

8.0 Update and Screening Assessment for PM₁₀

8.1 The national perspective

There are a wide range of emission sources which contribute to PM₁₀ concentrations in the UK. Sources of particles can be divided into three main categories:

- **Primary particles**

Derived directly from combustion sources including road traffic, power generation and industrial processes.

- **Secondary particles**

Formed by chemical reactions in the atmosphere. These comprise principally of sulphates and nitrates.

- **Coarse particles**

Comprised of emissions from a wide range of sources including re-suspended dust from road traffic, construction works, mineral extraction processes, wind blown dusts and soils, sea salt and biological particles.

The expected reduction in particle emissions in future years is different for each category of particle. For example, primary particle emissions from road transport will be governed by new legislation on vehicle emission standards whilst emissions of secondary particles will be largely governed by controls on industrial emissions of sulphur dioxide and oxides of nitrogen. Emissions of coarse particles are largely uncontrollable and are not expected to decline significantly in future years.

8.2 The local perspective

In the First Stage Review and Assessment of Air Quality in York PM₁₀ was assessed against the following objective:

‘The annual 99th percentile of daily maximum running 24 hour averages not to exceed 50µg/m³ by the end of 2005.’

The First Stage Review and Assessment of Air Quality in York concluded that this objective was unlikely to be met in York and that the authority should proceed to a detailed assessment for this pollutant.

Prior to the Second and Third Stage Review and Assessment of Air Quality in York being undertaken, the air quality objectives for PM₁₀ were revised. These revised objectives were used for the purpose of the Second and Third Stage Review and Assessment of Air Quality in York and were as follows:

'A 24 hour mean objective for PM₁₀ of 50µg/m³, not to be exceeded more than 35 times a year, to be achieved by the end of 2004.'

'An annual mean of 40µg/m³ to be achieved by the end of 2004.'

The Second and Third Stage Review and Assessment of Air Quality in York concluded that these revised objectives would be met in York without the need for further action at a local level.

Since the completion of the Second and Third Stage Review and Assessment of Air Quality in York a number of new provisional objectives, to be achieved by the end of 2010, have been proposed but have not yet been brought into regulations for the purpose of local air quality management.

8.3 Scope of the update and screening assessment for PM₁₀

For the purpose of this update and screening assessment PM₁₀ has been assessed against the current objectives which are:

'A 24 hour mean objective for PM₁₀ of 50µg/m³, not to be exceeded more than 35 times a year, to be achieved by the end of 2004.'

'An annual mean of 40µg/m³ to be achieved by the end of 2004.'

In accordance with the air quality guidance note LAQM.TG(03) the following items have been considered:

- Monitoring data outside the AQMA
- Monitoring data inside the AQMA
- Junctions
- Roads with high flows of buses and/or HGVs
- New roads constructed or proposed since the first round of reviews and assessments
- Roads close to the objective during the first round of reviews and assessments
- Roads with significantly changed traffic flows
- New industrial sources
- Industrial sources with substantially increased emissions
- Areas with domestic solid fuel burning
- Quarries, landfill sites, opencast coal, handling of dusty cargoes at ports etc
- Aircraft

8.4 Assessment of PM₁₀ data for the area outside the AQMA

8.4.1 PM₁₀ monitoring results from real time monitoring stations outside the AQMA

City of York Council has undertaken real time air pollution monitoring of PM₁₀ at three locations outside the AQMA. These are:

- Clifton Moor – roadside monitoring site
- Rawcliffe – roadside monitoring site
- Bootham – urban background site

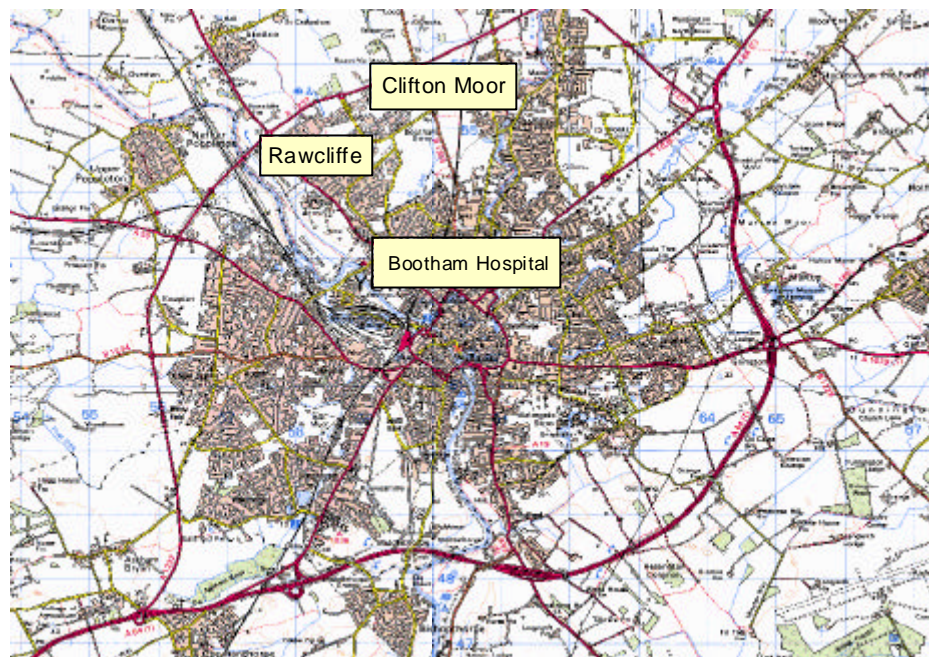
The location of these monitoring sites are shown on Figure 43. All three sites use TEOMs to monitor PM₁₀ concentrations.

The results of the PM₁₀ monitoring undertaken at these sites are shown in Table 16. Full information about the air pollution station locations, data management procedures and other QA/QC procedures for the real time air pollution stations have been previously documented as part of the Second and Third Stage Review and Assessment of Air Quality in York.¹

In October 2000 the air pollution station previously located at Clifton Moor was moved to the present location at Rawcliffe. As a result of this move the data sets for these two sites between 01/04/00 and 31/03/01 are incomplete.

¹ CITY OF YORK COUNCIL Second and Third Stage Review and Assessment of Air Quality in York – Technical Annex 2: Air Quality Monitoring in York Feb 2001

Figure 43: Locations outside the AQMA where real time monitoring of PM₁₀ has been undertaken.



Reproduced from Ordnance Survey Digital Maps with permission of Controller of Her Majesty's Stationary Office Crown Copyright. Unauthorised reproduction infringes crown copyright and may lead to prosecution or civil proceedings. City of York Council Ordnance Survey Licence LA90671

Table 16: Summary of real time PM₁₀ monitoring results for locations outside the AQMA

Parameter	Station	Results for period 01/04/99 to 31/03/00	Results for period 01/04/00 to 31/03/01	Results for period 01/04/01 to 31/03/02
Number of exceedances of 50 $\mu\text{g}/\text{m}^3$ (GRAV) 24 hour objective	Clifton Moor	11	-	-
	Rawcliffe	-	-	1
	Bootham Hospital	4	1	1
Annual mean concentration $\mu\text{g}/\text{m}^3$ (GRAV)	Clifton Moor	26	-	-
	Rawcliffe	-	-	26.0
	Bootham Hospital	19.5	19.5	19.5
90 th percentile of daily averages $\mu\text{g}/\text{m}^3$ (GRAV)	Clifton Moor	44.2	-	-
	Rawcliffe	-	-	40.3
	Bootham Hospital	33.8	31.2	29.9
Percentage data capture	Clifton Moor	94%	-	-
	Rawcliffe	-	-	96%

	Bootham Hospital	95%	90%	84%
--	------------------	-----	-----	-----

8.4.2 Predicted 2004 annual average PM₁₀ concentrations outside the AQMA based on data from real time monitoring stations

The technical guidance note LAQM.TG(03) provides correction factors for estimating annual average PM₁₀ concentrations in future years based on monitored data.

As the contribution from different PM₁₀ sources will not remain constant between the current year and 2004 it is not appropriate to apply a single correction factor. The measured data must first be divided into the separate category sources i.e. primary, secondary and coarse. As only the primary component is important in terms of local air quality management the secondary and coarse fractions can be removed and added back in once the future predicted emissions from local sources have been calculated. This process is shown in Table 17.

For the purpose of these calculations secondary PM₁₀ contributions in 2001 have been estimated using maps available on the internet at www.airquality.co.uk.

The estimated values used are as follows:

Clifton Moor	6.11µg/m ³ GRAV
Rawcliffe	6.11µg/m ³ GRAV
Bootham	6.13 µg/m ³ GRAV

The coarse PM₁₀ contribution has been assumed to be 10.5 µg/m³ GRAV in all years as detailed in the technical guidance note LAQM.TG(03).

Table 17: Predicted 2004 PM₁₀ concentrations outside the AQMA

parameter	station	monitoring year which the predictions are based upon		
		1999/2000	2000/2001	2001/2002
Measured annual average ($\mu\text{g}/\text{m}^3$ GRAV)	Clifton Moor	26.0	-	-
	Rawcliffe	-	-	26.0
	Bootham	19.5	19.5	19.5
Secondary PM ₁₀ concentration corrected for year ($\mu\text{g}/\text{m}^3$ GRAV)	Clifton Moor	5.94	-	-
	Rawcliffe	-	-	6.11
	Bootham	5.96	5.46	6.13
Estimated local primary PM ₁₀ concentration ($\mu\text{g}/\text{m}^3$ GRAV)	Clifton Moor	9.56	-	-
	Rawcliffe	-	-	9.39
	Bootham	3.04	3.54	2.87
Estimated local primary PM ₁₀ concentration in 2004 ($\mu\text{g}/\text{m}^3$ GRAV)	Clifton Moor	7.68	-	-
	Rawcliffe	-	-	8.73
	Bootham	2.44	3.21	2.67
Estimated secondary PM ₁₀ concentration in 2004 ($\mu\text{g}/\text{m}^3$ GRAV)	Clifton Moor	5.70	-	-
	Rawcliffe	-	-	5.70
	Bootham	5.71	5.71	5.71
Total estimated annual average PM ₁₀ concentration in 2004 ($\mu\text{g}/\text{m}^3$ GRAV)	Clifton Moor	23.88	-	-
	Rawcliffe	-	-	24.93
	Bootham	18.65	19.42	18.88

As can be seen from Table 17 no breaches of the annual average PM₁₀ objective are predicted to occur in 2004 at any of the real time monitoring locations outside the AQMA.

8.4.3 Predicted number of exceedances of the 24 hour objective outside the AQMA in 2004

It is not possible to directly adjust measured numbers of 24 hour exceedances forward to a future year. Instead the number of exceedances predicted in future years must be estimated using the relationship with the annual mean. This relationship is given in Figure 8.1 on page 8-41 of the technical guidance note LAQM.TG(03). Table 18 below shows the predicted number of exceedances of the 24 hour objective using this methodology.

Table 18: Predicted number of exceedances of the 24 hour objective in 2004 (outside the AQMA)

Parameter	station	monitoring year which the predictions are based upon		
		1999/2000	2000/2001	2001/2002
Total estimated annual average PM ₁₀ concentration in 2004 (µg/m ³ GRAV)	Clifton Moor	23.88	-	-
	Rawcliffe	-	-	24.93
	Bootham	18.65	19.42	18.88
Predicted number of exceedances of the 24 hour objective in 2004	Clifton Moor	9.87	-	-
	Rawcliffe	-	-	10.57
	Bootham	1.95	2.73	2.70

As can be seen from Table 18 no breaches of the 24 hour PM₁₀ objective are predicted to occur in 2004 at any of the real time monitoring locations outside the AQMA.

8.5 Assessment of PM₁₀ monitoring data for the area inside the AQMA

8.5.1 PM₁₀ monitoring results from real time monitoring stations inside the AQMA

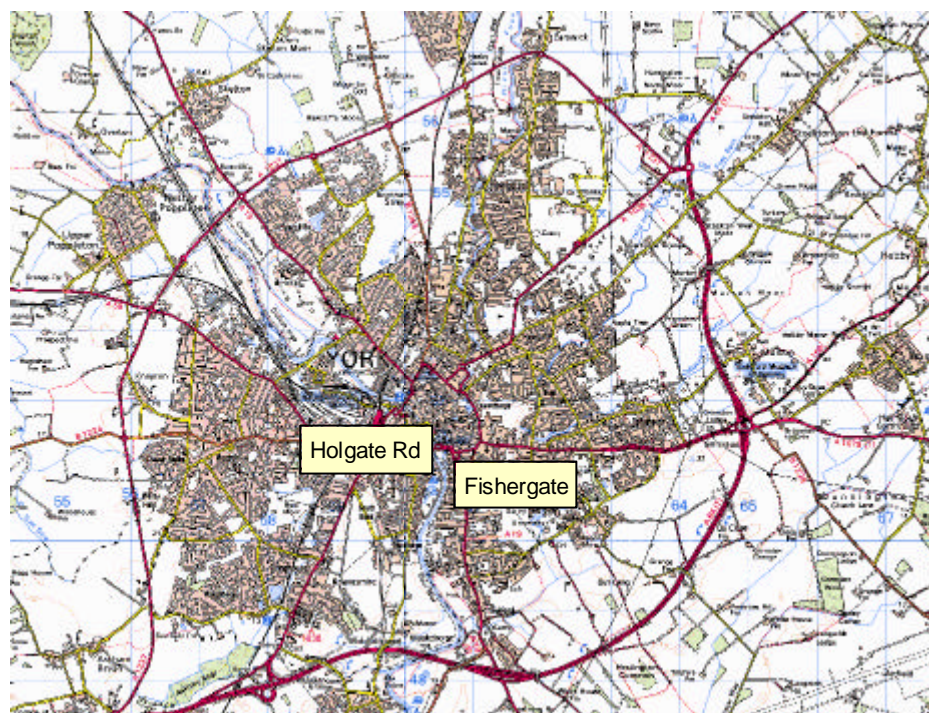
Currently there is only one real time monitoring site located in the AQMA. This is the Fishergate site, the location of which is shown in Figure 44 below. City of York Council is currently in the process of establishing a second PM₁₀ monitoring site within the AQMA, the location of which is also shown on Figure 44. Both the Fishergate site and the new Holgate Road site use TEOMs to monitor PM₁₀.

The results of the PM₁₀ monitoring undertaken at the Fishergate site are shown in Table 19. Full information about the air pollution station location, data management procedures and other QA/QC procedures for the real time air pollution station have been previously documented as part of the Second and Third Stage Review and Assessment of Air Quality in York² and the Interim Fourth Stage Review and Assessment of Air Quality in York³.

² CITY OF YORK COUNCIL Second and Third Stage Review and Assessment of Air Quality in York – Technical Annex 2: Air Quality Monitoring in York Feb 2001

³ CITY OF YORK COUNCIL Interim Fourth Stage Review and Assessment of Air Quality in York Jan 2003

Figure 44: Location of real time PM₁₀ monitoring equipment within the AQMA



Reproduced from Ordnance Survey Digital Maps with permission of Controller of Her Majesty's Stationary Office Crown Copyright. Unauthorised reproduction infringes crown copyright and may lead to prosecution or civil proceedings. City of York Council Ordnance Survey Licence LA90671

Table 19: Summary of real time PM₁₀ monitoring results for locations within the AQMA

Parameter	Station	Results for period 01/04/99 to 31/03/00	Results for period 01/04/00 to 31/03/01	Results for period 01/04/01 to 31/03/02
Number of exceedances of 50 µg/m ³ (GRAV) 24 hour objective	Fishergate	11	12	4
Annual mean concentration µg/m ³ (GRAV)	Fishergate	26	26	26
90 th percentile of daily averages µg/m ³ (GRAV)	Fishergate	44.2	42.9	40.3
Percentage data capture	Fishergate	97%	94%	91%

8.5.2 Predicted 2004 annual average PM₁₀ concentrations within the AQMA based on data from real time monitoring stations

As detailed in section 8.4.2 the technical guidance note LAQM.TG(03) provides correction factors for estimating annual average PM₁₀ concentrations in future years based on monitored data.

For the purpose of estimating 2004 annual average concentrations at Fishergate the following estimations of secondary and coarse PM₁₀ contributions have been used:

Estimated secondary PM₁₀ contribution = 6.13 µg/m³ GRAV

Estimated coarse contribution = 10.5 µg/m³ GRAV

The process of calculating the 2004 annual averages is shown in Table 20.

Table 20: Predicted 2004 PM₁₀ concentrations within the AQMA

Parameter	station	monitoring year which the predictions are based upon		
		1999/2000	2000/2001	2001/2002
Measured annual average (µg/m ³ GRAV)	Fishergate	26	26	26
Secondary PM ₁₀ concentration corrected for year (µg/m ³ GRAV)	Fishergate	5.96	5.46	6.13
Estimated local primary PM ₁₀ concentration (µg/m ³ GRAV)	Fishergate	9.54	10.04	9.37
Estimated local primary PM ₁₀ concentration in 2004 (µg/m ³ GRAV)	Fishergate	7.66	9.11	8.71
Estimated secondary PM ₁₀ concentration in 2004 (µg/m ³ GRAV)	Fishergate	5.71	5.71	5.71
Total estimated annual average PM ₁₀ concentration in 2004 (µg/m ³ GRAV)	Fishergate	23.87	25.32	24.92

As can be seen from Table 20 no breaches of the annual average PM₁₀ objective are predicted to occur in 2004 at the Fishergate air pollution station.

8.5.3 Predicted number of exceedances of the 24 hour objective within the AQMA in 2004

As detailed in section 8.4.3 it is not possible to directly adjust measured numbers of 24 hour exceedances forward to a future year. Instead the number of exceedances predicted in future years must be estimated using the relationship with the annual mean. Table 21 below shows the predicted number of exceedances of the 24 hour objective using this methodology.

Table 21: Predicted number of exceedances of the 24 hour objective in 2004 (within the AQMA)

Parameter	station	monitoring year which the predictions are based upon		
		1999/2000	2000/2001	2001/2002
Total estimated annual average PM ₁₀ concentration in 2004 (µg/m ³ GRAV)	Fishergate	23.87	25.32	24.92
Predicted number of exceedances of the 24 hour objective in 2004	Fishergate	9.85	13.17	12.21

As can be seen from Table 21 no breaches of the 24 hour PM₁₀ objective are predicted to occur in 2004 at the Fishergate monitoring station.

8.6 Assessment of PM₁₀ concentrations close to junctions

8.6.1 Assessment procedure

Following the first round of Reviews and Assessments DEFRA has indicated that some local authorities did not adequately assess PM₁₀ concentrations in the vicinity of busy road junctions.

To ensure that this does not happen again all local authorities are now required to undertake the following:

1. Identify all road junctions with flows of greater than 10,000 vehicles per day.
1. Determine whether there is relevant exposure within 10m of the kerb.

Where both conditions exist modelling should be used to predict the number of exceedances of the 24 hour objective in 2004.

8.6.2 Assessment of PM₁₀ concentrations at junctions

In the Second and Third Stage Review and Assessment of Air Quality in York all roads with flows of greater than 10,000 vehicles per day were assessed against the PM₁₀ air quality objectives using the ADMS-Urban dispersion model. Details of the road network covered by the modelling were given in the Second and Third Stage Review and Assessment of Air Quality in York.

Since the completion of the Second and Third Stage Review and Assessment of Air Quality in York a set of revised set of emission factors have been produced⁴. To take account of these emission factors the PM₁₀ model has been re-run with the revised emission factors. The model has also been updated to reflect the predicted impact of new development and the local transport plan by 2004. The predicted 2004 PM₁₀ concentrations using this revised model are shown in Figures 45 and 46 below.

The 90th percentile of daily 24 hour averages is approximately equivalent to the daily average value which will be exceeded more than 35 times per year. If the 90th percentile value is less than 50µg/m³ then the 24 hour PM₁₀ objective should be met.

⁴ Design Manual for Roads and Bridges, Volume 11, Section 3, Part 1, Air Quality. The Stationary Office, February 2003.

Figure 45: Predicted 90th percentile of daily 24 hour average PM₁₀ concentrations in York by 2004

Figure 46: Predicted annual average PM₁₀ concentrations in York by 2004

As can be seen from Figures 45 and 46 no exceedances of the PM₁₀ objectives are predicted to occur at any location in York in 2004. This is in agreement with the results of the monitoring work which has indicated that the current objectives are already being met at roadside locations in York.

On the basis of the modelling and monitoring work presented here City of York Council considers that it has already adequately assessed PM₁₀ concentrations in the vicinity of major junctions and is not required to undertake a further detailed assessment at this time.

Although a more detailed assessment is not required for the current objectives, City of York Council will continue to monitor PM₁₀ concentrations in the vicinity of busy junctions in the city and will extend its monitoring to include real time monitoring of PM₁₀ within the current AQMA. This work will be undertaken in preparation for the proposed changes to the PM₁₀ objectives.

8.7 Assessment of PM₁₀ concentrations close to roads with high flows of buses or HGVs

8.7.1 Assessment procedure

For the purpose of the update and screening assessment local authorities are required to specifically consider those roads which carry an usually high proportion of buses or HGVs.

To undertake this assessment local authorities are required to undertake the following:

1. Identify all roads where buses and/or HGVs make up 20% or greater of the total flow and where the total number of buses and/or HGVs is greater than 2,000 vehicles per day
2. If any such roads are identified determine whether there is relevant exposure within 10m of the road
3. If there is relevant exposure undertake a DMRB screening assessment

Where such roads have already been considered in previous reviews and assessments no further work is required for the purpose of the update and screening assessment.

8.7.2 Assessment of roads with a high proportion of buses or HGVs

Figures 45 and 46 show modelled PM₁₀ concentrations for the whole of York. This modelling work has taken into account the impact of traffic emissions on the major road network in York and has considered vehicle emissions in terms of both heavy and light vehicle emissions. As Figures 45 and 46 do not indicate any breaches of

the PM₁₀ objective it is considered unnecessary to progress to a detailed assessment of bus and HGV emissions at this time.

8.8 Assessment of PM₁₀ from new or proposed roads

8.8.1 Assessment procedure

For the purpose of the update and screening assessment local authorities are required to assess PM₁₀ concentrations which are likely to arise from new or proposed roads in their areas.

To undertake this assessment local authorities are required to undertake the following:

1. Identify any new or proposed roads which have, or will have, flows of greater than 10,000 vehicles per day. Only new roads which already have planning permission need to be considered.
2. If there are any such roads undertake a DMRB assessment to predict 2005 annual average nitrogen dioxide concentrations.

8.8.2 Assessment of new and proposed roads in York

Since the completion of the Second and Third Stage Review and Assessment of Air Quality in York one new road has been built in York and another one has obtained outline planning permission.

The new road has been introduced as part of the improvements to the Copmanthorpe junction on the A64. The new road serves the village of Copmanthorpe and carries around 4600 vehicles per day. It is therefore below the 10,000 vehicles per day threshold above which a DMRB assessment is required. The new road has been entered into the York ADMS-Urban emission inventory and will be included in future modelling studies.

The planned road is the James Street link road. This road already has outline planning permission and currently forms part of a full planning application for a retail park and supermarket. As part of the planning process an EIA is being prepared by White Young Green Environmental which will consider the air quality impact of the new road and the proposed retail activities. This report is due to be submitted to City of York Council in July 2003.

If full planning permission is granted for the new road the implications of this will be considered in future reviews and assessments of PM₁₀ in York.

- o **Assessment of PM₁₀ on roads which were close to the objectives during previous reviews and assessments**

8.9.1 Assessment procedure

For the purpose of previous reviews and assessments many local authorities have relied upon the use of air pollution models to determine where the boundaries of their AQMAs should be. Research has indicated that the emission factors used in these models have historically over predicted the reduction in emissions from vehicles by 2004 and therefore in some places estimates of 2004 PM₁₀ concentrations may have been too low.

8.9.2 Re-assessment of roads close to the objectives in York

For the purpose of this update and screening report the York PM₁₀ model has been re-run using the revised emissions factors. This work is detailed in section 8.6.2 and the results shown in Figures 45 and 46. As can be seen from the results of this work, use of the revised emission factors still indicates that the current PM₁₀ objectives will be met at all locations in York

8.10 Assessment of PM₁₀ concentrations on roads with significant increases in traffic flows since the last round of reviews and assessments

8.10.1 Assessment procedure

For the purpose of the update and screening assessment local authorities are required to identify any roads which have experienced an increase in traffic of greater than 25% and which have flows of 10,000 vehicles per day.

Where such roads are identified a DMRB assessment should be undertaken.

8.10.2 Assessment of roads in York which have experienced increases in traffic flows of greater than 25%

For the purpose of the Interim Fourth Stage Review and Assessment of Air Quality in York the ADMS-Urban emissions inventory was updated to take into account the latest traffic flows available from the transport planning department.

Figure 40 (section 6.11.2) shows all roads where the new AADT flows are greater than 25% of those used in previous versions of the emissions inventory.

As can be seen from Figures 45 and 46, even when these increases in vehicle flows have been taken into account, no exceedances of the current PM₁₀ objectives have been predicted.

8.11 Assessment of PM₁₀ from industrial sources

8.11.1 Assessment procedure

National monitoring and modelling shows that industrial sources contribute very little to annual average PM₁₀ concentrations but under certain meteorological conditions they can occasionally impact on 24 hour concentrations.

For the purpose of assessing PM₁₀ from industry local authorities are required to undertake the following:

1. Identify all new industrial sources of PM₁₀ which have entered the area since the last round of reviews and assessments. Significant emitters of PM₁₀ are listed in Annex 2 of technical guidance note LAQM.TG(03).
2. Identify all existing industrial sources of PM₁₀ which have increased their emissions substantially since the last round of reviews and assessments.
3. If any new or substantially increased industrial sources of PM₁₀ are identified the nomograms in section 8.35 of the technical guidance note LAQM.TG(03) should be used to assess the risk of breaching the objective levels.
4. If a risk of breaching the PM₁₀ objectives is identified authorities should proceed to a detailed review and assessment.

8.11.2 Assessment of industry in York

Annex 2 of technical guidance note LAQM.TG(03) lists the following processes as being significant PM₁₀ emitters:

- Iron and steel
- Petroleum processes
- Combustion processes
- Non-ferrous metals
- Carbonisation and associated processes
- Cement and lime manufacture
- Ceramic production
- Tar and bitumen processes
- Chemical fertiliser production
- Reheat furnaces
- Coal, coke, coal product and petroleum coke processes
- Quarry processes
- Roadstone coating
- China and ball clay processes
- Manufacture of coating powders
- Coil coating
- Rubber processes

For the purpose of this update and screening assessment all the Part A and Part B processes in the vicinity of York have been reviewed using information posted on the Internet (www.environment-agency.gov.uk), and by consulting the relevant public registers. A summary of all the authorised processes in and around York can be found at Appendix 1.

Using the table in Appendix 1 all industrial processes within 50km of York which have the potential to emit significant quantities of PM₁₀ have been identified. These are shown in Table 22.

Table 22: Industrial processes within 50km of York which have the potential to emit significant quantities of PM₁₀

Local Authority Area	Process Operator	Process Type	Approximate distance from nearest York boundary	Considered in previous reviews and assessment?	Any substantial increase in emissions since last assessment?
York	British Sugar	Part A 3.1 (d&e) Lime kiln	Within	Yes	No
York	British Sugar	Part A 1.3 (a) Boilers and Furnaces	Within	Yes	No
Selby	Drax Power Station	Part A 1.3 (a) Boilers and Furnaces	19km	Yes	No
Selby	Eggborough Power Station	Part A 1.3 (a) Boilers and Furnaces	22km	Yes	No
Selby	Tullow UK Gas Ltd	Part A Gas Turbine Combustion	27km	Yes (previously Parenco UK Ltd)	No
Wakefield	Ferrybridge Power Station	Part A 1.3 (a) Boilers and Furnaces	25km	Yes	No

As can be seen from Table 22 there have been no significant increases in PM₁₀ emissions from processes in and around York since the completion of the Second and Third Stage Review and Assessment of Air Quality in York. As the impact of all the processes currently in operation have been considered in previous reviews and assessments no further detailed assessment of these emissions is required at this time.

8.12 Assessment of PM₁₀ from domestic sources

8.12.1 Assessment procedure

In some areas of the UK domestic coal burning is still undertaken at a large number of properties. This can result in significant emissions of PM₁₀.

For the purpose of assessing PM₁₀ from domestic coal burning local authorities are required to undertake the following:

- Identify all areas where significant coal burning still takes place. This includes areas where solid smokeless fuels are in frequent use. For the purpose of the update and screening assessment 'significant' can be taken to mean any 500m x 500m area within which more than 50 houses burn solid fuels as their primary source of heating.
- Where the density of coal burning premises exceeds 50 per 500m x 500m area a more detailed assessment should be undertaken.

8.12.2 Assessment of domestic solid fuel burning

In section 7.6.2 the results of a recent housing condition survey undertaken in York were presented. The results of this survey indicate that in some areas of York there is potential for more than 50 houses per 500m x 500m to be using solid fuels as a primary or secondary source of heating.

As detailed in section 7.6.2 there are plans to investigate this issue further and provide an update before the end of 2003. If a detailed assessment of PM₁₀ is found to be needed the aim will be to complete this before April 2004.

8.13 Assessment of fugitive PM₁₀ emissions

8.13.1 Assessment procedure

A number of source types can give rise to significant fugitive emissions of PM₁₀.

For the purpose of the update and screening assessment the focus should be on unpaved haul roads, processing plant and materials handling activities.

Where the estimated 2004 annual mean background concentrations of PM₁₀ are in excess of 27µg/m³ all relevant locations within 1000m of the source should be considered.

Where the estimated 2004 annual mean background concentrations of PM₁₀ are in excess of 26µg/m³ all relevant locations within 400m of the source should be considered.

Where the estimated 2004 annual mean background concentrations of PM₁₀ are less than 26µg/m³ all relevant locations within 200m of the source should be considered.

If there are relevant locations within these distances then a visual inspection of dust deposition at the premises should be undertaken. If this assessment indicates significant deposition a detailed assessment of PM₁₀ concentrations should be undertaken.

8.13.2 Assessment of fugitive emission sources in York

As an amendment to the Second and Third Stage Review and Assessment of Air Quality in York an assessment of fugitive emission sources in York was undertaken.

This assessment concluded that 2004 annual average background concentrations of PM₁₀ in York would be around 22.5µg/m³ and as such it was unlikely that breaches of the current PM₁₀ objectives would occur at distances greater than 200m from fugitive emission sources. No properties within 200m of a fugitive emission source were identified.

For the purpose of this update and screening assessment the revised maps of estimated 2004 PM₁₀ concentrations have been consulted. These now show estimated 2004 annual mean concentrations to be around 16.8µg/m³. This again indicates that no breaches of the current PM₁₀ objectives are likely beyond 200m of a fugitive emission sources.

Since the completion of the Second and Third Stage Review and Assessment of Air Quality in York no new relevant locations have been located within 200m of a fugitive emission source. It is therefore not intended to progress to a detailed assessment of fugitive emission sources at this time.

8.14 Assessment of PM₁₀ from aircraft

8.14.1 Assessment procedure

Aircraft are not major sources of PM₁₀ but may make a contribution close to the source. For the purpose of the update and screening assessment local authorities are required to undertake the following:

1. Establish if there is relevant exposure within 500m of an airport boundary
2. Obtain information on the annual throughput of passengers and freight
3. If the predicted throughput of passengers and freight in 2005 is greater than 10 million passengers per annum (mppa) then a detailed assessment of emissions from the airport must be undertaken. (For the purpose of the update and screening assessment 100000 tonnes freight = 1mppa)

8.14.2 Assessment of aircraft emissions in York

There are no large commercial airports in the York area.

There is a small aerodrome at Rufforth to the west of York which is used for gliding and other private flight activities. There are also occasional flight activities undertaken at Elvington airfield to the east of York. As neither of these sources will give rise to significant emissions of PM₁₀ City of York Council is not required to undertake any assessment of aircraft emissions.

8.15 Conclusions from the update and screening of PM₁₀

The update and screening assessment for PM₁₀ has concluded that no further detailed assessments of PM₁₀ emissions from industry or traffic are needed at this time.

The update and screening assessment has however highlighted the need to undertake a further investigation into PM₁₀ concentrations in villages where there is still a high proportion of domestic solid fuel burning. As it has not been possible to quantify the size of these emissions in time for the completion of this report, City of York Council proposes to undertake this survey work within the coming months and report it's findings to DEFRA before the end of 2003. If the survey work identifies a need to progress to a detailed review and assessment the aim shall be to complete this by the end of April 2004.