



Leeds Aimsun Model

A two-tier microsimulation model of Leeds city centre capable of providing detailed analysis of different transport interventions to understand impacts and improve decision making.

Fore created the initial model of Leeds city centre for Commercial Estates Group, to enable the testing of its development proposals in the South Bank area of Leeds. In 2017, working with Leeds City Council, the model was extended in the north to encompass the whole of the Inner Ring Road and the area around the Universities, and to the west to include Armley Gyratory. Further development in 2019 saw the model extended to include the A61 University Corridor with aspirations to ultimately extend the model to cover the Leeds District.

It incorporates a macroscopic and microscopic model, to provide both fast, higher level simulation and more detailed representations of driver behaviour along with a visual representation of vehicles and pedestrians on the network, allowing full analysis of the impacts of congestion and different transport interventions.

The model enables highly detailed analysis including realistic acceleration rates on inclined roads especially for heavy vehicles, analysis of bus routes including delays and reliability, and the impact of emissions from different traffic flows and composition, including the introduction of connected and autonomous vehicles. Outputs from the model include detailed routing behaviour, emissions data, heat maps of delay and density and 3D representations of the city. The model can also be used in conjunction with additional software such as COBALT and TUBA to support economic appraisal.

The Leeds City Centre Aimsun model has been used to inform and design a wide range of projects in conjunction with Leeds City Council and its partners including LPTIP (as part of the Connecting Leeds Programme), Armley Gyratory and the Housing Infrastructure Fund (HIF).

Working in collaboration with the Virtuocity project at the Institute for Transport Studies, the model will integrate with the Driving Simulator, TruckSIM (HGV simulator) and HIKER (pedestrian simulator) providing a unique, immersive environment in which to research and analyse different transport choices.

Please contact us to find out more about how our expertise can support better transport decision making in cities:

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