

4) Conclusion

This report fulfils the requirements of the DEFRA guidance for Stage 4 and permits the LBHF to review and update its Stage 3 report and address relevant issues as part of the continuing LAQM process. The Stage 4 has used both improved modelling techniques and also an improved treatment of emissions.

The predictions for the 2005 base case take into account a predicted vehicle growth, improvement in vehicle technology leading to lower emission releases and changes to the background. These result in predicted concentrations that will still exceed the objectives. In the case of NO₂ the area predicted as likely to exceed is greater than the equivalent area for PM10. This confirms that the annual mean nitrogen dioxide objective is more stringent than the daily mean objective for PM10.

The extent by which the predictions exceed the objective has been derived from a selection of locations identified within the AQMA and all of these are predicted to exceed the NO₂ objective in the modelled 2005 base case.

For the first time an accurate source apportionment has been undertaken within the LBHF. To determine the separate contributions from the road and background sources a series of detailed tests were run, based on NO_x as the primary pollutant rather than NO₂. These confirm that approximately 40 - 75% of the concentrations relate to the road transport with the remainder relating to the background sources. However the tests further confirm that the background can also be partly ascribed to road transport sources, such as those outside the borough. For NO_x approximately three quarters the background contribution arises from such road transport sources.

For PM10 the proportions vary from that of NO_x as a result of the different components that contribute to total PM10. In this instance the contribution from the background sources is most significant (between 66 – 91%), whereas road transport as a primary emission varies between 9 – 34%. Of the latter again as expected, it is HGVs that predominate as the main source. Of the total background sources, road transport contribute between 8.5 and 10%, with the remainder arising mostly from secondary and coarse components, which are beyond the control of local authorities.

The LBHF is also required to consider actions that might be undertaken to reduce pollutant concentrations in order to work towards the prescribed objectives. To aid this process an agreed scenario was tested and the results of this highlight the complexity in dealing with this issue. The result of this was that for PM10 none of the locations was predicted to exceed the AQS objective, however for NO₂, areas close to the major roads were still predicted to exceed the AQS objective. Therefore to ensure complete compliance across the LBHF additional pollution reduction measures would be required.