

Queen's Park Council Citizen Science Study – January 2023

June 2023 Air Monitoring Study

During four weeks, from the 24th of June to the 22nd of July 2023, we carried out the first of our bi-annual studies measuring Nitrogen Dioxide (NO₂) pollution levels at various points around the ward.

The study revealed that Nitrogen Dioxide (NO₂) concentrations have returned to levels seen before June 2022 in the same four-week period. We attribute this, in large part, to the warmer weather and a reduction of burning natural gas in household boilers. Combustion of fossil fuel, however, remains a significant source of NO₂ and can be seen by the concentrations surrounding the neighbourhood.

The map below shows the location of each monitoring station in the neighbourhood, and the number reflects the concentration of nitrogen dioxide measured at that location. The colours are a gradient indicating the pollution level: 13 (Dark Blue) represents the lowest, and 97 (Dark Red) represents the highest. The 40 µg/m³ legal limit is measured in Micrograms per Cubic Meter of Air, as illustrated on the colour gradient to the right.

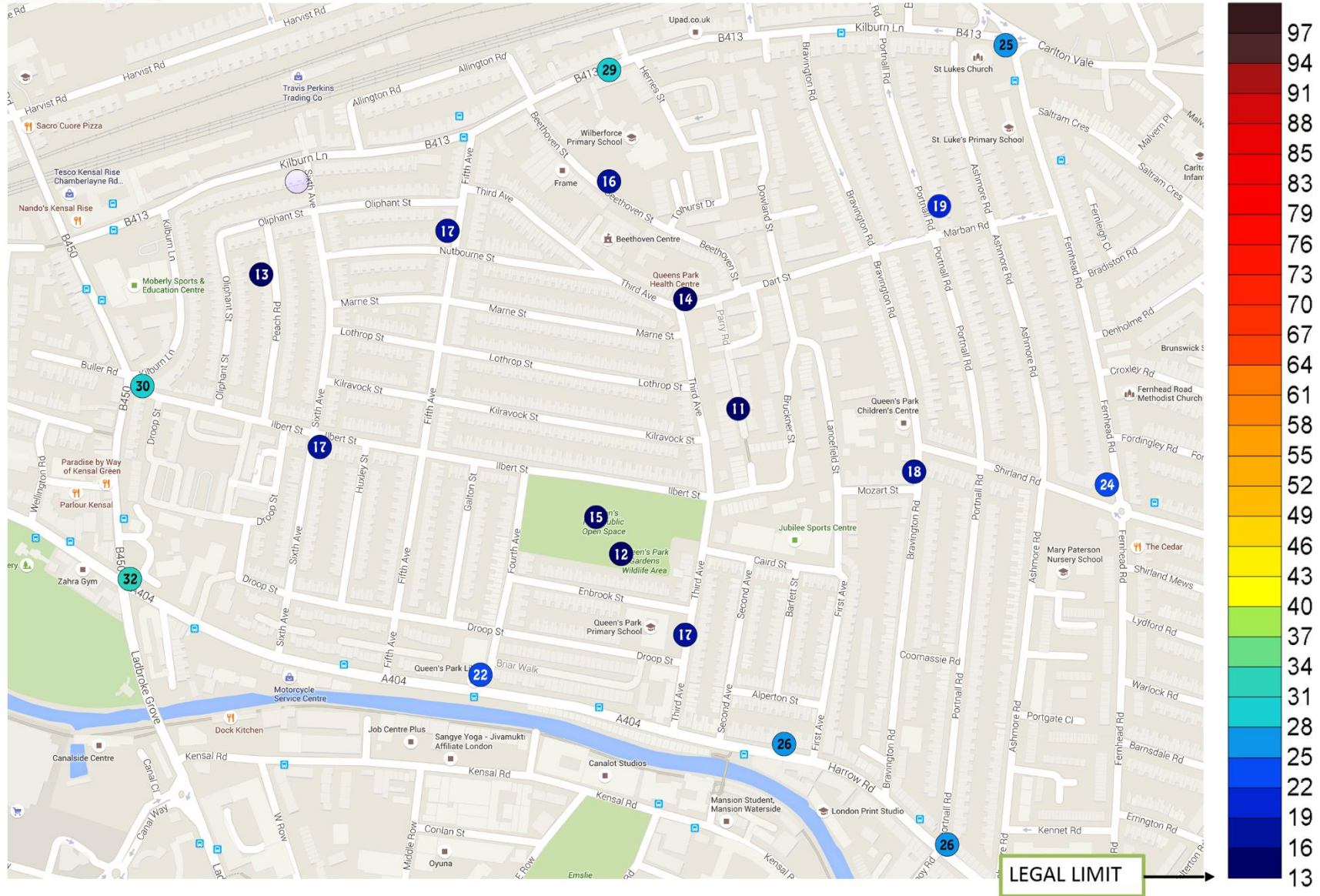
In addition to external monitoring, we also carry out internal monitoring in the homes of two volunteers in the area.

The most recent study found that:

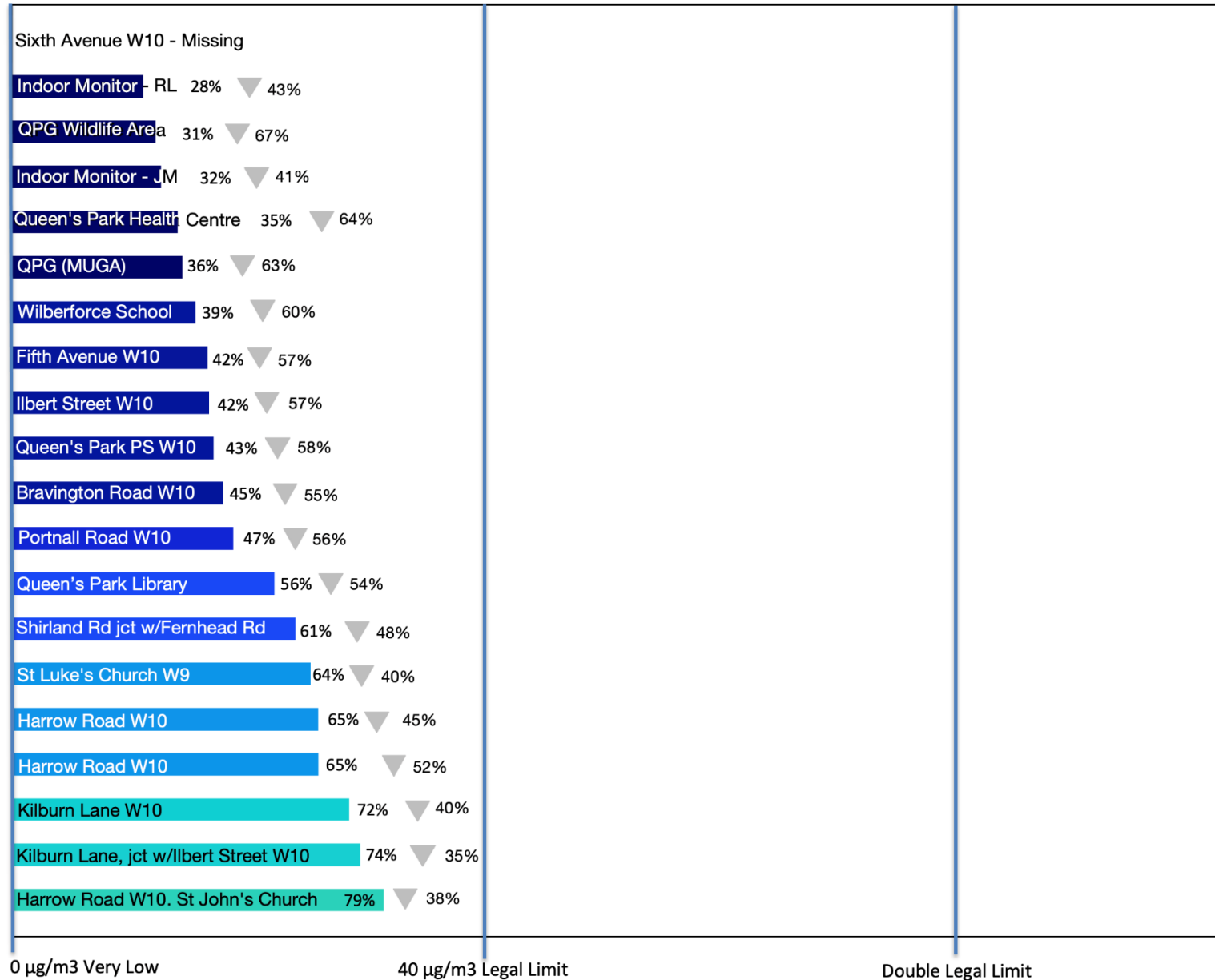
- **All areas are below the 40 µg/m³ legal limit.**
- **Both indoor locations saw a 41% and 43% reduction in concentrations, respectively, from their previous results - we repeated the locations of the two indoor locations - as in the last study (January 2023) - since the levels recorded then were much higher than expected.**
- **Queen's Park Gardens returned to being the least polluted outside location.**
- **The monitoring station outside St. John's Church on the busy junction of Harrow Road and Kilburn Lane continues to record the highest NO₂ levels. Encouragingly, the location has reduced by 38% from previous levels.**



These measurements were taken over a four week period:
24th June 2023 – 22nd July 2023



Queen's Park Nitrogen Dioxide pollution levels as percentage of EU Legal Limit (Monthly Mean NO₂ 40 µg/m³)



Below is a list of activities we can all engage in to help reduce No2 levels and bust local pollution!

Don't be idle. Turn off your car's engine when it is safe to do so, while waiting for someone or at the traffic lights. You are exposed to higher levels of toxic gases in a stationary car than when moving. A modern engine will consume less fuel turning off and re-starting than idling for extended periods.

Regular Servicing. It helps keep your car's engine at its best efficiency. Well-maintained engines consume less fuel and emit fewer emissions.

Tire Pressure. Check your tyre pressure at least once a month. Under-inflated tyres burn more fuel and accelerate tyre wear. Under-inflation of a tyre by 10% increases the tyre's wear rate by 5% and increases fuel consumption by 2%.

Reduce speed limit on faster roads. Brake and tyre wear creates particulates small enough to be inhaled by you or a child. Stopping at 30mph emits around twice the number of brake particles compared with stopping at 20mph.

Shorter Journeys. Don't use the car on short journeys: walk or ride a cycle. Cycling isn't just good for your physical health but benefits your mental well-being. Planet Earth helps, too!

Lose weight! The more weight a car carries, the more petrol it consumes and the more emissions it produces. So, clear out unnecessary things.

Wood Burning. A wood stove emits more pollutants than a diesel car. Avoid burning Softwoods. Use dried, fully seasoned chopped wood logs with less than 20% moisture content.

Over-revving accelerates emissions. Modern cars are designed to be fuel efficient from the moment they are switched on; revving your engine is not only unnecessary, it uses more fuel and increases engine wear.

Consume less energy and produce less pollution.

Gas and electricity are big contributors to air pollution. Gas creates fumes when we burn it to heat our homes, and electricity produced by power stations burning fossil fuels has the same result, just on a grander scale.

Drive' Green'...

Consider changing from petrol or diesel vehicles to hybrid or electric if feasible. More and more on-street rapid charging stations are available from on-street lampposts.

Get a lift. If possible, get a lift from someone who is already taking a similar journey to reduce congestion on the roads, reduce emissions and the cost of petrol.