

Air Quality Musselburgh

Dundas Estates made application to East Lothian Council (ELC) to redevelop the site of the former Tesco store in Musselburgh, for residential use. ELC advised that the application must include an air quality impact assessment (AQIA) as the scheme is adjacent to an air quality management area (AQMA) in Musselburgh High Street which was declared due to concerns that levels of nitrogen dioxide (NO₂) are at risk of exceeding the European Council (EC) annual mean Limit Value of 40 ug/m³.

The Airshed was appointed by Arcus Consulting (the applicant's environmental consultant for the project) to conduct an AQIA to assess the impacts from the scheme. Baseline flows on the High Street were predicted to be 14,754 AADT two way flow by 2018. The transport consultants for the project (White Young Green Ltd) estimated that the proposed scheme would generate up to 291 additional vehicle movements per day on Inveresk Road, with an additional 37 movements per day in the High Street.

Three traffic Scenarios were used to assess local air quality: Scenario 1 - Surveyed traffic (2016); Scenario 2 - Baseline traffic for 2018; and Scenario 3 - Baseline and Scheme traffic (2018).

ELC conducts seven diffusion tube monitoring sites within the study area, which provide an indication of annual mean exposure to NO₂. Based on this monitoring, the annual mean NO₂ complies with the EC annual mean Limit Value at most locations in the town centre, with the exception of two locations on the north side of the High Street.

A computer based dispersion model (ADMS Roads) was used to predict road traffic emissions. The results from the model were compared with ELC's measured levels. The initial model predictions were generally in poor agreement with the measured diffusion tube levels. The predicted levels of road source contribution were therefore adjusted in accordance with the methods set out in the Scottish Government's Technical Guidance (TG16). This provided a better fit between observed and predicted levels of road NO_x.

Baseline 2018 levels of NO₂ were predicted to comply with the annual mean Limit Value of 40 ug/m³ at all sensitive receptors. The predicted increase in the annual mean NO₂ as a consequence of the scheme was of negligible significance at all sensitive receptors. The predicted increase in particle exposure (both PM₁₀ and PM_{2.5}) as a consequence of the scheme was also of negligible significance at all sensitive receptors. The findings of the AQIA were accepted by the local authority.

