Annex 2

Local Verification Results - Leicester

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LOCAL VERIFICATION RESULTS - LEICESTER

Indicator 1: Accuracy of DOAS equipment compared with traditional equipment

This indicator is not applicable for Leicester

Indicator 2: Accuracy of roadside description, air models

Measurements were performed on one roadtype only :

Roadtype x	Air pollution monitoring on London Road Description: Street canyon location, two lanes inbound and outbound, should show am and pm peaks, buildings of similar height on both sides of the road (3 storey), Van located on wide pavement at side of inbound carriageway, streetboxes adjacent to the van on each side of the carriageway

Location X: London Road

Which organization(s) did the testing?	LCC (PC) monitored air pollution data using a Diahatsu van that measured CO, SO_2, NO_2 and PM_{10} ITS collected air pollution data using two streetboxes that measured CO and NO_2 SMHI are responsible for the street canyon modelling and the statistical comparison of the monitored and modelled data
When did the testing take place AND how long was the monitoring campaign?	Monitoring of air pollution data 9/11/01-7/12/01 (van) and 2/11/01-26/11/01 (street boxes)
How many values have been collected and evaluated?	Continous air pollution data (CO, NO_2, SO_2, PM_{10}) measured over 15 minute intervals (van). Continuous data (CO, NO_2) measured over 5 minute intervals (streetboxes) Evaluation as hourly data, as model output.
Any other remarks concerning indicator v.2?	CO data from van and street boxes used in evaluation. NO_x/NO_2 and PM_{10} from van only. SO_2 not measured at van and not evaluated. NO_2 data from street boxes questionable. Short part of van data (all substances 16/11/01-18/11/01) questionable, used anyway in evaluation.

$$\Delta C = \frac{\sum \frac{(C_m - C_{calc})}{C_{calc}}}{n} \qquad \Delta C_{abs} = \frac{\sum \frac{|C_m - C_{calc}|}{C_{calc}}}{n}$$

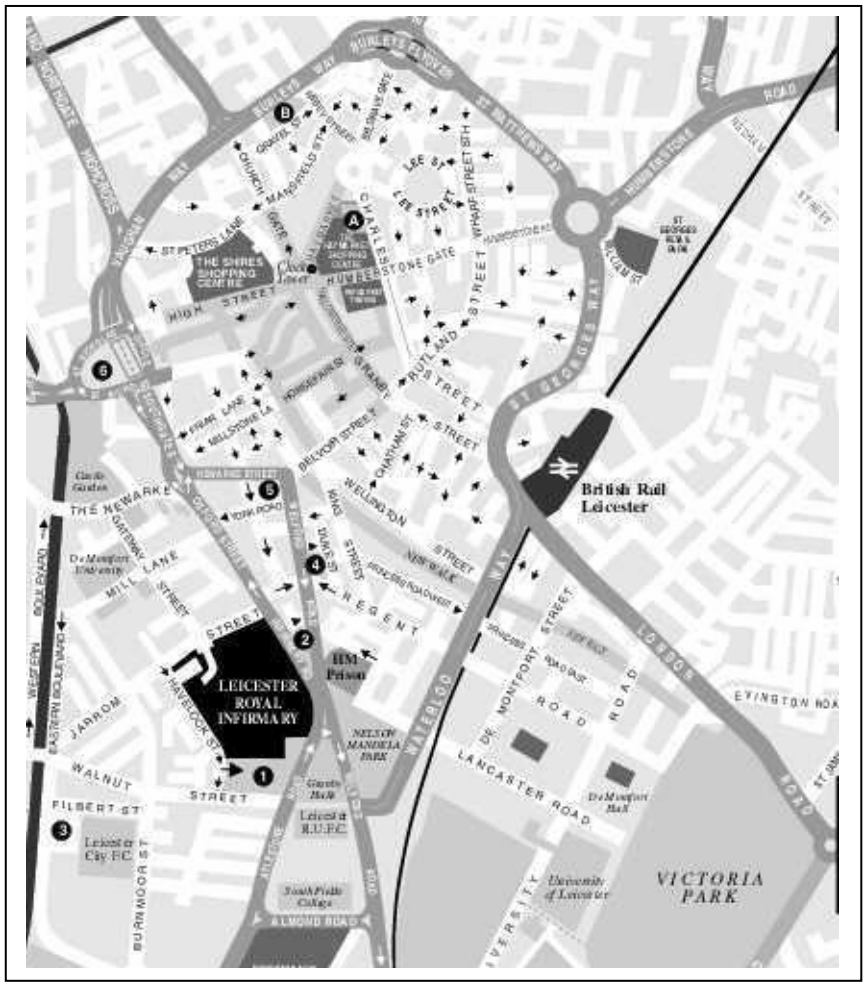
CRITERION	Testperiod / frequency	Value	Success criterion	OK / NOT OK or N/A
Comparison of observed and calculated air pollutant concentrations on specific roadside locations			The average difference between calculated and measured data should be less than 50% for all pollutants (for NO_2<60%)	
PM_{10} (24 hours), roadtype x	2/11-30/11 2001/29	ΔC=-14% ΔCabs=22%	ΔC < 50 %	OK OK
NO_2 (1 hour), roadtype x	2/11-30/11 2001/696	ΔC=5% ΔCabs=41%	ΔC < 60 %	OK OK
CO (8 hours), roadtype x	2/11-26/11 2001/585	ΔC=12% ΔCabs=50%	ΔC < 50 %	OK OK
C_6H_6 (annual), roadtype x	N/A	N/A	ΔC < 50 %	N/A

Photographs of the street canyon location on London Road can be seen in Figures 1 and 2 below

Figure 1: Photograph 1 illustrating the area used for air quality monitoring in the verification area

Figure 2: Photograph 2 illustrating the area used for air quality monitoring in the verification area

Figure 3: Map of Leicester city centre showing London Road. The monitoring van was positioned mid way between the junctions with University Road and De Montfort Street



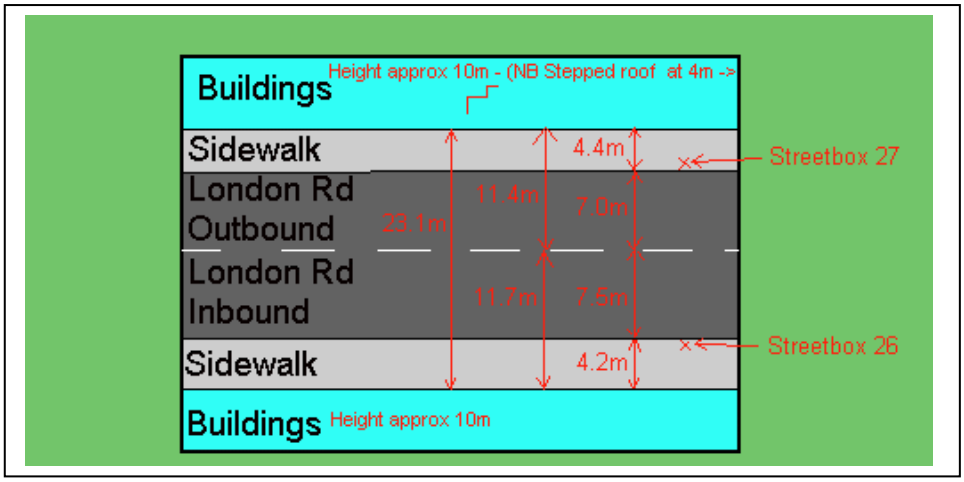


Figure 4: Geometrical properties of the London Road street canyon section

The output from the model was hourly concentration values. The calculation results were compared with the measured after a straightforward addition hour by hour of the AUN concentrations. The following analysis was performed by use of MS-Excel and a "home made" statistical evaluation package.

The results from the Excel analysis are displayed below. The analysis presented results in time series diagrams and scatter plots with estimated correlation coefficients. The analysis covers both the whole November period as well as selected parts of the period, where an exclusion of a certain part with low correlation, was presented.

Outputs from the statistical package are also presented below. This analysis was performed for the whole November period for each substance. The van data from the period 2/11/01-30/11/01 was examined for PM_{10}, NO_2 and CO, with 29, 696 and 585 periods respectively.

Measurements of CO, PM_{10}, NO_2, NO, meteorological parameters and estimated emissions of CO, NO_x and PM_{10}.

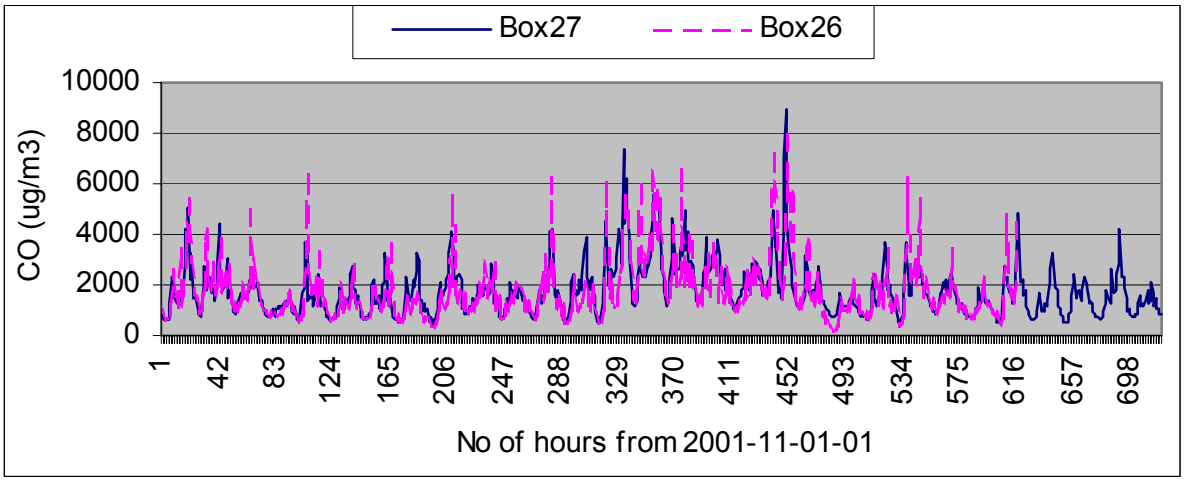


Figure 5: Time series of CO at Streetboxes 27 and 26 during November 2001

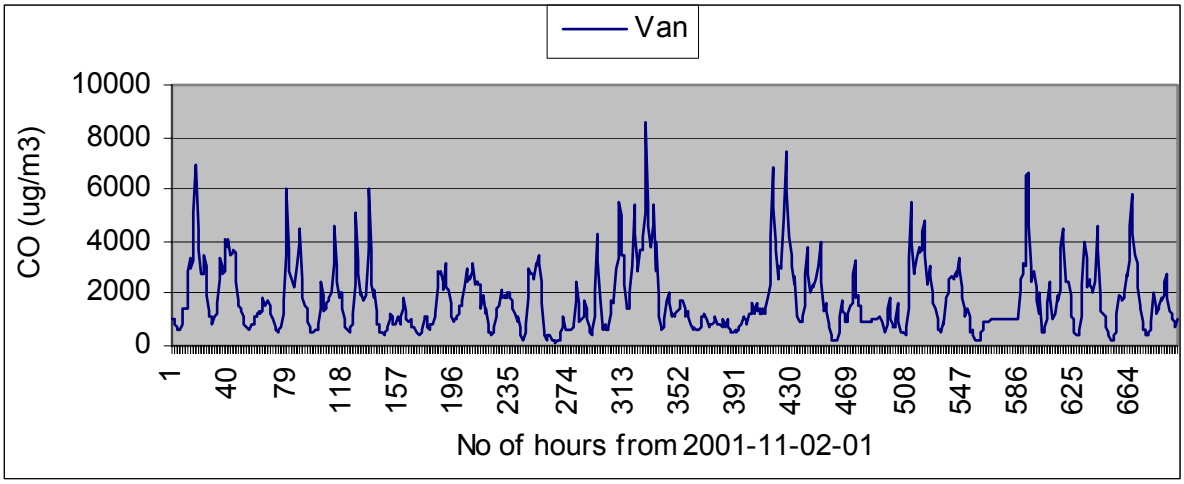


Figure 6: Time series of CO at the monitoring van (Van) during November 2001

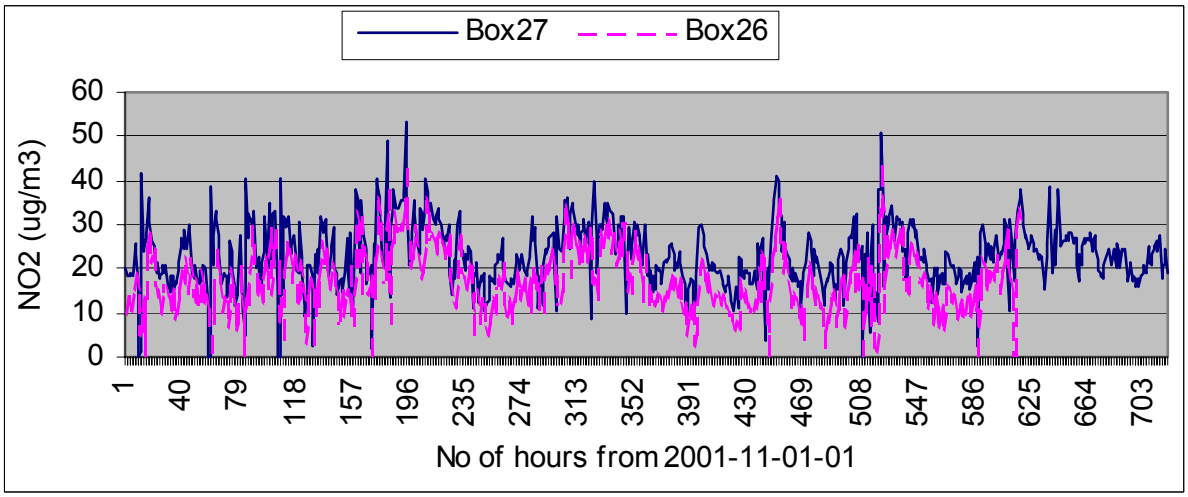


Figure 7: Time series of NO_2 at Streetboxes 27 and 26 during November 2001

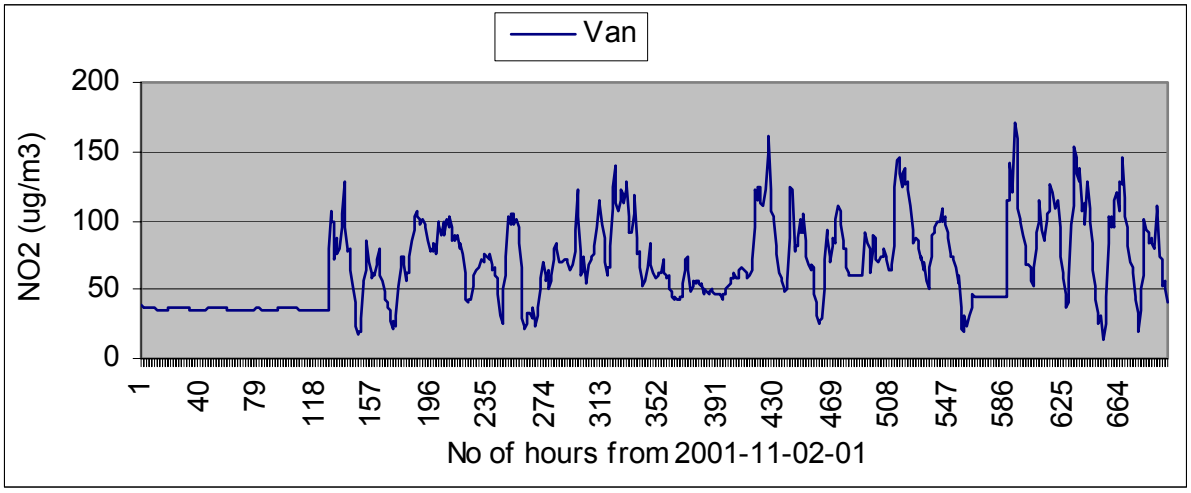


Figure 8: Time series of NO_2 at the monitoring van (Van) during November 2001

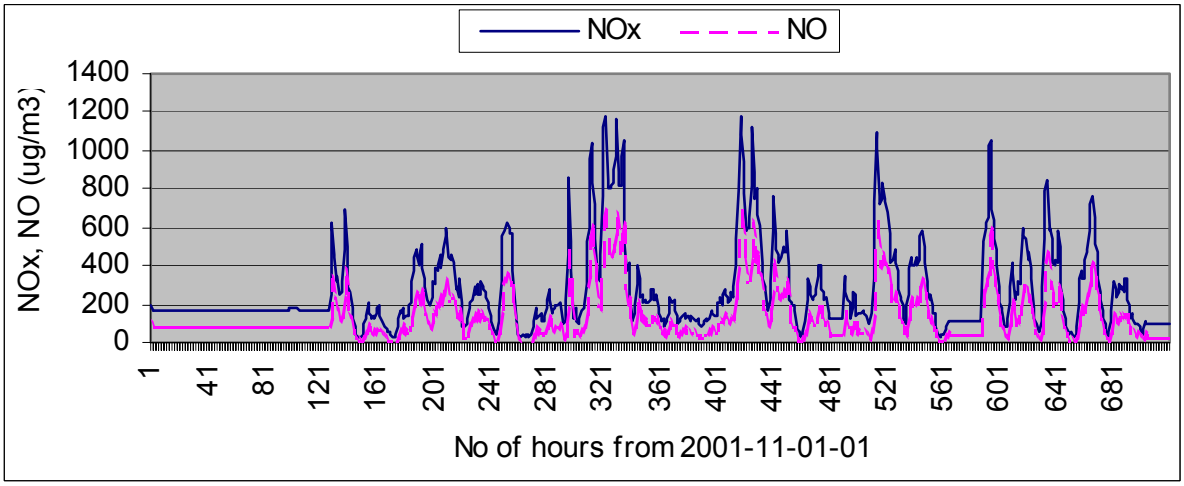


Figure 9: Time series of NO_x and NO at the monitoring van (Van) during November 2001

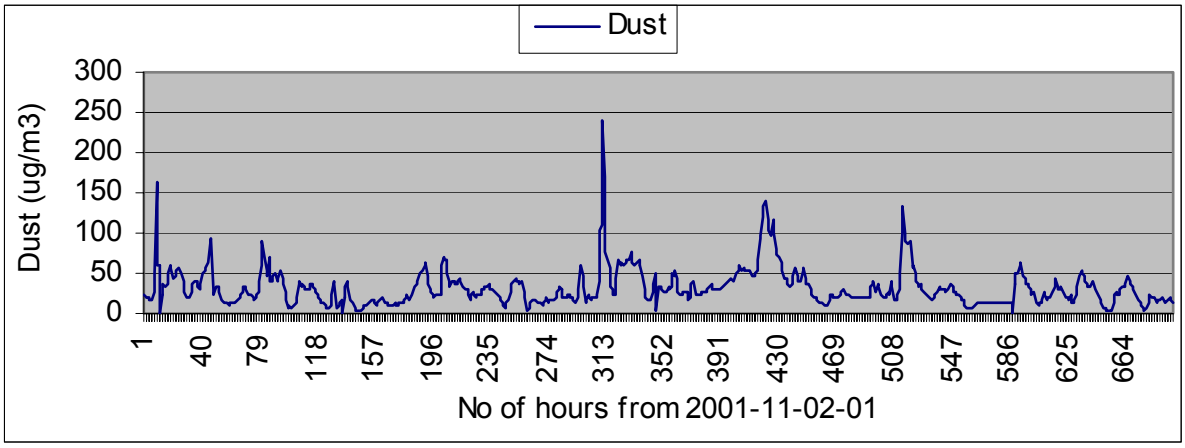


Figure 10: Time series of PM_{10} at the monitoring van (Van) during November 2001

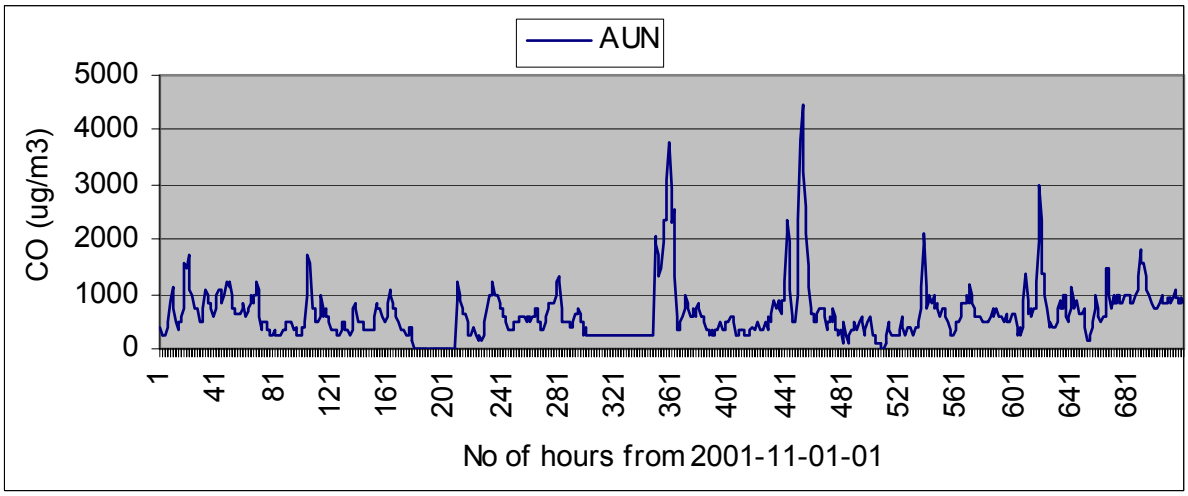


Figure 11: Time series of CO at the AUN station during November 2001

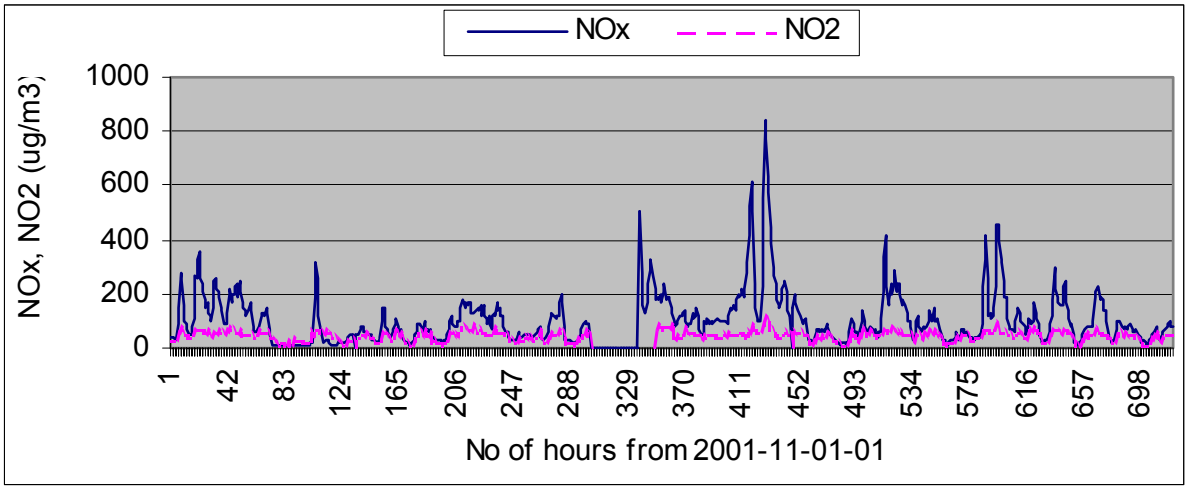


Figure 12: Time series of NO_x and NO_2 at the AUN station during November 2001

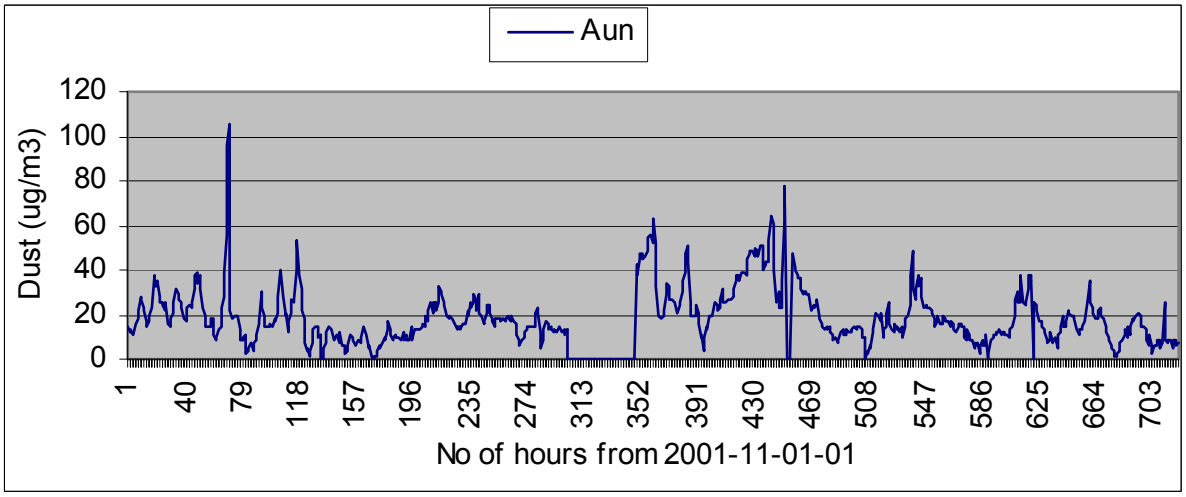


Figure 13: Time series of PM_{10} at the AUN station during November 2001

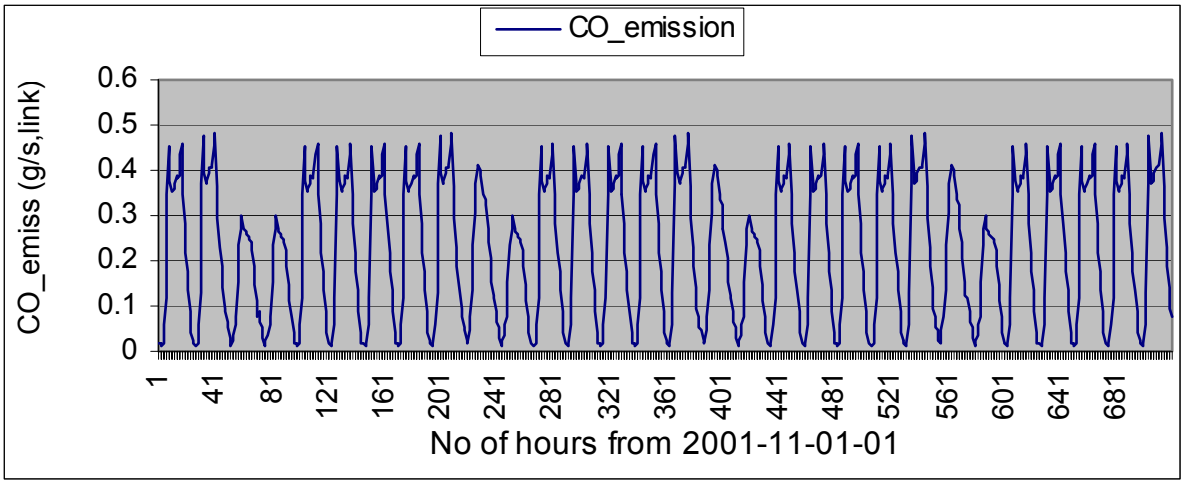


Figure 14: Time series of CO emissions during November 2001

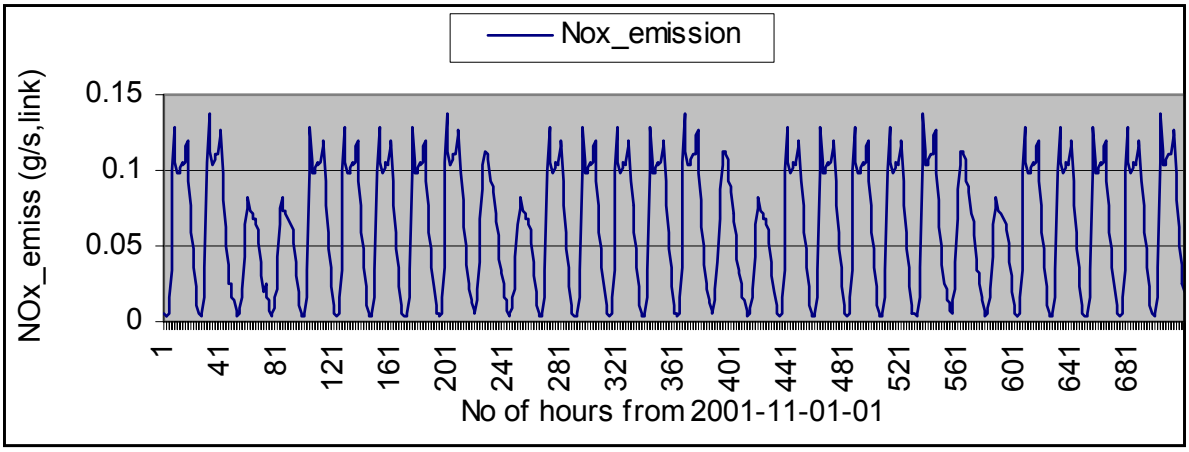


Figure 15: Time series of NO_x emission during November 2001

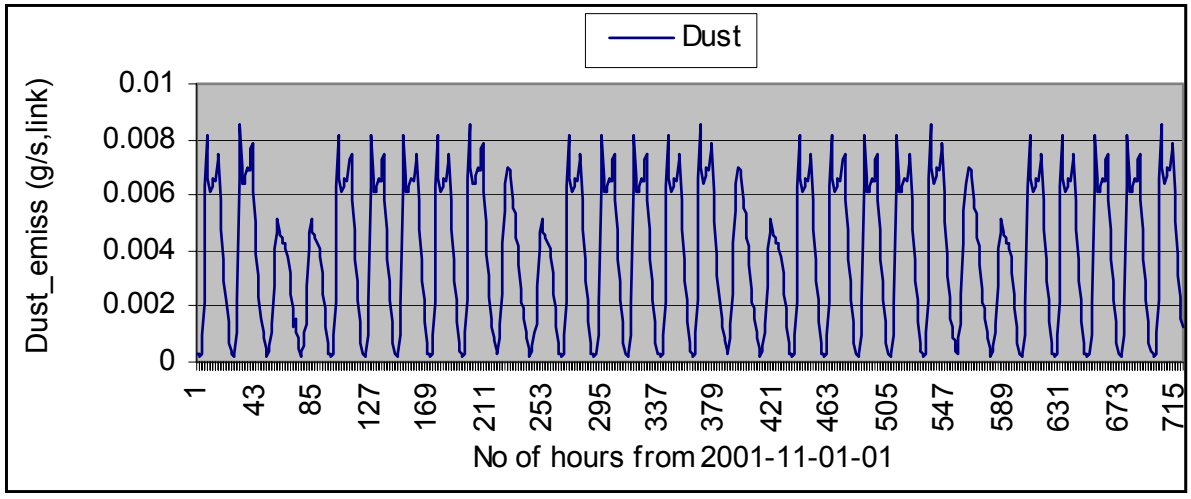


Figure 16: Time series of PM_{10} emission during November 2001

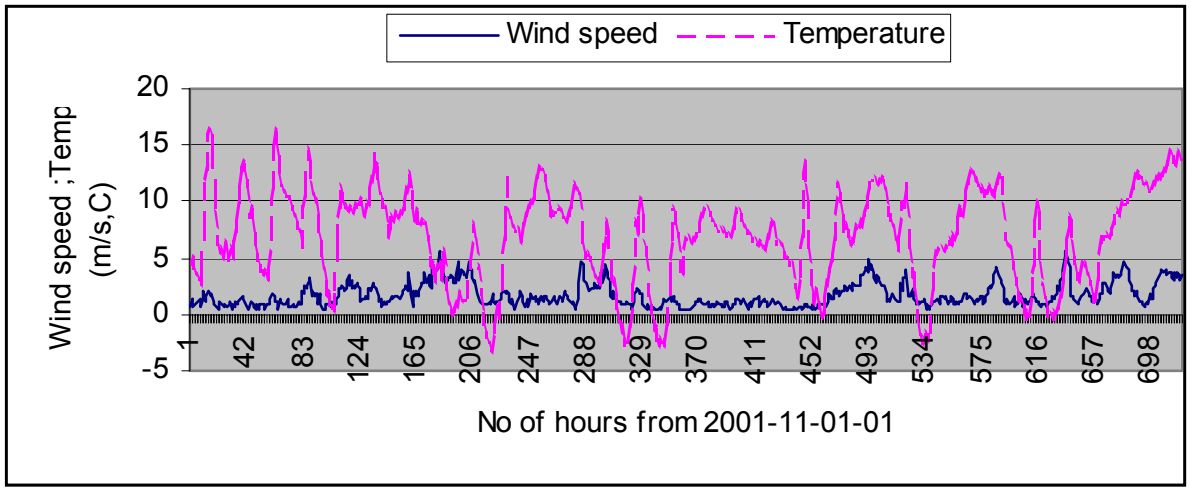


Figure 17: Time series of wind speed and temperature during November 2001

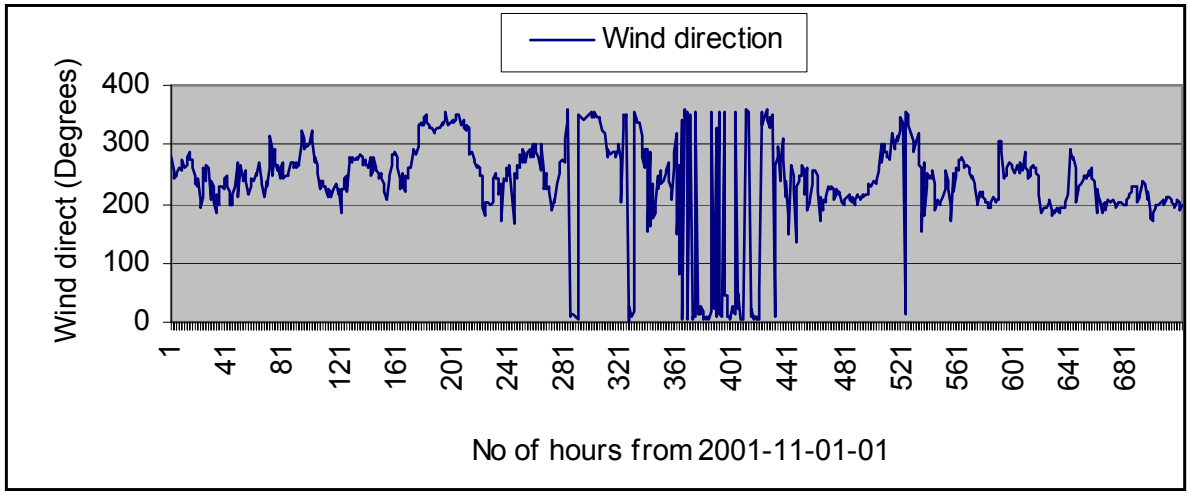


Figure 18: Time series of wind direction during November 2001

Comparisons of measured and calculated concentrations of CO.

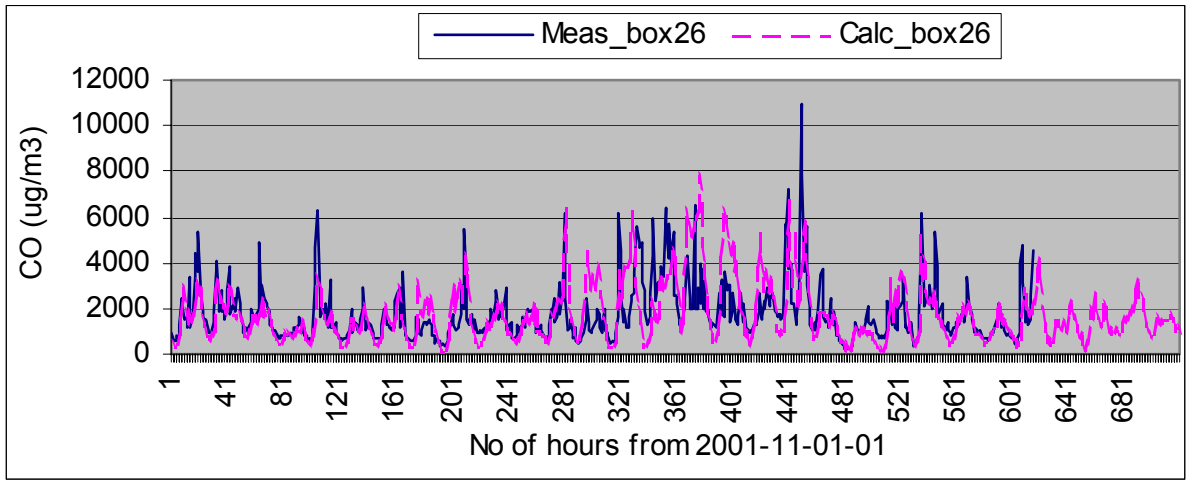


Figure 19: Measured and calculated concentrations of CO at Streetbox 26 during November 2001

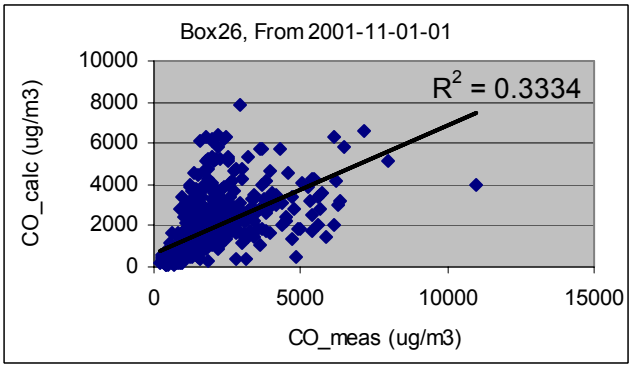


Figure 20: Scatter plot of measured and calculated concentrations of CO at Streetbox 26 during November 2001.

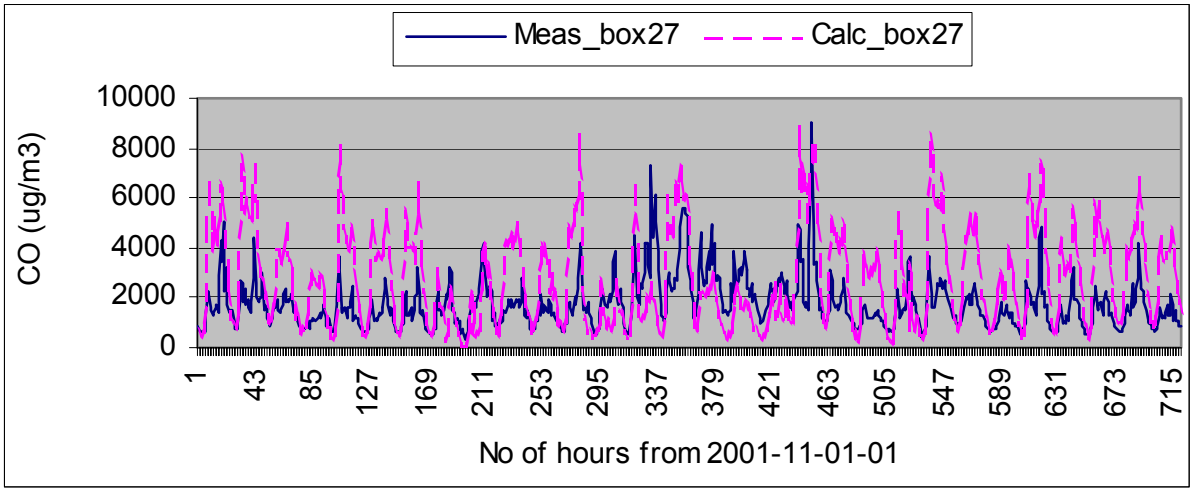


Figure 21: Measured and calculated concentrations of CO at Streetbox 27 during November 2001.

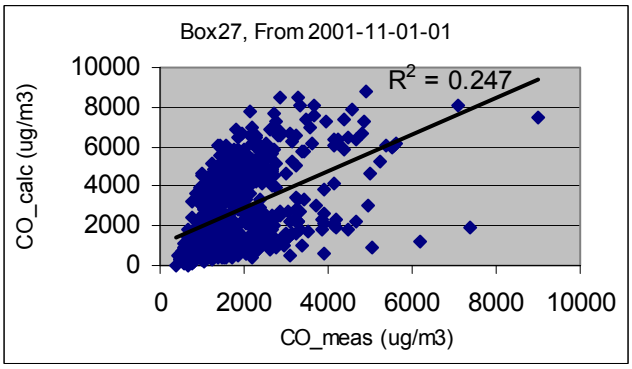


Figure 22: Scatter plot of measured and calculated concentrations of CO at Streetbox 27 during November 2001

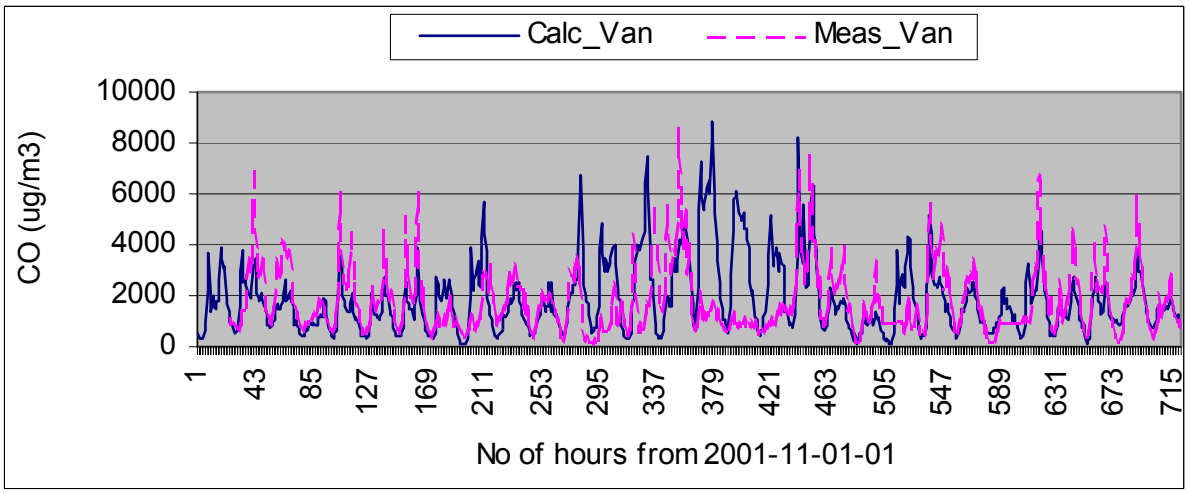


Figure 23: Measured and calculated concentrations of CO at Van during November 2001

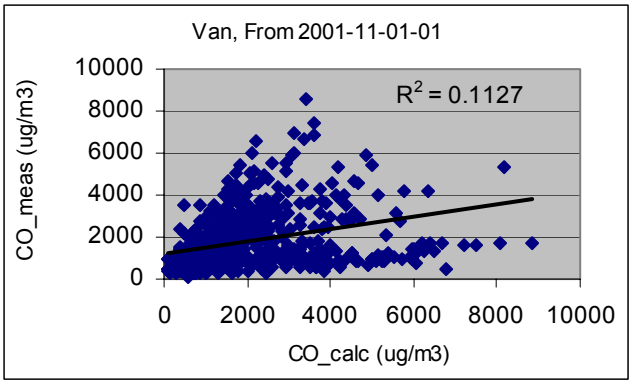


Figure 24: Scatter plot of measured and calculated concentrations of CO at Streetbox 26 during November 2001

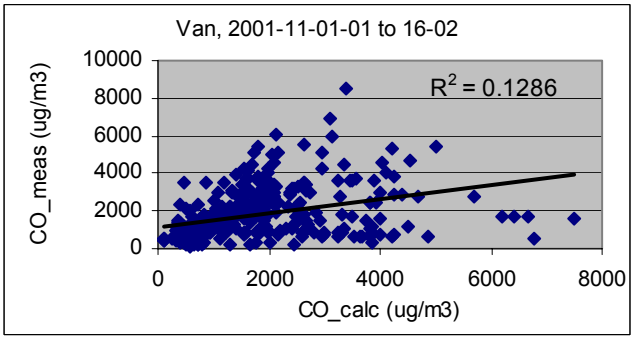


Figure 25: Scatter plot of measured and calculated concentrations of CO at Streetbox 26 upto 16th November 2001.

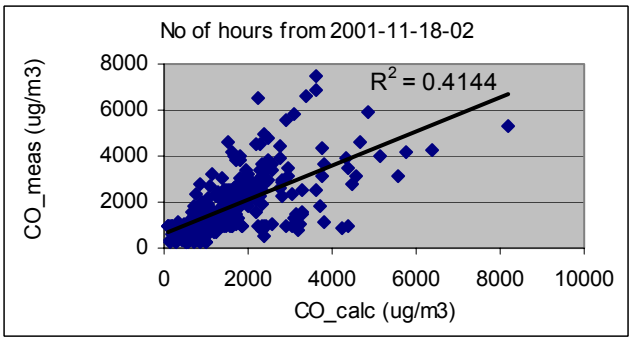


Figure 26: Scatter plot of measured and calculated concentrations of CO at Streetbox 26 between 18th November to the end of the month 2001.

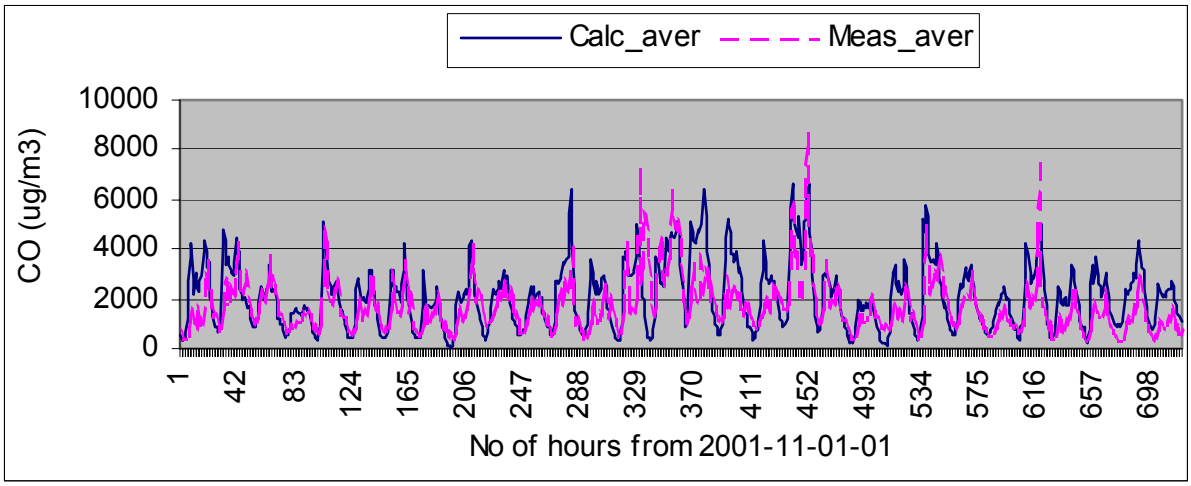


Figure 27: Measured and calculated average canyon concentrations of CO during November 2001.

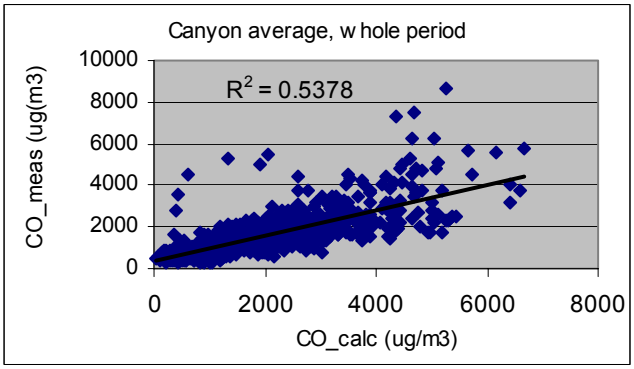


Figure 28: Scatter plot of measured and calculated average canyon concentrations of CO during November 2001.

CO:

The results from the Excel analysis are displayed above. The analysis presented consists of time series diagrams and scatter plots with estimated correlation coefficients. The analysis covers both the whole November period as well as selected parts of the period, the beginning of the month until 16th November, and 18th November until to the end of the month. The data between 16th - 18th November was excluded due to the low correlation.

The correlation coefficient for the whole November period varied between 0.5 and 0.58 for the comparisons between the calculated and measured data for streetboxes 26 and 27.

The comparisons of the calculated and measured data for the van gave a correlation coefficient for the whole November period of 0.34. A short period between 16th - 18th November caused the relatively low correlation between the calculations and the measurements. When that period was excluded, the correlation coefficient was improved, especially for the later part, from 18th November onwards, the coefficient was 0.64.

A further improvement was found for the calculated and measured canyon averages when the averages were constructed hour by hour between the values from the street boxes and the van. The correlation coefficient here was 0.73.

Outputs from the statistical package are presented in Table 1 below. This analysis was only performed for the whole November period using 8 hour running averages as specified by the Air Quality Objectives.

Table 1: Statistical properties of the measurements and calculations of CO collected by the van presented as hourly data and as 8 hour running averages s. during November 2001

Measuring device		Streetbox 26 (ug/m^3), No of hours 592	Streetbox 27 (ug/m^3), No of hours 592	Van (ug/m^3), No of hours 592	Van (ug/m^3) 8 hour running average. No of 8 hour periods 74	Canyon Average (ug/m^3), No of hours 592
Measurements	Average (O)	1780.2	1813.6	1736.5	1736.5	1776.7
	Standard deviation	1375.5	1057.3	1279.8	1006.6	1082.7
Calculations	Average (P)	1789.2	2597.3	1922.2	1922.2	2102.8
	Standard deviation	1402.7	1972.6	1508.2	1276.0	1387.8
	Correlation coefficient	0.6	0.54	0.3	0.31	0.77
	NMD=(O-P)/P	-0.01	-0.3	-0.1	-0.1	-0.16

NMD = Normalised Mean Difference

Comparisons of measured and calculated concentrations of PM_{10}.

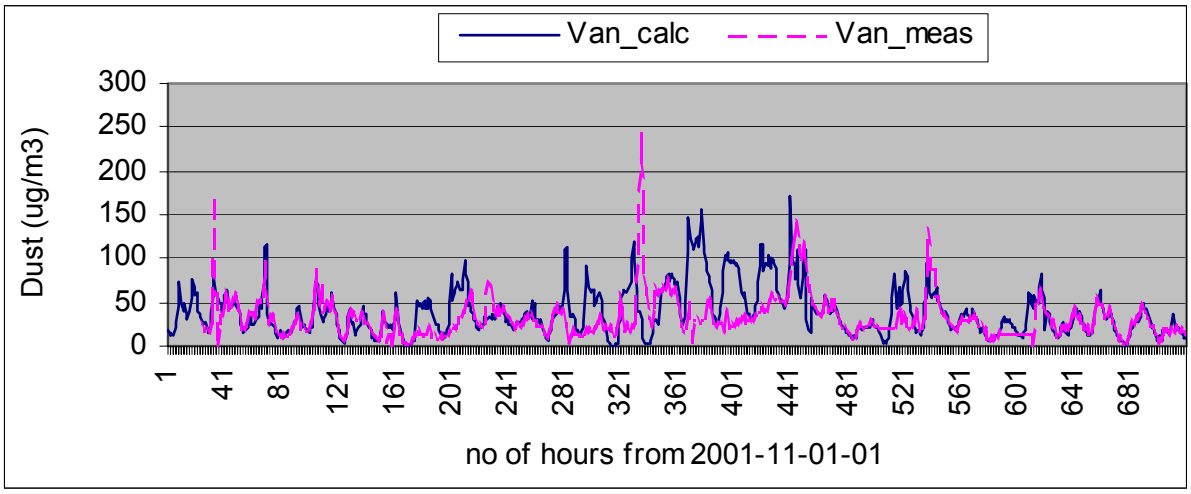


Figure 29: Measured and calculated concentrations of PM_{10} at the van during November 2001

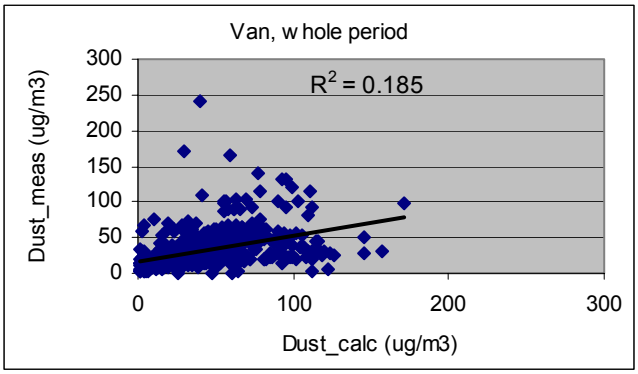


Figure 30: Scatter plot of measured and calculated concentrations of PM_{10} at the van during November 2001.

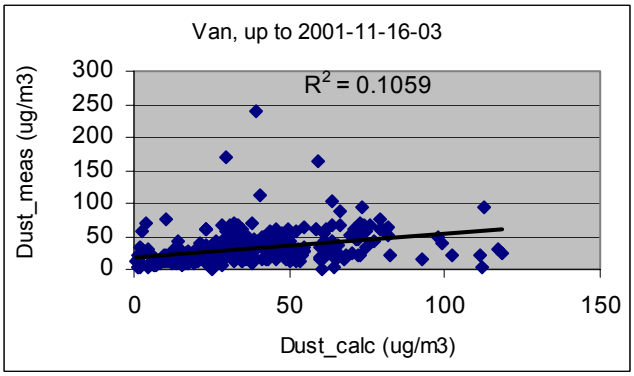


Figure 31: Scatter plot of measured and calculated concentrations of PM_{10} at the van from 1st - 16th November 2001

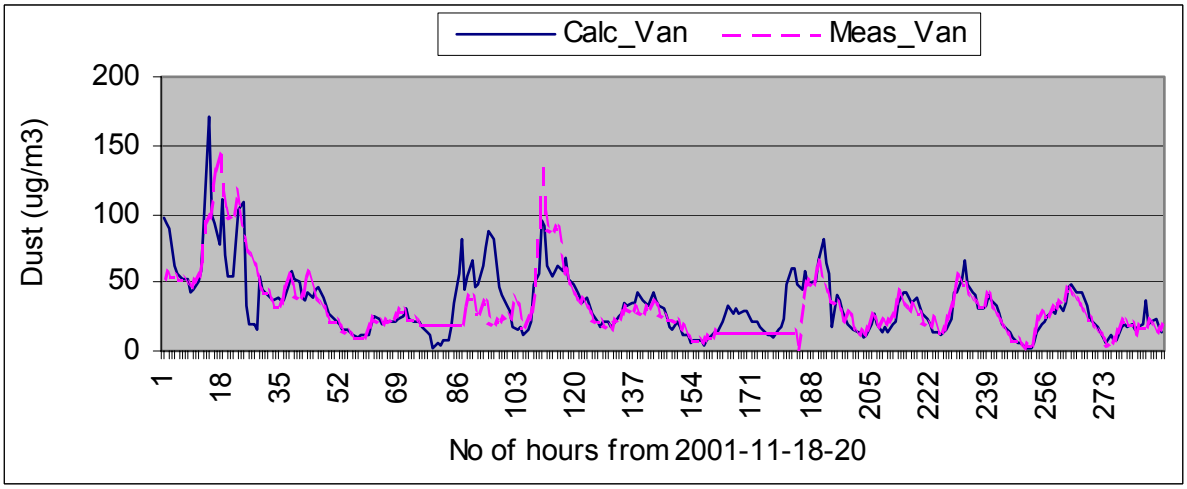


Figure 32: Measured and calculated concentrations of PM_{10} at the van from 18th November 2001 until the end of the month

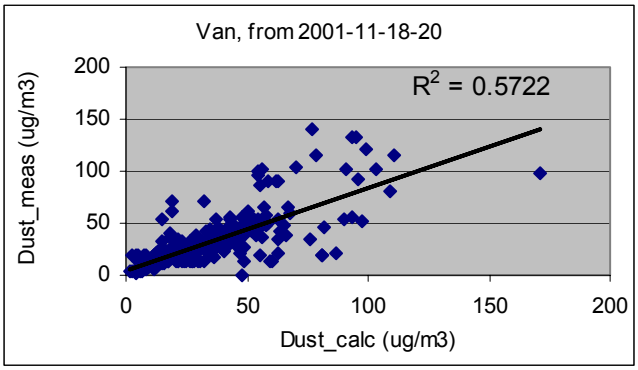


Figure 33: Scatter plot of measured and calculated concentrations of PM_{10} at the van from 18th November until the end of November

Dust:
The results from the Excel analysis are displayed above. The analysis presented consists of time series diagrams and scatter plots with estimated correlation coefficients. The analysis covers both the whole November period as well as selected parts of the period, the beginning of the month to 16th November, and 18th November to the end of the month. Data was excluded between 16th - 18th November due to low correlation.
The comparison of the calculated and measured data for the van during the November period gave a correlation coefficient of 0.43. A short period between 16th - 18th November caused the relatively low correlation between the calculations and the measurements. When that period was excluded, the correlation improved for the later part from 18th November until the end of the month, with a value of 0.75.
As no PM_{10} measurements were made at the streetboxes, the canyon average conditions could not be analysed. 8 hour running averages as specified by the Air Quality Objectives are also presented.

Table 2: Statistical properties of the measurements and calculations of PM_{10} collected by the van during November 2001 presented as hourly data and as 24 hour averages.

Measuring device		Van (ug/m^3), No of hours 696	Van (ug/m^3) 24 hour average. No of 24 hour periods 29
Measurements	Average (O)	31.7	31.7
	Standard deviation	23.2	15.3
Calculations	Average (P)	38.9	38.9
	Standard deviation	27.7	18.2
	Correlation coefficient	0.43	0.52
	NMD=(O-P)/P	-0.19	-0.19

NMD = Normalised Mean Difference

Comparisons of measured and calculated concentrations of NO_x.

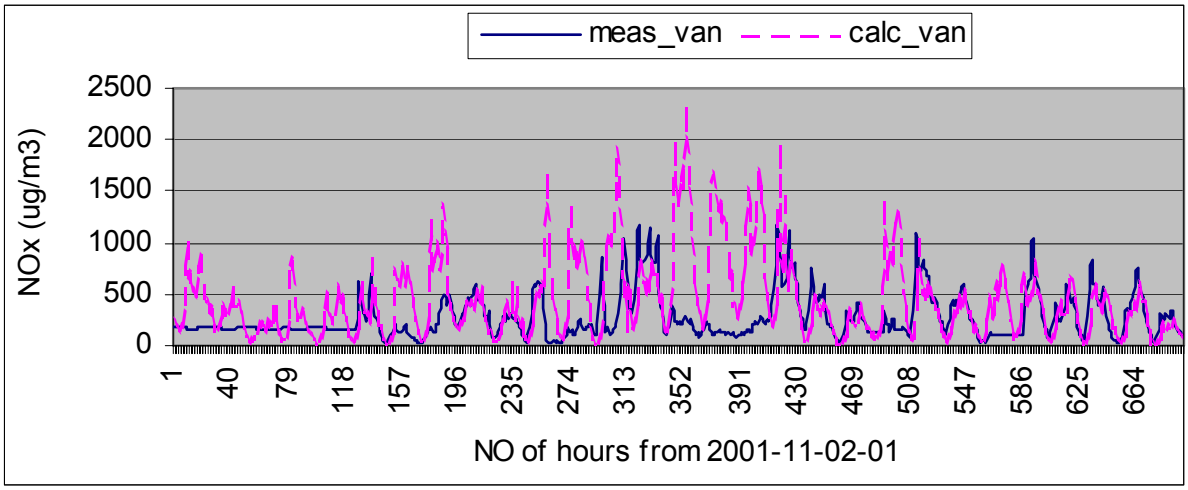


Figure 34: Measured and calculated concentrations of NO_x at the van during November 2001.

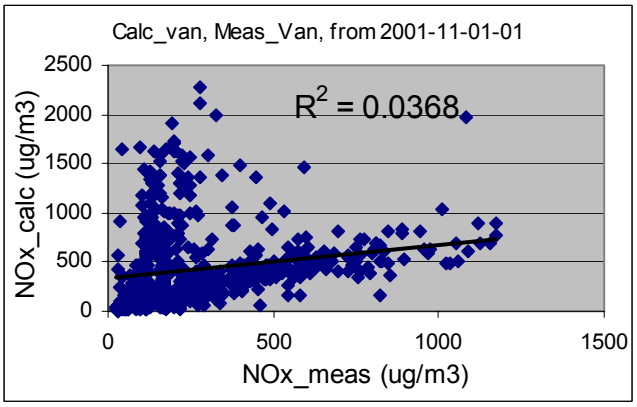


Figure 35: Scatter plot of measured and calculated concentrations of NO_x at the van during November 2001.

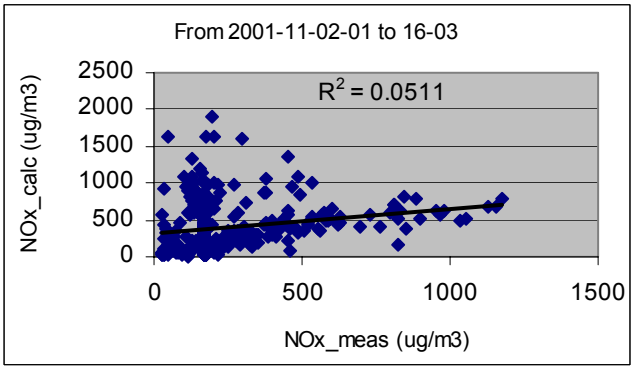


Figure 36: Scatter plot of measured and calculated concentrations of NO_x at the van from 2nd-16th November 2001

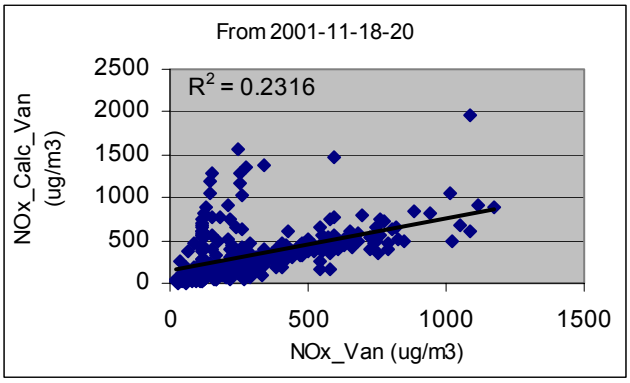


Figure 37: Scatter plot of measured and calculated concentrations of NO_x at the van from 18th November 2001 until the end of the month

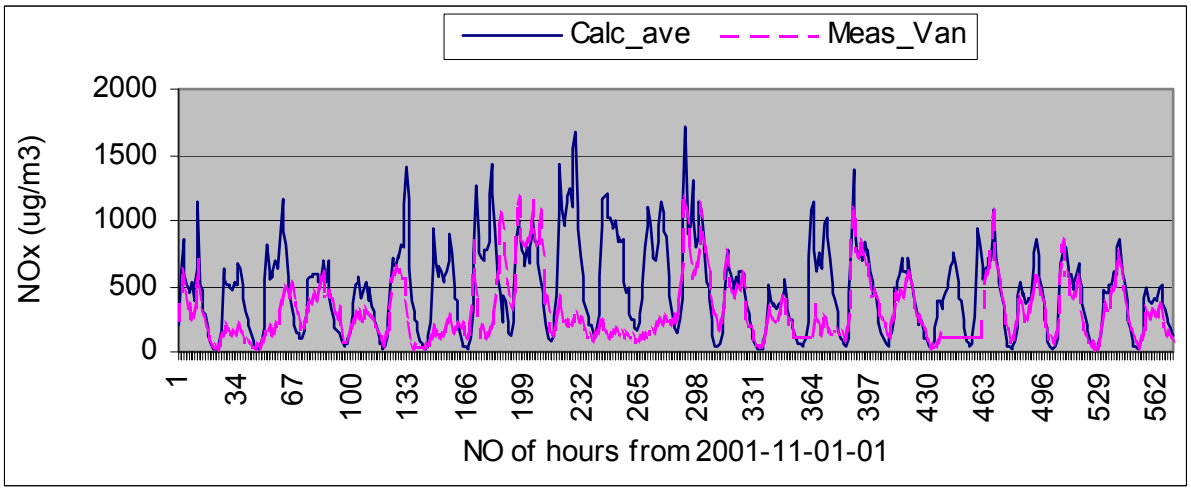


Figure 38: Measured concentrations collected by the van and calculated canyon average concentrations of NO_xduring November 2001

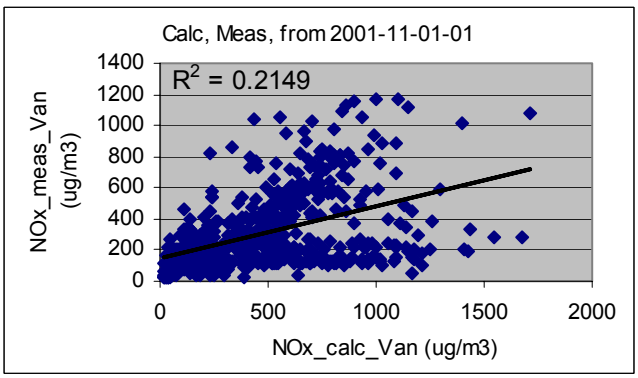


Figure 39: Scatter plot of measured concentrations collected by the van and calculated canyon average concentrations of $NO_x$from 11th November 2001 to the end of the month

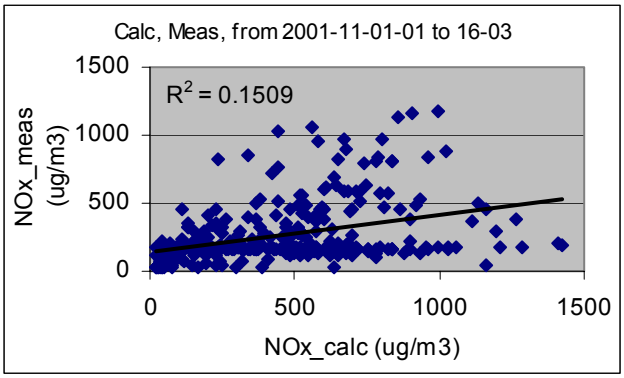


Figure 40: Scatter plot of measured concentrations collected by the van and calculated canyon average concentrations of $NO_x$from 2nd - 16th November 2001

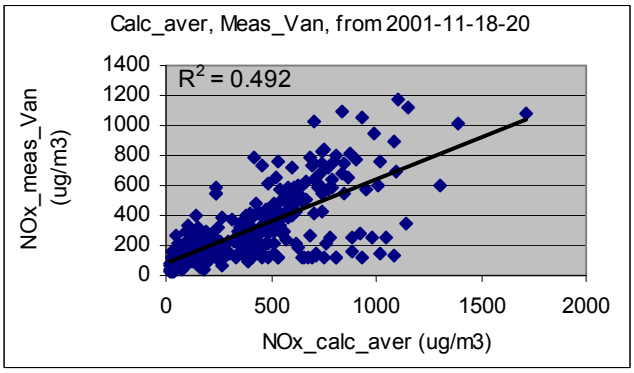


Figure 41: Scatter plot of measured concentrations collected by the van and calculated canyon average concentrations of $NO_x$from 18th November 2001 until the end of the period.

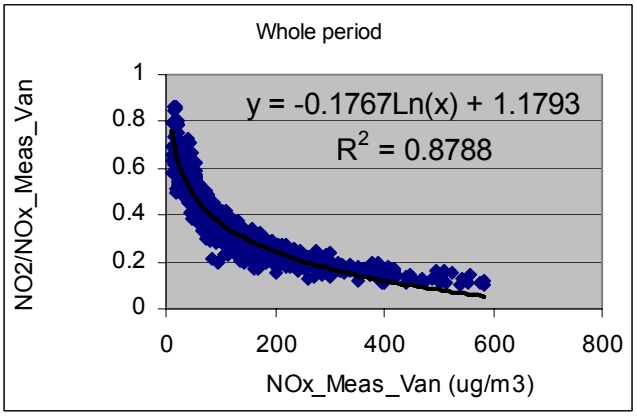


Figure 42: Functional relationalship of NO_2/NO_x to NO_x

NO_x/NO_2:
The results from the Excel analysis are displayed above. The analysis presented consists of hourly time series diagrams and scatter plots with estimated correlation coefficients. The analysis covers both the whole November period as well as selected parts of the period, the beginning of the month to 16th November, and 18th November to the end of the month. Data from 16th - 18th November was excluded due to low correlation.
The comparisons of calculated and measured data for the van displayed a correlation coefficient of 0.19 for the whole November period. A short period between 16th- 18th November caused the relatively low correlation between the calculations and the measurements. When that period was excluded, the

correlation coefficient was improved, especially for the later part, from 18th November, the coefficient was 0.48.
The function that has been used to transform calculated NO_x to NO_2 is also shown above. The regression curve is based on the van data of NO_x and NO_2.
Outputs from the statistical package for NO_x and NO_2 are presented in Table 3 below. This analysis was only performed for the whole November period.

Table 3: Statistical properties of the measurements and calculations of NO_x and NO_2 collected by the van for November 2001 presented as hourly data.

Measuring device		NO_x at Van (ug/m^3), No of hours 696	NO2 at Van (ug/m^3), No of hours 672
Measurements	Average (O)	277.1	67.4
	Standard deviation	221.9	29.9
Calculations	Average (P)	400.5	77.4
	Standard deviation	306.8	35.9
	Correlation coefficient	0.44	0.48
	NMD=(O-P)/P	-0.31	-0.13

NMD = Normalised Mean Difference

It was established whether the success criterion had been met for each pollutant by the use of the following formula comparing the measured and modelled values:

$$\Delta C = \frac{\sum \frac{(C_m - C_{calc})}{C_{calc}}}{n}$$

Table 4 below lists the results for each pollutant evaluated in Leicester.

Table 4: Results for comparison between monitored and modelled values for pollutants in Leicester.

Criterion	**Value**	**Success criterion**
Comparison of observed and calculated air pollutant concentrations on specific roadside locations		The average difference between calculated and measured data should be less than 50% for all pollutants (for NO_2 < 60%)
PM_{10} (24 hours), roadtype x	ΔC=-14%	ΔC < 50 %
NO_2 (1 hour), roadtype x	ΔC=5%	ΔC < 60 %
CO (8 hours), roadtype x	ΔC=12%	ΔC < 50 %
C_6H_6 (annual), roadtype x	N/A	ΔC < 50 %

Indicator 3: Accuracy of roadside description, noise models

Measurements were completed on the following roadtypes:

Roadtype x	Noise pollution monitoring on: Evington Road, London Road (4), Waterloo Way (4), New Walk, Upper New Walk, Regent Road (4), University Road, De Montfort Street (2). London Road and Waterloo Way are main routes in and out of the city (London Road shows peaks inbound during am, and outbound during pm, whereas Waterloo Way shows am and pm peaks both inbound and outbound), the other roads are less busy side roads, except New Walk and Upper New Walk which are pedestrianised (therefore provide backround data)

Which organization(s) did the testing?	ITS / LCC (ATC)
When did the testing take place?	Testing took place from 31st October – 2nd November 2001: 18 one-hour measurements were taken. Monitoring of 12-hour measurements needs to be completed Further statistical analysis is required

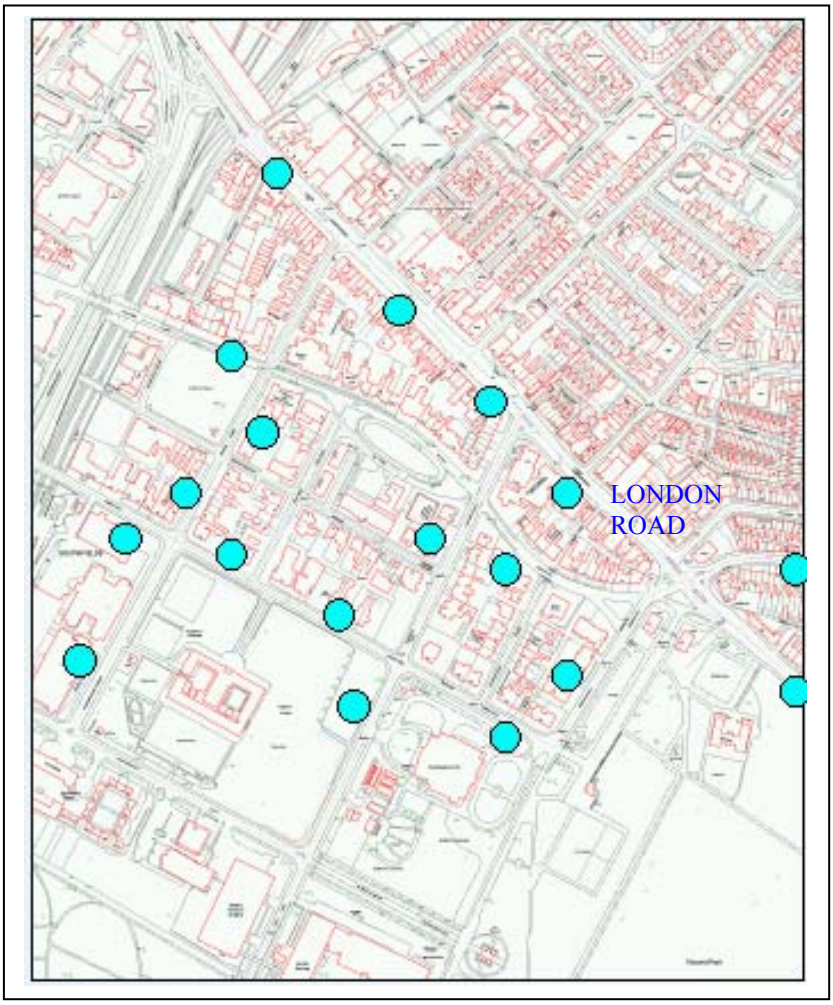


Figure 43: Location of monitoring sites in the London Road area

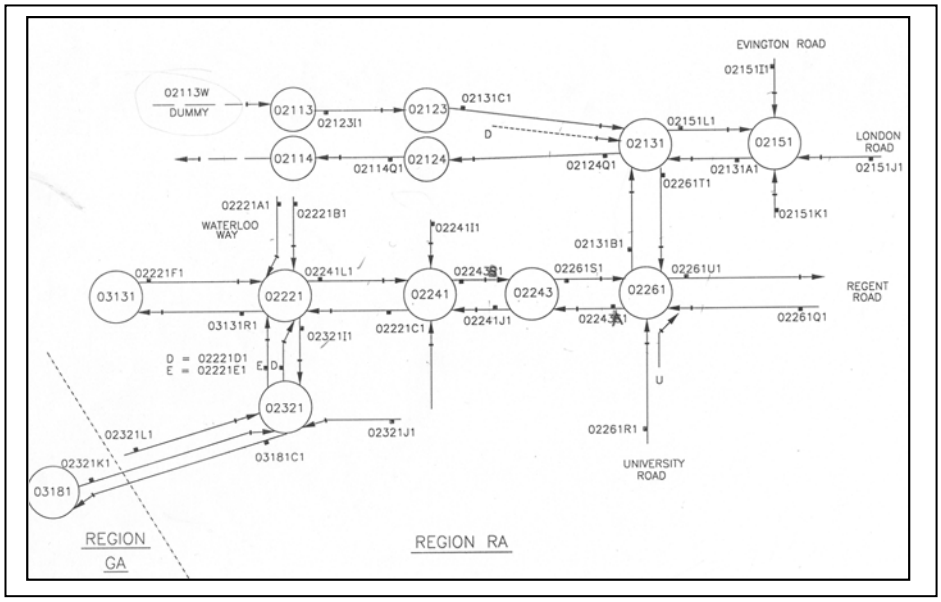


Figure 44: SCOOT Region RA.

Set up of noise monitoring equipment.

Figure 45: Typical Noise Monitoring Equipment Set-ups

The comparison of the modelled (predicted) and monitored values was undertaken using Microsoft Excel. The result of a least-squares linear regression analysis on the modelled and measured values is shown below (minus the analysis for the two sites from West Walk).

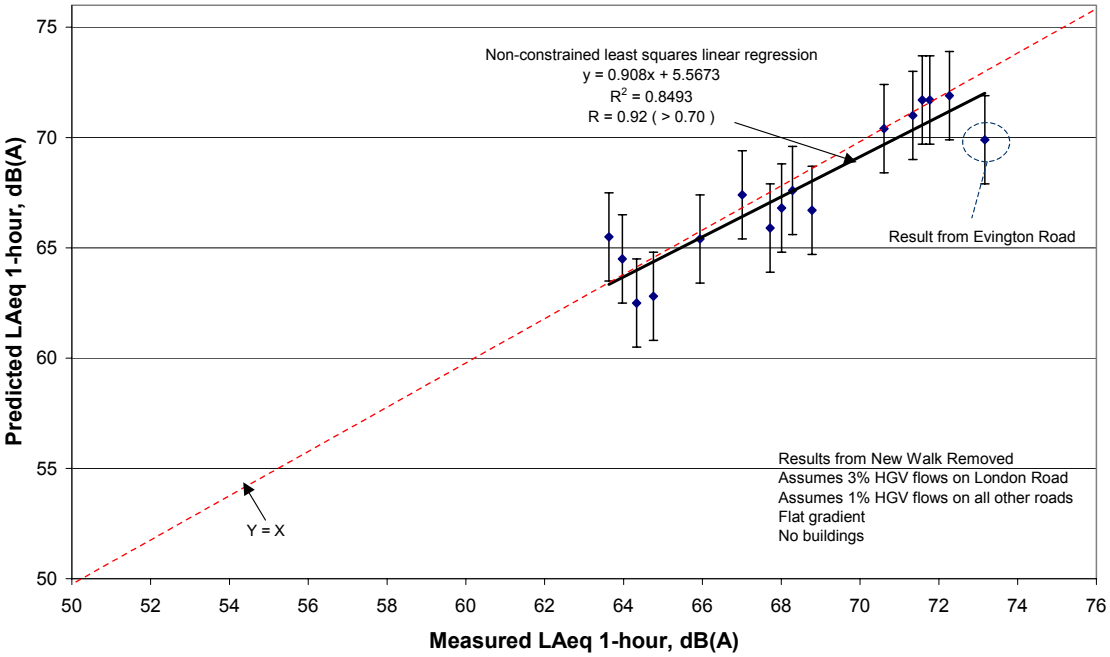


Figure 46: Regression analysis of measured and predicted values

Table 5: Regression Statistics from analysis of AVTUNE SNEM-CRTN results

Regression Statistics	
Multiple R	0.91861
R Square	0.8493
Adjusted R Square	0.778178
Standard Error	1.26445
Observations	16

As can be seen from Figure 46 and Table 5, the first criteria has been achieved. The R value of 0.92 is over the specified criteria of 0.7.
Additional analyses were undertaken to observe the performance of the regression analysis using modelled noise levels from the prototype SNEM/SPM combination. In both of the following analyses the results from the background sites on New Walk were included and the effects of buildings excluded.

Figure 47 shows the non-origin constrained regression analysis. Figure 48 shows the results of the origin-constrained analysis.

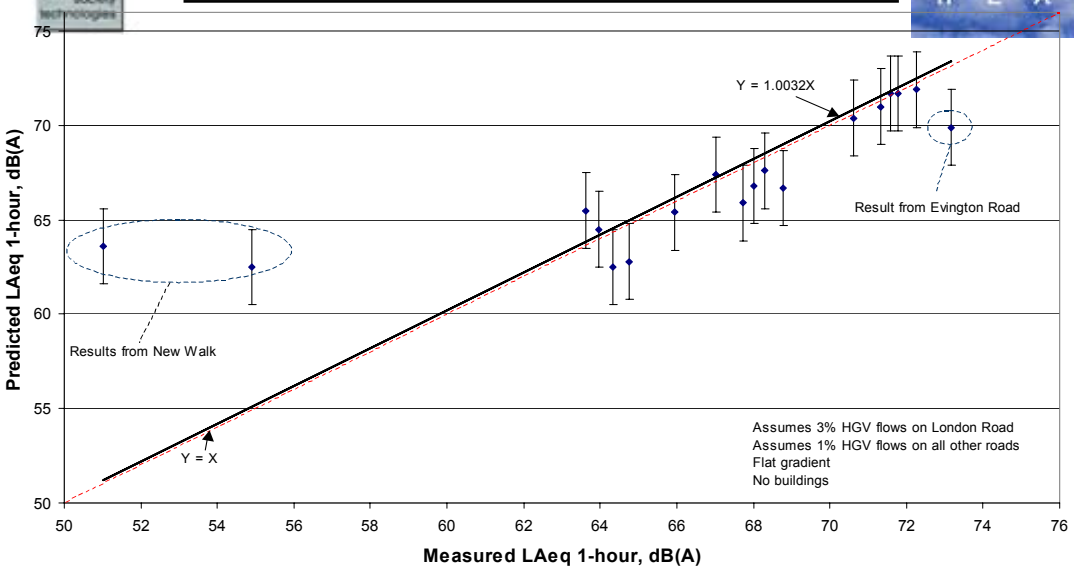


Figure 47: Non-origin constrained analysis including results from New Walk

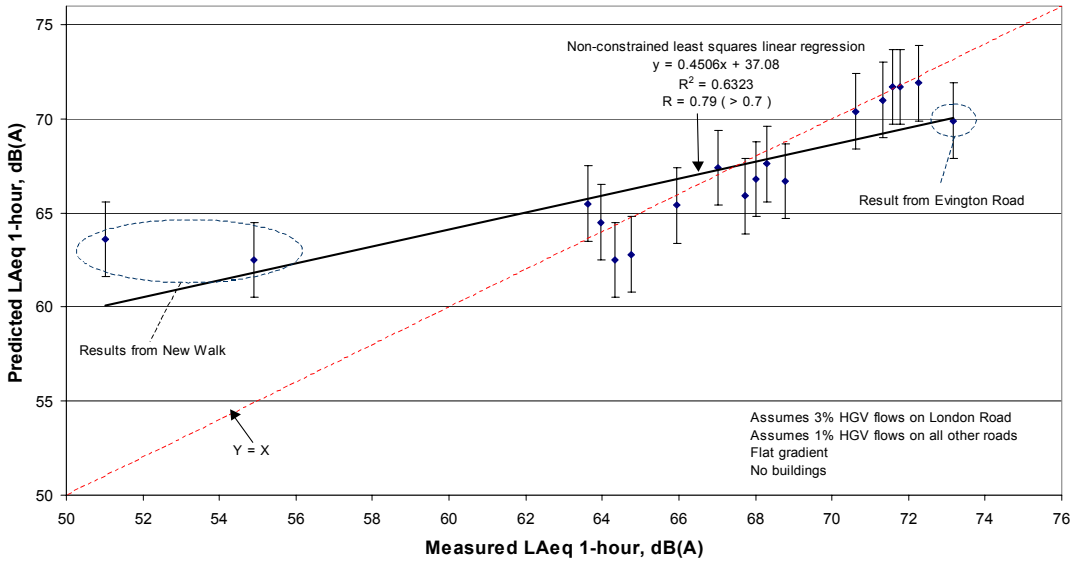


Figure 48: Origin constrained analysis including results from New Walk

As can be seen from both figures, the noise levels for New Walk are grossly over-predicted. This is entirely due to the exclusion of building effects from the SPM during sound propagation. In turn, this leads to a marked flattening of the regression line (gradient of only 0.45).

Again, as would be expected, given that the overall range of predicted and measured L_{Aeq} levels fall within a fairly tight band of 50-75 dB(A), constraining the regression analysis through the origin markedly improves the gradient of the regression equation, with the gradient of the line being not statistically significantly different from 1.0 at the 5% significance level.
The coefficients of regression and determination do not markedly change between the two additional analyses.

Indicator 3a: Absolute differences between measured and predicted noise levels (L_{Aeq},).

CRITERION	Test period / frequency	Value	Success criterion	OK / NOT OK or N/A
Direct measurement of noise levels over 6 4-hour periods multiple sites in the verification area. Noise parameters recorded will be ½ hour L_{Aeq} levels. Daily L_{den} and L_{night} levels will be calculated from L_{eq} levels.	1st Phase: 31st October until 2nd November 2001 2nd Phase: 19th - 25th April 2002	100% of Modelled L_{Aeq} levels using combination of AVTUNE SNEM & SPM were within ±2 dB(A) of the measured values.	95% of all modelled L_{Aeq} values will be within ±2 dB(A) of the measured	NOT OK[1]

[1] The criterion was not met as one result out of 16 failed, however this was merely due to the small number of measurements taken rather than a reflection of the accuracy of the model.

Other remarks:
2nd Phase still needs to be completed. Further statistical analysis is required.

Indicator 3b: Correlation coefficient, R, calculated from an origin-constrained linear regression analysis between measured and predicted values.

CRITERION	*TEST PERIOD / FREQUENCY*	Value	Success criterion	OK / NOT OK or N/A
Origin-constrained regression analysis to be carried out between the measured and predicted levels.	1st Phase: 31st October until 2nd November 2001 2nd Phase: 19th - 25th April 2002		The correlation coefficient (R-value) between measured and modelled L_{Aeq} levels from all measurement periods and sites shall be above 0.7.	OK

Other remarks:
2nd Phase still needs to be completed. Further statistical analysis is required.

Indicator 4: Testing processes of DSS interfaces

Indicator 4a: Test Interface to Traffic Monitoring Process

CRITERION	Test period / frequency	Value	Success criterion	OK / NOT OK or N/A
SCOOT data (UTC)				
Number of system failures	Daily over 1 month period	1	EFFECT / EQUAL / EMMA PROJECTS	OK
Operational time	Daily over 1 month period	98.5% of total time	>95%	OK
Correct data in and out, referred to data in monitoring station	Daily over 1 month period	YES	Data in DSS equals data in monitoring station	OK
Speed	Daily over 1 month period	Hourly	Fast enough to allow the entire system to reach an hourly update	OK
Automatic count data (UTC)				
Number of system failures	Daily over 1 month period	0	EFFECT / EMMA / EQUAL PROJECTS	OK
Operational time	Daily over 1 month period	100% of total time	> 95%	OK
Correct data in and out, referred to data in monitoring station	Daily over 1 month period	YES	Data in DSS equals data in monitoring station	OK
Speed	Daily over 1 month period	Hourly	Fast enough to allow the entire system to reach an hourly update	OK
CCTV images (Control Room)				
Number of system failures	Daily over 1 month period	6	EFFECT / EMMA / EQUAL PROJECTS	OK
Operational time	Daily over 1 month period	99.95% of total time	> 95%	OK
Correct data in and out, referred to data in monitoring station	Daily over 1 month period	YES	Data in DSS equals data in monitoring station	OK
Speed	Daily over 1 month period	< 1 Hour	Fast enough to allow the entire system to reach an hourly update	OK

To which process(es) does the above table refer?	- SCOOT data in the UTC system at ATC - Automatic count site data in the UTC system at ATC - CCTV images received to the Control Room at ATC
What method(s) were used for testing?	- 1 random site was selected for each of the 18 regions covered by SCOOT, data was monitored continously over 1 month period - 12 random sites were selected from a total number of 62, data was monitored continously over 1 month period

	- Log from PREFECT fault reporting system was monitored at the end of the 1 month period
Which organization(s) did the testing?	LCC
When did the testing take place?	29th October - 30th November 2001
Any other remarks concerning this sub-indicator?	It was difficult to monitor the total number of SCOOT and Automatic Count Sites data due to the huge volumes of data involved, however it was possible to measures the total number of SCOOT loops working in real time at a given instance (84% efficiency)

Indicator 4b: Test Interface to Meteorological Monitoring Process

CRITERION	Testperiod / frequency	Value	Success criterion	OK / NOT OK or N/A
Real time meteorological data (AIRVIRO)				
Number of system failures	Daily over 1 month period	0	EFFECT / EMMA / EQUAL PROJECTS	OK
Operational time	Daily over 1 month period	100% of total time	> 95%	OK
Correct data in and out, referred to data in monitoring station	Daily over 1 month period	YES	Data in DSS equals data in monitoring station	OK
Speed	Daily over 1 month period	Hourly	Fast enough to allow the entire system to reach an hourly update	OK

To which process(es) does the above table refer?	Real time meteorological data refers to the data supplied by the local meteorological mast (temperature at two different heights, wind direction, wind speed, stability measurements) data is measured continuously and supplied to the Airviro modelling system on an hourly basis
What method(s) were used for testing?	The Indico Presentation module in the Airviro system was used to check that the met data was historically complete
Which organization(s) did the testing?	LCC
When did the testing take place?	29th October - 30th November 2001
Any other remarks concerning this sub-indicator?	

Indicator 4c: Test Interface to Environmental Monitoring Network Process

CRITERION	Testperiod / frequency	Value	Success criterion	OK / NOT OK or N/A
Real time pollution data (AIRVIRO)				
Number of system failures	Daily over 1 month period	Number of system failures: 21	EFFECT / EMMA /EQUAL PROJECTS	OK
Operational time	Daily over 1 month period	61.73% of total time	> 95%	NOT OK [1]
Correct data in and out, referred to data in monitoring station	Daily over 1 month period	YES	Data in DSS equals data in monitoring station	OK
Speed	Daily over 1 month period	Hourly	Fast enough to allow the entire system to reach an hourly update	OK

[1] Whilst the operational time is below that required, the number of faults was predominantly due to the calibration of the RPMs and AUN.

To which process(es) does the above table refer?	Real time pollution data from the AUN monitoring station (NO_x, CO, SO_2, PM_{10}, O_3) and 13 Roadside Pollution Monitors (CO, NO_2), data monitored continuously and supplied to the Airviro modelling system on an hourly basis
What method(s) were used for testing?	The Indico Presentation module in the Airviro system was used to check that the meteorological data was historically complete
Which organization(s) did the testing?	LCC
When did the testing take place?	29th October - 30th November 2001
Any other remarks concerning this sub-indicator?	

Indicator 4d: Test Interface to Static & Infrequently Updated Information Process

CRITERION	Test period / frequency	Value	Success criterion	OK / NOT OK or N/A
SCOOT network data (UTC)				
Number of system failures	6 times during 1 month period	0	EQUAL /EMMA/ EFFECT PROJECTS	OK
Operational time	6 times during 1 month period	100% of total time	> 95%	OK
Correct data in and out, referred to data in source	6 times during 1 month period	YES	Data in DSS equals data in source	OK
Speed	N/A	N/A	Hourly update	N/A
Network/GIS data (AIRVIRO)				
Number of system failures	6 times during 1 month period	0	EQUAL /EMMA /EFFECT PROJECTS	OK
Operational time	6 times during 1 month period	100% of total time	> 95%	OK
Correct data in and out, referred to data in source	6 times during 1 month period	YES	Data in DSS equals data in source	OK
Speed	N/A	N/A	Hourly update	N/A
Topographical data (AIRVIRO)				
Number of system failures	6 times during 1 month period	0	EQUAL /EMMA/ EFFECT PROJECTS	OK
Operational time	6 times during 1 month period	100% of total time	> 95%	OK
Correct data in and out, referred to data in source	6 times during 1 month period	YES	Data in DSS equals data in source	OK
Speed	N/A	N/A	Hourly update	N/A
Land use data (AIRVIRO)				
Number of system failures	6 times during 1 month period	0	EQUAL /EMMA /EFFECT PROJECTS	OK
Operational time	6 times during 1 month period	100% of total time	> 95%	OK
Correct data in and out, referred to data in source	6 times during 1 month period	YES	Data in DSS equals data in source	OK
Speed	N/A	N/A	Hourly update	N/A
Emissions factors (AIRVIRO)				
Number of system failures	6 times during 1 month period	0	EQUAL /EMMA /EFFECT PROJECTS	OK

Operational time	6 times during 1 month period	100% of total time	> 95%	OK
Correct data in and out, referred to data in source	6 times during 1 month period	YES	Data in DSS equals data in source	OK
Speed	N/A	N/A	Hourly update	N/A

To which process(es) does the above table refer?	- SCOOT network data stored in the UTC system - Network/GIS data, Topographic data, and Land use data in the Airviro modelling system - Emissions factors for point, line and area sources in the Airviro modelling system
What method(s) were used for testing?	- The SCOOT network data was checked in the database of the UTC system for the same SCOOT loops detailed in indicator 4a - Physiographical, topographical, etc data examined in usr/airviro/data/leicester/wnd directory in Airviro modelling system - Emission factors examined in EDB module of Airviro modelling system
Which organization(s) did the testing?	LCC
When did the testing take place?	29th October - 30th November 2001
Any other remarks concerning this sub-indicator?	- During the examination of the area, line, and point sources in the Airviro modelling system, it was noted that the number of sources in the database is higher than the original list of entries, and this will need to be resolved before the demonstration phase. A quality control process is currently in progress. - Verification of sub-indicators for the AVTUNE noise model will need to take place following integration with the Airviro modelling system. - Scenario assessment to be performed during demonstration phase.

Indicator 4e: Test Interface to Information Flow Process

CRITERION	Testperiod / frequency	Value	Success criterion	OK / NOT OK or N/A
WebCOMIS map (EQUAL)				
Number of system failures	6 times during 1 month period	0	EFFECT / EQUAL /EMMA PROJECTS	OK
Operational time	6 times during 1 month period	100% of total time	> 95%	OK
Correct data in and out, referred to data in DSS database	6 times during 1 month period	NO	Data information presentation equals data in DSS	NOT OK [1]
Speed	6 times during 1 month period	< 1 Hour	Hourly update	OK
Pollution nowcasts (EQUAL)				
Number of system failures	6 times during 1 month period	6	EFFECT / EMMA/ EQUAL PROJECTS	OK
Operational time	6 times during 1 month period	75% of total time	> 95%	NOT OK [2]
Correct data in and out, referred to data in DSS database	6 times during 1 month period	YES	Data information presentation equals data in DSS	OK
Speed	6 times during 1 month period	Hourly	Hourly update	OK
Pollution forecasts (EQUAL)				
Number of system failures	6 times during 1 month period	4	EFFECT/ EMMA/ EQUAL PROJECTS	OK
Operational time	6 times during 1 month period	84% of total time	> 95%	NOT OK [2]
Correct data in and out, referred to data in DSS database	6 times during 1 month period	YES	Data information presentation equals data in DSS	OK
Speed	6 times during 1 month period	HOURLY	Hourly update	OK [3]

[1] The webcomis map is displaying the data received, however a connection problem is preventing all of the traffic data from being received and displayed. This issue is currently being resolved.

[2] Whilst the operational time is below that required, following the calibration of the AUN the scales on the real time pollution graphs needed adjustment, which could not be carried out until 30th November 2001.

[3] Forecast updated daily, but temporal resolution is hourly.

To which process(es) does the above table refer?	- WebCOMIS map as displayed on the website www.leicesterequal.co.uk - Pollution nowcasts (CO, NO_x, SO_2, PM_{10}) as displayed on the website www.leicesterequal.co.uk - Pollution forecasts (CO, NO_x, SO_2, PM_{10}) as displayed on the website www.leicesterequal.co.uk
What method(s) were used for testing?	Frequent checks of the webpage
Which organization(s) did the testing?	LCC
When did the testing take place?	29th October - 30th November 2001
Any other remarks concerning this sub-indicator?	- Verification of sub-indicators for the AVTUNE noise model will need to take place following integration with the Airviro modelling system. - Verification of the air and noise quality newsletter will need to take place when completed

Indicator 5: Testing DSS modelling and forecasting processes

Indicator 5a: Test Air Quality Emission Process

CRITERION	Testperiod / frequency	Value	Success criterion	OK / NOT OK or N/A
SCOOT data (AIRVIRO)				
Number of system failures	Daily over 1 month period	1	EFFECT / EMMA / EQUAL PROJECTS	OK
Operational time	Daily over 1 month period	98% of total time	> 95%	OK
Speed	Daily over 1 month period	Hourly	Hourly update	OK

To which process(es) does the above table refer?	SCOOT data fed into the Airviro modelling system from UTC system on an houly basis
What method(s) were used for testing?	Macro set up in Airviro modelling system to display same SCOOT loops as discussed in indicator 4a
Which organization(s) did the testing?	LCC
When did the testing take place?	29th October - 30th November 2001
Any other remarks concerning this sub-indicator?	

Indicator 5b: Test Air Quality Concentration Process

CRITERION	Testperiod / frequency	Value	Success criterion	OK / NOT OK or N/A
Pollution nowcasts (AIRVIRO)				
Number of system failures	6 times during 1 month period	1	EFFECT/ EMMA/ EQUAL PROJECTS	OK
Operational time	6 times during 1 month period	93% of total time	> 95%	NOT OK [1]
Speed	6 times during 1 month period	Hourly	Hourly update	OK
Pollution forecasts (AIRVIRO)				
Number of system failures	6 times during 1 month period	6	EFFECT / EMMA /EQUAL PROJECTS	OK
Operational time	6 times during 1 month period	82% of total time	> 95%	NOT OK [1]
Speed	6 times during 1 month period	Hourly	Hourly update	OK [2]
Real time pollution data (AIRVIRO)				
Number of system failures	Daily over 1 month period	21	EFFECT / EMMA /EQUAL PROJECTS	OK
Operational time	Daily over 1 month period	61.73% of total time	> 95%	NOT OK [3]
Speed	Daily over 1 month period	Hourly	Hourly update	OK

[1] Whilst the operational time is below that required, following the calibration of the AUN the scales on the real time pollution graphs needed adjustment, which could not be carried out until 30th November 2001.

[2] Forecast updated daily, but temporal resolution is hourly

[3] Whilst the operational time is below that required, the number of faults was predominantly due to the calibration of the RPMs and AUN.

To which process(es) does the above table refer?	- Pollution nowcasts appear as GIF images on the Airviro modelling system screen every hour before being sent to the website - Pollution forecasts need real time pollution data and T+72 hour weather forecast to produce the forecast

	- Real time pollution data from the AUN monitoring station (NO_x, CO, SO_2, PM_{10}, O_3) and 13 Roadside Pollution Monitors (CO, NO_2) data monitored continously and supplied to the Airviro modelling system on an hourly basis
What method(s) were used for testing?	- Frequent checks that GIF images appear correctly - The Dispersion module of the Airviro modelling system was used to check that the pollution forecasts were historically complete - The Indico Presentation module in the Airviro system was used to check that the pollution data was historically complete
Which organization(s) did the testing?	LCC
When did the testing take place?	29th October - 30th November 2001
Any other remarks concerning this sub-indicator?	- Verification of the data feed from the NAME model and the OPANA model (background pollution data) to the Airviro modelling system will need to takeplace when completed. - Scenario assessment to be performed during demonstration phase.

Indicator 5c: Test Noise Modelling Process

This indicator is not applicable to Leicester. Verification of sub-indicators for the AVTUNE noise model will need to take place following integration with the Airviro modelling system.

Indicator 5d: Test Traffic Modelling and Forecast Process

CRITERION	***TESTPERIOD / FREQUENCY***	**Value**	**Success criterion**	***OK / NOT OK OR N/A***
WebCOMIS map (EQUAL)				
Number of system failures	6 times during 1 month period	0	EFFECT / EQUAL /EMMA PROJECTS	OK
Operational time	6 times during 1 month period	100% of total time	> 95%	OK
Speed	6 times during 1 month period	< 1 Hour	Hourly update	OK
TISDB (Control Room)				
Number of system failures	6 times during 1 month period	0	EFFECT /EMMA /EQUAL PROJECTS	OK

Operational time	6 times during 1 month period	100% of total time	> 95%	OK
Speed	6 times during 1 month period	< 1 Hour	Hourly update	OK

To which process(es) does the above table refer?	- WebCOMIS map as displayed on the website www.leicesterequal.co.uk - Traffic information received is entered immediately intoTISDB computer
What method(s) were used for testing?	- Frequent checks on the webpage - Check that entries from start of testing (30th October 2001) remain correctly on system
Which organization(s) did the testing?	LCC
When did the testing take place?	29th October - 30th November 2001
Any other remarks concerning this sub-indicator?	Scenario assessment has to be performed during demonstration phase

Indicator 5e: Test Result processing Process

This indicator is not applicable for Leicester

Indicator 6: Testing DSS operator interface and scenario processes

Indicator 6a: Test DSS Operator Interface Presentation Process

CRITERION	Testperiod / frequency	Value	Success criterion	OK / NOT OK or N/A
WebCOMIS map (EQUAL)				
Number of system failures	6 times during 1 month period	0	EFFECT / EQUAL /EMMA PROJECTS	OK
Operational time	6 times during 1 month period	100% of total time	> 95%	OK
Correct data in and out, referred to data in monitoring station	6 times during 1 month period	NO	Data information presentation equals data in DSS	NOT OK [1]
Speed	6 times during 1 month period	< 1 Hour	Hourly update	OK
WebCOMIS log (Server)				
Number of system failures	Daily over 1 month period	4	EFFECT / EMMA / EQUAL PREOJECTS	OK
Operational time	Daily over 1	87.5% of total	> 95%	NOT OK [2]

	month period	time		
Correct data in and out, referred to data in monitoring station	Daily over 1 month period	NO	Presented data in interface equals data in DSS	NOT OK [1]
Speed	Daily over 1 month period	< 1 Hour	Hourly update	OK
TISDB (Control Room)				
Number of system failures	6 times during 1 month period	0	EFFECT /EMMA /EQUAL PROJECTS	OK
Operational time	6 times during 1 month period	100% of total time	> 95%	OK
Correct data in and out, referred to data in monitoring station	6 times during 1 month period	YES	Presented data in interface equals data in DSS	OK
Speed	6 times during 1 month period	< 1 Hour	Hourly update	OK
Pollutant nowcasts (AIRVIRO)				
Number of system failures	6 times during 1 month period	1	EFFECT/ EMMA/ EQUAL PROJECTS	OK
Operational time	6 times during 1 month period	93% of total time	> 95%	NOT OK [3]
Correct data in and out, referred to data in monitoring station	6 times during 1 month period	YES	Presented data in interface equals data in DSS	OK
Speed	6 times during 1 month period	Hourly	Hourly update	OK
Pollutant forecasts (AIRVIRO)				
Number of system failures	6 times during 1 month period	6	EFFECT / EMMA /EQUAL PROJECTS	OK
Operational time	6 times during 1 month period	82% of total time	> 95%	NOT OK [3]
Correct data in and out, referred to data in monitoring station	6 times during 1 month period	YES	Presented data in inter-face equals data in DSS	OK
Speed	6 times during 1 month period	Hourly	Hourly update	OK [4]
Pollutant nowcasts (EQUAL)				
Number of system failures	6 times during 1 month period	6	EFFECT / EMMA/ EQUAL PROJECTS	OK
Operational time	6 times during 1 month period	75% of total time	> 95%	NOT OK [3]

Correct data in and out, referred to data in monitoring station	6 times during 1 month period	YES	Presented data in inter-face equals data in DSS	OK
Speed	6 times during 1 month period	Hourly	Hourly update	OK
Pollutant forecasts (EQUAL)				
Number of system failures	6 times during 1 month period	4	EFFECT/ EMMA/ EQUAL PROJECTS	OK
Operational time	6 times during 1 month period	84% of total time	> 95%	NOT OK [3]
Correct data in and out, referred to data in monitoring station	6 times during 1 month period	YES	Presented data in inter-face equals data in DSS	OK
Speed	6 times during 1 month period	Hourly	Hourly update	OK [4]

[1] The webcomis map is displaying the data received, however a connection problem is preventing all of the traffic data from being received and displayed. This issue is currently being resolved.

[2] Building work responsible for number of power failures.

[3] Whilst the operational time is below that required, following the calibration of the AUN the scales on the real time pollution graphs needed adjustment, which could not be carried out until 30th October 2001.

[4] Forecast updated daily, but temporal resolution is hourly

To which process(es) does the above table refer?	- WebCOMIS map as displayed on the website www.leicesterequal.co.uk - WebCOMIS log indicates any faults with data, system restarts, etc - Traffic information received is entered immediately intoTISDB computer - Pollution nowcasts appear as GIF images on the Airviro modelling system screen every hour before being sent to the website - Pollution forecasts need real time pollution data and T+72 hour weather forecast to produce the forecast - Pollution nowcasts (CO, NO_x, SO_2, PM_{10}) as displayed on the website www.leicesterequal.co.uk - Pollution forecasts (CO, NO_x, SO_2, PM_{10}) as displayed on the website www.leicesterequal.co.uk
What method(s) were used for testing?	- Frequent checks on webpage - Check all logs since onset of verification period (29th October 2001) - Check that entries from start of testing (30th October 2001) remain correctly on system - Frequent checks that GIF images appear correctly - The Dispersion module of the Airviro modelling system

	was used to check that the pollution forecasts were historically complete
Which organization(s) did the testing?	LCC
When did the testing take place?	29th October - 30th November 2001
Any other remarks concerning this sub-indicator?	- Verification of the data feed from the NAME model and the OPANA model (background pollution data) to the Airviro modelling system will need to take place when completed. - Verification of sub-indicators for the AVTUNE noise model will need to take place following integration with the Airviro modelling system. - Verification of the air and noise quality newsletter will need to take place when completed. - Scenario assessment to be performed during demonstration phase.

Indicator 6b: Test DSS Operator Interface Intervention Process

CRITERION	Testperiod / frequency	Value	Success criterion	OK / NOT OK or N/A
WebCOMIS map (EQUAL)				
Number of system failures	6 times during 1 month period	0	EFFECT / EQUAL /EMMA PROJECTS	OK
Operational time	6 times during 1 month period	100% of total time	> 95%	OK
Correct data in and out, referred to data in monitoring station	6 times during 1 month period	NO	Stored data in DSS equals introduced data	NOT OK [1]
Speed	6 times during 1 month period	Hourly	Hourly update	OK
TISDB (Control Room)				
Number of system failures	6 times during 1 month period	0	EFFECT / EMMA / EQUAL PROJECTS	OK
Operational time	6 times during 1 month period	100% of total time	> 95%	OK
Correct data in and out, referred to data in monitoring station	6 times during 1 month period	YES	Presented data in inter-face equals data in DSS	OK
Speed	6 times during 1 month period	< 1 Hour	Hourly update	OK
Pollutant nowcasts (AIRVIRO)				
Number of system failures	6 times during 1 month	1	EFFECT/ EMMA/ EQUAL PROJECTS	OK

	period			
Operational time	6 times during 1 month period	93% of total time	> 95%	NOT OK [2]
Correct data in and out, referred to data in monitoring station	6 times during 1 month period	YES	Presented data in interface equals data in DSS	OK
Speed	6 times during 1 month period	Hourly	Hourly update	OK
Pollutant forecasts (AIRVIRO)				
Number of system failures	6 times during 1 month period	6	EFFECT / EMMA /EQUAL PROJECTS	OK
Operational time	6 times during 1 month period	82% of total time	> 95%	NOT OK [2]
Correct data in and out, referred to data in monitoring station	6 times during 1 month period	YES	Presented data in interface equals data in DSS	OK
Speed	6 times during 1 month period	Hourly	Hourly update	OK [3]
Pollutant nowcasts (EQUAL)				
Number of system failures	6 times during 1 month period	6	EFFECT / EMMA/ EQUAL PROJECTS	OK
Operational time	6 times during 1 month period	75% of total time	> 95%	NOT OK [2]
Correct data in and out, referred to data in monitoring station	6 times during 1 month period	YES	Presented data in interface equals data in DSS	OK
Speed	6 times during 1 month period	Hourly	Hourly update	OK
Pollutant forecasts (EQUAL)				
Number of system failures	6 times during 1 month period	Number of system failures:4	EFFECT/ EMMA/ EQUAL PROJECTS	OK
Operational time	6 times during 1 month period	84% of total time	> 95%	NOT OK [2]
Correct data in and out, referred to data in monitoring station	6 times during 1 month period	YES	Presented data in interface equals data in DSS	OK
Speed	6 times during 1 month period	Hourly	Hourly update	OK [3]

[1] The webcomis map is displaying the data received, however a connection problem is preventing all of the traffic data from being received and displayed. This issue is currently being resolved.

[2] Whilst the operational time is below that required, following the calibration of the AUN the scales on the real time pollution graphs needed adjustment, which could not be carried out until 30th october 2001.

[3] Forecast updated daily, but temporal resolution is hourly.

To which process(es) does the above table refer?	- WebCOMIS map as displayed on the website www.leicesterequal.co.uk - Traffic information received is entered immediately intoTISDB computer - Pollution nowcasts appear as GIF images on the Airviro modelling system screen every hour before being sent to the website - Pollution forecasts need real time pollution data and T+72 hour weather forecast to produce the forecast - Pollution nowcasts (CO, NO_x, SO_2, PM_{10}) as displayed on the website www.leicesterequal.co.uk - Pollution forecasts (CO, NO_x, SO_2, PM_{10}) as displayed on the website www.leicesterequal.co.uk
What method(s) were used for testing?	- Frequent checks on webpage - Check that entries from start of testing (30th October 2001) remain correctly on system - Frequent checks that GIF images appear correctly - The Dispersion module of the Airviro modelling system was used to check that the pollution forecasts were historically complete
Which organization(s) did the testing?	LCC
When did the testing take place?	29th October - 30th November 2001
Any other remarks concerning this sub-indicator?	- Verification of the data feed from the NAME model and the OPANA model (background pollution data) to the Airviro modelling system will need to take place when completed - Verification of sub-indicators for the AVTUNE noise model will need to take place following integration with the Airviro modelling system. - Scenario assessment to be performed during demonstration phase.

Indicator 6c: Test DSS Scenario Process

CRITERION	Testperiod / frequency	Value	Success criterion	OK / NOT OK or N/A
WebCOMIS map (EQUAL)				
Number of system failures	6 times during 1 month period	0	EFFECT / EQUAL /EMMA PROJECTS	OK
Operational time	6 times during 1 month period	100% of total time	> 95%	OK
Correct data in and out, referred to data in monitoring station	6 times during 1 month period	NO	Data stored in DSS equals scenario data	NOT OK [1]
TISDB (Control Room)				
Number of system failures	6 times during 1 month period	0	EFFECT / EMMA / EQUAL PROJECTS	OK
Operational time	6 times during 1 month period	100% of total time	> 95%	OK
Correct data in and out, referred to data in monitoring station	6 times during 1 month period	YES	Presented data in interface equals data in DSS	OK

[1] The webcomis map is displaying the data received, however a connection problem is preventing all of the traffic data from being received and displayed. This issue is currently being resolved.

To which process(es) does the above table refer?	- WebCOMIS map as displayed on the website www.leicesterequal.co.uk - Traffic information received is entered immediately intoTISDB computer
What method(s) were used for testing?	- Frequent checks on webpage - Check that entries from start of testing (30th October 2001) remain correctly on system
Which organization(s) did the testing?	LCC
When did the testing take place?	29th October - 30th November 2001
Any other remarks concerning this sub-indicator?	Scenario assessment to be performed during demonstration phase

Indicator 7: Testing the functioning of the main system components and their interaction

CRITERION	Testperiod / frequency	Value	Success criterion	OK / NOT OK or N/A
Number of system failures	Daily over 1 month period	50	EFFECT / EQUAL / EMMA PROJECTS	OK
Operational time	Daily over 1 month period	93% of total time	> 90%	OK
Speed	Daily over 1 month period	Hourly	Hourly update	OK

To which process(es) does the above table refer?	
What method(s) were used for testing?	All sub-indicators (18 in total from v4, v5 and v6) tested during the verification period will be used to assess the overall efficiency of the system
Which organization(s) did the testing?	LCC
When did the testing take place?	29th October - 30th November 2001
Any other remarks concerning this sub-indicator?	The system testing during the verification phase was useful and brought to light a number of points that needed examination, particularly concerning thesource data in the Airviro modelling system and the EQUAL website

Indicator 8: User acceptance by professional users

Indicator 8a: Does the DSS meet the system requirements as described in WP5?

The results will be presented in Deliverable 8.11.

	Questions about Functional Requirements "To which extent are the following requirements implemented satisfactory?" Rating 1-5 (1=not at all satisfactory 5=very satisfactory) **When the rating is below 4, please ask for an explanation**	**User 1**	**User 2**	**User 3**	**User 4**	**User 5**
	Traffic information management					
1	Does the system support on-line network traffic monitoring through interface with the trafic control and monitoring systems					
2	Does the system support accurate and efficient incident detection?					
3	Does the system support recording of traffic data and formation of historical series and statistics					
4	Does the system support traffic forecasting?	-	-	-	-	-
5	Does the system support traffic demand modelling?					
6	Does the system support the optimisation of traffic control?					
7	Does the system support the evaluation of short-term and long-term traffic measures?					
8	Does the system support near real-time traffic status representation for the whole demonstration area					
	Air quality modelling					
9	Does the system support emissions modelling based on near real-time traffic measurements?					
10	Does the system support emissions modelling based on modelled traffic data?					
11	Does the system support pollutants dispersion modelling at the street and area levels?					
12	Does the system support recording of monitored pollutant levels and modelled data?					
13	Does the system support background pollution modelling?					
14	Does the system support noise modelling at the *hotspots?*					
15	Does the system support air quality modelling based on current traffic levels and on predefined traffic and demand management scenarios?					
16	The system shall support evaluation of the environmental effect of short and long term transport policies					

EXPLANATION IN CASE OF SCORES LOWER THAN 4 (Please give a detailed explanation and if possible an indication of how your site may be able to improve the situation)

Indicator 8b: Is the information provided by the system easy to understand?

The results will be presented in D8.11.

Questions about understandable information Rating 1-5 (1=not at all satisfactory 5=very satisfactory) **When the rating is below 4, please ask for an explanation**	**Leicester**	**User 1**	**User 2**	**User 3**	**User 4**	**User 5**
Information presentation						
Does the system support data representation via maps, charts and generic tables	X					
Environmental maps						
How do you rate the comprehensibility of the HEAVEN information presentation via *maps*	X					
How easy to use is the HEAVEN information presentation via *maps*	X					
How useful is the HEAVEN information presentation via *maps* to manage urban mobility	X					
How do you rate the comprehensibility of the colour codes used on the *maps*	X					
Is the level of geographical detail presented in maps satisfactory	X					
Environmental charts and generic tables						
How do you rate the comprehensibility of the HEAVEN information presentation *via charts and generic tables*	X					
How easy to use is the HEAVEN information presentation *via charts and generic tables*	X					
How useful is the HEAVEN information presentation *via charts and generic tables to manage urban mobility*	X					
Traffic maps						
How do you rate the comprehensibility of the HEAVEN information presentation via *maps*	X					
How easy to use is the HEAVEN information presentation via *maps*	X					
How useful is the HEAVEN information presentation via *maps* to manage urban mobility	X					
How do you rate the comprehensibility of the colour codes used on the *maps*	X					
Is the level of geographical detail presented in maps satisfactory	X					
Traffic charts and generic tables						
How do you rate the comprehensibility of the HEAVEN information presentation *via charts and generic tables*	X					
How easy to use is the HEAVEN information presentation *via charts and generic tables*	X					
How useful is the HEAVEN information presentation *via charts and generic tables to manage urban mobility*	X					
Health information						
How do you rate the comprehensibility of health information presented	X					
How easy to use is the health information presented	X					
Information output						
Does the system deliver reports dealing with model outputs and evaluation of traffic demand management strategies	X					
Does the system support attention and alarm pollutant levels achievement detection and forecast	X					
Is information presentation driven through a suitable MMI	X					
Are you satisfied with the update interval of the information	X					
Operator interface						
Does the system interface support operator driven scenario definition	X					
Is the system interface for support of operator driven definitions	X					

Questions about understandable information Rating 1-5 (1=not at all satisfactory 5=very satisfactory) **When the rating is below 4, please ask for an explanation**	**Leicester**	**User 1**	**User 2**	**User 3**	**User 4**	**User 5**
comprehensible?						
Is the system interface for support of operator driven definitions easy to use?	X					
Is the system interface for support of operator driven definitions useful to manage urban mobility?	X					
Does the system interface drive the operator through the tasks related to off-line evaluation of the impact of scenarios on the environment	X					
Are these procedures comprehensible	X					
Are these procedures easy to use	X					

EXPLANATION IN CASE OF SCORES LOWER THAN 4 (Please give a detailed explanation and if possible an indication of how your site may be able to improve the situation)

Indicator 9: User acceptance by the general public

The results will be presented in D8.11.

Questions on understandable information Rating 1-5 (1=not at all satisfactory 5=very satisfactory) **When the rating is below 4, please ask for an explanation**	**Leicester**	**User 1**	**User 2**	**User 3**	**User 4**	**User 5**
Information presentation	X					
Environmental maps						
How readable is HEAVEN information via *maps*	X					
How do you rate the comprehensibility of the HEAVEN information presentation via *maps*	X					
How easy to use is the HEAVEN information presentation via *maps*	X					
How useful is the HEAVEN information presentation via *maps*	X					
How do you rate the comprehensibility of the colour codes used on the *maps*	X					
Is the level of geographical detail presented in maps satisfactory	X					
Environmental charts and generic tables						
How readable is HEAVEN information via *via charts and generic tables*	X					
How do you rate the comprehensibility of the HEAVEN information presentation *via charts and generic tables*	X					
How easy to use is the HEAVEN information presentation *via charts and generic tables*	X					
Traffic maps						
How do you rate the comprehensibility of the HEAVEN information presentation via *maps*	X					
How easy to use is the HEAVEN information presentation via *maps*	X					
How do you rate the comprehensibility of the colour codes used on the *maps*	X					
Is the level of geographical detail presented in maps satisfactory	X					
Traffic charts and generic tables						
How do you rate the comprehensibility of the HEAVEN information presentation *via charts and generic tables*	X					
How easy to use is the HEAVEN information presentation *via charts and generic tables*	X					
Health information						
How do you rate the comprehensibility of health information presented		-	-	-	-	-
How easy to use is the health information presented		-	-	-	-	-

EXPLANATION IN CASE OF SCORES LOWER THAN 4 (Please give a detailed explanation and if possible an indication of how your site may be able to improve the situation)