

Air Quality Trends during 'Lockdown'

MAB requested an update on the trends in road traffic emissions during lockdown.

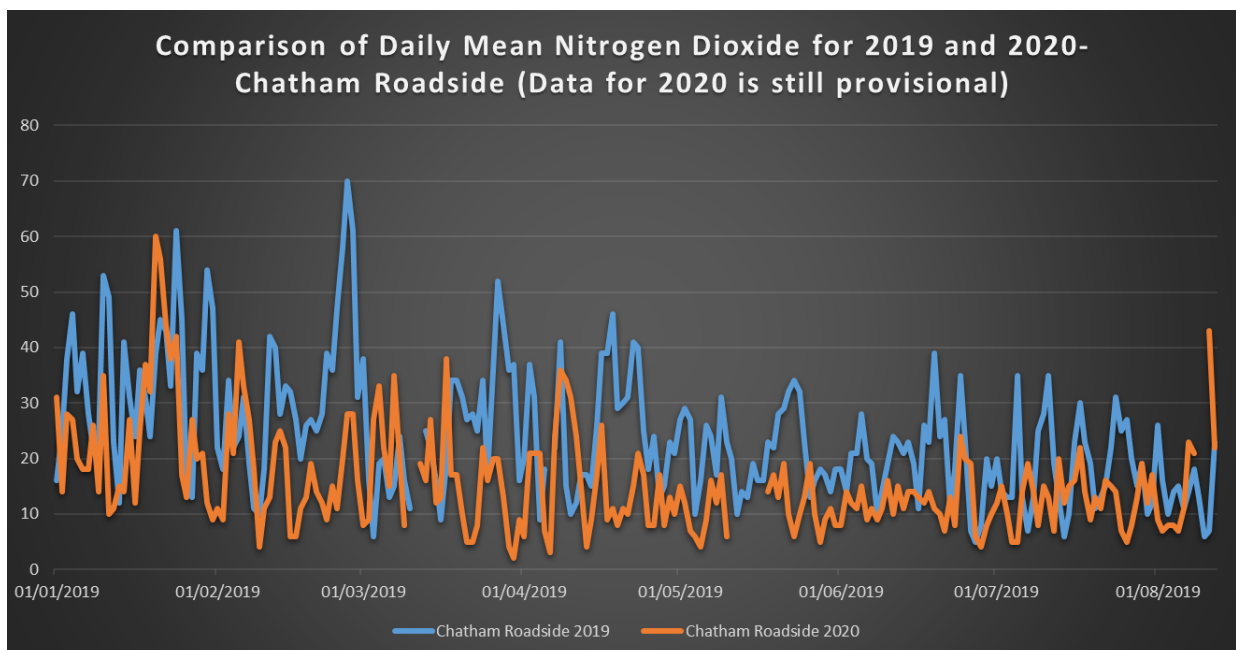
The chart below is a comparison of the nitrogen dioxide monthly means at Chatham Roadside for the same period in 2019 and 2020.

From what has been seen from other more scientific work which has been undertaken, there is some element of seasonality on the levels being measured across the monitoring networks. We may be seeing reductions due to lower traffic volumes but also the weather conditions. What is normally being measured is the influence of weather conditions on pollution concentrations.

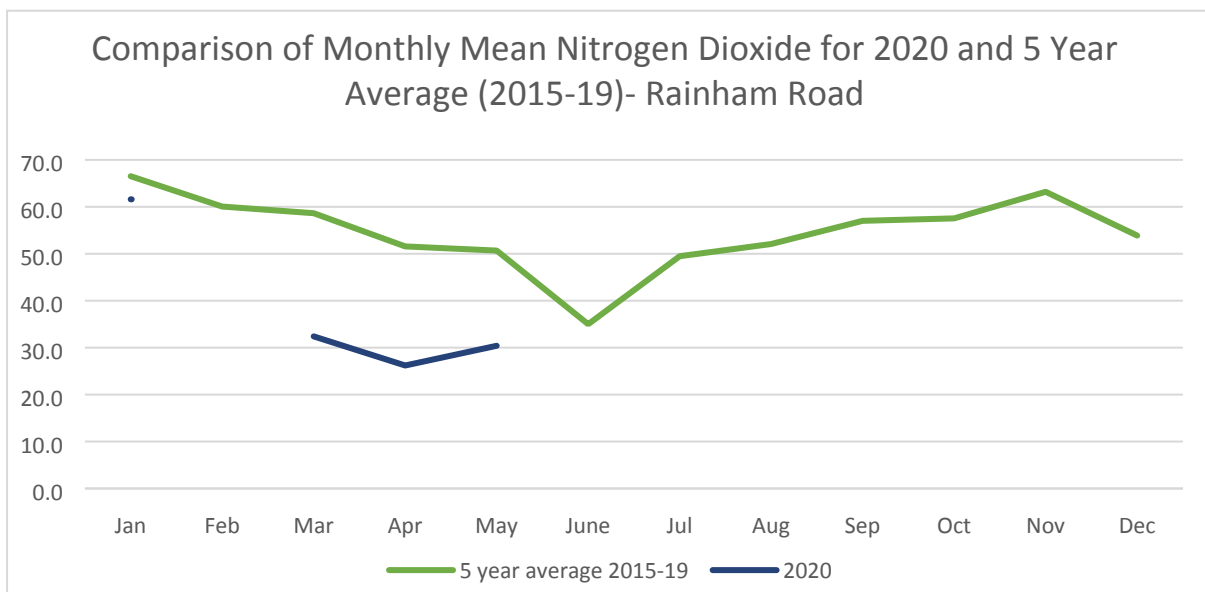
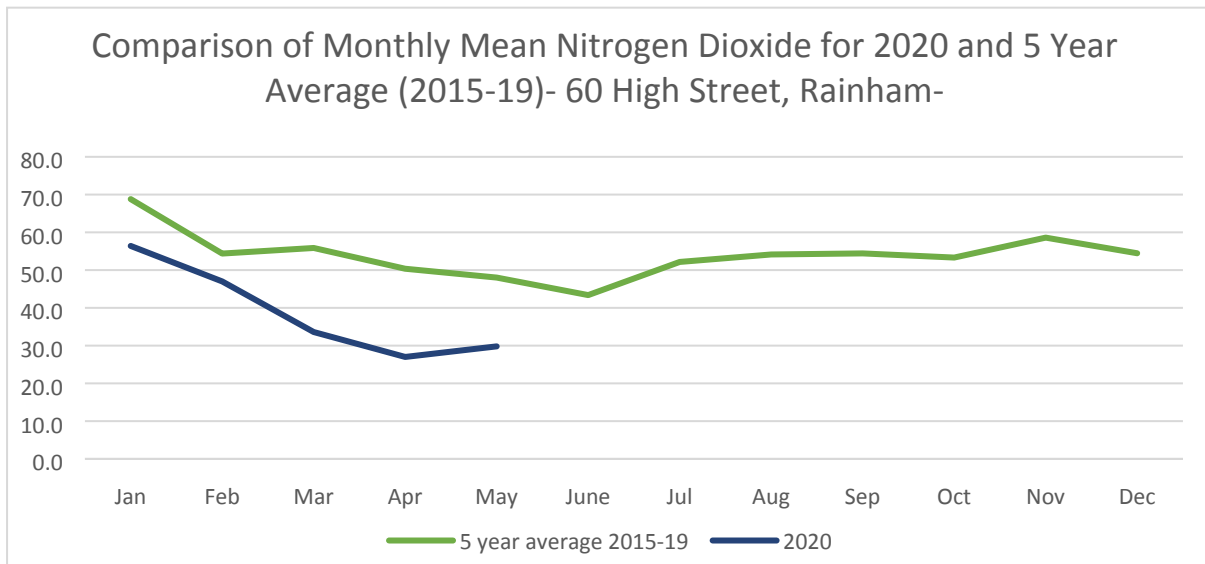
During the mandatory lockdown stage, overall traffic volumes fell, however, there was an increase in food delivery vans and there is some anecdotal evidence of an increase in domestic wood combustion from wood burners.

An important aspect to realise is that the same behavioural changes that have reduced NOx emissions and concentrations are also likely to have changed the way in which most people are exposed to air pollution. During lockdown many people are likely to have reduced the amount of time that they spend breathing roadside air, instead spending more time in their homes. People may also have either done more or less exercise than normal. Whether this provides a net benefit, or disbenefit, I am sure will be looked at over the coming months and years by scientists.

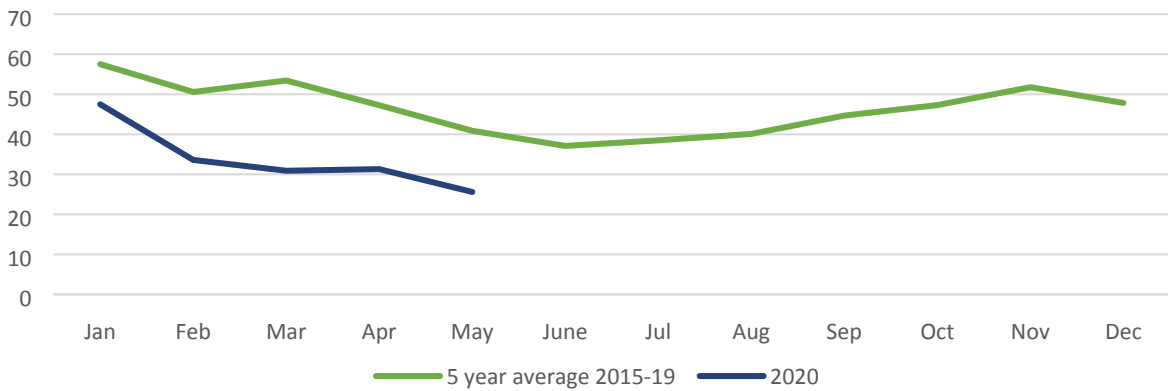
As you can see from the chart below the levels of nitrogen dioxide are tracking lower than 2019 at Chatham Roadside, some of this is likely to be meteorological and some due to the lower road transport emissions as detailed above.



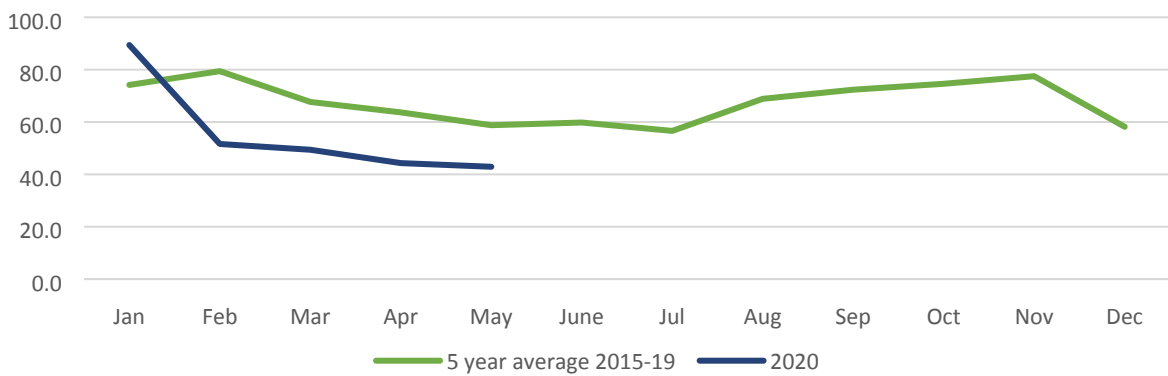
Some initial preliminary analysis has been undertaken of the diffusion tube monitoring data obtained from our network of sites. This data is only available as monthly means, so lacks the granularity of the continuous stations. The data needs to go through some rigorous checks and adjustments at the end of the year, so the results do need to be interpreted with caution. The 5-year average (2015-19) of individual monthly means for a selection of monitoring sites has been compared to the 2020 monthly means to see if there is any observed deviation from the expected results.



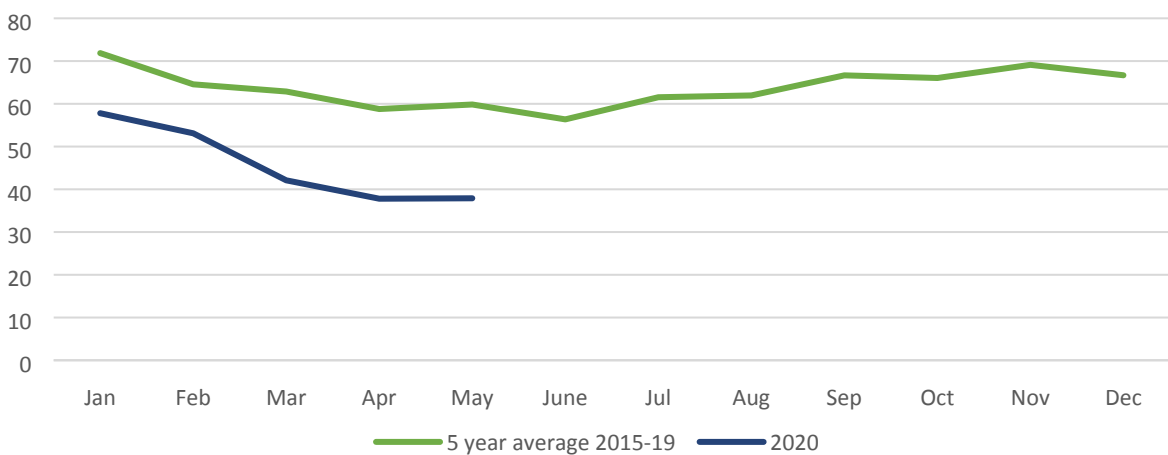
Comparison of Monthly Mean Nitrogen Dioxide for 2020 and 5 Year Average (2015-19)- Luton Road (Funeral Directors)

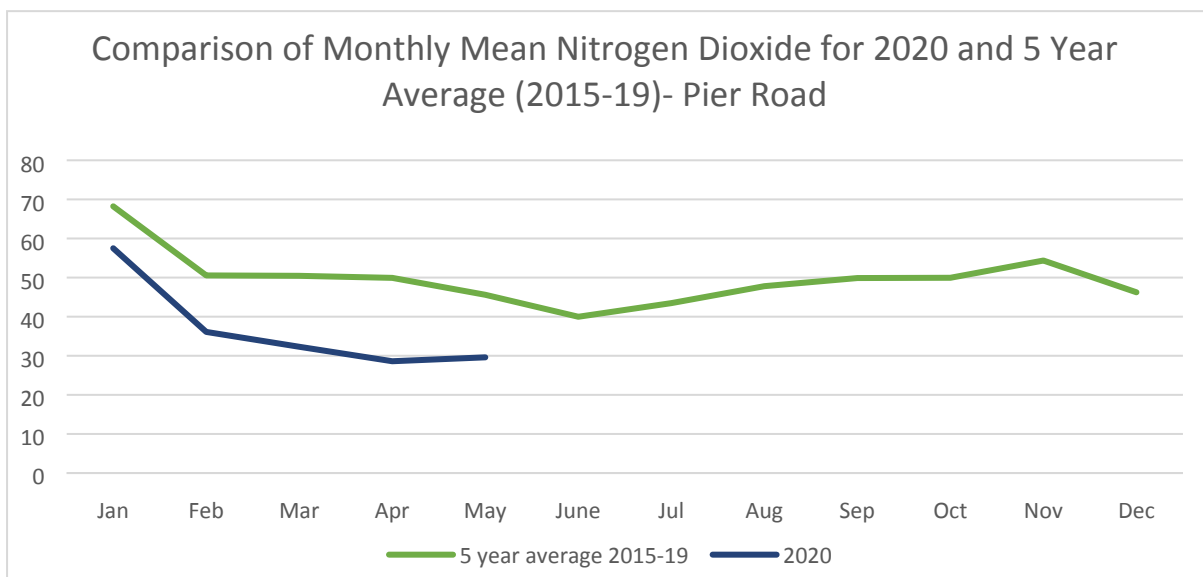
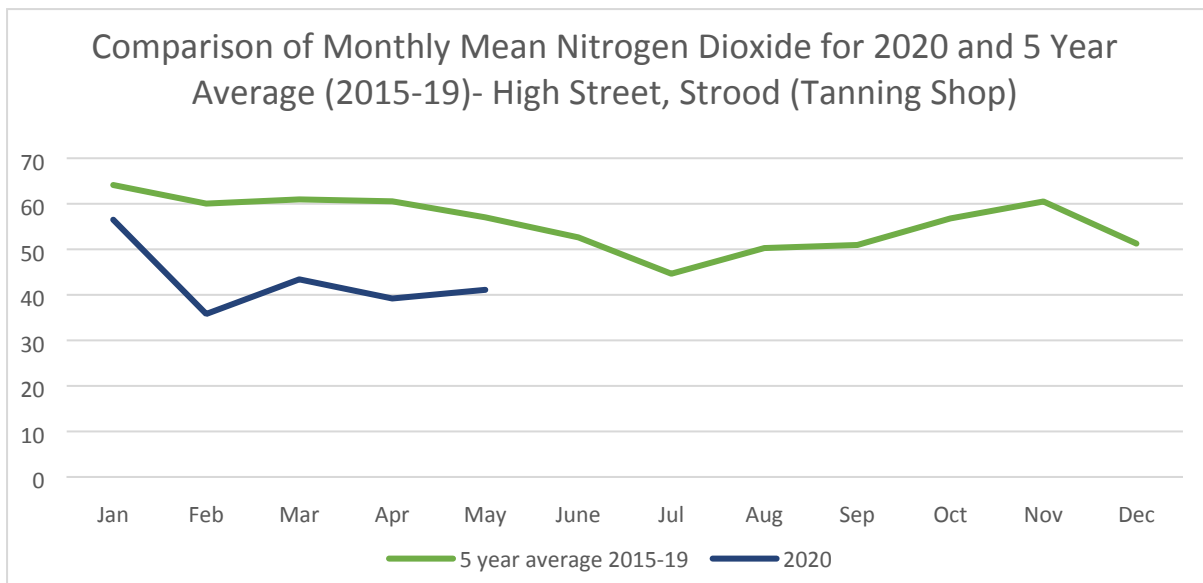


Comparison of Monthly Mean Nitrogen Dioxide for 2020 and 5 Year Average (2015-19)- Four Elms Hill



Comparison of Monthly Mean Nitrogen Dioxide for 2020 and 5 Year Average (2015-19)- 18 Star Hill





In general, we are observing a significant reduction in nitrogen dioxide concentrations across the diffusion tube network. As with the continuous monitoring data presented above, some of this may be meteorological conditions some down to lower road transport emissions.

We will not know the true ongoing impact of the pandemic on air quality for some time to come. In terms of 2020, the monitoring data from the continuous monitoring stations for this year has to be fully ratified, and the diffusion tube data will be subject to the necessary data checks and adjustments as required by Defra. This cannot be undertaken until the end of the calendar year and will be published in next year's Annual Status Report.

Going forward there may be some positive impacts on air quality more widely in Medway if some of the behavioural changes around travel, working from home, walking and cycling etc. are maintained. However, in addition to looking at the monitoring data over a longer period of time than a year or two, we would also need to look at data around travel behaviour and traffic flows.