Using the ADMS Mapper

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ADMS-Urban and ADMS-Roads User Group Meeting
14th November 2013
Newcastle

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Environmental Software and Services

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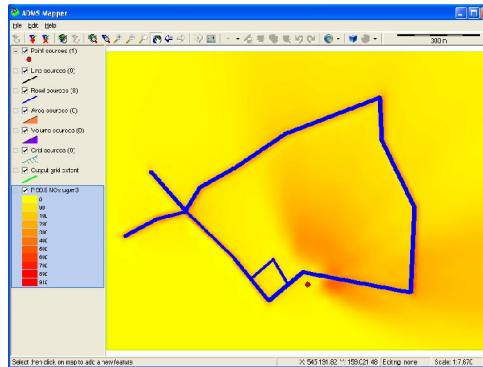   - 3D visualisation
    - Importing and exporting layers

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Introduction
The ADMS Mapper

- **New utility** included with the new release of ADMS-Urban, ADMS-Roads, and ADMS-Airport

- **GIS** tool that connects to the model interface

- Allows **graphical visualisation** of model input and output

Does not require any third party software

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Introduction
Key applications

- **Visualising** model input

- **Checking** model input

- **Editing** model input
  - Edit or add sources graphically

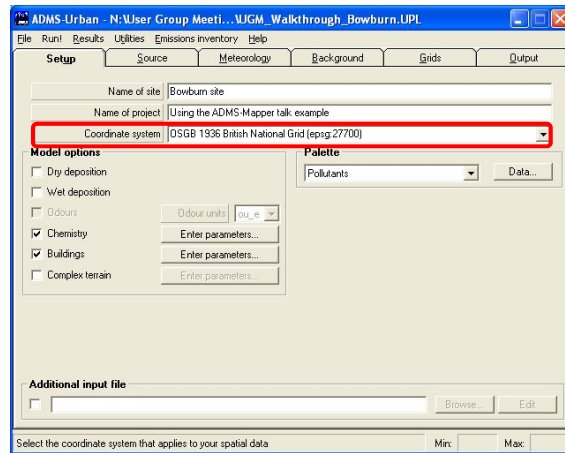- **Contour plotting**
  - Without third party software

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Viewing model input
Loading the ADMS Mapper

- Load your *.upl* in the model interface

- Select the correct coordinate system for your run
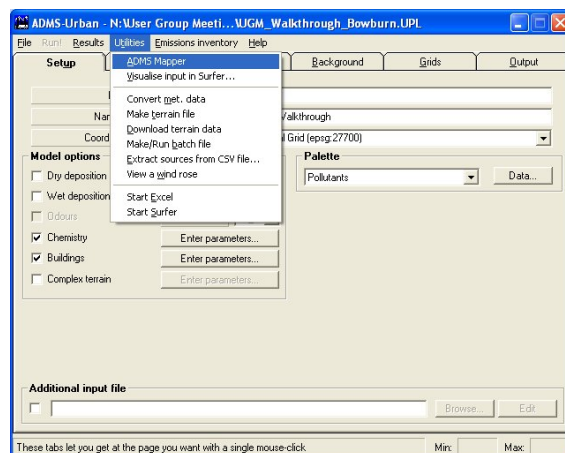 - This is used by the ADMS Mapper

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Viewing model input
Loading the ADMS Mapper

- Load your *.upl* in the model interface

- Select the correct coordinate system for your run
  - This is used by the ADMS Mapper

- The **ADMS Mapper** is a new option available from the **Utilities** menu

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Viewing model input
The interface

- All model input is loaded from the open *.upl*
  - In coordinate system specified in the main interface
- Each source type is added to the map as a separate layer
- Also loads
  - Buildings
  - Gridded output points
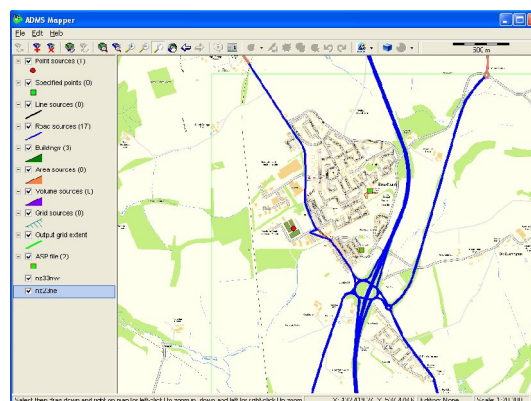 - Specified points (including *.asp*)
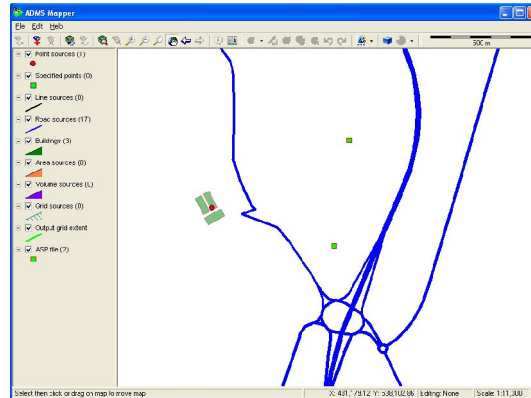
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Viewing model input
Basic GIS tools

- Basic GIS features:
  - Measure distances
  - Change order of layers
  - Refresh source layers

- Add other files
  - **Rasters** (including georeferenced files)
  - **ESRI Shapefiles**
  - **Surfer Grid** files
  - A range of other formats

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Checking model input
Viewing source information

Point sources	
UID	1
Name	Bowburn South
Geometry	Point
Elevation	20
Diameter	1.6
X	430328
Y	537921
MainBuilding	(Main)
Temperature	40
Exit velocity	15
NOx (g/s)	0.105
VOC (g/s)	2.5
PM2.5 (g/s)	0.00525
GIS_AREA	0
GIS_LENGTH	0

View in ADMS-Urban   Close

- Viewing **information** on model inputs

  – Useful for checking input before setting off a run

  – Loads emissions and traffic information for roads

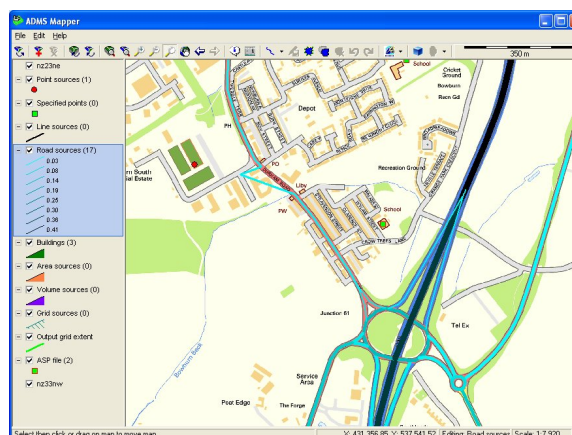 – Useful for identifying model inputs (e.g. NAEI point sources)

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Checking model input
Modifying the appearance of layers (1)

- Modify feature colour, line thickness, symbols

- Control the display of layers using data parameters
  - User input for ADMS sources and receptors
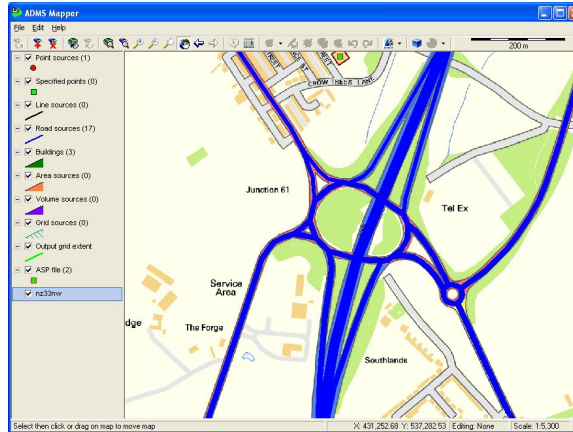 - Fields for ESRI shapefiles

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Checking model input
Modifying the appearance of layers (2)

- Much of the model input is scaled by default
  - e.g. road widths are scaled to the width input in the interface
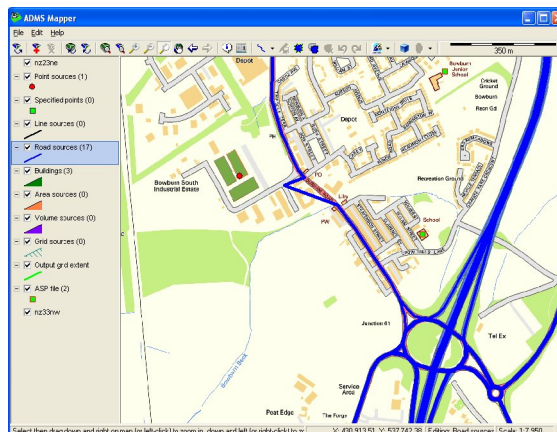
- Check parameters at a glance

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Editing model input
Editing sources

- One of the vertices in this road is wrong!

- The ADMS Mapper can
  - Edit vertices
  - Shift features
  - Delete features

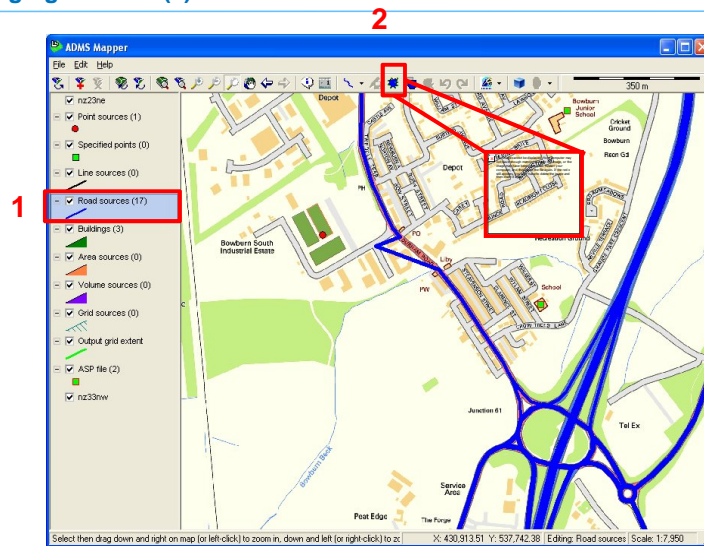- Current restrictions
  Cannot edit
  - Airport sources
  - Grid sources
  - *.asp* files

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Editing model input
Changing vertices (1)
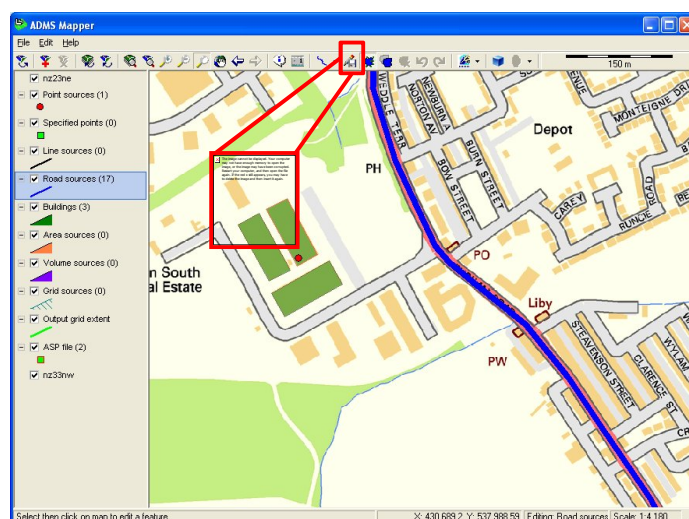
Editing model input
Changing vertices (2)

Editing model input
Shifting features
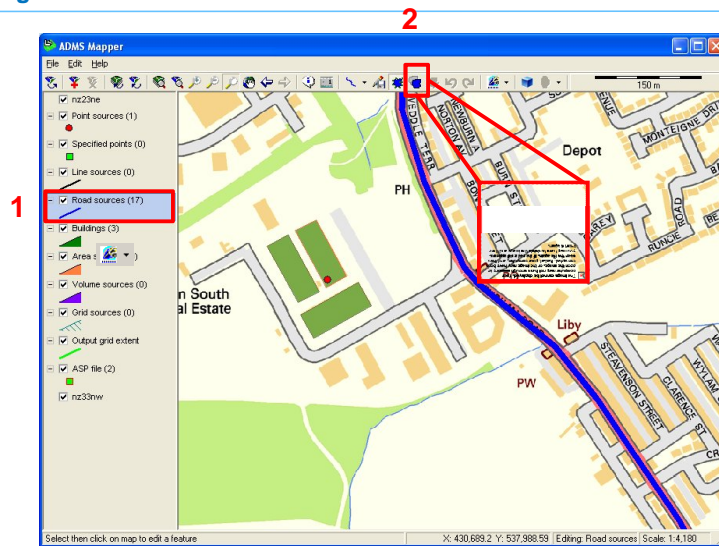
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Editing model input
Adding sources (1)

- I want to add a source to the Bowburn North Industrial estate
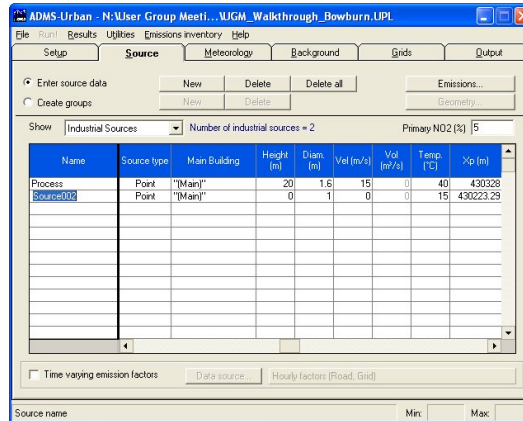
- Add specified points

- Add buildings
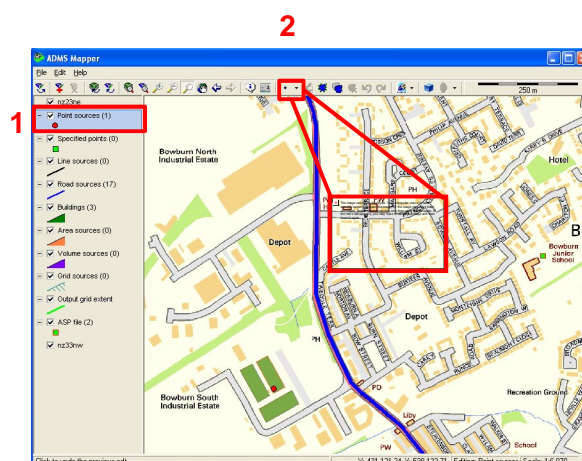
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Editing model input
Adding sources (2)

- Brings up model interface, with new source selected

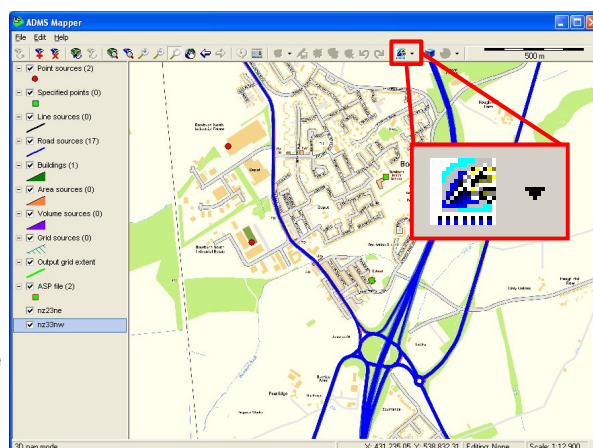- Enter emissions data and other sources parameters in the main model interface

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Visualising results
Plotting contours (1)

- The ADMS Mapper can plot contours of ADMS-Urban gridded output concentrations
- Three methods
  - In-built interpolator (Kriging or inverse distance weighting)
  - Surfer *
  - ArcGIS Spatial Analyst *
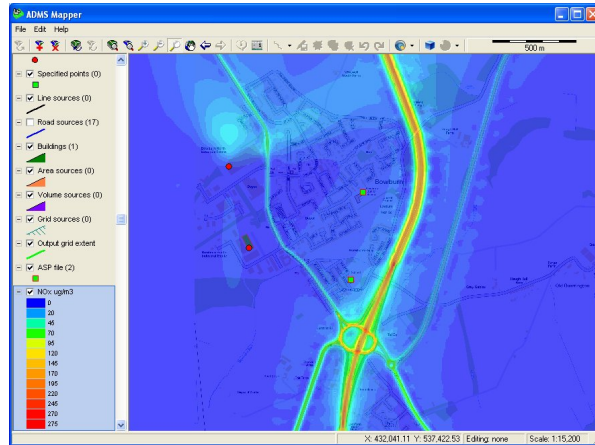

* Requires third-party software

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Visualising results
Plotting contours (2)

- The ADMS Mapper can plot contours of ADMS-Urban gridded output concentrations
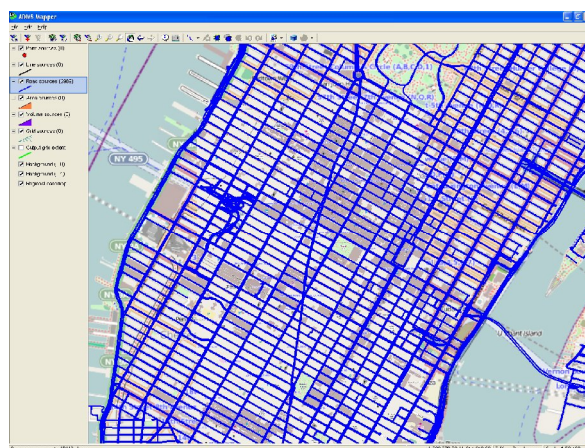- This plot shows annual average NO_x concentrations, plotted using the in-built interpolator

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Other features
Larger scenarios

- Display as many sources as can be loaded into the model

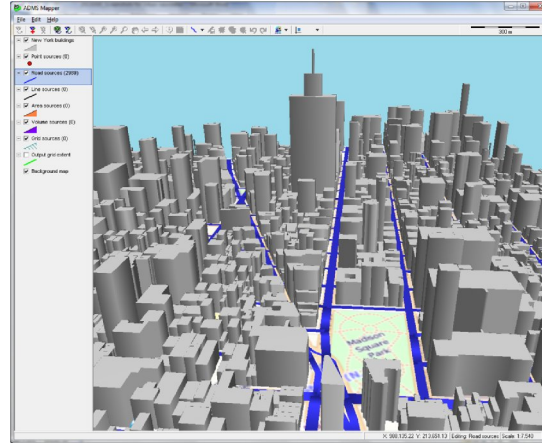- This example shows the road network in Manhattan, New York!

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Other features
3D Visualisation (1)

- Visualise input in **3D**

- Shapefile of New York buildings loaded
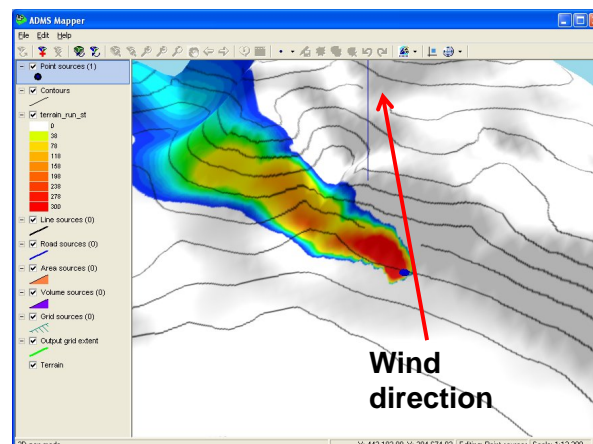
- Helps to identify potentially important street canyons

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Other features
3D Visualisation (2)

- Grid files or rasters can be used as the DEM (Digital Elevation Model)

- Plotting contours over the terrain may highlight the effect of terrain on output concentrations
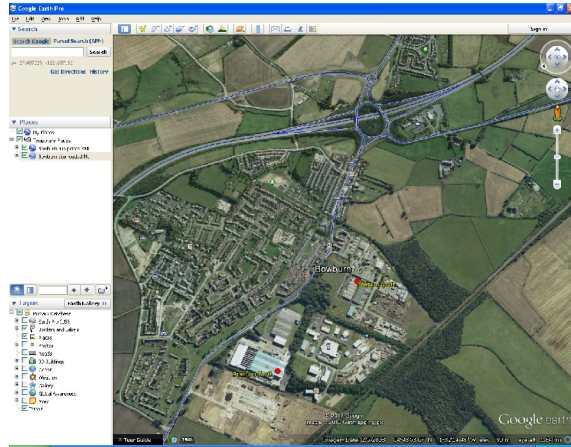

Wind direction

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Other features
Exporting layers

- Layers, including sources, can be exported
- These use the coordinates system defined in the model interface
- Formats include
  - *.shp*
  - *.mif*
  - *.kml* (Google Earth)

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Summary

- **Visualising** model inputs
  - Useful while setting up runs

- **Checking** model inputs

- **Editing** existing sources

- **Adding** sources

- **Contour plotting** without third-party software

> **Please refer to the ADMS Mapper User Guide for more information**

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