

APPENDIX 3: SOURCES OF POLLUTION IN LONDON BOROUGH OF RICHMOND UPON THAMES

Pollution in the London Borough of Richmond upon Thames comes from a variety of sources. This includes pollution from sources outside of the borough, and, in the case of particulate matter, a significant proportion comes from outside London and beyond the UK.

In order to evaluate the impact of the pollution sources within the borough, the charts reproduced in Figure 6 below provide source apportionment data for each of the borough's four Air Quality Focus Areas. The data originates from TfL's London Atmospheric Emissions Inventory (LAEI) and is based on modelled data for the year 2020. The charts provide a comparison of the percentage contribution to NOx concentrations across each AQFA, as an average concentration value, and compare it with the percentage NOx concentration within 20 metres of the major roads within each AQFA. As would be expected this highlights the impact of road transport at receptor locations close to the roadside.

For each AQFA the charts also provide a breakdown of NOx emissions from each vehicle type within the road transport fraction. This information is helpful for highlighting the variation in traffic emissions between the different AQFAs and for targeting measures which will have the most benefit in terms of reducing emissions from the various transport sources. Based on the average percentage contribution of

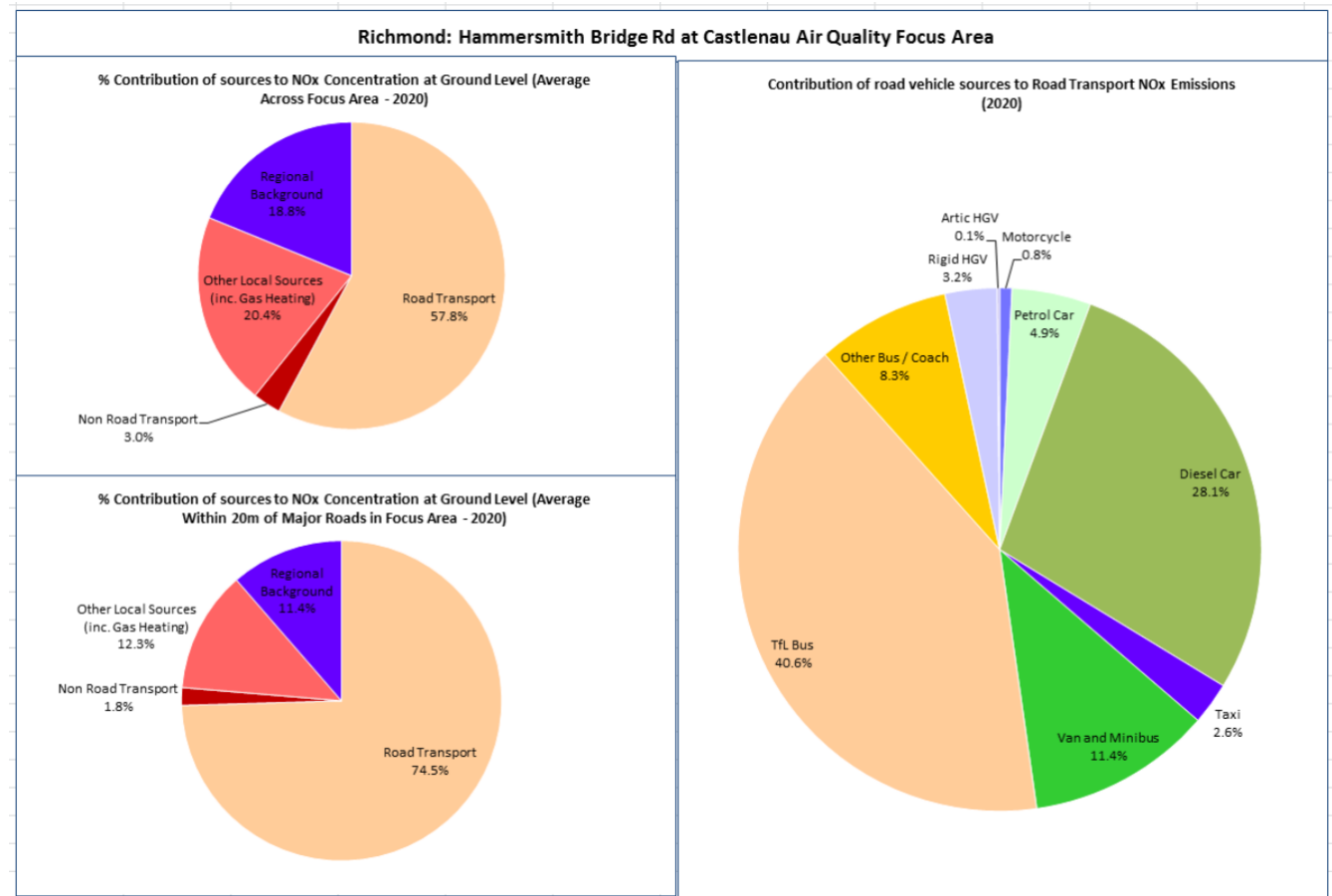
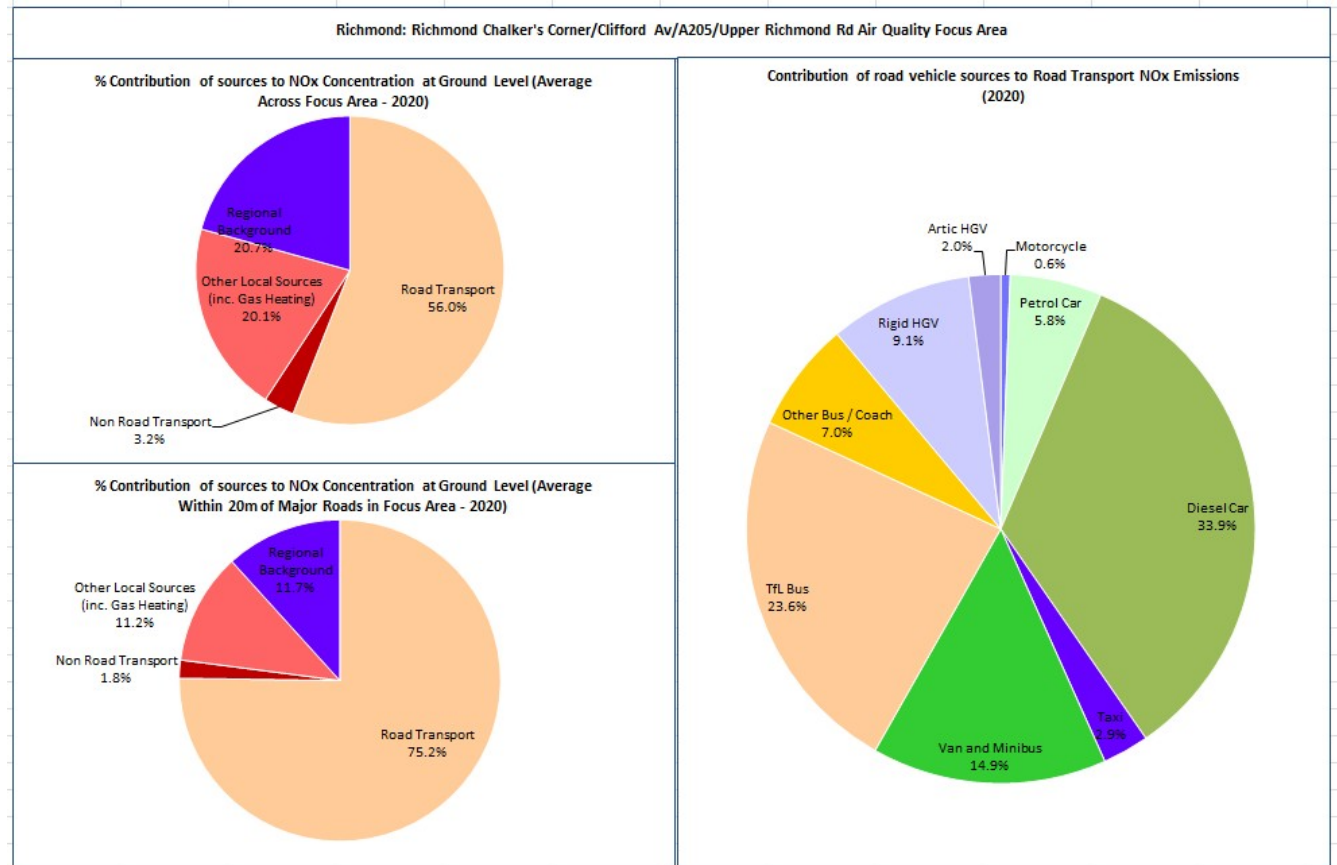


Figure 6: NOx emissions by source and vehicle type for the London Borough of Richmond upon Thames Air Quality Focus Areas. (Modelled data for 2020)

sources to NO_x concentrations across the four AQFAs; transport contributes an average of 55% (range 50.0% to 57.8%), other local sources including gas heating an average of 21.2% (range 20.1% to 23.5%), non-road transport an average of 3.4% (range 3.0% to 3.9%), with regional background sources contributing an average of 20.2% (range 18.8% to 21.8%).

In respect of the transport sources in particular, the LAEI source apportionment emissions data for each AQFA indicates that diesel vehicles contribute approximately 90% of the total road transport NO_x emissions (based on 2020 modelled data). This is the combined NO_x emission contribution from diesel vehicles across all vehicle types. Comparison of the modelled emissions data between each AQFA indicates some interesting variations in the relative contribution of NO_x from diesel cars and TfL buses which are the two largest individual road transport emission sources.

The highest NO_x emissions from buses are within the Richmond Town Centre AQFA at 50.5% compared with the lowest contribution at Chalkers Corner/Clifford Avenue AQFA at 23.6%. For emissions from diesel cars the highest percentage contribution is within the Twickenham Town Centre AQFA at 37.2% and the lowest within the Richmond Town Centre AQFA at 24.7%. The data is based on the predicted number of each of the vehicle types within the AQFAs in 2020 as well as other assumptions such as predicted average vehicle speed and emission standards for the specific vehicle fleet at that point in time.



Numerically buses and other heavy duty vehicles represent a smaller proportion of the fleet but generate higher emissions per vehicle when compared to cars and other light duty vehicles. The council currently has limited direct control over the TfL bus and taxi fleets operating within the borough but it is clear that the AQAP measures need to address emissions from all vehicle types but particularly those which are diesel powered. This includes general measures which aim to reduce traffic volume and improve traffic flow but also more specific measures to increase the proportion of low emission vehicles in the general fleet such as increasing number of electric cars and vans; ensuring that the borough benefits from improved TfL emission standards for local bus and taxi fleets and reviewing freight and delivery practices to minimise emissions in areas with poorest AQ.

Other local sources of NOx emissions include commercial and domestic gas heating sources and non-road mobile machinery. The London Borough of Richmond upon Thames is limited in terms of reducing domestic gas NOx emissions from existing housing stock as the council no longer has any housing stock, however the AQ Supplementary Planning Guidance document and GLA AQ Neutral policy for London boroughs provide some controls on heating appliances for new and redeveloped properties and businesses.



For non-road mobile machinery (NRMM), the borough has jointly commissioned an NRMM emissions study to identify compliant machinery and develop a checklist for contractors which will be used to improve emissions from machinery and equipment operated on development sites.

Similarly, for particulate matter, the dominant source of emissions is transport and within that sector diesel powered vehicles collectively contribute more than 70% of PM₁₀ emissions. Measures to address transport sources generally and those which reduce reliance on diesel fuels will have a positive impact on PM₁₀ and PM_{2.5} emissions. One additional source of particulate matter is the re-suspension of dust from roads and commercial and development sites. For development sites re-suspension of particulate matter is controlled to some extent by use of the Sustainable Design and Construction and Control of Dust and Emissions Supplementary Planning Guidance and for highways sources, existing street cleansing regimes will have some benefit

