

Sheffield & Rotherham Clean Air Zone Plan Study

Modelled Years and the Use of Interpolation

The SCRTM1 model provides an estimate of 2017 traffic conditions, which will be used to calibrate the 2017 Airviro air Quality model, using all SCC/RMBC's 2017 Annual Average NO₂ monitoring data.

The SCRTM1 model will also be used to provide forecasts of traffic conditions in 2024 and 2034, based on agreed Land-Use Planning Scenarios provided by SCC/RMBC. The emissions-related factors applied to these traffic forecasts will be derived from the latest version of the EFT.

It has therefore been possible to produce detailed Business as Usual forecasts of the traffic emissions for 2024 which are consistent with relevant land-use assumptions and the Business as Usual fleet improvements.

Using these two modelled years, it will also be possible to estimate the relevant link-based traffic conditions (flows and speeds) in any intermediate year, by linear interpolation. We then apply the relevant fleet assumptions to these intermediate years, to provide an estimate of the emissions in these intermediate years (without having separate transport models for these intermediate years).

The estimated NO_x emissions for 2021 have been passed to the Airviro model, to enable it to predict the air quality across the SCC/RMBC modelled area in 2021, the year in which compliance must be achieved.

The traffic model will also be used to create a series of 'Do Something' versions of the traffic model for 2017 and 2024 (including the 'Preferred Option' basket of CAZ-related measures) which will be used in the same way as described above to estimate the Do Something link-based emissions in any future post-implementation year. These Do Something emissions forecasts will be used to create 2021 Do Something version NO_x emissions for input into the Airviro model.

Results from the Airviro model will then be used to estimate the changes in the future annual average levels of NO₂ at the main AQ 'Hotspots'. These changes will be applied to the observed values (where available), with linear interpolation used to estimate the relevant NO₂ Do Something concentrations at each of these locations.

This approach undertaken is summarised in Figure 1 below.



Figure 1 Modelled Years

