LTN Air Quality Modelling Guide
Air quality modelling was undertaken to determine the impacts the implementation London Fields, Hackney Downs and Hoxton West LTNs had on air quality.

What is an air quality model?
An air quality model is undertaken on a computer which can 'replicate real world conditions' in order to predict air pollutant concentrations over a certain geographical area, a 'study area' for a given time period.

How does an air quality model work?
An air quality model works by inputting a number of different data sources relevant to the study area including traffic data and meteorological data. These inputs enable 'real world' conditions to be replicated and the model can then predict air pollutant levels under these conditions.

How did the air quality model predict the impacts - positive or negative - from the LTNs?
The air quality model predicted air pollutant concentrations under two scenarios within the LTN study areas using data inputs from 2021 - **'2021 baseline' (without the LTN) and '2021 with scheme' (with the LTN)**. The impact of the LTN was then determined by looking at the change in air pollutant concentration from the baseline pollutant concentration to the pollutant concentration with the LTN in place. A decrease in concentration meant there had been a positive impact on air quality from the implementation of the LTN and an increase in concentration meant there was a negative impact on air quality from the LTN.

Why do only certain locations have modelled air quality concentrations in the LTN study area?
Air quality concentrations were predicted at locations called 'sensitive receptors'. Sensitive receptors are where the annual mean air quality objectives apply and include residential, educational and healthcare receptors. Therefore, residential, educational and healthcare receptors were all modelled within the LTN study areas. As there are so many residential receptors within the LTN study areas, only those closest to roads where pollutant concentrations were expected to be highest were modelled.

How reliable is the air quality model of 'real world conditions'?
All air quality models must be verified to ensure air quality modelled results are reliable. This is done by comparing modelled air pollutant concentrations and monitored concentrations from the same year at the same location in the modelled study area. The process in which this is done is outlined in Local Air Quality Technical Guidance (TG16). For the LTN modelling, the model fell within ±25% of the national air quality objective of 40µg/m^3 which in line with TG16 is deemed robust and reliable.

Future Information
More detailed information on how the air quality modelling was undertaken for the LTNs can be found in the following air quality reports created by AECOM.

- London Fields
- Hackney Downs

- Hoxton West