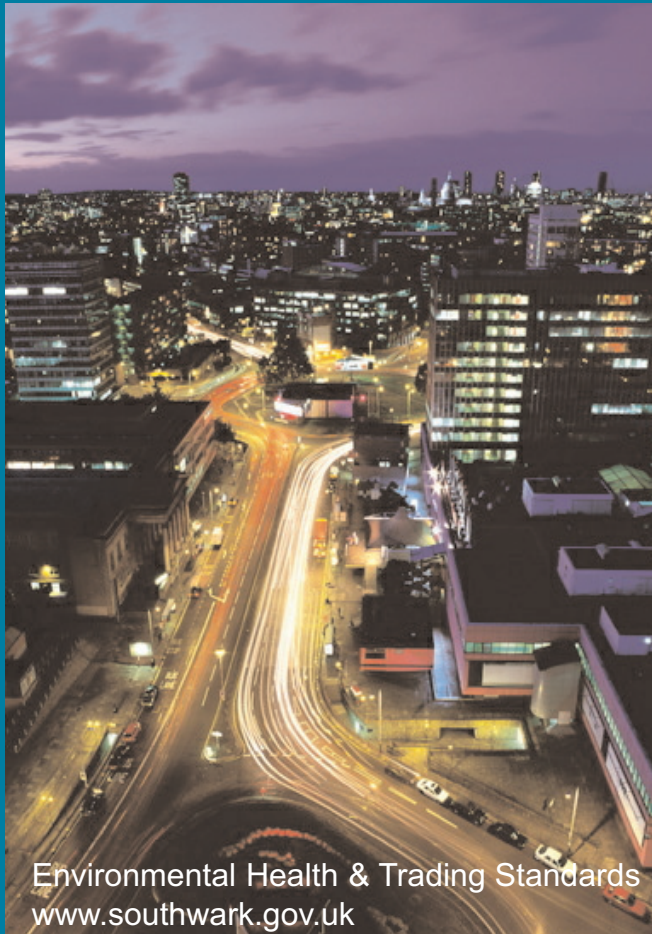


Southwark's Air Quality Strategy and Improvement Plan 2002 - 2005

Version 2 - January 2003



Environmental Health & Trading Standards
www.southwark.gov.uk



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Foreword

Making Southwark 'cleaner and greener' is one of the Council's key priorities; improving air quality is an important part of this agenda.

There is an assumption now that poor air quality is a thing of the past – we read in history books, of residents of going to school or work in Southwark with a cloth over their mouth and nose, traffic moving slowly and the docks nearly coming to a standstill, due to the dense winter smog's. Older residents will remember those days. New laws were made, which targeted both industrial and domestic smoke and we all became part of the solution with newly adapted fireplaces in our homes. Poor air quality is viewed as a thing of the past.

40 years on and what has changed? The docks have gone, so too has much of the industry. Traffic is again moving slowly, not due to visibility but the sheer volume entering and moving within the Borough, car journeys to school, work and shops are more commonplace. The air is again polluted, but principally with traffic emissions and now it is mainly invisible. Although other concerns dominate the public agenda, people recognise the effects on their health and quality of life and still place air quality as an issue of concern.

Much already has been done by the Council to identify those areas at greatest risk of continuing to exceed the Government's basic standards for air quality by 2005 and we have undertaken a lengthy and inclusive process of consultation on our draft plans.

This plan contains a series of measures which we see as necessary to set in place which will be delivered hand in hand through our local traffic and land –use planning policies and initiatives - towards achieving a cleaner, healthier Southwark.

The Council needs to work closely with the London Mayor and GLA bodies, adjoining Boroughs and Regulatory and Health Improvement Agencies, but principally with its residents, businesses and visitors.

This will not be achieved overnight but together we can clear the air, and make Southwark a better place to live, work and visit.

Councillor Richard Thomas

Executive Member for Environment & Transport

November 2002

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Southwark's Air Quality Strategy and Improvement Plan (hereafter referred to as 'The Plan') describes the Council's responsibilities and actions that need to be taken by the Council in partnership with residents, businesses, visitors, and people who travel through the borough, to improve air quality in Southwark.

Southwark is required by Part IV of the Environment Act 1995 to take action in pursuit of meeting air quality objectives set out in the Air Quality Strategy for England, Wales, and Northern Ireland. For the first time, a detailed analysis is complete, estimating the impact an integrated package of measures will have on air quality, alongside an analysis of the extent to which these measures are likely to be socially and politically acceptable as well as economically and technically feasible. It assesses what other impacts will be associated with the required action in terms of costs incurred and the need to accept possibly unpopular measures, as well as in terms of non air quality benefits that Southwark will enjoy as positive side effects of the air quality improvement measures.

The requirement for an 'air quality action plan' arises from the Council's three-stage review and assessment of air quality and predictions that parts of Southwark would be unlikely to meet the National standards for Fine Particles and Nitrogen Dioxide by 2004 and 2005 respectively without further intervention. This area in the north west of the borough was declared as an Air Quality Management Area (AQMA) late in 2000.

A draft Plan for Southwark was then published for consultation in May 2002, and a detailed programme of active consultation with a range of stakeholders carried out during Summer 2002. This led to an assessment of the extent to which the measures proposed in the draft plan would be socially and politically acceptable. Some additional air quality improvement measures were also added following suggestions by consultees, and others deleted having been deemed not to be technically feasible.

At the same time, a further "Stage 4" Review and Assessment of Air Quality in Southwark has been carried out. This provides information on the contribution of various categories of source to pollution concentrations at a range of points throughout Southwark. It also revises the calculation of the extent to which Southwark will fail to meet air quality objectives if no action is taken. The source apportionment information is used to quantify the effectiveness of the air quality improvement measures. The recalculation is needed to check if the AQMA declared in 2000 to support the introduction of air quality improvement measures is the correct size and shape in the light of new information.

The major piece of new information that has become available since the publication of the draft Plan is a revised set of estimates of future emissions from diesel-engined road traffic published by Government (DEFRA). Newly available measurements, especially of emissions

from the most recent heavy goods vehicles, have shown the estimates used previously were too optimistic about the rate of improvement that vehicle manufacturers

would achieve in response to tightening of emissions standards. This change makes it necessary to extend the boundaries of the current AQMA. The new AQMA (Figure 1) will cover almost the whole of Southwark. Only a small part to the south is to be left undeclared, since there is a high enough probability there that the air quality objectives will be met by national and international action alone without taking any additional local action. In the rest of Southwark, the amount of air quality improvement required to meet the objectives is greater than what was previously estimated.

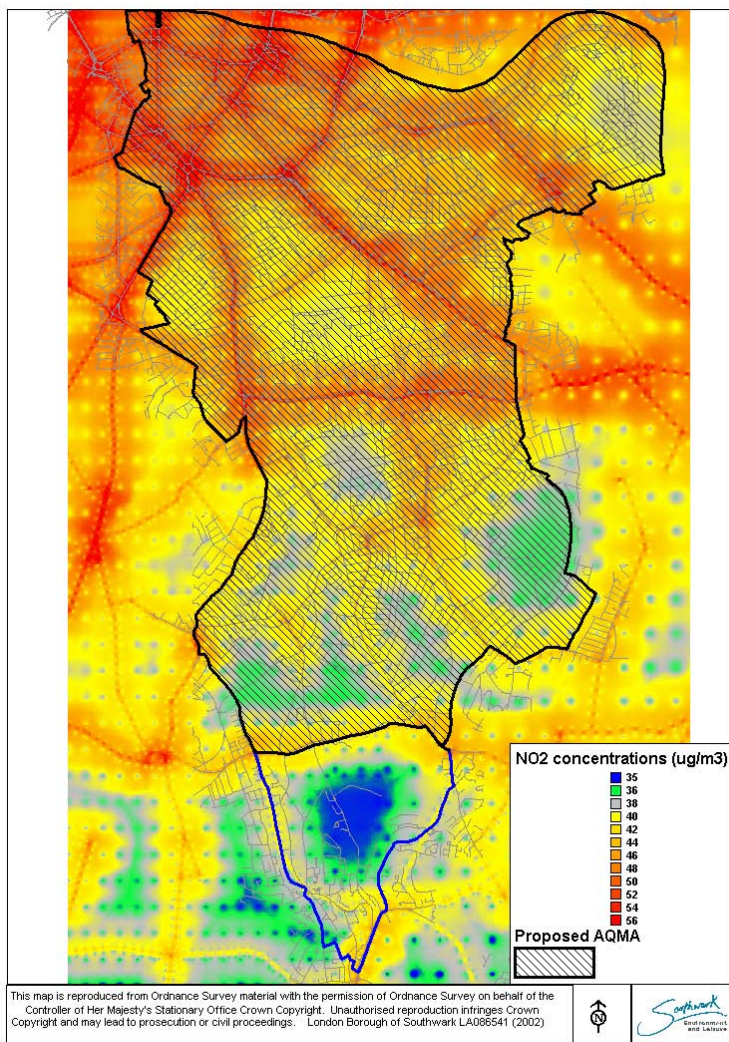


Figure 1. Revised map of modelled nitrogen dioxide concentrations in 2005 in Southwark, showing proposed new Air Quality Management Area.

This Plan therefore starts with chapters describing the strategic context to its development, summarises the methods used to quantify the effectiveness and acceptability of the measures that were proposed in the draft plan, and concludes which measures are needed and the extent to which the air quality objectives will be met by the adoption of those measures. The measures themselves are listed in Appendix A, accompanied by full details explaining each measure and its technical and regulatory background. Additional appendices provide an overview of who is responsible for each measure and the timescale with which it should be adopted, extracts from the London Air Quality Strategy that helps to support Southwark's air quality improvement work, and a complete list of references cited in the whole plan. Finally, we include a glossary of abbreviations and some key technical words and phrases used in the preceding sections.

Southwark's residential population is increasing and the borough is a growth area for investment in business and leisure development. This places heavy demands on the need to travel both privately and by public transport, to

the extent that parts of Southwark are congested for the majority of the day. This in turn exposes our communities, students, workers, and visitors to air pollution. Health in Southwark is below the national average for a number of pollution related health conditions, and we have a number of areas that are identified as deprived in comparison with National data. Several such areas are already in programme for regeneration including Peckham Partnership, Aylesbury, and Elephant and Castle. Attention is now focused on the next five key areas, all of which are within the AQMA.

Local pollution arises predominantly from road traffic sources. Southwark is a strategic route for haulage from the Kent Coast ports into London, for car commuters from north-west Kent, north-east Surrey, and South London, and is a distribution network for light goods servicing the City and West End. Escorted school journeys by car add to the pressure on the road network at peak times. In addition, Southwark shares with the rest of London and South East England a background pollution problem originating from emissions mostly associated with industry and power generation over a much wider area than Southwark or even London alone.

The development of Southwark's draft Plan was concurrent with the review and revision of two closely related strategies – the Unitary Development Plan (UDP) and the Transport Strategy (ILIP), which allowed for integration of themes and policy development. Also at this time the Council has been developing its Community Strategy and involving local people through the community consultative and neighbourhood forum process. We have used this opportunity for community

engagement and consultation. The Plan therefore has evolved through an integrated approach between many parties within the Council and 'stakeholders'. The guidance of the 'AQUIP' model, for which the Lichfield Associates must be acknowledged, helped to steer this approach. Southwark officers participate in many regional partnerships in Central London, South-East London and Cross River to support and finance joint initiatives within the field of air quality assessment, traffic reduction measures, cleaner fleet development and encouraging modal change.

Southwark's air quality policy needed to have full regard to the policies and proposals set out the Mayor's draft Strategies, particularly those relating Air Quality, Transport, and Spatial Planning. The formulation and timing of Southwark's air quality policy has therefore been influenced by the Mayor's Air Quality Strategy that was published shortly before Southwark's Air Quality Strategy and Improvement Plan.

Measures to improve air quality are set out in seven sections of Appendix A. These address:

1. Emissions from industry, construction, domestic and energy use;
2. Emissions from vehicles;
3. Reducing or restricting traffic access to London and Southwark;
4. Restricting traffic penetration into residential areas;

5. Supporting an increased role of public transport, walking, and cycling;
6. Reducing travel and transport demand through land-use planning and regeneration;
7. Raising awareness and promoting modal change.

Some of the measures are already being taken or have been under trial previously. Others are programmed in the current or forthcoming periods within the ILIP or will be formulated for medium term delivery in Planning Policies in the 'Southwark Plan'. Several new actions will require development and implementation either locally or regionally engaging in partnerships with neighbouring Councils and businesses. It will be the first time that all measures relevant to pollution prevention and control have been packaged together in this way.

Quantification of the effectiveness of the air quality

improvement measures revealed different measures were more effective for controlling Nitrogen Dioxide than for Fine Particles. These can be categorised not only by the amount of air quality improvement each measure can deliver, but also by the extent to which they act over the whole of Southwark, the whole of the Air Quality Management Area, or are restricted in effect to local areas usually close to where the sources concerned arise. A summary can be seen in Tables 1 and 2.

The most effective measures available to control Nitrogen Dioxide concentrations at roadside locations, in the short period available before the due date to meet UK air quality objectives, are those that act locally in certain parts of Southwark. These include the London Congestion Charging Zone, and potential 'Streets for People' schemes. Since most of Southwark's extended Air Quality Management Area is outside the Congestion Charging Zone, this measure is likely to have an adverse affect on air quality in some parts of the

Impact	Location:		Background locations in Southwark
	Most major roads	Roadside locations At only a few locations in Southwark	
<i>Most significant direct impact on NO_x levels</i>	3e: Low Emission Zone*	3b-c: Congestion charging= 3h: Streets for People 3i: Bankside Clear Zone	1n: low-NO _x appliances 1o-q: energy saving 3e: Low Emission Zone*
<i>Moderately significant impact on NO_x levels</i>	2a-e: target most-polluting vehicles 2s: cleaner buses 2v, 3e-f: freight partnerships 5a-b etc.: Modal change to bus	2f-h: "switch off vehicle engines" 2k-p: cleaner council and Health Authority fleets 2w-x: cleaner vehicles for waste and construction 2u: target cabs and minicabs, in combination with 2a-c: most polluting vehicles	2a-e: target most-polluting vehicles 2s: cleaner buses 2v, 3e-f: freight partnerships 5a-b etc.: Modal change to bus
<i>Impact on NO_x levels is mainly indirect</i>	2o,p: promote cleaner vehicles 2u,v: target cabs and minicabs 5d, 6f-h, 7d-h etc.: smaller contributions to modal change	2i-j: council vehicle tests	1a: SELCHP 1b-d: LAPPC 1i: Smoke control 5c, 6e-g, 7d-h etc.: smaller contributions to modal change

* From 2007, so too late to meet air quality targets by the target date

= Benefit inside congestion charging zone; disbenefits outside it. Measures to prevent situation getting worse outside zone do not contribute to gap closure.

Table 1. Contribution of measures to reduction of concentrations of oxides of nitrogen

borough where it is anticipated that there will be an increase in traffic flow associated with drivers trying to avoid entering the zone. Schemes such as ‘Streets for People’ that contribute to reversing this trend at selected locations are therefore especially important to be considered.

A further group of measures are less effective individually but make a significant contribution acting together. These include detection of poorly maintained vehicles that make a disproportionately high contribution to emissions, encouraging the introduction of cleaner buses, encouraging change from car to other modes of transport especially bus, and working in partnership with heavy and light goods freight operators to reduce their emissions. These contribute at roadside and background locations and act over a wide geographical

area, being most effective at the locations where the pollution levels are highest.

The measures that could potentially contribute the most to closing the gap between future projections of Nitrogen Dioxide concentrations and the objective for this pollutant at background locations away from major roads throughout Southwark, are concerned with saving energy and reducing emissions from domestic and commercial use of natural gas.

Additional measures combine to make a further significant impact on Nitrogen Dioxide at a range of roadside locations locally where emissions from the sources concerned are most highly concentrated. These include measures to switch off the engines of stationary vehicles, measures to address emissions from licensed

Location:	Major roadside locations	Near specific sources	Throughout Southwark
Impact			
<i>Most significant direct impact on PM₁₀ levels</i>	2a-e: target most-polluting vehicles 2s: cleaner buses 2v, 3e-f: freight partnerships 2u: target cabs and minicabs 2y: motorcycle emissions control* 1e-h: Construction and waste dust and mud	1b-d: LAPPC 1e-h: Construction and waste dust and mud 1i: Smoke Control Areas 1j-m: Bonfires, fireworks, and fires 2f-h: “switch off vehicle engines” 2k-p, w-x: cleaner council and similar fleets 3b-c: Congestion charging= 3h: Streets for People 3i: Bankside Clear Zone	1a: SELCHP and others 1o-q: energy saving
<i>Moderately significant impact on PM₁₀ levels</i>	5a: Concerted effort to achieve significant modal change	2i-j: council vehicle tests	2a-e: target most-polluting vehicles 2s: cleaner buses 2v, 3e-f: freight partnerships 2u: target cabs and minicabs 2y: motorcycle emissions control*
<i>Impact on PM₁₀ levels is mainly indirect</i>	2o,p: promote cleaner vehicles 5b-c: individual measures to promote modal change		5a-c: transport modal change

* Prevents worsening on introduction of congestion charging; does not contribute significantly to gap closure
= Benefit inside congestion charging zone; disbenefits outside it.

Table 2. Contribution of measures to reduction of concentrations of fine particles

taxis and minicabs, and alternative fuels for fleets used on Council or Health Authority business, or for specific purposes such as waste collection or on construction sites.

Other measures have smaller individual direct contributions to the reduction of Nitrogen Dioxide concentrations, but combine to support the more directly effective measures. These include promotion of cycling, more frequent emissions testing of council vehicles, and control of point sources such as South East London Combined Heat and Power, and Part B authorised processes.

Our estimation of the impact of all these measures combined is sufficient to close approximately one third of the gap between future projections and air quality objectives for Nitrogen Dioxide at background locations, and two thirds of the gap at roadside locations. It is therefore highly likely that the objectives will not be met everywhere in Southwark, even with all the air quality improvement measures being adopted. Substantial areas of Southwark's Air Quality Management Area are likely to remain in breach of air quality objectives. Not until some time after the target date will air quality objectives for Nitrogen Dioxide be met everywhere in Southwark.

Introduction of a London Low Emissions Zone (LEZ), from which more polluting categories of vehicle would be excluded, would help to close a significant fraction of the remaining gap. Unfortunately, the introduction of this measure has now been delayed London-wide, so that it will not come into effect until after the initial target date

for meeting the air quality objectives for Nitrogen Dioxide.

For Fine Particles the picture is similar but with several important differences.

The large regional background for this pollutant means that local measures such as energy efficiency and best available control of large point sources such as South East London Combined Heat and Power, *if repeated throughout the region*, could have a significant impact on Fine Particle concentrations throughout Southwark.

A number of road-traffic sources make a proportionately larger contribution to fine particles than they do to Nitrogen Dioxide. Control of these sources therefore is more effective for fine particles. These include cleaner taxis and buses, detection of more-polluting vehicles and the Freight Quality Partnership. The movement of dust and mud around Southwark's streets, especially from construction work, is a further highly significant source that can be controlled for fine particles but which did not feature in the analysis of nitrogen dioxide.

A collection of local sources also feature more prominently in the analysis of fine particles than for Nitrogen Dioxide. These include control of non-accidental fires, bonfires, enforcement of smoke free zones, and control of dust from construction work.

The combination of all the measures will therefore probably result in the air quality objectives for fine particles being met throughout Southwark. Any failure to meet the objectives for this pollutant after implementation of the whole package of measures is

most likely to be extremely small. If any measures are removed, or implemented at less than maximum efficiency and effectiveness, the probability of failing to meet the objective for this pollutant also increases.

It is therefore concluded that the complete package of measures needs to be adopted together. Effective implementation of the whole package of measures has been shown to be technically and economically feasible, as well as politically and socially acceptable. We believe that this Plan and programme has taken into consideration the extent to which local people and businesses are currently prepared to accept such

measures to deliver cleaner air more quickly to Southwark. This will result in the greatest immediately achievable improvement in Nitrogen Dioxide levels, at the same time as meeting the Air Quality Objective for Fine Particles. It should be noted at this point that the evidence for health effects of fine particles is stronger than that for Nitrogen Dioxide. It is necessary to close the gap as far as possible between Air Quality Objectives and what can be achieved in Southwark, because this will reduce the health effects of air pollution and make a contribution towards sustainable development of a more prosperous, health, and pleasant Southwark.
