

Pockets of Legal Air

Rod Gonggrijp reports on the latest pollution tests

In 2013 the Tufnell Park Parents ran a Citizen Science project to assess the level of local air pollution. At that time this was a novel way for people to get involved in a debate normally reserved for accredited scientists and politicians. On the website <https://communitymaps.org.uk/project/air-quality-monitoring> you can see that prior to 2013 there had been only 69 such measurements, the first one ever being an Islington Green Party project in Highbury in 2011.

The TPP project was a community action by local residents worried about their health and that of others, especially the elderly and young. They were taking matters into their own hands because they did not feel that the growing concern around air pollution was being taken seriously enough by the authorities.

They were not alone in taking action. Since 2013 more than 1,600 additional air pollution measurements have been posted on this website from neighbourhoods all across London; all Citizen Science, all carried out by people concerned about a topic that may be hard to see, but that affects all of us every day.

Air Quality Measures

There are two common benchmarks for air quality. The World Health Organisation (WHO) states that a concentration of 20 micrograms of NO₂ per cubic meter (ug/m³) is the limit for 'healthy' air, while the EU uses as the legal limit a concentration of 40 ug/m³.

Above this value action must be taken by governments to remedy the situation. And for good reasons because Nitrogen Dioxide is a pollutant that inflames the lungs, stunting their growth and increasing the risk of respiratory diseases such as asthma and lung cancer. In London alone because of air pollution an additional 10,000 people a year are estimated to die and average life expectancy may be 16 months less because of it. Nitrogen Dioxide has various sources, but is very much associated with diesel engines.

Has the Situation Changed?

The original air pollution measurements carried out by the TPP were followed up by an article in the Summer 2014 issue of the TPP magazine. I read that and the information stuck with me. Even in 2013 all areas near schools in our neighbourhood where measurements were taken showed highly elevated concentrations of Nitrogen Dioxide (NO₂) in the air.

For example, on Camden Road near Camden School for Girls and Torriano Primary School, the measurement in 2013 already exceeded 86 ug/m³, so more than double the legal limit and more than four times higher than the limit for what the WHO classifies as healthy air.

Islington Green Party asked if they could jointly re-run, and expand on, the survey run by the Tufnell Park Parents in 2013. The proposal was to expand the number of measurement points to 60 and to include several additional 'quieter' locations to identify places where the air is better.

Has there been improvement in air quality, justifying the lack of action, or has the quality of the air we breathe in Islington got even worse?

How We Did It

Citizen Science projects like these have little impact if they are not a community effort, and as it turned out there was a lot of interest in the area and more than 20 people, including several kids, participated in placing the measuring tubes, and then retrieving them three weeks later. The locations included the original ones from 2013, chosen because on the routes to local schools and nurseries.

The reason these community-led projects focus on Nitrogen Dioxide is because it is straightforward and cheap to measure NO₂, while for community groups it is difficult and expensive of measure for example of Carbon Dioxide (CO₂) and especially micro particulates pollutants.

Measurement is carried out over a period of three weeks, using a small glass tube positioned about 7ft up on, for example, a lamp post. The glass tubes come from a company called Gradko which specialises in forensic analysis. The tubes are capped shut until installed to measure air quality, at which point the lower cap is removed and the air circulates in and out. When taken down the tube is again capped and is sent off for lab analysis. Each tube, including analysis, costs just over £10.

What Do the Results Tell Us?

In general, the air quality in the area covering Kentish Town, Tufnell Park and Archway is poor. There are a few pockets around which the air quality has not yet breached the EU's limit for 'legal' air, but the average NO₂ concentration is 48.5 ug/m³, ie above the EU upper limit of 40 ug/m³.

There are no locations anywhere that we could identify where the concentration of NO₂ was below the limit of 20 ug/m³ that the WHO uses for 'healthy' air.

Number of locations	% of total locations	Measurement NO ₂ concentration
16/56	28.5%	Below 40 ug/m ³
31/56	55.4%	Up to 50% above EU limit
6/56	10.7%	50%-100% above EU limit
3/56	5.4%	More than 100% above EU limit

The location with the cleanest air in our area was near the center of Dalmeny Park (locally also known as 'The Secret Park'), off Dalmeny Road. Here we measured a NO₂ concentration of 28.56 ug/m³. Dalmeny Park is a small, very enclosed space, surrounded by four to five storey Victorian houses and featuring several large trees, all possibly keeping the pollution created on the roads from settling in the park.

Despite an attempt to find pockets of cleaner air, Dalmeny Park was the only location that returned a value below 30 ug/m³. Almost all the other locations showing still legal air quality (albeit with an average of 37.45 ug/m³ so only just legal) were in the areas around Yerbury Primary School and Tufnell Park Primary school. However, the Tufnell Park Road that separates these two areas is highly polluted with an average measurement of just over 50 ug/m³. (The average last November when Upper Holloway bridge was closed was 62 ug/m³.)

Further north the situation is even more concerning. Near Archway tower, despite the changes to the road lay-out, the NO₂ concentrations were all above 50 ug/m³ and even above 60ug/m³. The entrance to the Whittington Hospital returned a value of 50.98 ug/m³, that is 2.5 times (!) what the World Health Organisation classifies as the upper limit for healthy air. And this result is 20% worse than in 2013, when the reading was already above the limit for legal air.

All, but two locations in the 2013 survey showed a worsening in air quality, and on average air pollution across the area was found to have increased by 31% in just three and a half years. In other words, what the results show us is that in this part of London we are reduced to a few pockets, of fast disappearing, legal air, with no healthy air anywhere.

What Should We Do?

What these results also tell us is that action is needed. The council, the mayor, central government should act, but also each one of us should consider more carefully every time we use a car whether we could use an alternative like walking, cycling and public transport. Cars, and especially diesel cars, are not the only culprit, but they are the cause we can address most easily.

If you feel that walking or cycling or public transport are not an option, could more be done to make this a more attractive alternative? Are the roads too busy and traffic too fast? Would you like safe cycle lanes? Is there safe public bicycle storage? Do the locations of bus stops and the routes they follow make sense? All of these are issues which can be addressed by innovative public policy and it makes sense to ask for them as it is your absolute right to be able to travel comfortably without using a car.

Location	2017 NO ² ug/m ³	2013 NO ² ug/m ³	2013 to 2017 increase
39-47 Wedmore Street, Opera Court	37.67	25.27	49.1%
Hargrave Park Primary School.	39.64	28.77	37.8%
11 Windermere Road	41.13	41.57	-1.1%
Highgate Library. Chester Road	42.01	27.63	52.0%
Holloway Road / Whittington Park Entrance	43.10	41.21	4.6%
9 Tufnell Park Road, Bus Stop D	47.30	32.22	46.8%
York Rise / Chetwynd Road junction.	47.41	39.12	21.2%
Magdala Avenue. Whittington Hospital Entrance.	50.98	42.30	20.5%
Montpelier Nursery, 115 Brecknock Road.	52.34	33.60	55.8%
Corner Junction Road / Pemberton Gardens.	55.53	55.95	-0.7%
159 Leighton Road.	57.39	49.41	16.2%
Eleanor Palmer Primary School, Fortress Road	57.45	41.81	37.4%
113-117 Highgate Road, Parliament Hill Surgery	57.91	40.41	43.3%
643-645 Holloway Road, outside Paddy Power.	64.52	41.57	55.2%
89 Parkhurst Road, At bus stop B	65.87	62.82	4.9%
Tufnell Park Tube Station. Bicycle stands.	67.93	47.25	43.8%
Kentish Town Tube Station, Kentish Town Road	84.01	53.14	58.1%
201 Camden Road, Corner House Hotel.	100.32	86.51	16.0%

The full results of all 56 locations will be available at <https://communitymaps.org.uk/project/air-quality-monitoring>, or contact me via email at rgonggrijp@hotmail.com and I can share them with you directly. Also do contact me if you have any further questions following this article.