ADMSroads
ATMOSPHERIC DISPERSION MODELING SYSTEM

IMPACT OF ROAD NETWORKS

ADMS-Roads is an easy-to-use software solution that has been specifically designed to investigate the impact of road traffic on air quality. It is the reference tool to study the impact on air quality and health in road network impact studies.

A flexible, easy-to-use tool

● *User-friendly interface.*

● *Has links to visualize systems and GIS packages, i.e. Surfer®, MapInfo®, ArcGIS®.*

● *Import/export of emissions databases.*

● *Internal SIG (Mapper).*

● *Converts meteorological data and topography datasets.*

A validated model with global recognition

Worldwide recognition, several model/ measurement comparisons have been published.

Referenced in several methods guides.

About 3,000 bodies equipped with ADMS worldwide: industrials, design offices, monitoring & research organisations.
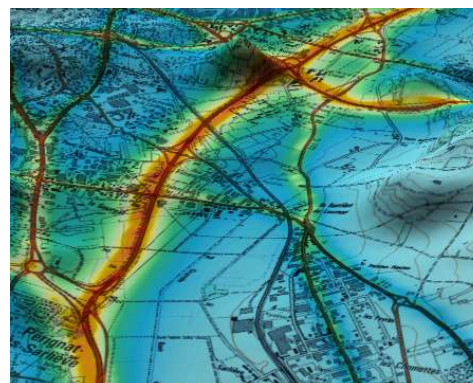
NO$_x$ concentration around a motorway project.

The impact of road networks on air quality and health

● Health and environmental impact assessments for new road developments.

● Layout of traffic lanes: widening, road cover, modification of traffic conditions (vehicle speed, intersection configuration).

● Setting up of ring-roads and diversions.

● Impact study on complex rail and road networks.

● Setting up or rerouting of public transport lines.

● Assessment of the relative contribution of a particular type of vehicle or traffic lane on the air quality of a specific study area.

● Specific traffic engineering: tunnels, car parks, traffic jams, bridges, etc.

A tool tailored to the international regulations taking into account the health effects of air pollution in road infrastructure impact studies

● Estimation of pollutant ground deposition and concentration around the roads and within the study area in order to establish initial and future pollutant conditions.

● Direct comparison against regulatory values.

● Comparison of variants (positive or negative impacts).

● Data can be processed directly for Quantitative Health Risk Assessments (respiratory and oral pathways).
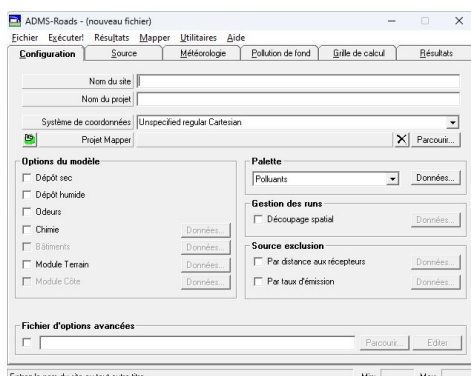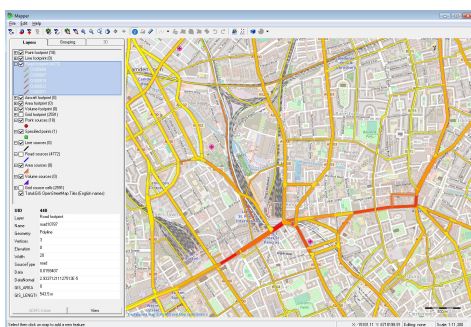
● Features a palette of 30 pollutants.

numtech
ENVIRONMENTAL INTELLIGENCE

Display of the environmental impact of an urban ring-road project.

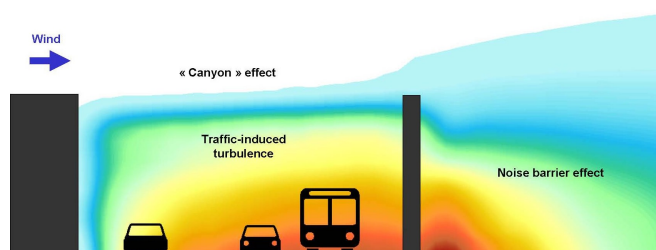## New-generation dispersion models

Meteorology

- Vertical and continuous representation of the atmospheric boundary layer (met. processor based on the boundary layer depth and the Monin-Obukhov length).
- Use of statistical or hourly sequential meteorological data. Data can be collected from observed data or from regional met models (MM5, RAMS, etc.).

Specific modules

- The resolution of the calculation grid around road systems is automatically increased to improve mapping results ("intelligent gridding").
- The effects of terrain and land use are taken into account in plume dispersion studies.
- 3-D wind field predictions using the FLOWSTAR diagnostics model.
- Estimates of the ground deposition of gases and particulates.
- Incorporation of background pollution for comparison with regulatory and measured values (initial pollutant condition).
- NOx, ozone, VOCs photochemistry model.
- Simple (based on OSPM) or advanced "Street Canyon" model.
- Effect of road noise barriers and tunnels on pollutant dispersion.

Capabilities geared to environmental impact assessments

- No limit on the number of sources that can be modeled. Simultaneous calculation on 150 road sources (each defined by up to 50 vertices).
- For large areas of study, tools facilitating the division into several sub-domains of calculation.
- Option of placing receptor points (houses, sensitive buildings, air quality measurement stations, etc.).
- Daily and monthly emission factor profiles.
- Handles the simultaneous dispersion of several different gaseous and particulate pollutants.
- Statistical processing of numerical output: averages, rolling averages, percentiles, threshold exceedences, etc.
- Possibility to integrate industrial sources.

Technical support

Our engineers provide an online technical help-desk, tutorials, and customized advice how to conduct even the most complex of your studies.

A user-friendly interface.

Direct links with standard GIS packages.

Recommended configuration

The ADMS model runs under Windows 8, 10 and 11.

RAM: 4 Go.

ADMS-Roads is developed by CERC, Cambridge Environmental Research Consultants Ltd.

Effect of obstacles on road-scale pollutant dispersion.