

# Dispersion Modelling at Fitzgerald Road

## Background

This project is for the construction of 170 homes on the land south of Fitzgerald Road in Bramford. Additional exhaust emissions from development-generated traffic have the potential to reduce the quality of the air in the local area, particularly at the junction of Lorraine Way and Fitzgerald Road. With many residential dwellings along Fitzgerald Road, significant degradation of local air quality could adversely impact residents so dispersion modelling was used to evaluate the proposal.

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## Challenge

Mid Suffolk District Council required evidence that air quality at the junction of Lorraine Way and Fitzgerald Road will not be significantly deteriorated by the additional road traffic generated by the development. The effects of peak-hour queues on the junction required particular attention, due to the additional road traffic on Fitzgerald Road increasing the length of the peak-hour queues. As part of the proposal, several new roads are planned to be constructed within the site. In order to accurately assess the air quality that the new residents will likely be exposed to, the traffic that will be using these new roads needed to be assessed.

## Solution

Using dispersion modelling a model was created that included increased queue lengths and the proposed new roads, as well as industrial point sources and several bus stops located near the proposed site entrances on Fitzgerald Road. The results of the dispersion modelling showed that there would be no significant impact on existing receptors, nor would there be a significant effect on the new receptors within the proposed development. By analysing emissions at several locations at the road junction, the results showed that there would be no significant air quality impact at the junction due to increased peak-hour traffic queues, nor at any of the nearby residential dwellings.