Peterborough City Council

Air Quality Progress Report 2007

May 2007

Growing the right way for
a bigger, better Peterborough

Abstract

The Progress Report 2007 forms an integral part of Peterborough City Council's air quality management. The overall aim is to report progress on implementing local air quality management; and progress in achieving, or maintaining, concentrations below air quality objectives. Progress reports also help ensure continuity in resourcing air quality within Local Authorities, and provide a means for communicating air quality information to members of the public.

The Progress Report 2007 focuses on information that may affect the air quality of the Peterborough City Council District. One of the key aims of the Progress Report is to provide information that will assist in other related policy areas such as transport and land use planning. This will allow Peterborough City Council to be able to require any potential impacts on air quality to be investigated and assessed. The Progress Report also aims to identify areas of focus for when the next round of updating and screening assessments are due. In the event that information becomes available that suggests there may be an exceedence of UK air quality standards Peterborough City Council will begin a detailed assessment in accordance with statutory guidance

The Progress Report 2007 shows the latest figures for Peterborough City Council's nitrogen dioxide monitoring scheme. The report shows figures for 2006 with the estimated figures for 2010 and assessed against the 2005 objective values. This report shows that no area currently monitored, which has any relevant receptors is exceeding the air quality objectives for nitrogen dioxide.

Information previously supplied from a brick making process located in Fenland District Council's boundary has shown that they may be exceeding the 15 minute mean for sulphur dioxide. In 2006 Peterborough City Council undertook a Detailed Assessment of the Sulphur Dioxide and declared an Air Quality Management Area on 1 May 2007.

Contents

Abstract

1 Introduction.

The progress report forms part of the local air quality management (LAQM) process introduced in the Environment Act 1995 and subsequent regulations. The progress report was conceived as the previous procedure was recognised to be too 'stop-start', especially for authorities that had no exceedences of air quality. The progress report helps to ensure continuity in resourcing air quality within local authorities so as to maintain the capacity and skills required to manage LAQM.

Table 1 shows the different ways that progress reports will assist the local authorities with the LAQM process

Table 1: How progress reports can assist local authorities.

By helping retain a profile for LAQM within the authority, including the retention of staff with knowledge of air quality issues.
By providing a means for communicating air quality information to members and the public.
By maximising the usefulness and interpretation of the monitoring effort being carried out by the local authority.
By maximising the value of the investment in monitoring equipment.
By making the next round of review and assessment that much easier, as there will be a ready available up-to-date source of information.
By helping authorities respond to requests for up-to-date information on air quality.
By providing information to assist in other policy areas, such as transport and land use planning.
By providing a ready source of information on air quality for developers carrying out environmental assessments for new schemes.
By demonstrating progress with implementation of air quality Action Plans and/or air quality strategies.
By providing a timely indication of the need for further measures to improve air quality, rather than delaying until the next full round of review and assessment.

Source: Progress Report Guidance LAQM.PRG(03)

The overall aims of the progress report are to report progress on implementing local air quality management and report progress in achieving or maintaining concentrations below the air quality objectives. It is considered that these aims can be best achieved by addressing new monitoring results and new local developments that might affect local air quality.

The last round of Review and Assessment was in May 2006. The Review and assessment concluded that there were not any air quality exceedences in Peterborough for six of the seven pollutants. It was identified that sulphur dioxide may be exceeded in some parts of Peterborough. A Detailed Assessment of sulphur dioxide was undertaken in 2006 and an Air Quality Management Area was declared in May 2007, see section 4.

2 Monitoring Results.

Peterborough City Council currently monitors Nitrogen Dioxide (NO_2) at 16 sites within the Local Authority Area. Other sites have been monitored around Peterborough in previous years but monitoring at these sites ceased following the completion of monitoring programmes for these locations. Only the current locations have been considered for this report. These sites are a mixture of urban background, roadside and kerbside. Table 2 shows the different site types and a

brief description. The location plans for the different tubes can be found in Appendix 1 & 2.

Table 2. NO_2 Diffusion Tube Monitoring Sites in Peterborough.

Site Location	Site type	Relevant exposure	Description
Copeland	Urban Background	Yes.	An urban location distanced from sources and therefore broadly representative of city-wide background concentrations
Lythmere	Urban Background	Yes	
Stanground	Urban Background	No	
Walton	Roadside	No	Site sampling within 5m of the kerbside of a busy road and the back of the pavement.
Bourges Boulevard	Roadside	No	
Fletton Parkway (1)	Roadside	No	
Fletton Parkway (2)	Roadside	No	
Thorney S1(b)	Kerbside	Yes	Site sampling within 1m of the kerb of a busy road. The nearest relevant exposures are residential properties set back approximately 1 - 5 metres from the kerb.
Thorney 2TA (1)	Kerbside	Yes	
Thorney 2TA (2)	Kerbside	Yes	
Thorney S7	Kerbside	Yes	
Thorney S3	Kerbside	Yes	
Thorney S4	Kerbside	Yes	
Thorney S5	Kerbside	Yes	
Thorney S6	Kerbside	Yes	
Thorney S2	Kerbside	Yes	

Table 3 shows the nitrogen dioxide levels in micrograms per cubic metre ($\mu g/m^3$) for Peterborough's sites for the year 2006 as well as the objective values for 2005 and the estimated values for 2010, using the conversion factor supplied in the technical guidance (LAQM.TG (03). The UK objectives gives the annual mean limit for nitrogen dioxide to be $40\mu g/m^3$ at relevant locations. Out of the 16 sites monitored in Peterborough in 2006 no relevant locations exceeded the objectives.

Charts 1, 2 and 3 show the annual mean for nitrogen dioxide diffusion tube monitoring in $\mu g/m^3$. There have not been enough years of monitoring data to show trends for the sites. However, the majority of sites show that there was a decrease in NO^2 in the year 2006.

Table 3. NO_2 in $\mu g/m^3$ levels for 2006, the estimated level for 2010 and the objective values.

Site Location	2006 ug/m^{3+}	Estimated 2010 ug/m^{3+}	2005 & 2010 ug/m^3 objective value
Copeland	19	16	40
Lythmere	18	16	40
Stanground	22	19	40
Walton	26	22	40
Bourges Boulevard	38	32	40
Fletton Parkway	41	35	40
Fletton Parkway	45	38	40

Thorney S1(b)	19	16	40
Thorney 2TA	24	21	40
Thorney 2TA	23	19	40
Thorney S7	21	17	40
Thorney S3	20	17	40
Thorney S4	23	20	40
Thorney S5	17	14	40
Thorney S6	22	19	40
Thorney S2	16	14	40

+ Values are bias adjusted

All the results shown for the diffusion tubes are calculated after taking into account the laboratory bias. Laboratory bias must be determined and allowed for when using diffusion tubes, as there is considerable difference nationally in the performance of tubes prepared by different laboratories. The bias adjustment factor can be calculated by the colocation of tubes with a chemiluminesence monitor. However, if the local authority does not have a chemiluminesence monitor then they can obtain the bias factor from work undertaken by Air Quality Consultants Ltd on behalf of DEFRA see http://www.uwe.ac.uk/aqm/review/examples/index.html for how this was undertaken and the bias factors to be used.

Nitrogen Dioxide Diffusion Tubes are provided and analysed by Harwell Scientifics Limited. The samples are analysed in accordance with Harwell Scientifics standard operating procedure HS/GW1/1015 issue 7. The tubes are prepared by spiking acetone: triethanolamine (50:50) onto the grids prior to the tubes being assembled. The tubes are desorbed with distilled water and the extract analysed using a segmented flow autoanalyser with ultraviolet detection.

The techniques involved in the preparation and analysis of nitrogen dioxide are covered by methods listed in Harwell's UKAS schedule. In the WASP inter comparison scheme for comparing spiked Nitrogen Dioxide diffusion tubes, Harwell Scientifics is currently ranked as a Category Good laboratory. Further information on diffusion tube bias, including results of collocation studies from across the UK, is available on the Review and Assessment Helpdesk www.uwe.uk/aqm/review

Chart 1. NO_2 at Peterborough's Urban Background Sites

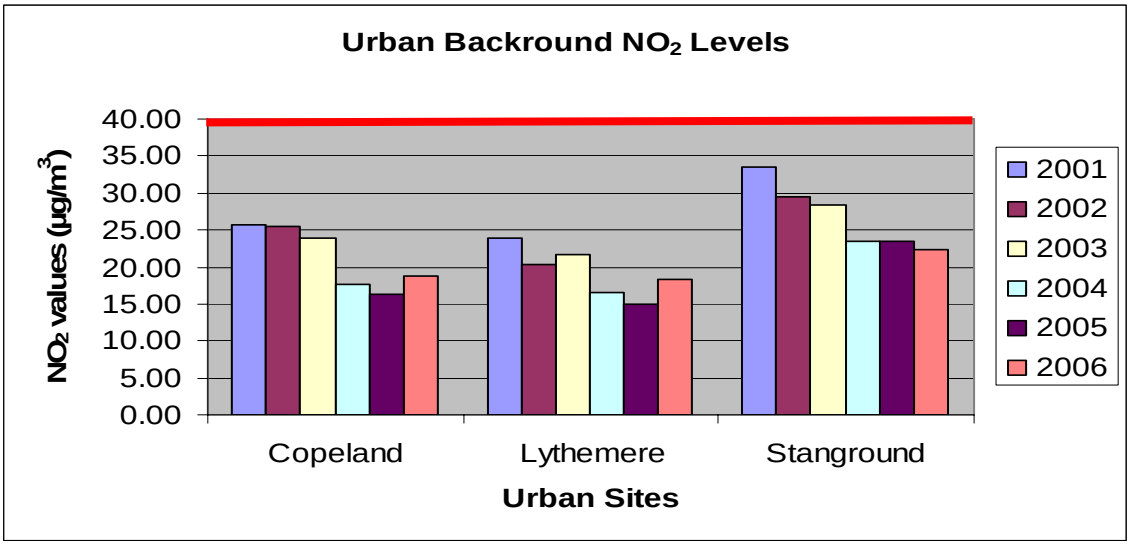


Chart 2. NO_2 at Peterborough's Roadside Background Sites

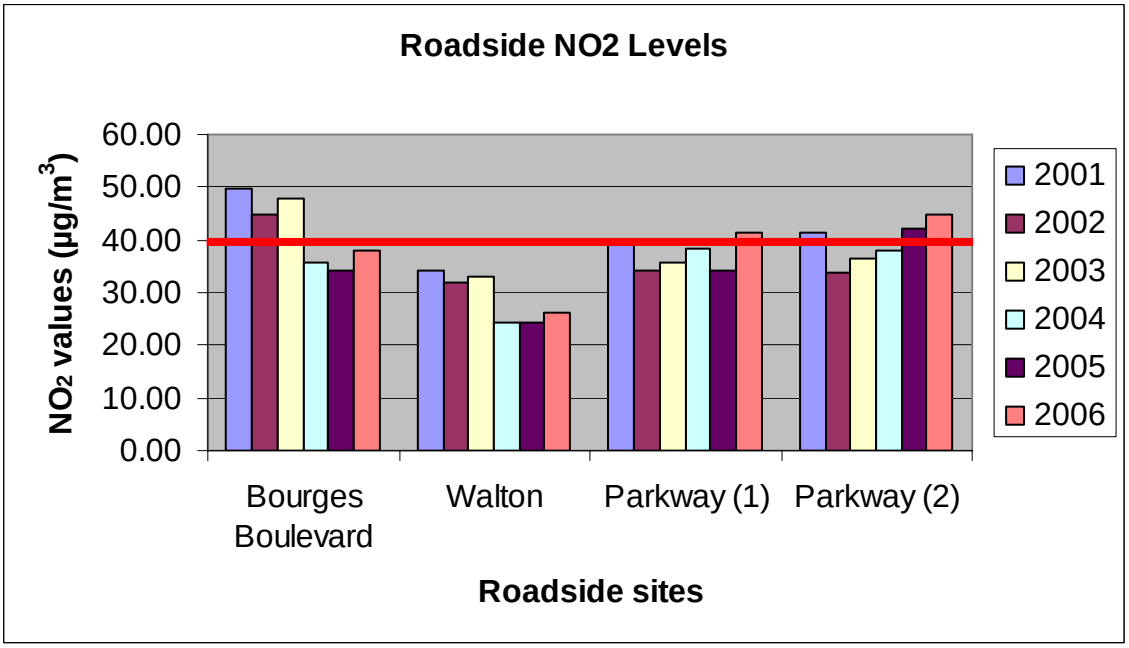
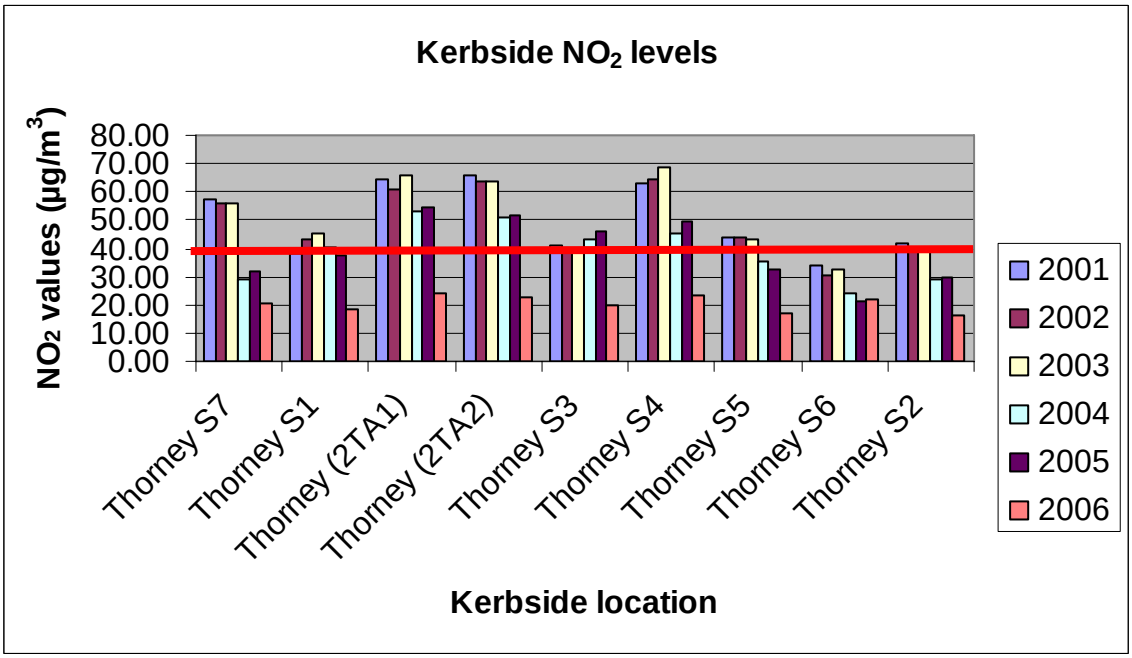


Chart 3. NO_2 at Peterborough's Kerbside Sites



There has not been any new monitoring sites set up in Peterborough. The last round of screening assessment for Peterborough was in 2006. This report can be viewed at http://www.peterborough.gov.uk/page-398. This report identified that no new monitoring stations were needed at that present time.

Other air quality data

Table 4 shows a list of air quality complaints that Peterborough City Council's Environmental Health team investigated in 2006, along with the number of abatement notices served.

Table 4. Breakdown of Peterborough City Council's air quality nuisance investigations in 2006.

Type	No of complaints
Domestic Smoke Complaints	87
Commercial Smoke Complaints	42
Dust Complaints	2
Total	131

3 New Local Developments.

There are certain new developments that may affect the local air quality. Table 5 shows a list of these developments. Some of these new sites are previously operational sites that have either moved into the new PPC permitting regime, are proposed or have been recently identified.

Table 5: New developments and roads with the potential to affect air quality.

New developments	Site Location	Other Information
Part A(1) processes		
Dogsthorpe Acquisitions Ltd	Dogsthorpe	Flour mill
National Grid Gas Plc	Peterborough	Gas compressor station
Centrica PB Ltd	Fengate	Gas power station
Part A(2) processes		
E-Leather Ltd	Bretton	Organic solvent coating plant
Part B Process		
Schoffields Dry Cleaners	Orton	Dry cleaner
Paperfeel Ltd	Orton	Organic solvent coating plant
WM Morrison Supermarkets PLC	Walton	Dry cleaner
Sketchley Dry Cleaners UK Ltd	City Centre	Dry cleaner
P.J. Thory Ltd	Thornhaugh	Quarry process
Peters Cleaners Ltd	West Town	Dry cleaner
Peters Cleaners Ltd	Millfield	Dry cleaner
Image Dry Cleaners	Millfield	Dry cleaner
New retail development		
None		
Very busy Roads		
Single carriageway road with daily average traffic flows which exceed 80,000 vehicles per day	None	
Dual carriageway (2 or 3 lane) with daily average traffic flows which exceed 120,000 vehicles a day	None	
Motorways with daily average traffic flows which exceed 140,000	None	
Busy road		
A road with more than 30,000 vehicles per day	Yes	A15 Lincoln Road 4 A15 Boongate A47 between Junctions 15-20 Town Rail Bridge

		A1139 Frank Perkins Parkway A1139 Fletton Parkway A1 north of the junction with the A1139 Fletton Parkway. A1260
Busy junction		
A busy junction can be taken to be one with more than 10,000 vehicles per day	Yes	J18 J36 J40 J41 J42 J18 J A15/B1443 J47 J22 J8
Heavy duty vehicles (buses & lorries)		
A proportion of heavy duty vehicles which exceed 25% of the daily vehicles per day	None	
More than 2,500 heavy duty vehicles per day	None	
New roads constructed/ planned since April 04		
Was there an air quality assessment undertaken for the new road	Yes	Changes to the A1073 improvement scheme
Is the traffic flow on the new road over 10,000 vehicles per day?	No new roads opened	
Significant increases		
Identify any roads with more than 10,000 vehicles per day that have had or expected to have an increase in traffic flow of more than 25%	None	
Bus stations		
Collect information on the daily movement of buses at the station.		Mon-Fri. 1012 (+4.5%) Sat 967 (+10.6) Sun 227 (+6%)
Roads with a significant traffic increase		
Identify any roads with more than 10,000 vehicles per day that have had or expected to have an increase in traffic flow of more than 25%	None	
New mineral developments		
None		
New landfill developments		
None		
New mix use developments		
None		

New industrial/ commercial developments		
None		

4 Air Quality Management Areas

In Fenland District Councils administrative area Hanson Plc has two brick making factories. As part of their PPC permit application the company undertook a study on the affects their releases has on the air quality in the surrounding area. As a result of this study and further emission monitoring information supplied by the company Fenland District Council and Peterborough City Council both wrote a detailed assessment. Both detailed assessments showed that there are small areas where the sulphur dioxide 15 minute mean value objective is currently being exceeded. As a result Peterborough City Council declared an Air Quality Management Area in May 2007. See appendix 3 & 4 for the location plans.

5 Action Plans.

There are currently no action plans in Peterborough.

6 Local Air Quality Strategy.

Peterborough's Air Quality Strategy was issued in the summer of 2004 a copy is available of Peterborough City Council's web page. Table 6 shows the summary section.

The strategy is a working document and is periodically reviewed to ensure that it is consistent with council initiatives. The next review of the strategy will be in the after the Local Transport Plan 2 has been written.

Table 6. Summary section of Peterborough's Air Quality Strategy 2004.

Peterborough's air quality is currently within its target limits set by central government in the Air Quality Strategy for England, Scotland, Wales and Northern Ireland published in January 2000. Therefore there has been no Air Quality Management Areas designated in Peterborough.

The aim of the Air Quality Strategy is therefore to keep air quality in Peterborough below these levels and to try to reduce the levels even further, whenever this is reasonably practical.

The main aspects of the air quality strategy are

- The industrial processes authorised by either the local authority or the Environment Agency will continue to be inspected regularly and their authorisations/ permits will be reviewed and varied as necessary. These activities will ensure that the operations will continue to operate within the limits set by their authorisation/ permit and that the authorisations/ permits are in line with current Best Available Techniques (BAT).

- The monitoring of nitrogen dioxide by diffusion tubes will continue to be used in Peterborough. The sites that are currently monitored will be reviewed periodically. Should any of the areas currently monitored show that monitoring is

no longer required then the diffusion tube will be relocated to an area where further monitoring will be beneficial.

- Traffic and transport planning will continue to consider air quality in its decisions regarding traffic management schemes. The City Council will also continue to develop ways to reduce the amount of traffic borne pollution by encouraging other forms of transport including public transport and walking/ cycling.

- Peterborough City Council's Planning department will continue to consult with other departments and external agencies with regards to planning applications for potentially polluting processes. It is from these consultations that decisions will be made with regards to granting or refusing the application and what conditions will be included.

- Peterborough City Council's Environmental Health Department's Pollution Control Team will continue to investigate complaints of smoke nuisances from both domestic and commercial properties. Should they witness any smoke nuisances they will serve an abatement notice.

- Peterborough City Council will periodically review and update its smoke control zones should this prove necessary.

- Peterborough City Council will continue to promote and encourage people to reduce the amount of waste they burn and increase composting and recycling.

- Peterborough City Council will continue to be involved in partnerships with other local authorities. Should any areas in Peterborough require to be designated an Air Quality Management Area then a partnership shall be set up to include relevant local business, industry and the community.

- A multi-disciplinary forum will be developed for the routine consideration of current and potential air quality issues.

- Peterborough City Council will continue to educate its citizens and businesses about air quality issues and the services the City Council runs which can reduce air pollution. This will be done by different means including campaigns, leaflets and the Internet.

7 Planning and Policies.

Certain planning applications require further information supplied to the City Council in relation to their potential effect on the air quality before a decision is made. Table 5 shows a list of applications which has been received by the City Council which air quality has been taken into consideration.

The City Council has various policies, which all include ways to help improve air quality. Table 7 shows a list of these policies and a brief description of how they can improve air quality.

Table 7 Policies designed to help improve air quality.

Planning Policy	Description of ideas
Local Transport Plan	To investigate road traffic and ways to reduce traffic congestion and growth.
Local Agenda 21	To promote sustainable development. Currently it may be

	integrated into the Community Strategy.
Peterborough Local Plan	To minimise adverse impacts of development on the amenity of existing and future neighbours.
Cambridgeshire and Peterborough Structure Plan	New development will be located and designed to minimize and where possible avoid air pollution. Individual and cumulative impacts of development will be taken into account in the consideration of proposals and developers will be expected to take appropriate avoidance and mitigation measures. Local Planning Authorities should resist proposals that will adversely affect air quality
East Of England Regional Spatial Strategy (Secretary of State proposed changes)	Regional Policy on air quality is deleted as it repeats advice in PPS12 (see below)
Planning Policy Statement 12: local Development Frameworks (2004)	B21. The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (January 2000) and first Addendum (February 2003) sets out objectives for reducing the levels of the nine main air pollutants that harm human health and the environment. B22. Local authorities also play a part in delivering cleaner air. They have a duty to review and assess the local air quality against seven of the main air pollutants as prescribed in regulations. Where the objectives are unlikely to be met, local authorities must designate these areas as air quality management areas and draw up action plans setting out measures in pursuit of the objectives. B23. Land use planning is integral to improving air quality. Local authorities should therefore take the national air quality objectives into consideration when preparing local development documents. B24. Local authorities may produce their own local air quality strategies. These local air quality strategies are a means of encouraging community involvement in bringing about improvements in local air quality.
Environment Strategy	To reduce to a minimum, emissions to air, water and land and reduce noise within the district.
Air Quality Strategy	See section 5 for the summary.

8 Local Transport Plans and Strategies.

Peterborough City Council's Local Transport Plan has a direct bearing on air quality as it has targets for CO_2 and greenhouse gases as well as the seven UK air quality objectives. The Local Transport Plan aims to reduce traffic congestion and traffic growth by providing a greater travel choice through improvements to public transport and promoting cycling and walking.

The second Local Transport Plan was written in 2005. Table 8 shows the progress of traffic schemes in the second Local Transport Plan which will have or is having an effect on air quality. The City Council's air quality officer is involved in the officers group in formulating the strategies.

Table 8 Progress with traffic schemes beneficial to air quality identified in the second Local Transport Plan.

Measure in LTP2	Scheme progress 2006/07	Impact on Air Quality
Travel Choice		
Walking	Implementation of pedestrian crossings, dropped kerbs and route branding	More people walking and not driving will reduce the pollutants being released by vehicles.
Cycling	Primary Cycle Network route enhanced including improved signage. Cycle parking installed at 5 sites	More people cycling and not driving will reduce the pollutants being released by vehicles
Buses	Primary Public Transport Corridor enhancements such as real time passenger information. Improved bus shelters and travel information across the city	More people using public transport and not driving will reduce the pollutants being released by cars
Individualised Travel Marketing	Stage 1 of the project completed and evaluated. Significant changes were recorded in the target group with a reduction of 5% choosing to drive.	More people using sustainable transport modes and not driving will reduce the pollutants being released by vehicles
Traffic Management		
ITS	ITS strategy for Peterborough developed. Implementation planned for 2007/08 onwards	Vehicles release more pollutants when in stop start so free flowing vehicles will reduce air pollution.
Traffic Management	Congestion relief schemes identified at junctions across the city including J5 and J8 on Frank Perkins Parkway	Vehicles release more pollutants when they are in stop/ start motion so ensuring free flowing traffic will improve air quality.
Speed Management	Reduced speed limit introduced at Deeping Gate, and traffic calming measures implemented at Newborough	Lowering speeds may reduce air pollution and noise pollution.
Parking	Parking Improvement Project reviewed parking at sites across the city, including a verge and footway parking ban in Old Dogsthorpe	Vehicles release more pollutants when in stop start so free flowing vehicles will reduce air pollution.
Other		
Safer Journeys to School	Improvements including shelters for parents and cycle parking installed to encourage sustainable travel	More families using alternative travel modes to access education should reduce the pollutants released by vehicles on the school run
Major	Provide reduced journey times	Reducing journey times and

Highways Schemes	and improved traffic flows.	improving traffic flows will reduce congestion and improve air quality

9 Summary.

The monitoring of nitrogen dioxide (NO_2) in Peterborough show that the levels of NO_2 are below the limits set by Government for 2005 and are estimated to be below the objectives for 2010. The by-pass built around the village of Thorney has reduced the levels of NO_2 to below the objective levels so some of the diffusion tubes there will be moved to new locations. The areas selected for monitoring will be areas most likely to have the potential to exceed the objective level but screening modelling has shown that there is no exceedence.

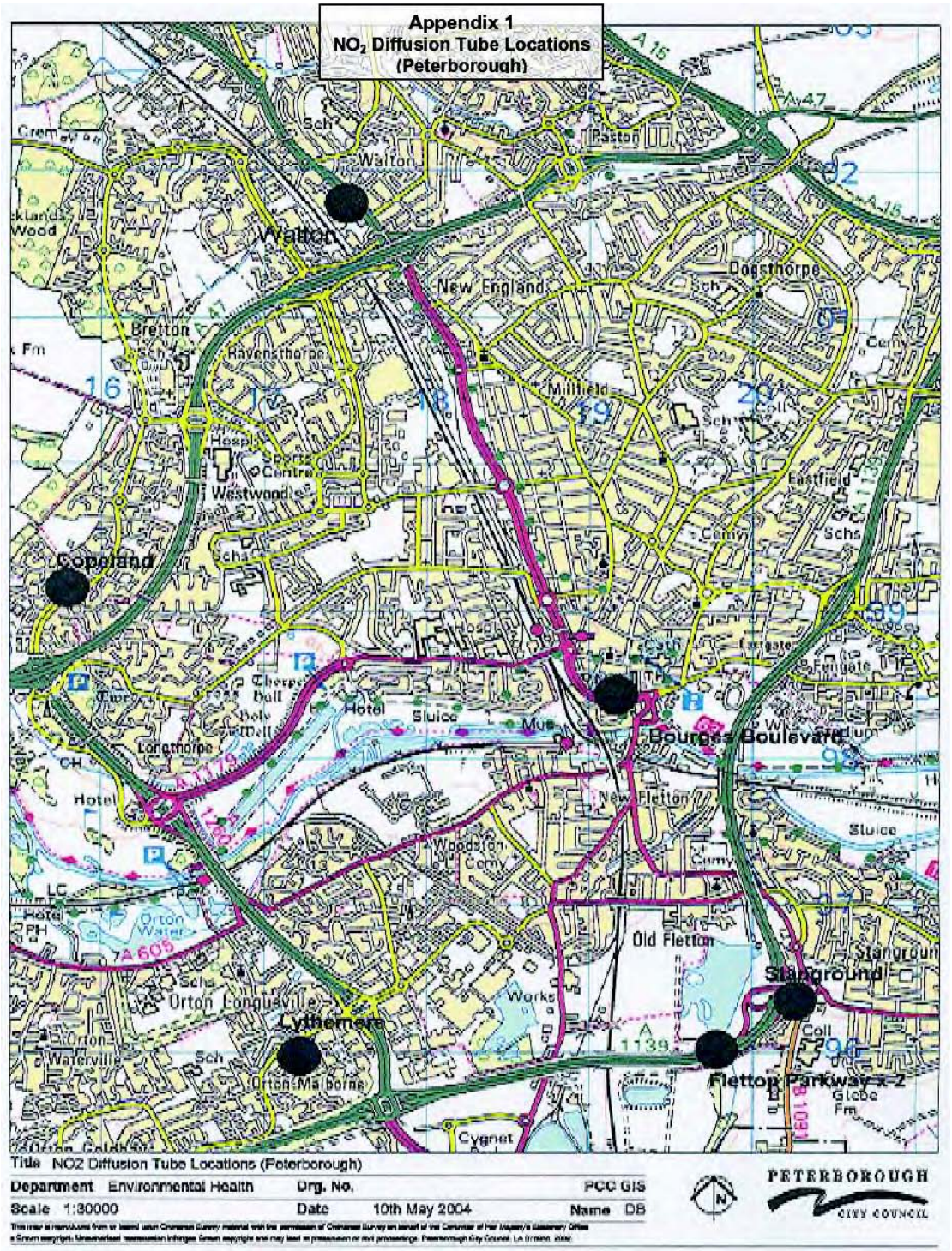
An Air Quality Management Area has been declared as a result of emissions from a brick manufacture is exceeding the sulphur dioxide 15 minute mean value objective in a small area in Peterborough. Discussions with the company, the regulator (the Environment Agency) and other interested parties have already begun to look at ways of containing and reducing the emissions.

Peterborough City Councils Air Quality Strategy has been issued. A multi-disciplined forum for air quality has been developed and has started looking at ways of integrating air quality into other sections work programmes. This has included drawing up a map showing areas and roads with the greatest potential for exceedences. This will assist the planning department in deciding which planning applications require further air quality assessments.

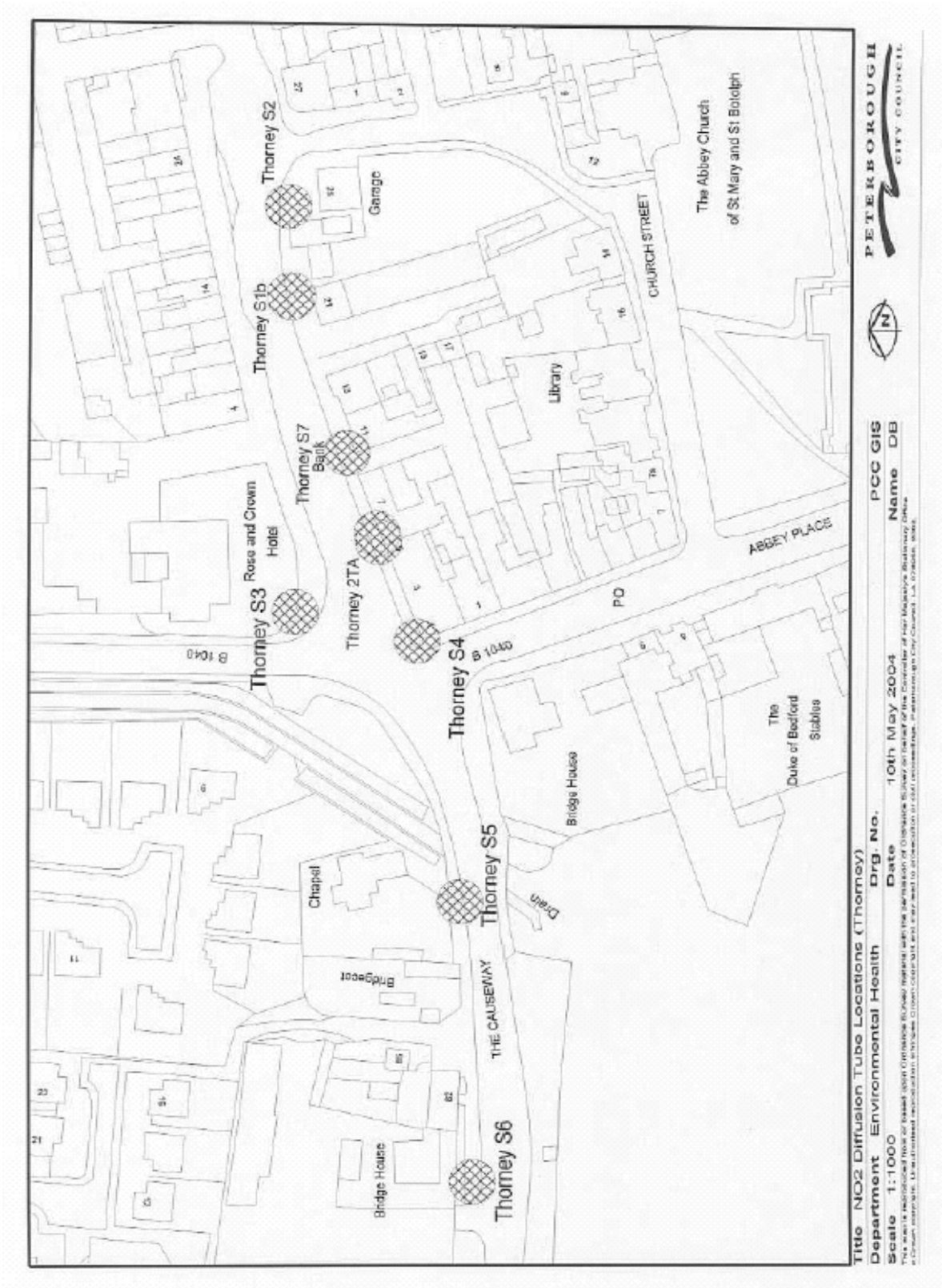
There has not been any significant increase in road traffic or any major new roads proposed. The second Local Transport Plan has been produced which is looking at reducing the impact of traffic even further.

Environmental Health are consulted with respect to planning applications and air quality considerations. If deemed necessary an air quality assessment is undertaken for the proposal. Applications where air quality has been considered, have all shown that air quality standards would not be exceeded.

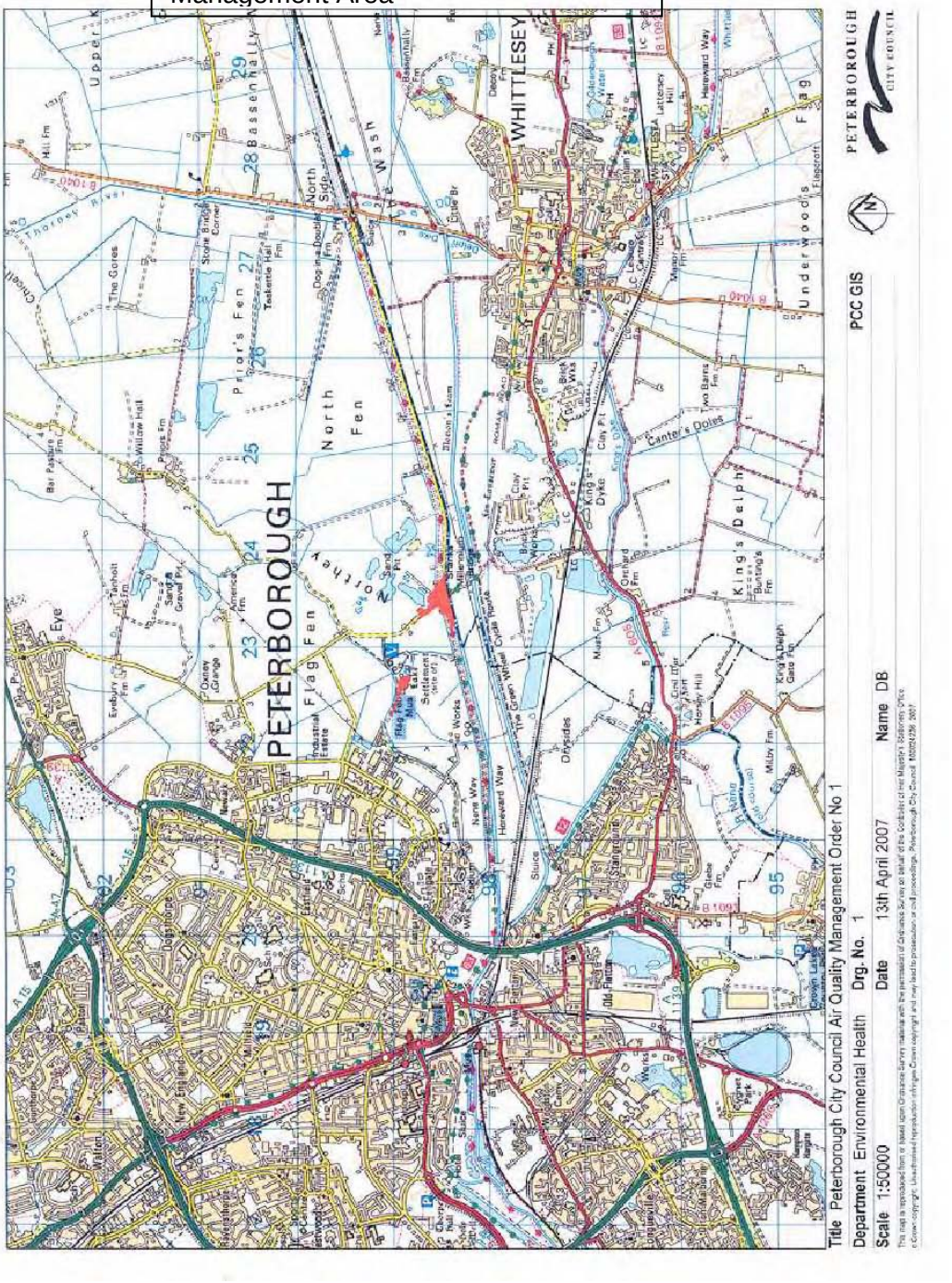
There are various policies and strategies that have varying impacts on air quality. These policies and strategies are updated periodically. Part of the multi-disciplined forum will be to help prepare information for these reports.


Appendix 1
NO2 Diffusion Tube Locations
(Peterborough)
Walton
New England
Dogsthorpe
Bretton
Ravensthorpe
Millfield
Westwood
Eastfield
Coppland
Bourges Boulevard
Longthorpe
New Fletton
Woodston
Old Fletton
Stanground
Orton Longueville
Orton Waterville
Orton Malborne
Cygnet
Fletton Parkway J 2
Title NO2 Diffusion Tube Locations (Peterborough)
Department Environmental Health
Drg. No.
PCC GIS
Scale 1:30000
Date 10th May 2004
Name DB
PETERBOROUGH
CITY COUNCIL

Appendix 2: NO_2 diffusion tubes in Peterborough



Appendix 3: Location plan of Peterborough's Air Quality Management Area



Appendix 4: Location plan of Peterborough's Air Quality Management Area