debate about what to do about our air pollution often begins with four key "narratives". These indicate answers to the problem and often close other possible solutions. The four narratives should be questioned because of the evidence becoming available, not to experts, but to us, the public.

### **1. *Pollution is only serious at main roadside locations***

Every survey in Annex 1 shows Roadside pollution in breach of legal limits. Our sample surveys indicate that Background AQ is at "elevated" levels for NO<sub>2</sub>. More evidence is needed. The Borough's only non-roadside site nearest to East Greenwich (at Boord St) shows levels well in excess of legal limits.

### **2. *East Greenwich pollution is caused by congestion at the Blackwall Tunnel***

This narrative is not the same as suggesting that traffic at the Blackwall causes pollution but that idling vehicles are the problem. It rests on evidence, which is poor, that idling vehicles cause much more pollution than free-flowing ones. They do, but the degree is important if traffic improvement induce more traffic. TfL's own tests show that a test congested Blackwall tunnel vehicle may emit less than twice as much NO<sub>2</sub> as one

travelling at 35 mph (see [Silvertown Tunnel consultation](#)). If a tunnel induces twice as much traffic (as the extra tunnel in 1968 did) the positive effect will be balanced by increased traffic emissions. Congestion, or lower speeds, may not even be affected.

Only in late 2015, after the VW scandal, are traffic engineers becoming aware of the real on-road emissions of many vehicles. Even if true and important, this narrative ignores a fact that congestion is really serious for traffic moving away from the tunnel and possibly unconnected with it.

Eye witness accounts often show tunnel traffic moving freely at times when Trafalgar Road traffic is jammed. What is true is that tunnel incidents cause gridlock and are a serious disgrace that TfL should tackle. They are not, in themselves, the major cause of air pollution in East Greenwich.

### **3. Air quality is getting better**

The best evidence of trends in AQ in East Greenwich is from the Borough's monitoring shown in Annex 2. Boord Street is shown though it is not in East Greenwich. The most pronounced fall in NO<sub>2</sub> pollution is at the Blackwall Lane junction with Woolwich Road. The A102 flyover has seen no improvement at all.

Traffic over the same period from the [Department of Transport statistics](#) fell in Greenwich as a whole (in thousand vehicle miles) by 11%. In Trafalgar Road it fell by just 1.3%, but in Woolwich Road (near Denham Street) by a staggering 48%. It's difficult to reconcile these changes. A change in traffic composition, to more polluting heavy traffic or diesel cars, could mean more pollution for the same traffic. So could more peaked and hence more idling traffic.

What is more important is that these changes happened before some major traffic and hence pollution generating projects may come on stream. The painfully slow improvements on some of our roads may well be wholly disrupted by overdevelopment. Meanwhile even without such developments our air pollution continues to breach legal limits.

### **4. Technology and regulation will cure the problem**

The benign answer of technical fixes and regulation is difficult to swallow after a decade of disastrous pollution in London (remember that is 95,000 deaths). From 2005 we have progressed from Euro 4 to Euro 6 standards in vehicle emissions. Allowing for the fall in vehicle use these regulations have had little impact on pollution, possibly because of the disastrous move to diesel cars. If we were to emulate American emission regulatory standards, rather than European ones, the UK may clean up its air much more swiftly. We know however that we cannot rely on industry and technology to cure the problems.

## **Towards Part 2**

Many answers rest partly in our own hands. Part 2 of this investigation of our bad air in East Greenwich will offer a smorgasbord of possible (though perhaps not always feasible) ways to tackle the problem. We hope you may add your ideas to reducing the serious pollution in East Greenwich. Send any you may have to [louiseatbeadles@yahoo.co.uk](mailto:louiseatbeadles@yahoo.co.uk) and watch for Part 2 of this report on one of the most serious problems affecting our neighbourhood.

**Annex 1: NO<sub>2</sub> Monitoring Results Compared (all in µgram/cubic metre)**

**EGRA Spring and Autumn 2015 Sample Results**



Spring

Autumn

**Greenwich Council Whole Year 2013 Results**



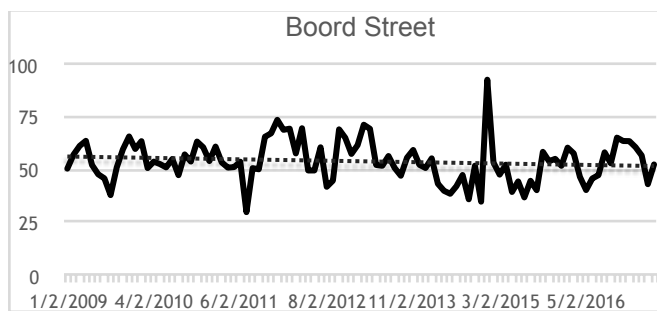
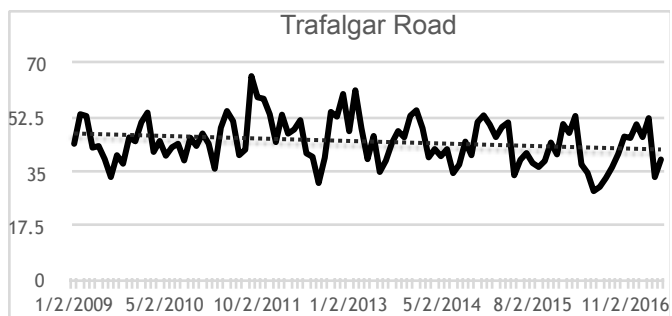
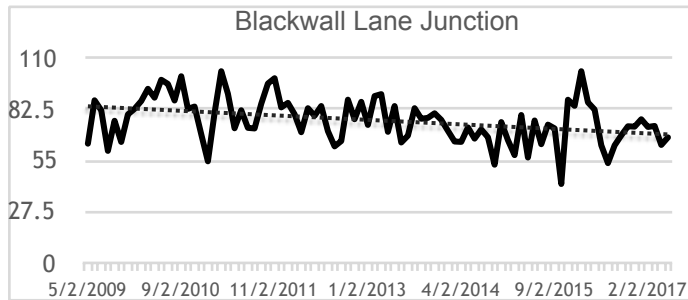
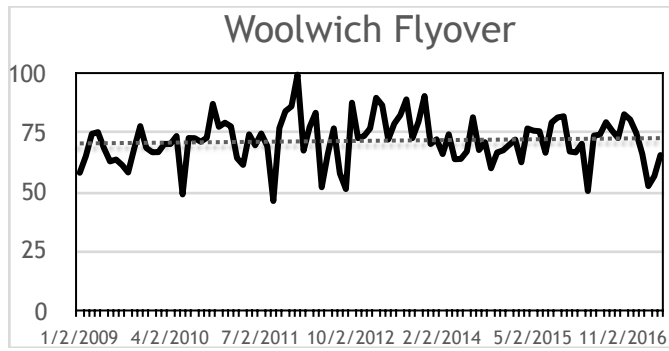
**Silvertown Tunnel Project Sample Results**



TfL Results (6 months 2014)

**No to Silvertown Campaign (Winter 2014)**

**Annex 2: NO2 Trends in East Greenwich ( $\mu$ grammes/cu. metre)**



Source: Greenwich Council Air Quality Action Plan Progress Reports