



Glasgow City Council
AIR QUALITY ACTION PLAN
2009



Executive Summary

The Environment Act 1995 requires that local authorities review the air quality within their boundaries. Where the review concludes that air quality objectives will not be met within the statutory timeframe then the local authority is required to designate an Air Quality Management Area (AQMA). The local authority is then required to produce an Air Quality Action Plan (AQAP) to demonstrate how the Authority intends to work towards meeting the air quality objectives within its AQMA.

Glasgow's first AQMA was declared in 2002 for the City Centre area and subsequently the City Centre AQAP was produced in 2004. Since that time further assessment concluded that the boundary of the original AQMA required to be increased and that new AQMAs were required for both Parkhead Cross and for the Byres Road/Dumbarton Road area.

This document sets out Glasgow City Council's 2009 Air Quality Action Plan and aims to improve air quality in the three AQMAs designated on the 1st July 2007. The Plan sets out a number of actions, ranging from Low Emission Zones (also required for the 2014 Commonwealth Games) to Tree Planting, that have been identified to reduce levels of the air pollutants Nitrogen Dioxide (NO₂) and Particulate Matter (PM₁₀).

The measures in this new AQAP are those that are currently considered to be the most cost effective and appropriate for Glasgow and have been drawn up following consultation with key stakeholders and members of the public.

An annual report will be produced following the implementation of this action plan and will outline progress together with the inclusion of any additional actions.

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This document has been compiled by Glasgow City Council's Land and Environmental Services and incorporates information and data acquired from various sources. Consequently, we would like to acknowledge the contribution of a number of people from within Glasgow City Council and in external organisations. Also, a number of documents have been accessed for information and any documents used in the compilation of this report have been acknowledged in the Bibliography section at the end.

- Land and Environmental Services, Glasgow City Council
- Development and Regeneration Services, Glasgow City Council
- Scottish Environment Protection Agency
- Strathclyde Partnership for Transport
- Scottish Government

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2.0 Introduction

In 2004 Glasgow City Council produced an Air Quality Action Plan with the aim of reducing levels of nitrogen dioxide (NO₂) in the city centre. The plan was required in terms of the Environment Act 1995 following the city centre being declared an Air Quality Management Area in 2002.

Since that time, further monitoring and modelling of air quality data has established that if no action is taken, additional parts of the city will also fail national objectives. Therefore on 01/07/07 Glasgow City Council declared new Air Quality Management Areas (AQMA) for the following three areas;

1. City Centre
2. Parkhead Cross
3. Byres Road & Dumbarton Road

All three AQMA currently fail the 2005 NO₂ objective while the City Centre is also predicted to fail the particulate matter (PM₁₀) objective required by 2010. It may be that further areas within the city might also fail to meet the 2010 PM₁₀ objective; however additional monitoring data will be required before modelled predictions for these areas can be confirmed.

This new 2009 Action Plan addresses all three AQMA while building upon the measures introduced under the original 2004 Plan. Road traffic, while not the only source of air pollutants, is the main source of such pollution within Glasgow. It has therefore been considered appropriate to prepare a single Action Plan covering all three AQMA rather than three separate Plans with broadly similar measures.

This plan examines a series of options to tackle air pollution and a package of short, medium and long term actions are identified as appropriate to take forward within Glasgow. The primary goal of this plan is to improve air quality within the AQMA however the measures required to bring about this improvement will have air quality and environmental benefits for other parts of the city including areas to be used for the Commonwealth Games in 2014.

The actions within this plan are intended to reduce levels of both PM₁₀ and NO₂ pollution however the actions are limited to matters where the Council can actually influence change. The Council cannot, for example, reduce the levels of air pollutants blown in from outside the city or from the M8 (motorways are the responsibility of the Scottish Government).

An exact prediction of improvement in air quality that will be brought about through the actions in this Plan is an extremely complex matter; therefore this report cannot guarantee that all of the relevant human health based air quality objectives will be met. It should be noted however, that the combined effect of the actions presented within this Plan are anticipated to bring about a cumulative reduction in air pollution, while aiming to bring levels to within the statutory requirements in the longer term.

3.0 Requirement for an Air Quality Action Plan

The National Air Quality Strategy sets out the air quality objectives for seven of the main air pollutants. The objectives set limits to be achieved by certain dates for each pollutant. The air quality objectives represent a balance, between reducing air pollution to levels at which there would be no significant risks to human health, with the wider economic and social costs and technical feasibility of reducing pollution. For example, there are no safe levels of particles, but it would be impossible to eliminate them completely from the environment.

The Environment Act 1995 requires local authorities to undertake regular reviews of current air quality and also assessments of whether future air quality objectives are likely to be met by their set compliance dates. Where breaches of air quality objectives are predicted, local councils must declare an Air Quality Management Area and produce air quality action plans, containing measures aimed at achieving the objectives. There is no legal duty on councils to achieve the objectives, as a significant proportion of the air pollution in a particular area will have its source outside of that area and therefore be beyond the control of the local authority. The duty on councils is to take action to try to meet the objectives by identifying who is responsible for the pollution and seeking their co-operation in minimising it.

At a national level the Scottish Government must ensure the prescribed limits for air quality in the European Union's Air Quality Framework and Daughter Directive are met.

Fig 3.1 The National Air Quality Strategy Objectives for Scotland

Pollutant	Objective		Date to be achieved by
	Concentration	Measured as:	
Benzene	3.25 $\mu\text{g m}^{-3}$	Running annual mean	31.12.2010
1,3-butadiene	2.25 $\mu\text{g m}^{-3}$	Running annual mean	31.12.2003
Carbon monoxide	10 mg m^{-3}	Running 8 h mean	31.12.2003
Lead	0.5 $\mu\text{g m}^{-3}$	Annual mean	31.12.2004
	0.25 $\mu\text{g m}^{-3}$	Annual mean	31.12.2008
Nitrogen dioxide (NO_2)	200 $\mu\text{g m}^{-3}$ not to be exceeded more than 18 times per year	1 h mean	31.12.2005
	40 $\mu\text{g m}^{-3}$	Annual mean	31.12.2005
Particles (PM_{10})	50 $\mu\text{g m}^{-3}$ not to be exceeded more than 35 times per year	24 h mean	31.12.2004
	40 $\mu\text{g m}^{-3}$	Annual mean	31.12.2004
	50 $\mu\text{g m}^{-3}$ not to be exceeded more than 7 times per year	24 h mean	31.12.2010
	18 $\mu\text{g m}^{-3}$	Annual mean	31.12.2010
Particles ($\text{PM}_{2.5}$)	12 $\mu\text{g m}^{-3}$	Annual mean	2020
	15% Cut (target)	(Urban background exposure reduction)	Between 2010 and 2020
Sulphur dioxide	350 $\mu\text{g m}^{-3}$ not to be exceeded more than 24 times a year	1 h mean	31.12.2004
	125 $\mu\text{g m}^{-3}$ not to be exceeded more than 3 times a year	24 h mean	31.12.2004
	266 $\mu\text{g m}^{-3}$ not to be exceeded more than 35 times a year	15 min mean	31.12.2005

4.0 Air Pollution – Sources and Health Effects

Air quality legislation introduced following the smogs of the 1950s has brought about major improvements in air quality in the UK. More recently, restrictions on emissions from industry, road transport and domestic sources have further improved air quality. Despite this trend of general improvement it is currently estimated that air pollution reduces the life expectancy of every person in the UK by an average of 7-8 months with estimated equivalent health costs of up to £20 billion each year*.

There is therefore, still much to be done. The European Environment Agency describes air pollution as “the environmental factor with the greatest impact on health in Europe...responsible for the largest burden of environment-related disease”**.

In Glasgow city centre the pollutants identified to be of concern are NO₂ (a gas formed during the combustion process) and PM₁₀ (very small air borne particulate matter less than 10µm in diameter). At both Parkhead Cross and the Byres Road & Dumbarton Road area, NO₂ is the main pollutant of concern.

4.1 NO₂ and Oxides of Nitrogen

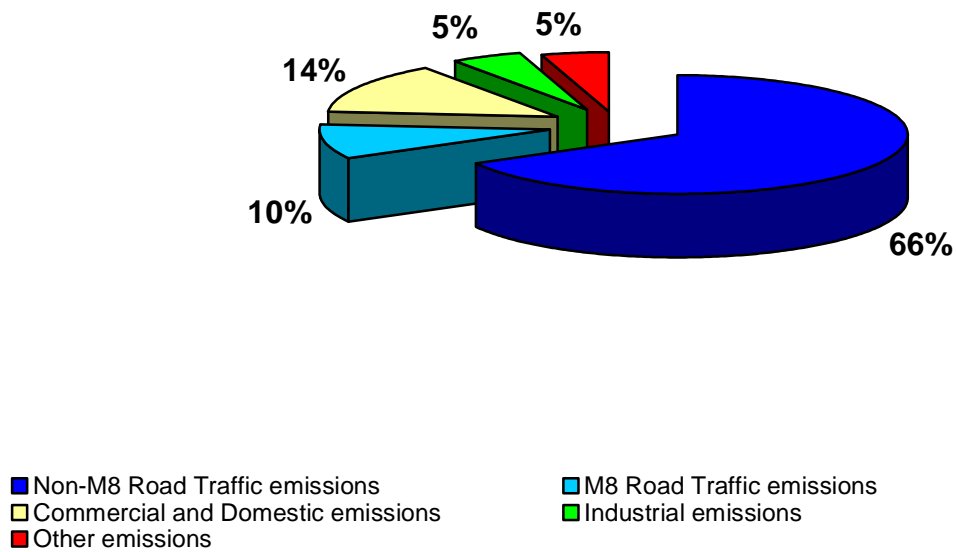
Nitrogen oxides are produced by the burning of fossil fuels and biomass (e.g. forests or agriculture) and from some industrial processes. Oxides of nitrogen (NO_x) is a collective term for the two main nitrogenous gases that cause air pollution problems, nitric oxide (NO), and NO₂. Oxygen or ozone reacts with NO in the air to produce NO₂. Oxides of nitrogen occur both naturally as well as being produced by human activities. The largest source of NO_x in the UK is road traffic, although power generation also produces a significant amount. In Glasgow, like many other urban areas, motor vehicles are the dominant pollutant source, responsible for 76% of NO_x.

* Written Ministerial Statement by Jonathan Shaw on the Air Quality Strategy - 17 July 2007

** EEA Report No 10/2005

Fig 4.1 Estimated contributions from sources to total NO_x emissions in Glasgow

(source : National Atmospheric Emissions Inventory 2004)



Although NO is the primary pollutant the impact on human health is caused by the NO₂ formed when NO is oxidised. High levels of NO₂ can have impacts on sensitive people including children, the elderly and those who suffer from respiratory conditions like asthma and bronchitis.

4.2 PM₁₀

Particulate material comes from a wide range of sources, some of which are naturally occurring (such as sea salt, dust, pollen, forest fires and even fine sands from as far as the Sahara desert). There are several sources of particulates emitted by human activity, either directly as primary particulates or through secondary particulates formed by reactions involving other pollutants. The main sources are combustion processes including industrial processes, vehicle exhaust and waste incineration, as well as quarrying processes and construction activities. This Action Plan is concerned with particulate matter of diameter of 10 microns or less (PM₁₀), however new objective levels for PM_{2.5} within the 2007 National Air Quality Strategy will require to be addressed in the near future.

While UK emissions of PM₁₀ declined by 48% between 1990 and 2004, urban development and increased traffic congestion has meant that some city locations are experiencing an increase in levels of PM₁₀. In Glasgow the majority of PM₁₀ emissions are attributed to road traffic, mostly from diesel engine exhausts, however particles from tyre wear and brake dust, some of which becomes re-suspended through vehicle movement, also significantly contribute to the total.

High levels of PM₁₀ pollution are associated with cardiovascular illness and mortality as well as other ill-health effects, and bring about an increase in hospital admissions for those with pre-existing lung or heart disease.

5.0 Air Quality Management Areas in Glasgow

Following review and assessment of air pollution levels across the city, Glasgow City Council declared three new Air Quality Management Areas on 01/07/07. The declared areas are as follows;

5.1 Parkhead Cross

Parkhead Cross is formed by the convergence of five roads in Glasgow's east end. The roads are Westmuir Street, Tollcross Road, Springfield Road, Duke Street and Gallowgate. The Area is a mixture of commercial and residential properties within mostly tenement buildings.

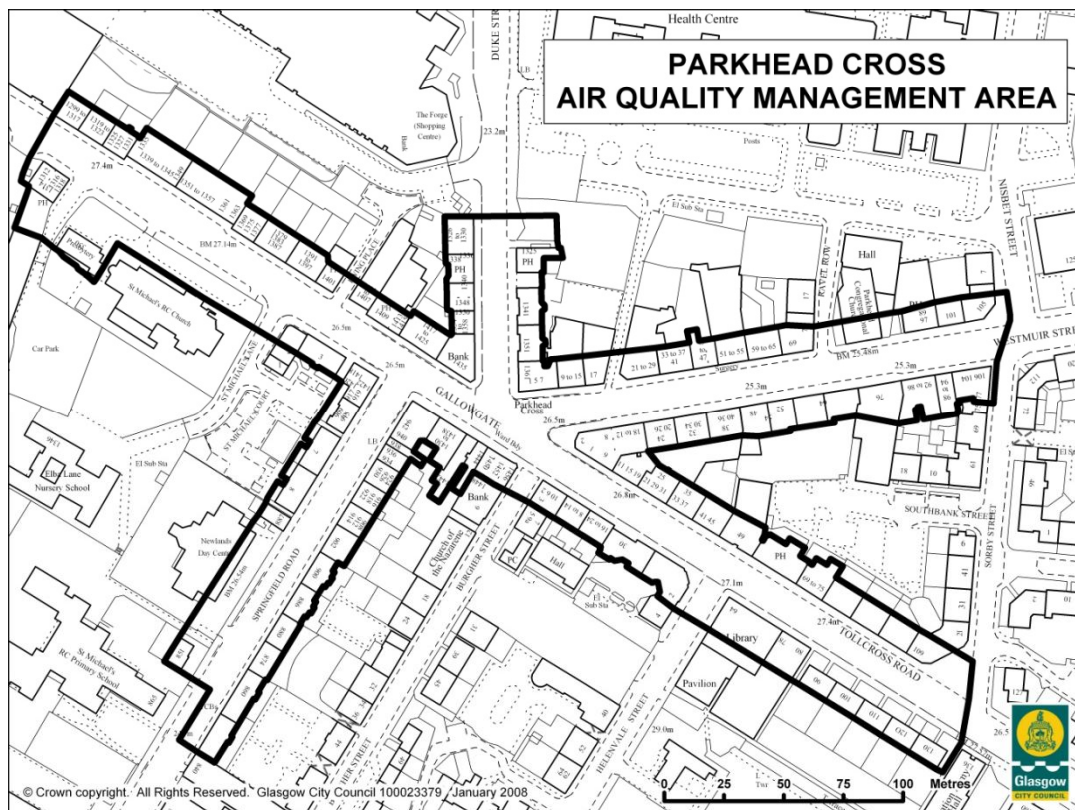


Fig 5.1 Parkhead Cross Air Quality Management Area

The detailed street listing for this AQMA can be found in the 01/07/07 declaration (appendix A)

5.2 Byres Road and Dumbarton Road

Byres Road and Dumbarton Road are at the heart of Glasgow's west end and comprise a mixture of residential and commercial properties within mostly tenement buildings. The Area covers from the junction of Byres Road and Great Western Road south to Dumbarton Road and west along Dumbarton Road as far as Thornwood Drive.

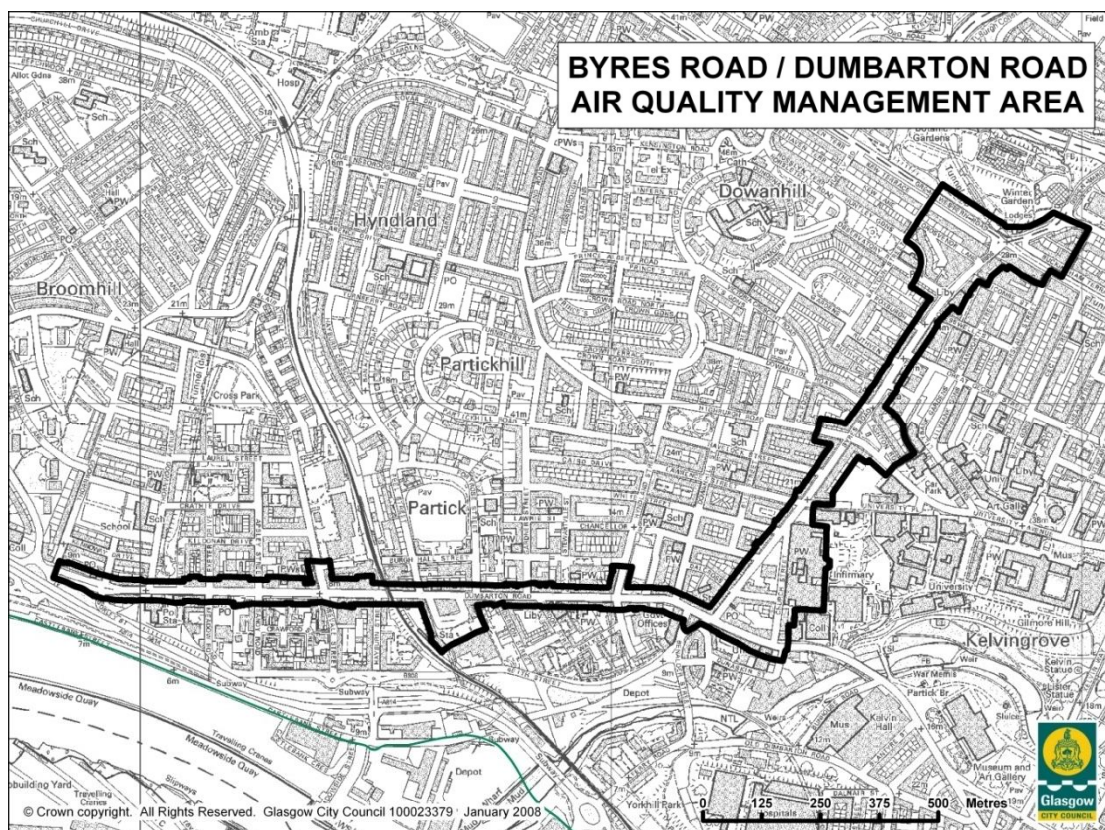


Fig 5.2 Byres Road and Dumbarton Road Air Quality Management Area

The detailed street listing for this AQMA can found in the 01/07/07 declaration (appendix A)

5.3 City Centre Air Quality Management Area

The city centre Area has been extensively developed with a large number of multi-storey properties for both commercial and residential use.

The city centre AQMA is loosely bound by the M8 motorway to the west and north (with minor protrusions at North Street and Robroyston Road), by High Street and Saltmarket to the east and by the river Clyde to the south.

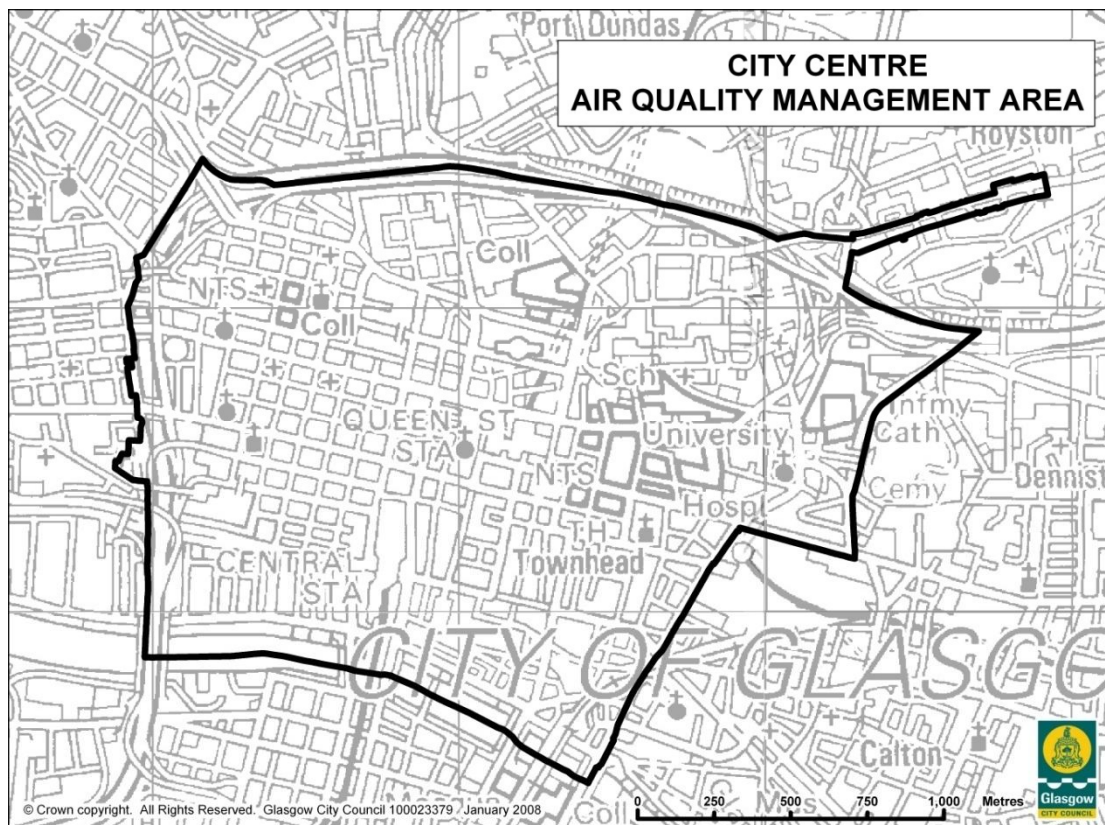


Fig 5.3 City Centre Air Quality Management Area

The detailed street listing for this AQMA can be found in the 01/07/07 declaration (appendix A)

6.0 Background to City of Glasgow

6.1 Glasgow – Population and Location

Glasgow is Scotland's largest city with an estimated resident population of around 600,000, of which approximately 60% are estimated to be in the 'economically active' 20-65 yr age range. The city is located on the banks of the river Clyde on the western end of Scotland's Midland Valley. Following relatively recent boundary changes, the city now covers the area outlined in Fig 6.1, an area comprising some 17,730 hectares or approximately 68 square miles of land, of which about 20 % is classified as countryside or green belt land, whilst some 10 % is vacant land.



Fig 6.1 The City of Glasgow's Current Boundaries including AQMAs

6.2 Meteorology

Due to its relatively sheltered position, Glasgow commonly experiences winter temperatures similar to those experienced at locations in southern Britain, but cooler summers than such locations. The mean annual temperature of the city is approximately 9 °C with a mean maximum of around 12 °C and mean minimum of around 5 °C. The diurnal range of temperature is normally a good deal larger in summer than winter, varying from less than 2 °C in January to an average of about 6 °C in July.

Glasgow experiences a fairly modest 1400 hours of sunshine a year but approximately 1200 mm of rainfall, with the first half of the calendar year generally drier than the final six months. Maximum daily levels of precipitation in the Glasgow area are generally around 50 mm. A particular feature of precipitation in the Glasgow area is the combination of heavy rainfall with high winds, which results in 'driving rain', most commonly in a south-westerly direction. Glasgow suffers from this phenomenon more than any other comparably sized settlement in the United Kingdom.

In addition, the Glasgow basin can occasionally experience fogs, which are either carried inland from the Firth of Clyde with light summer winds, carried by advection currents through the Midland Valley from the east coast, or more commonly result from the drainage of cold air into the Clyde Valley from the surrounding hills on calm, cold nights.

6.3 Industry and Economy

In recent decades Glasgow's economy has experienced significant changes. The traditional base of mercantile, engineering, and marine industries still remain but in much smaller numbers. Other production industries have modernised around new technologies and city centre services have increased in importance in recent years. Glasgow is the principal business focus in Scotland and one of the largest office centres in the United Kingdom. Service industries now account for approximately 80 % of the workforce with manufacturing, other production and construction employing the majority of the remaining 20 %.

Despite these changes in industry, Glasgow still produces around 18% of Scotland's gross domestic product and remains the fourth largest manufacturing hub in the United Kingdom, behind London, Birmingham and Leeds. Furthermore, Glasgow represents the largest shopping nucleus in Scotland and the second in the United Kingdom after London. It draws trade from the whole of the west of Scotland and beyond. In addition, the city also attracts large numbers of visitors both national and international to tourist attractions such as museums and galleries, for the use of sports, leisure and business venues, whilst the three Universities located in the city (Glasgow, Strathclyde and Glasgow Caledonian) increase visitor numbers still further.

Glasgow will also host the 2014 Commonwealth Games when over 6000 athletes and officials from around the world and many thousands more spectators will visit the city for the duration of the games.

6.4 Transport

In common with other large cities, Glasgow has a requirement to transport people in and out of the city quickly and effectively, whilst also functioning as a major modal point of the Scottish modal transport system. Consequently, Glasgow has experienced a continuous increase in road traffic. The city has an extensive road network consisting of some 40 km of motorway and 1700 km of other public roads.

The backbone of the road system is the M8 motorway that runs through the city and continues to Edinburgh (A8/M8) (Fig 6.2). At the Baillieston Interchange, on the eastern outskirts of the city, the M8 links, via the M73, with the M74/A74 route to Carlisle and the south, and with the M73/A80 route to Stirling and the north.

The M77 (Ayr Road route) was completed in November 1996 and runs through the south west of the city.

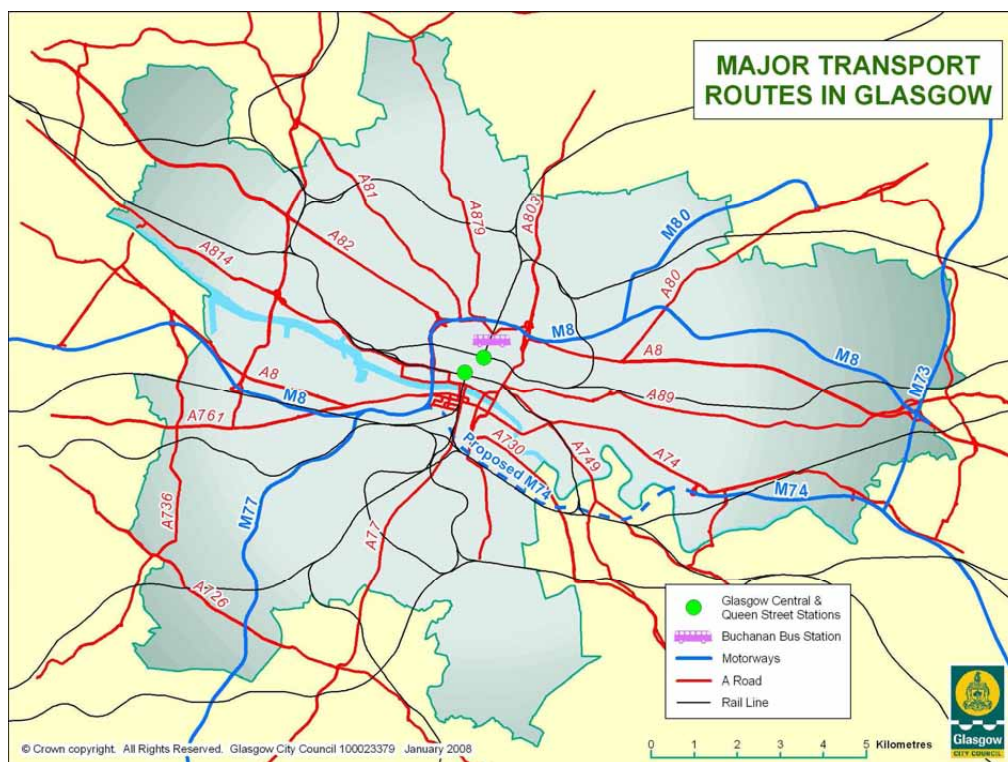


Fig 6.2 Major Transport Routes in Glasgow

Several other major routes radiate from the city centre. These include the Clydeside Expressway, Great Western Road, Springburn Road, Cumbernauld Road, Edinburgh Road, London Road, Paisley Road West and the M80 Stepps bypass. A large

proportion of journeys along these routes are by commuters in private cars travelling into the city. As a result there is frequent congestion on routes leading to the city during peak periods.

As well as the road system, a modernised underground railway system and the largest suburban commuter rail network in the United Kingdom outside London also operate in Glasgow. The rail network is used to make 100,000 daily passenger trips in or out of the six central area stations, with almost 20% of this figure accounted for by morning peak hour movements alone. Two major railway stations (Queen Street and Glasgow Central) are sited within Glasgow city centre and link to a further 60 railway stations throughout the city, five of which have park and ride facilities. The SPT Subway (Glasgow Underground) operates on 10.4 km of double track and handles more than 40,000 passengers a day and is estimated to be used by about 10% of city centre travellers.

In addition, a main bus station (Buchanan Bus Station) is also situated within the city centre (See Fig 6.2). The scale of equivalent bus movements is such that about 16,000 bus trips are made into or across the central area during the morning peak hour period. Buchanan Bus Station is used by an estimated 35,000 passengers per day. It offers a significant terminal resource for both coach and local bus operators. Glasgow International Airport lies some 10 km west of the city centre, outwith the city boundary.

6.5 Future Transport Development

6.5.1 Transport Strategy

Glasgow's transport vision is to provide a world class transport system which is safe, reliable, integrated and accessible to all citizens and visitors and also supports the physical, social, economic, cultural, environmental and economic regeneration of the City.

In order to achieve this, the Local Transport Strategy (LTS) contains a balanced strategy, which concentrates on promoting and enhancing sustainable transport modes such as walking, cycling and public transport, with limited investment in roads infrastructure to tackle key congestion points, provide essential links to development areas and provide links to enable public transport to provide effective circumferential services.

Clearly, with road traffic having such a significant impact on air quality in Glasgow the measures within the LTS can have a major role to play in reducing the city's air pollution. Integration of the AQAP into the LTS is therefore essential. Ongoing co-operation and discussion within the Council is imperative to ensure that air pollution is remains a key consideration within the LTS

A full list of all the measures proposed within the LTS can be found in Appendix B.

6.5.2 City Centre Transport Plan

Glasgow is currently undertaking a review and update of the City Centre Traffic Management Strategy and opportunities for further enhancing the public realm, including pedestrian priority areas, improved public transport and reducing traffic volumes and thereby pollution in the city centre and its gateways. The strategy is focussing on enhancing the priority and reliability for public transport, walking and cycling within the city centre and discouraging unnecessary private car access. At the same time, the strategy will accommodate city centre residents, blue badge holders and traffic essential to sustain the economic functions. The strategy is also looking at ways of enhancing the physical public realm, particularly the quality and legibility of

main pedestrian spaces, development areas and main access routes. The strategy should therefore help to reduce harmful traffic emissions while enhancing road safety and personal security for all city centre users.

6.5.3 The M74 Motorway

By early 2011 the M74 completion (Fig 6.3) will complete the missing link between the M74 at Fullarton Road and the M8 to the west of the Kingston Bridge. This development and its potential impact on air quality have been reported in the M74 Environmental Statement 2003 and are therefore not repeated in detail here. However to summarise, the M74 completion is expected to bring about a slight improvement in air quality within the city centre AQMA by redirecting traffic away from the city centre section of the M8. It is also expected that the relief to traffic congestion on local roads will allow priority to be allocated to public transport, cyclists and pedestrians.

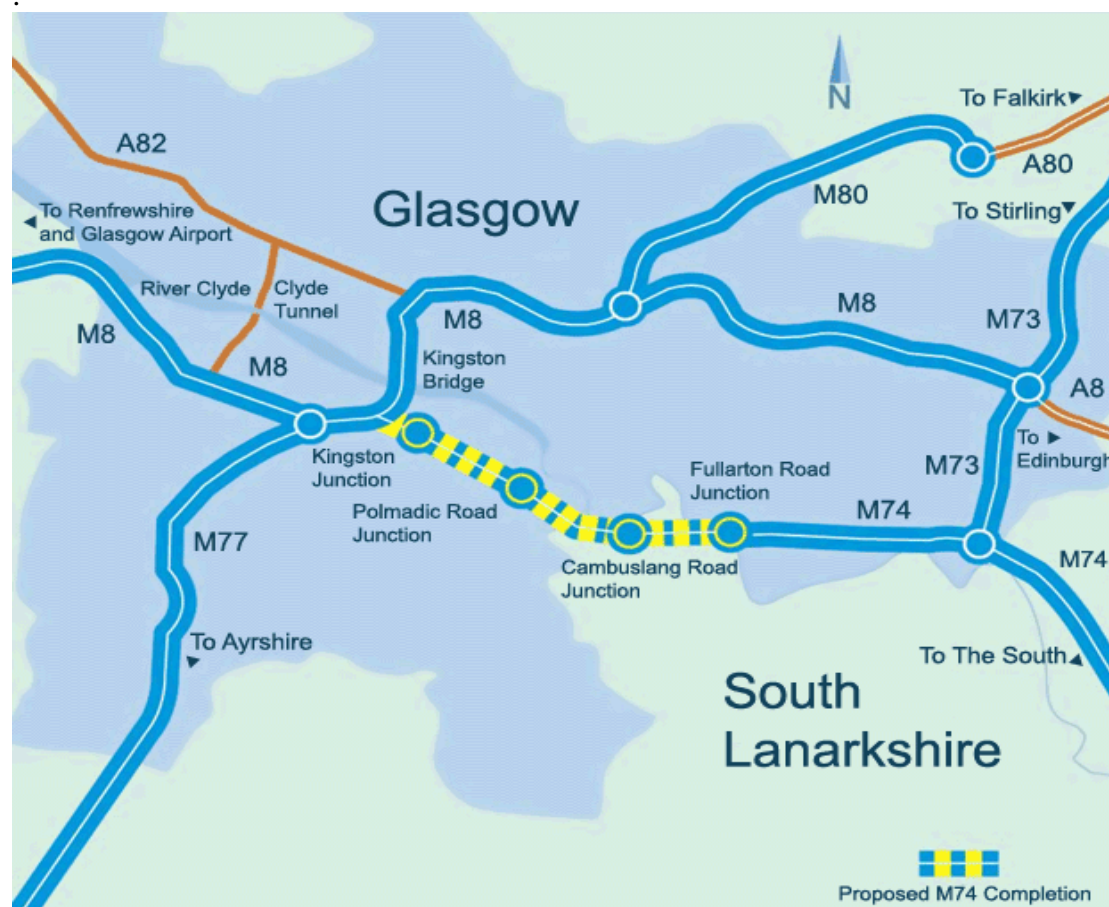


Fig 6.3 M74 Completion Route

(Transport Scotland, © Crown Copyright)

6.5.3 Glasgow Airport Rail Link (GARL)

Transport Scotland is working on a new direct rail link between Glasgow Central station and Glasgow International Airport. The proposed GARL works will enable a direct rail service to Glasgow Airport for the first time and therefore help ease congestion from airport traffic on the M8 into and through Glasgow. Reduced road traffic on the M8 through Glasgow will have a positive impact on city centre air quality.

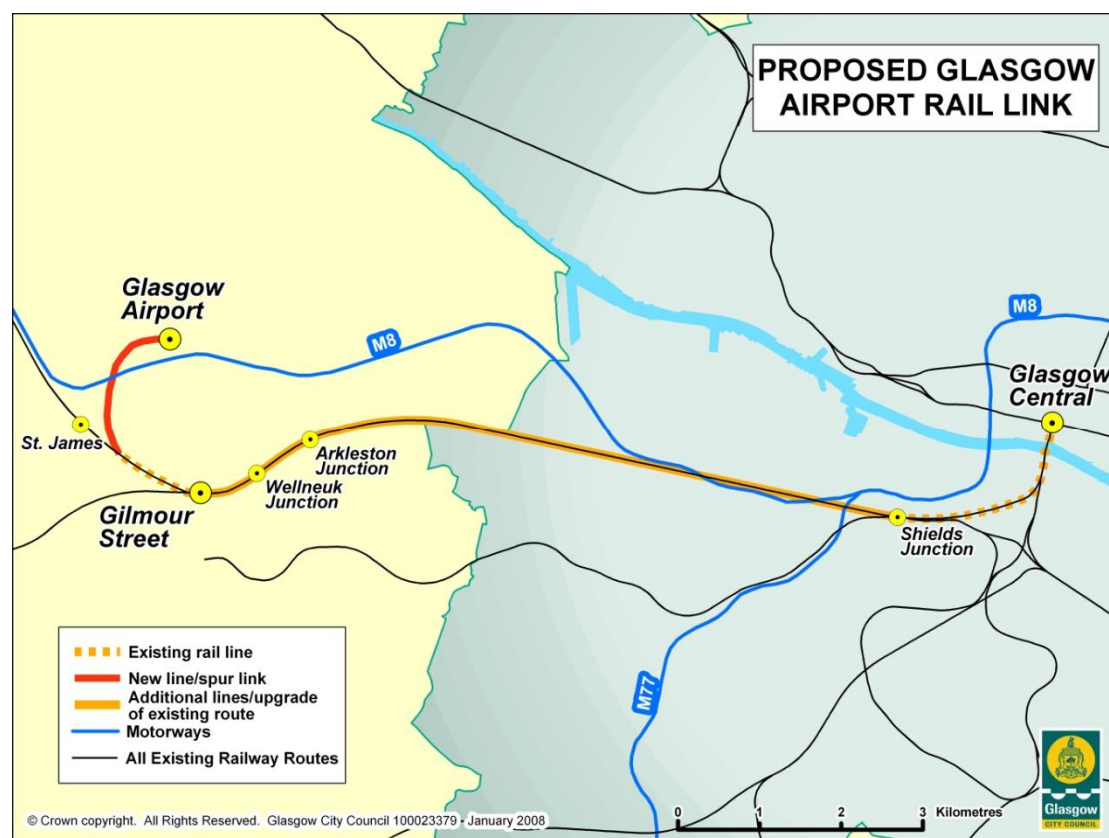


Fig 6.4 Route of Glasgow Airport Rail Link (based on information from SPT)

6.5.4 East End Regeneration Route

Glasgow's East End Regeneration Route (EERR) programme is an ambitious programme that involves the construction of a 3.8km road with the aim of improving accessibility between the East End of Glasgow and the strategic road network. The works which should facilitate regeneration in the Clyde Gateway area are expected to reduce traffic flow through Parkhead Cross and therefore have a positive impact on air quality in that area.

The second phase of the works will extend northwards from Rutherglen Bridge and connect the Parkhead by-pass at Gallowgate with the M74 completion. A subsequent third phase of works will continue the route north to the M8/M80 at Provan. The development of this road will complement the M74 completion.

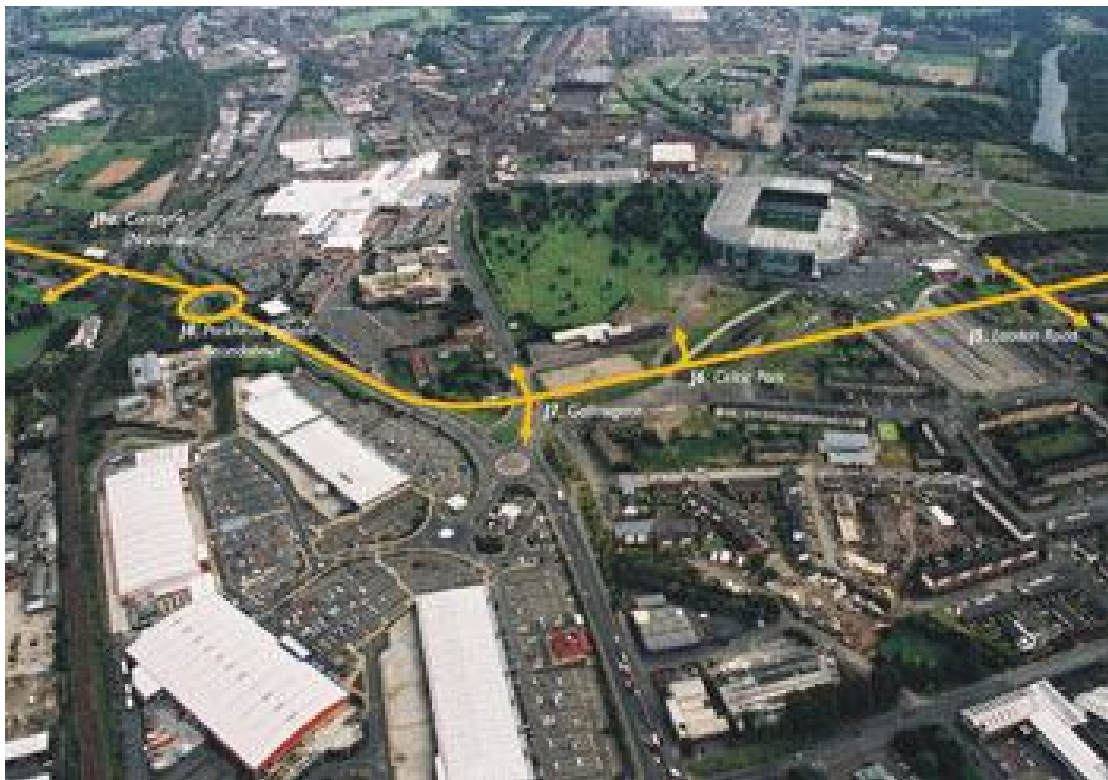


Fig 6.5 East End Regeneration Route

6.5.5 Clyde Fastlink

Glasgow City Council has drawn up proposals for a new public transport system for the Clyde Corridor which will not only provide better access, but will also help tackle increased traffic congestion and associated air pollution in the city centre.

Clyde Fastlink will be a state of the art public transport system running at a six minute interval service.

The initial route will be from the city centre along the northern bank of the River Clyde, via the SECC and Pacific Quay terminating at the new South Glasgow Hospital. The public transport vehicle will provide many of the benefits of a tram without the rails embedded in the ground.

From the SECC to the eastern end of Broomielaw, the system will be almost fully segregated from the existing road network, running on its own private section. Two-way sections will be provided for this length of the route, with the exception of a short section on Broomielaw at Lancefield flats where it will be on-street due to land constraint. In the city centre section it runs in a clockwise one-way loop passing below Glasgow Central at the “Heilanmans Umbrella” and sharing the network with all other traffic, but running on bus lanes where possible to minimise delay.



6.5.6 Partick Interchange Redevelopment

Partick interchange consists of a train and underground station and bus stances. It is located within the Byres Road and Dumbarton Road AQMA just off Dumbarton Road. The interchange is one of the busiest in Scotland with 4 million travellers passing through it each year. With extensive regeneration works including new home building in the west end of the city, the station is set to become even busier.

Partick interchange has recently been substantially redeveloped. Works were completed in 2009 and included rebuilding the station and upgrading the bus stances. The works should improve the facilities for travellers and ensure that future numbers can be adequately accommodated.

6.5.7 Cross Rail

Glasgow Cross Rail was an SPT proposal to improve the rail network in and around Glasgow. It would connect the rail networks north and south of the Clyde to enable interurban rail journeys crossing the city to be made without the need to change trains (and stations) in the city centre. The scheme previously proposed by SPT, and supported by Glasgow City Council, would entail use of the former City Union Line between Shields Road and Bellgrove station.

The increase in rail capacity would allow new routes for additional trains to run and therefore attract car users to switch to rail. A reduction in car traffic through the city and in particular on the M8 through the city centre would have a positive impact on local air quality.

6.5.8 Scottish High Level Output Specification (HLOS)

The HLOS plan prepared by Transport Scotland aims to increase capacity, reduce journey times and meet rising demand for rail travel. Works proposed will include electrification of the core route between Edinburgh and Glasgow plus 2 diversionary routes. A further programme of infill electrification including Paisley Canal services,

Maryhill services, Cumbernauld and other services, diverting where appropriate to low level routes will free up capacity at Glasgow High level stations.

6.5.9 North Clydeside Development Route

In support of development in the River Clyde Corridor, the North Clydeside Development Route (Anderston Junction on the M8 to Clydebank (incorporating SECC works, Glasgow Harbour works and Yoker Relief Road)) has been proposed. The route could provide a solution to the problems of access between Glasgow and Clydebank along Dumbarton Road and in conjunction with the recently opened Clyde Arc (Bridge), improve access to Pacific Quay from north of the river. The route will have provision for cyclists and public transport and by reducing congestion on Dumbarton Road benefit local air quality in both the City Centre and Byres Road & Dumbarton Road AQMAs.

6.5.10 Streamline and Bus Quality Partnership Schemes

The Streamline project to improve bus services in the city will be further expanded to include three new corridors covering the North East area of the city, routes to/from Hampden (Caledonia Road, Aitkenhead Road, and Cathcart Road) and Pollok.

The Council is also committed to investigating the implementation of a bus Quality Partnership Scheme (QPS), involving bus companies operating within the City. Work has already commenced on scoping the likely nature and extent of a QPS and it is the Council's intention to continue work on this with the aim of, subject to successful progression on the required consultation and the availability of funding, implementing a QPS in the lifetime of the new Council Plan. This will build on the existing Streamline quality partnership agreement between the Council and First and pave the way for improving the services of all bus operators.

As part of any partnership agreement the quality of bus services can be set along with a minimum frequency of service. Through Streamline and a QPS, it is anticipated that the quality of buses can be improved, with attendant benefits for accessibility and improvements in air quality, together with a reduction in bus congestion.

7.0 Air Pollution Monitoring

7.1 Air Monitoring Network

An extensive monitoring network has been established to measure ambient concentrations of air pollutants across Glasgow.

Automated monitoring equipment is located at eleven sites with three of the units (Hope Street, St Enoch Square and the City Chambers) forming part of The Department for Environment Food and Rural Affairs (DEFRA) Automated Urban and Rural Network (AURN).



Fig 7.1 Battlefield Road Automatic Monitoring Station

Equipment located at the sites measure a variety of air pollutants including NO₂, carbon monoxide and PM₁₀. Glasgow City Council also operate a non-automatic monitoring network of diffusion tubes which measure NO₂ levels at over 100 sites around the city.



Fig 7.2 NO₂ and Benzene Diffusion Tubes

All the air quality data gathered is independently ratified by AEA Technology and made available for viewing by the public at the Scottish Government funded air quality website at: <http://www.scottishairquality.co.uk>

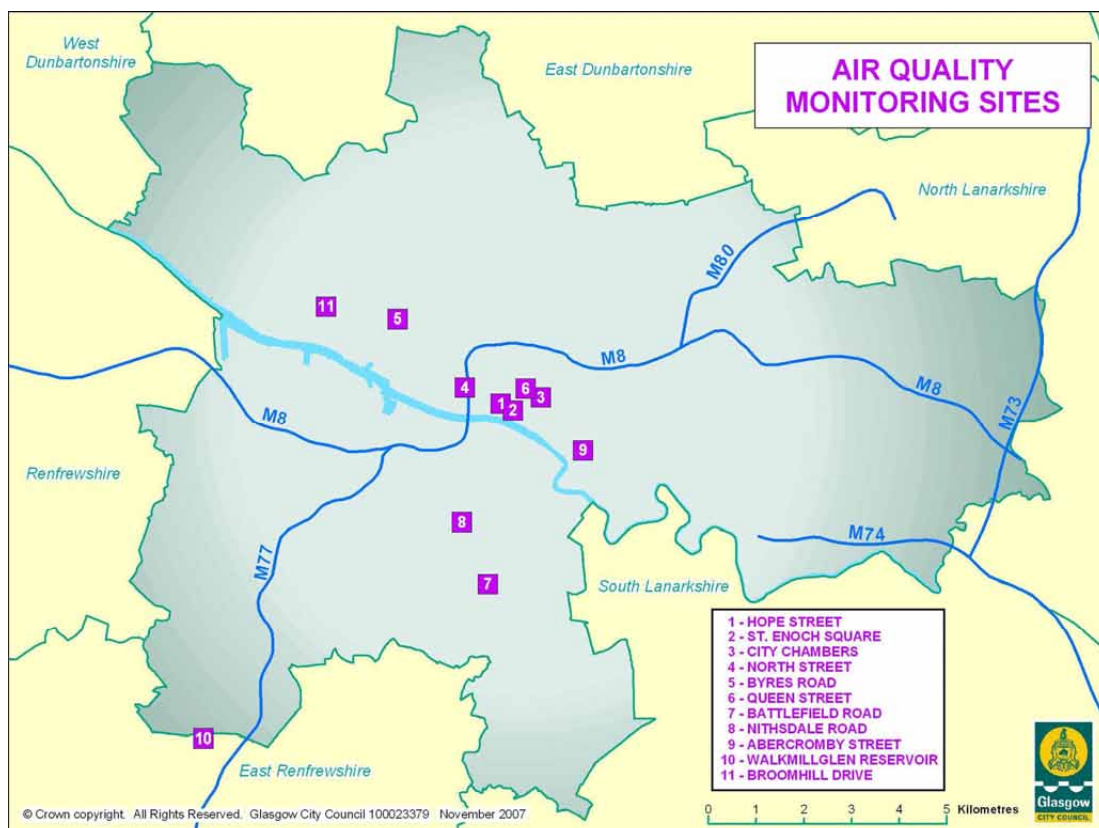


Fig 7.3 – Location of Automatic Air Quality Monitoring Sites for Glasgow

7.2 Future Requirements for Monitoring Air Quality

The assessment of the effectiveness of this action plan at improving air quality in the AQMAs and across Glasgow will be determined through the continued monitoring of our network of NO₂ and PM₁₀ sites.

The current monitoring network will therefore be maintained. Some alterations or additions to the network may, however, be required following further assessment at a later date.

8.0 Current and Future Air Quality

Glasgow City Council has completed both an Update and Screening Assessment (2006) and a further Detailed Assessment (2007) for air quality as required by the Environment Act 1995. The findings of these assessments which involve monitored and modelled data conclude that Glasgow will continue to meet existing statutory air quality objectives for all pollutants except NO₂ and PM₁₀.

8.1 Current Levels of NO₂

NO₂ levels have been found to exceed the required annual mean objective of 40µgm⁻³ within all the three AQMAs: the City Centre, Parkhead Cross and at Byres Road/Dumbarton Road.

Figures 8.1 – 8.3 show annual mean concentrations of NO₂ recorded at set locations within each of the AQMAs.

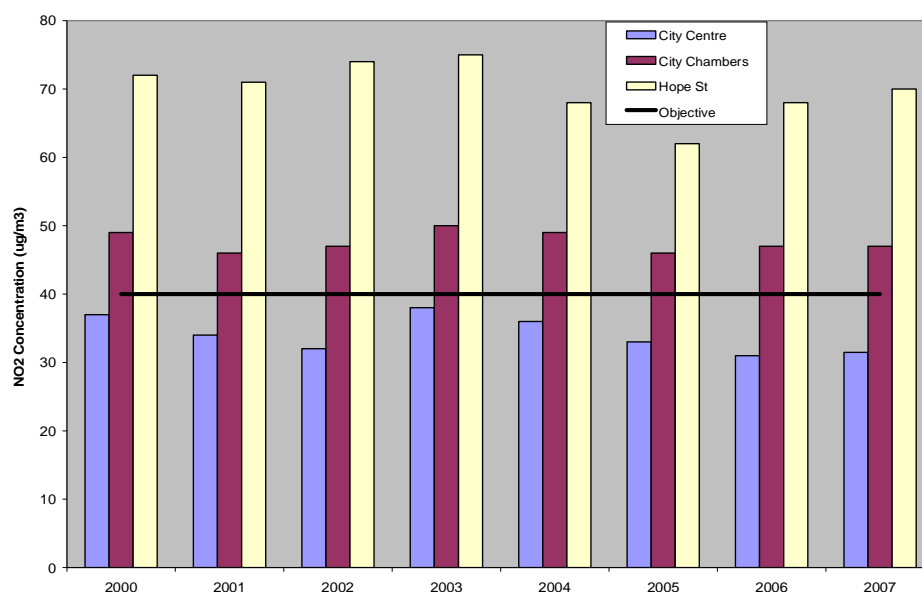


Fig 8.1 City Centre Annual Mean NO₂ levels 2001 – 2007

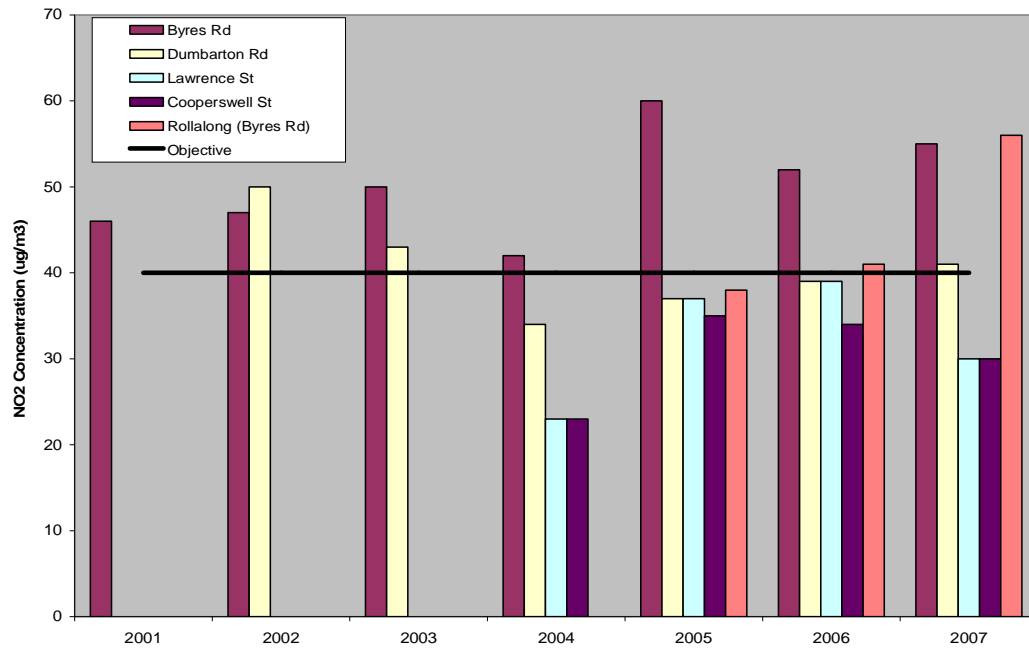


Fig 8.2 Byres Rd & Dumbarton Rd Annual Mean NO₂ levels 2001 – 2006

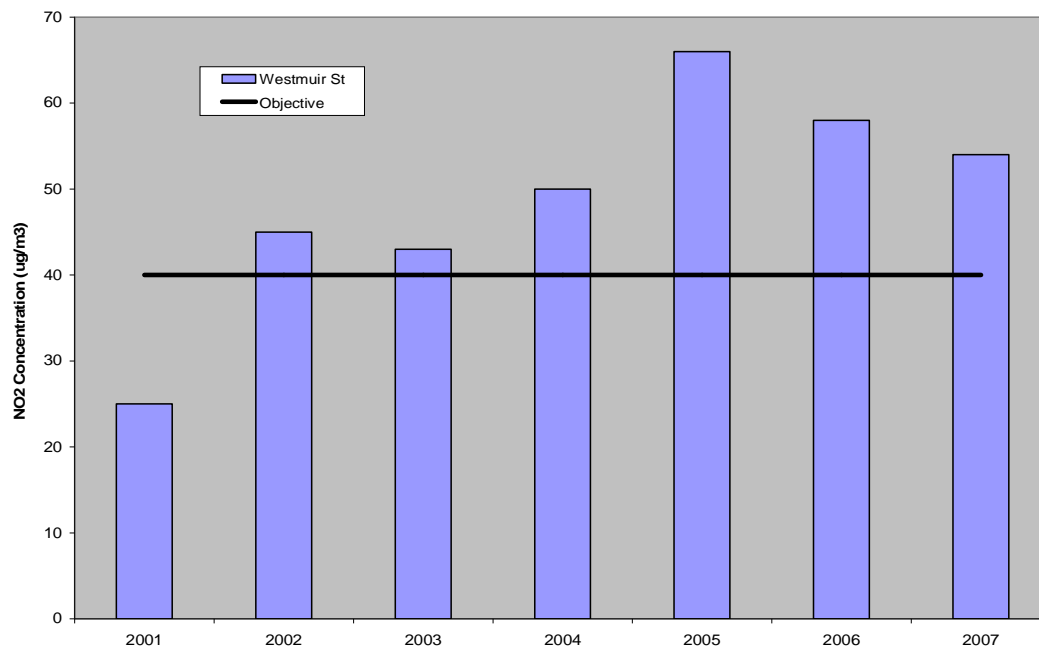


Fig 8.3 Parkhead Cross Annual Mean NO₂ levels 2001 – 2006

8.2 Future NO₂ Levels in the AQMAs

Predicted future levels of NO₂ in 2010 based on monitoring results and a “do nothing” scenario (Fig 7.4) have been calculated using method adapted from Local Air Quality Management Technical Guidance LAQM. TG(03) and show a similar trend to those currently observed in Glasgow, with exceedences (in red) of the annual objective within each of the AQMAs.

City Centre AQMA	[NO ₂] µg m ⁻³ (Objective Level 40 µg m ⁻³)	
	2006	2010 Predicted
St Enoch Square	31	27
City Chambers	47	41
Hope Street	68	60

Byres Rd & Dumbarton Rd AQMA	[NO ₂] µg m ⁻³ (Objective Level 40 µg m ⁻³)	
	2006	2010 Predicted
Byres Rd	52	46
Dumbarton Road	39	34
Lawrence Street	39	34
Cooperswell Street	34	30

Parkhead Cross AQMA	[NO ₂] µg m ⁻³ (Objective Level 40 µg m ⁻³)	
	2006	2010 Predicted
Westmuir Street	58	51

Fig 8.4 Observed and predicted NO₂ concentrations on selected streets within the AQMAs.

More information on predicted NO₂ levels (including dispersion modelling) at a number of locations in Glasgow can be found in Glasgow City Council’s Local Air Quality Management, Detailed Assessment Report 2007.

8.3 Current PM₁₀ Levels

Levels of PM₁₀ recorded within the city centre AQMA are summarised in Fig 8.5. Glasgow meets the current 40µgm⁻³ National Air Quality Strategy objective for PM₁₀ however in 2010 the objective level is lowered to 18µgm⁻³.

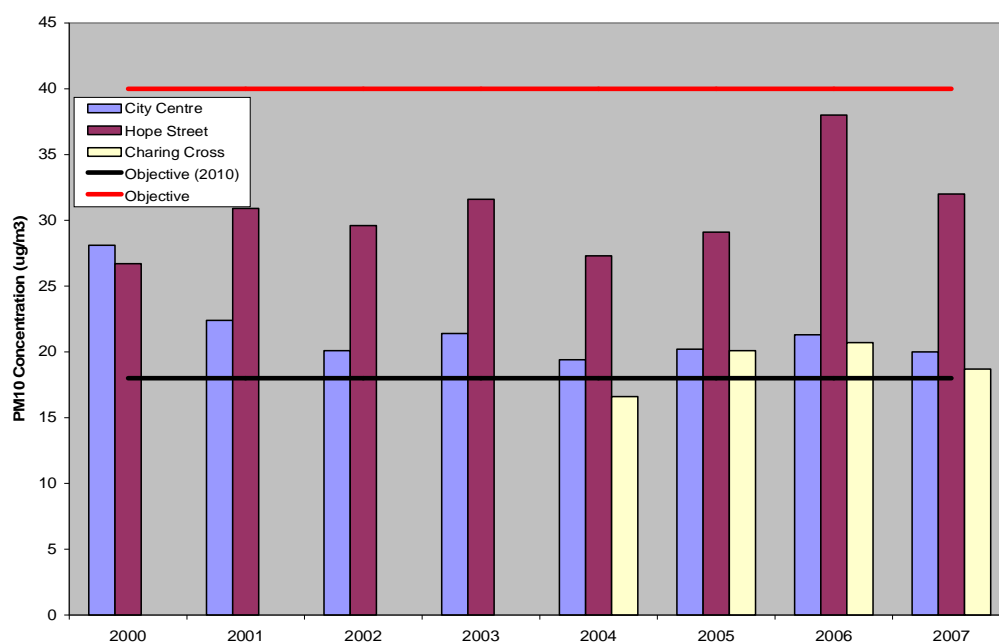


Fig 8.5 Annual Mean PM₁₀ levels City Centre

8.4 Future PM₁₀ Levels

As shown above, the current PM₁₀ levels recorded in the city centre are already above the objective level required by 2010. Future PM₁₀ levels expected at these city centre sites (fig 8.6) have been calculated in accordance with LAQM. TG(03) and again show a similar trend to those currently observed with exceedences (in red) of the annual objective at each location.

City Centre AQMA	[PM ₁₀] $\mu\text{g m}^{-3}$ (Objective Level 18 $\mu\text{g m}^{-3}$)	
	2006	2010 Predicted
Hope Street	38	35.44
St Enoch Square	21.3	20.02
North Street	20.7	19.47

Fig 8.6 Future PM₁₀ level City Centre

More information on predicted PM₁₀ levels (including dispersion modelling) at a number of locations in Glasgow can be found in Glasgow City Council's Local Air Quality Management, Detailed Assessment Report 2007.

9.0 Action Glasgow Has Taken So Far On Air Quality

In 2004 Glasgow published an Air Quality Action Plan for the city centre. The report listed 20 actions to be taken to improve air quality within the city centre AQMA.

Implementation of the works in the 2004 plan (which will be updated by this 2009 plan) continues and involves liaison with the Scottish Government and other Council Services including Development and Regeneration, Education and Social Work.

Generally speaking, good progress has been made on the 2004 plan; for example, the Council has adopted powers to require drivers of stationary vehicles to switch off 'idling' engines. In the last three years we have received over 50 complaints and issued over 220 fixed penalty notices. Since 2004 the Council have tested over 14000 vehicles and issued over 400 fixed penalty notices. This action continues to be implemented.



Fig 9.1 Vehicle Emissions testing in Glasgow

The Council has also implemented the Streamline project (including the Quality Bus Corridors referred to in the 2004 Plan) to improve bus services in the city. This is a partnership agreement between Glasgow City Council and First to develop high quality efficient, reliable and accessible bus services through the use of high quality modern vehicles on a network of Quality Bus Corridors. As well as providing bus lanes and bus gates at key congestion points along the corridors a Bus Information and Signalling System (BIAS), covering about 40% of the traffic signal controlled

network, has also been successfully developed to assist in tackling the city's traffic congestion problems whilst improving bus services. Encouraging commuters out of their cars, easing traffic congestion in key areas and using modern more efficient buses will have obvious benefits for air quality.

The Council is also keen to promote the 'greener' aspects of the original Action plan by for example, encouraging the proportion of trips undertaken by bicycle by improving routes to provide safe and direct access to city destinations including the proposed cycle lanes along the A77 White Cart cycle route.

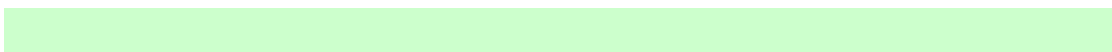
Many schools now have School Travel Plans established in an effort to try and curb the 'school run'. In total 37 schools have completed a School Travel Plan, 8 schools have a draft travel plan and a further 48 schools are in the process of developing a travel plan.

A pilot School Bicycle Loan Scheme which started at St Mungo's Academy has been extended to another four secondary schools. Each school is provided with 30 bicycles and associated equipment to enable the setting up of a cycle club. The scheme aims to engage young people in cycling as a transport choice and for leisure activities.

140 primary schools have so far registered to participate in Walk to School Week. Each school was provided with free resources to help promote and raise awareness of the benefits of walking on the school journey.

Specific engineered projects (safer routes to schools) have also been developed at some school locations; these help provide support for increasing walking and cycling journeys to and from school.

Glasgow City Council continues to aim to raise the profile of air pollution problems within the city and to encourage the public to participate in improving the situation. Publicity campaigns for vehicle emission and idling vehicles enforcement, as well as International Walk to School Week, help to bring air quality issues in Glasgow to a wider audience. Air quality information also continues to be made available on the Council web site.



10 Improving Air Quality - the Way Forward

Glasgow City Council's first AQMA was declared in 2002 and was concerned with a single pollutant: NO₂ within the city centre area. Subsequent assessment has identified the need to extend the original boundary of the city centre AQMA to include North Street and Royston Road and to now also include the pollutant PM₁₀.

Following assessment a further two new AQMAs have also been declared for NO₂ pollution at both Parkhead Cross and the area at Byres Road & Dumbarton Road.

This new AQAP aims to build on the improvements brought about through the first action plan and to set out the measures we propose to take to improve air quality in all of the three AQMAs: the City Centre, Byres Road & Dumbarton Road and Parkhead Cross. Indeed the air quality benefits from the actions within this Plan may extend to many other parts of the city.

Measures such as tackling vehicle emissions and vehicle idling enforcement, introduced following the 2004 plan, will be improved and expanded under the new plan. Others such as the introduction of Low Emission Zones and addressing particles from building sites are new directions where the Council feels it is now right to focus its efforts. Measures proposed for the new AQMAs will also take account of the particular circumstances at each location.

In preparing this new AQAP the focus has been on delivering measures and dealing with issues that are within the control of the air quality remit. It is not the intention of this action plan to produce a strategy that encompasses all of the many works that local government is involved in that may impact on air quality.

Following regular steering group meetings the total number of actions proposed by this plan has been reduced to 15 in order to concentrate on the key measures we are taking specifically to deliver better air quality.

Strategies already proposed in other areas of the Council such as walking and cycling, and transport improvements may have significant benefits for air quality, however these strategies would have been brought about regardless of this action plan and are

therefore not repeated in detail here. City Plan 2 (2007) and the Local Transport Strategy (LTS) (2007) in particular contain many such strategies. A list of the actions proposed within the LTS is provided in Appendix B and copies of both documents are available at local libraries and on the Council web page at <http://www.glasgow.gov.uk>.

11. Developing the Air Quality Action Plan

In order for this Action Plan to be effective it was considered appropriate to form a steering group that could oversee the development of the action plan.

The steering group comprised officers from a range of Council Services and also included representation from Strathclyde Partnership for Transport.

The steering group began by sharing an understanding of the legislative framework and the status of air quality in Glasgow. This included a review of the current and future limit values for the pollutants NO₂ and PM₁₀, together with forecasts for future air quality.

The steering group then began the process of identifying actions that were likely to result in an improvement in air quality. The broad basis of the group enabled this process to proceed swiftly with a significant number of existing Council actions being identified.

Glasgow's Local Transport Strategy and City Plan 2 were quickly identified as having a considerable number of measures that could result in an improvement to air quality. The measures within these documents are measures the Council is already committed to introduce and were therefore were not taken forward within this plan. The steering group instead focused efforts on measures that could be identified and developed specifically within the AQAP.

Finally, the steering group carried out an outline cost-benefit analysis of the actions identified and then decided upon an appropriate consultation strategy for the Action Plan.

The consultation process took place during 2008 and a report on the outcome of the consultation is included in Appendix C.

12. Costs and Benefits

12.1 Cost-Benefit Analyses/Time Scales

According to guidance, the Scottish Government does not expect local authorities to undertake detailed cost-benefit analyses, or to attempt to calculate, for example, the monetary value of lives lost or extended due to actions proposed in air quality action plans. However, local authorities are required to assess the benefits, costs (financial, socio-economical and environmental) and thus feasibility of different actions proposed within the action plan.

12.2 Benefit analyses

In terms of the predicted benefit of the actions listed in the action plan with regard to reducing emissions of NO₂ and PM₁₀ assessments have been conducted where possible, and actions classified as having a (i) low, (ii) medium or (iii) high impact. The predicted effect of each of the three classifications on percentage reduction in emissions within the AQMAs is presented in Table 12.1.

Table 12.1 Classifications of predicted air quality impacts of actions

Impact on air quality Classification	Approximate reduction in PM₁₀/NO₂ emissions
Low	$\leq 0.5 \mu\text{gm}^{-3}$
Medium	$0.5 - 1.0 \mu\text{gm}^{-3}$
High	$> 1.0 \mu\text{gm}^{-3}$

It is stressed that the classifications used are only preliminary due to the nature of the actions. Consequently, where feasible, Glasgow City Council will introduce monitoring programmes to quantify the actual impact of each action on air quality.

In so far as socio-economical and environmental (e.g. greenhouse gasses, noise, ecological and other) impacts are determined, these are assessed as positive, negative or neutral. Further information on the wider environmental impact of the action plan has been considered within the associated Strategic Environmental Assessment (SEA) screening report.

12.3 Estimated Costs of Actions

The cost of actions included within the Plan has been provided in the form of low, medium and high. The range of costs associated with each of these categories is presented in Table 12.2.

Table 12.2 Estimated Financial Costs of Action Plan Proposals

Costing Category	Estimated Cost of Action (£ thousands)
Low	< 50
Medium	50 - 500
High	> 500

It must be stressed that there are inherent difficulties associated with estimating costs of actions where the precise nature of the proposals have not been confirmed. Therefore, all estimates given are relative and subject to change.

12.4 Timescales for Action Implementation

In view of the scale of some of the measures proposed exact timescale have not been provided. It should also be understood that some of the actions proposed will require to be introduced gradually due to the scale of the projects and the need to secure funding. Timescales have therefore been given as current, short term (1-2 years), medium term (3-5 years) and long term (5+ years).

While the actions presented in this report represent the most appropriate measures identified by the steering group to reduce air pollution within the AQMAs, it must be understood that there is a limit to the effect that these measures will have. In addition significant quantities of the pollutants NO₂ and PM₁₀ originate from outside the AQMAs (e.g. from neighbouring streets, the M8 motorway etc.) and it is therefore by no means certain that the following actions alone will ensure that the air quality objectives are met within the desired timescale.

In order to meet objective levels within the AQMAs it may be necessary for actions to be amended and timescales brought forward where possible. The Council will monitor progress and endeavour to work with others to achieve the goal of meeting the objectives.

13. Actions

The following 15 actions to improve air quality in Glasgow have been split into 3 different categories they are:

- **Direct Actions** - practical actions which the Council can undertake directly, or are already underway (e.g. Emissions & Idling Enforcement, Leading By Example, Workplace Travel Plan)
- **Actions to Investigate** – actions the Council will investigate further, i.e. no action will be taken until a detailed investigation or feasibility study has been completed, and then, only if justified (e.g. Low Emission Zones, Tree Planting)
- **Actions to Request** - actions the Council will take to persuade others to take action (e.g. Public Service Vehicles)

A. Idling Vehicles

(Direct Action)

Action: The Council will expand the programme of vehicle idling enforcement and increase the provision of “No Idling” street signage.

Background

Unnecessary idling of a vehicle engine is the most inefficient use of fuel, producing both harmful exhaust emissions and the greenhouse gas CO₂. Unnecessary vehicle idling can also cause noise disturbance to local residents.

In order to tackle vehicle idling Glasgow City Council have been issuing fixed penalty notices to drivers of vehicles found to be idling unnecessarily. In the last 3 years over 220 fixed penalty notices for the offence of unnecessary idling have been issued. Many of the notices have been issued to bus drivers; however recent enforcement action has also targeted privately owned vehicles outside schools. To raise awareness of the enforcement action “No-Idling” signage has also been provided at various locations within the city.

Enforcement activities and media campaigns by the Council and others such as SPT Bus Wardens have brought about a better understanding of the requirement not to unnecessarily idle vehicles by some drivers (notably those targeted for enforcement work e.g. bus and taxi drivers), however unnecessary vehicle idling continues to be an issue throughout the city.

Presently, vehicle idling enforcement is carried out by a relatively small number of staff from within the City Council Environmental Health. The participation of additional enforcement staff (such as Glasgow Community and Safety Services) would increase the enforcement presence on the streets. An increase in enforcement presence should lead to less unnecessary vehicle idling and therefore less harmful emissions.

In addition to enforcement action, new street signage will be designed and provided within the AQMAs to inform the public of the need to switch off their engines. It is hoped that signage together with an increased enforcement presence on the streets will bring about an increased awareness among the general public of the need not to idle vehicles unnecessarily.

Potential for air pollution reduction in the AQMAs

Low

Environmental, Socio-Economic Impact

There is potential for this action to have a small positive impact on greenhouse gasses and other environmental factors such as noise.

No socio-economic impacts anticipated.

B. Emission Testing

(Direct Action)

Action: The Council will continue a programme of roadside emission testing with particular focus on taxis, private hires and buses operating within the City.

Background

Local councils have powers to test the emissions from vehicles on public roads. Where a vehicle fails the test the driver is issued with a fixed penalty notice. If within 28 days the vehicle is repaired and proof of a satisfactory re-test is submitted to the testing authority, the notice is waived.

Over the past 5 years Glasgow has carried out over 14000 tests, mostly on private vehicles, taxis, private hire vehicles and vans. Over 400 vehicles have been found to fail the test resulting in the issue of a fixed penalty notice to the driver. Analysis of the data available indicates that a much higher percentage of taxis and private hire vehicles than privately owned cars are failing the roadside test.

In view of the failure rates for taxis and private hire vehicles and the frequency with which these vehicles operate within the AQMAs, it is considered appropriate to ensure future emission testing is focussed on taxis and private hire vehicles.

At present Glasgow has a team of three daytime staff funded by the Scottish Government to undertake roadside testing of vehicles. Glasgow City Council will purchase additional equipment that will enable Glasgow's taxi enforcement staff to undertake roadside emission testing on taxis and private hire vehicles during the course of their normal operations.

Buses are the main public transport in and around Glasgow. There are approximately 1000 buses operating daily in the Glasgow area under 23 different operators. Due to difficulties associated with stopping and testing buses "in-service" there has been only limited roadside spot checks by the Council.

It is therefore considered necessary that a more proactive approach to testing buses is now developed. Bus emission testing will be combined, where possible, with other enforcement activities to bring about an increase in the number of bus spot checks carried out.

Potential for air pollution reduction in the AQMAs

Low

Environmental, Socio-Economic Impact

There is potential for this action to have a slight positive impact on greenhouse gasses. No socio-economic impacts anticipated.

C. Cleaner Taxis

(Direct Action)

Action: The Council will prepare an emissions strategy to reduce harmful emissions from taxi and private hire vehicles.

Background

In 2008 there were over 1400 taxis and 2700 private hire vehicles registered to operate within Glasgow. Reducing emissions from these vehicles will make an important contribution to improving air quality within the city. A taxi emission strategy could be prepared to tackle emissions from these vehicles by i) raising the emission standard for taxis, ii) increasing the frequency for licensed vehicle emission testing and iii) evaluating ranking facilities within the city.

i) Raising Emission Standards

At present 98% of private hire vehicles meet or exceed Euro III emission standards, while the remaining 2% will be improved under Glasgow City Council licensing restrictions on the maximum vehicle age (7 years).

There are currently no age restrictions on taxis operating in Glasgow. The most recent records indicate that 32% of the taxi fleet fall below Euro III emission standards, indeed some older vehicles may even be pre-Euro I compliant. If all taxis were brought up to a minimum of Euro III emission standard by 2010 emissions would be reduced.

The cheapest current option for reducing emissions from older taxis is to install selective catalytic reduction systems (approx cost £1500). The cost of upgrading the emission standard of taxis would initially fall on the taxi operator, however costs could be recouped by means of an environmental levy on fares. Such a levy would mean the users of taxis would finance the improvement in the fleet and is similar to the system proposed for the London Taxi Emission Strategy.

ii) Increased Frequency of Inspection

Currently emission testing for taxis and private hire vehicles must be carried out at least once a year as part of the Annual Inspection vehicle test. This test is similar to the emissions test carried out as part of an MOT on privately owned vehicles. Vehicles may also be given a spot check at the roadside, (see Action D) however such testing only results in a small percentage of the taxi and private hire fleet being tested more than once a year.

In view of the higher failure rate at roadside tests and the amount of time such vehicles operate within the AQMAs, it is proposed to increase the mandatory emission testing for taxis and private hires to every six months.

iii) Evaluate Ranking Facilities

During the course of the consultation exercise for this action plan concerns were expressed that taxis in Glasgow were circling the city centre unnecessarily due to a shortage of ranking facilities being available. Further study is required to evaluate the provision of taxi ranks.

Potential for air pollution reduction in the AQMAs

Low/Medium

Environmental, Socio-Economic Impact

There is potential for this action to have a neutral impact on greenhouse gasses and other environmental factors such as noise.

Economic impacts may be felt by taxi operators for the additional mandatory testing and also for operators of older non-compliant vehicles. There will also be a financial impact with the environmental levy fare increase.

D. Council Workplace Travel Plan

(Direct Action)

Action: The Council will prepare a Workplace Travel Plan for all employees.

Background

A travel plan is a package of measures produced by employers to encourage staff to use alternatives to single-occupancy car use. Such a plan for example, could include: car sharing schemes, a commitment to improve cycling facilities, a dedicated bus service or restricted car parking allocations. It might also promote flexible-working practices such as home working, flexible hours, remote access and video conferencing.

Travel plans can offer real benefits not only to the organisation and its employees, but also the community that surrounds it. It may help to relieve local parking or congestion problems or improve public transport connections across the area. It may also relieve stress on employees through reducing delays or providing the opportunity to cut their travel commitments by working from home on occasion.

Glasgow City Council as the largest local authority in Scotland employs over 35,000 people located at various premises throughout the city. Employees commute from throughout central Scotland and could benefit from having a Workplace Travel Plan provided for them.

A Workplace Travel Plan may consider, among other options, the possibility of home-working for staff in order that the number of days staff commute can be reduced. The plan should bring about a reduction in the number of private motor vehicles used daily within the city to transport staff to and from work.

Such a travel plan will also allow Glasgow City Council to lead by example and encourage other employers in the city to provide travel plans for their employees.

Potential for air pollution reduction in the AQMAs

Low

Environmental, Socio-Economic Impact

There is potential for this action to have a slight positive impact on greenhouse gasses and other environmental factors such as noise.

Social benefits may include improved work/life balance.

Economic benefits may include transport savings for the Council.

E. Construction sites

(Direct Action)

Action: The Council will target dust and smoke emissions from constructions sites and produce a code of practice for construction/demolition contractors.

Background:

Dust and smoke emissions from construction and demolition sites can cause annoyance and possible nuisance. Such emissions also contribute towards poorer air quality.

There are many simple measures that can be taken to reduce dust emissions e.g. damping down, use of wheel washes etc. Glasgow City Council will produce a Code of Practice that identifies simple measures that can be introduced to reduce dust emissions from construction and demolition activities in Glasgow. Bonfires of waste material on all construction and demolition sites will be restricted and consultation will take place with SEPA and the Considerate Constructors Scheme to investigate the prohibition of site bonfires.

Potential for air pollution reduction in the AQMAs

Low

Environmental, Socio-Economic Impact

There is potential for this action to have a slight positive impact on greenhouse gasses and other environmental factors such as noise.

Socio-economic impacts are not anticipated.

F. Boiler Emissions

(Direct Action)

Action: The Council will raise awareness and provide information to assist in energy efficiency in the home and workplace.

Background:

Although the majority of NO₂ emissions in Glasgow are attributed to road traffic, emissions from domestic and commercial gas boilers also contribute to the total. This may be particularly so in heavily populated areas of tenement housing and commercial properties.

While the use of gas and solid fuel boilers for heat and hot water is a necessity, significant amounts of energy is wasted because the buildings are not suitably insulated and/or old inefficient boilers are in use. Therefore energy efficiency measures have an important role to play in helping to reduce levels of air pollution.

Glasgow City Council is responsible for a large number of buildings such as schools, offices etc. These properties are currently being reviewed as part of Glasgow City Council Carbon Management Plan and have a target of improving efficiency in our properties by 20% in 10 years. In addition to this work the Council will provide information on the web site detailing measures that can be taken to improve energy efficiency in the and wider community.

Potential for air pollution reduction in the AQMAs

Low

Environmental, Socio-Economic Impact

There is potential for this action to have a positive impact on greenhouse gasses. Economic impacts are should be positive by saving money on fuel.

G.Planning Guidance

(Direct Action)

Action: The Council will produce revised planning guidance to improve air quality in the city

Background

Air quality must be a key consideration in the City Council's approach to planning; from local plans to master plans, to prioritising public transport in new developments and promoting modal shift through the investment in public transport infrastructure.

Where major developments are proposed that may affect air quality in the AQMA, developers can be required to submit a detailed air quality assessment. Where assessment identifies a likely negative impact on air quality, the developer must identify adequate mitigation measures.

There may be times when the environmental impact of a development should be controlled, but the desired restrictions go beyond the bounds planning conditions may cover. In this case it is possible to enter a Section 75 Agreement (planning obligation) that can relate to areas outside the application boundary and allow for adverse effects on air quality to be mitigated.

Glasgow City Council will prepare planning guidance on air quality assessments and mitigation measures desirable for improving local air quality.

Potential for air pollution reduction in the AQMA

Medium

Environmental, Socio-Economic Impact

There is potential for this action to have a positive impact on greenhouse gasses and other environmental factors such as noise.

Socio-economic impacts may be positive for Section 75 agreements.

H. Leading by Example

(Direct Action)

Action: The Council will demonstrate best practice in the operation of its vehicle fleet.

Background

Glasgow City Council operates a fleet of over 2000 vehicles within the city. It is therefore essential that the Council takes steps to cut harmful emissions from its own fleet where possible.

Present policy within the Council is to ensure that only the most efficient and least polluting (highest Euro category) vehicles are purchased/leased. This policy has already seen the Council take delivery of a fleet of Volkswagen Bluemotion vehicles with highly efficient engines and with the lowest emission levels in its class. In 2009 the Council will also introduce a number of electric vehicles for use in Council business with a view to expanding the number if they prove to be effective. The use of modern low emission vehicles is, however, only part of the solution.

Any vehicle used inefficiently will massively reduce the potential benefits to be gained by using modern Euro IV or V engines. It is therefore important that vehicles used are the most suitable for the job, that they are properly maintained and that they are driven in an efficient manner.

Glasgow City Council will therefore ensure that replacement vehicles are environmentally assessed for purpose in order that smaller more efficient replacements are obtained where possible.

All Council vehicles are regularly serviced and daily checks are carried out and recorded to ensure vehicles are operating safely. These daily checks include measures such as checking correct tyre pressure which also impact on fuel efficiency.

Drivers of Council vehicles have already been instructed not to idle vehicles unnecessarily however further instruction will be issued to drivers to ensure they use their vehicles efficiently. Simple efficient driving styles such as avoiding over accelerating and then braking heavily can make a huge difference to fuel efficiency, as can reducing speed (e.g. 60mph as opposed to 70 mph). A more efficient driving style means less fuel consumption and therefore less harmful emissions and can be easily supervised by monitoring individual driver fuel use.

Council Services will aim to use vehicles with the best emission standards in the fleet within the AQMAs.

Potential for air pollution reduction in the AQMAs

Low

Environmental, Socio-Economic Impact

There is potential for this action to have a slight positive impact on greenhouse gasses and other environmental factors such as noise.

Economic impacts for the Council should be positive in the long term by saving on fuel costs.

I. Air Quality Information

(Direct Action)

Action: The Council will provide data and information regarding current and longer term air quality monitoring within Glasgow on our web site and at Variable Message Signs throughout the city.

Background

The availability of local air quality information can be important for people affected by asthma and other health problems. During times of elevated pollution levels such people can take suitable precautions to try and minimise exposure to the pollutants; however they can only do this if they know what the current pollution levels are.

Glasgow City Council will update the web site to ensure that information about current air quality within Glasgow is readily available.

The Council also operate a network of variable message signals (VMS) throughout the city. These boards can also be used to display real-time pollution levels being recorded in the city. By targeting pollution level messages to drivers, awareness will be raised and it may help to bring about a change in commuter transport.

Potential for air pollution reduction in the AQMAs

Low

Environmental, Socio-Economic Impact

This action is not predicted to impact on greenhouse gasses and other environmental factors such as noise.

Socio-economic impacts are expected to be positive.

J. Car Clubs

(Direct Action)

Action: The Council will make on-road spaces available for car club vehicles.

Background

A car club provides its members with quick and easy access to a car for short term hire. Members can make use of the car club vehicles as and when they need them.

Research in the UK and overseas has found significant changes in travel behaviour once the link between car use and car ownership is broken. Car club members typically drive less and make more use of public transport, cycling and walking.

With each car club vehicle typically replacing up to 6 privately owned cars, the air quality and environmental benefit seems obvious, however other benefits will include less congested roads, fewer accidents and tackling social exclusion and obesity.

While unable to fund and operate a car club scheme of its own the Council will encourage and support employers and other organisations wishing to establish Car Clubs.

Potential for air pollution reduction in the AQMAs

Low

Environmental, Socio-Economic Impact

A neutral impact on greenhouse gasses and other environmental factors such as noise is predicted.

Social impacts (inclusion) may be positive by providing access to a car and therefore a greater choice of transport options.

Economic impacts for car owners may be positive if the clubs mean they no longer need to keep their own vehicle.

K. Low Emission Zones

(Action to Investigate)

Action: The Council will undertake a detailed feasibility study with a view to introducing LEZs in Glasgow.

Background

A Low Emission Zone is a geographically defined area where operators of vehicles not meeting an agreed emission standard can be required to pay a daily charge to enter the LEZ or are fined. The aim of the LEZ is that fleet operators either replace or improve some of the heaviest polluting vehicles operating within the LEZ area.

Over 70 cities and towns in eight countries around Europe have, or are preparing LEZs as a means of controlling vehicle emissions in city centres and urban areas. London established the UK's first LEZ, effective from February 2008. In Glasgow, where there are similar problems with road traffic emissions, the Council have already undertaken to declare LEZs at a number of locations within the city for the 2014 Commonwealth Games.

In 2007 Glasgow City Council contracted Hyder Consulting to study options to reduce air pollution from road traffic in the city (see appendix D). The study compared the following three scenarios

- the introduction of a LEZ.
- 10% reduction in the number of Heavy Goods Vehicles (including buses) on the roads.
- 50% reduction in the number of Heavy Goods Vehicles (including buses) on the roads.

The result of the exercise indicated that a LEZ would be the most effective option in terms of bringing about a reduction in NO₂.

It is recognised that within certain areas of the city new bus Quality Partnership Schemes (QPS) are under development and will lead to a reduction in bus emissions on certain routes. It is anticipated that any vehicle meeting the requirement for the QPS would also be LEZ compliant.

The costs for Glasgow City Council to administer a LEZ and for the operators of older “non-compliant” vehicles may be significant; therefore Glasgow City Council will undertake a detailed study into the feasibility of LEZ options. The study will be undertaken in consultation with key stakeholders and will ascertain the potential benefits to air quality and the likely costs for both businesses and for the Council administration of such a scheme.

Potential for air pollution reduction in the AQMAs

Medium

Environmental, Socio-Economic Impact

There is likely to be an overall neutral impact on greenhouse gasses and other environmental factors such as noise in the AQMAs and wider areas.

Economic impacts may be felt by businesses requiring to replace or upgrade vehicles to become LEZ compliant.

L. Promote Greener Vehicles

(Action to Investigate)

Action: The Council will investigate the potential for reduced rate street parking for electric and hybrid vehicles.

Background

Electric, hybrid and other low polluting private vehicles (including LPG powered vehicles) are widely recognised to have an important role to play in reducing harmful road traffic emissions. Indeed when powered by their electric motors such vehicles produce no combustion gasses and therefore no exhaust emissions.

Electric and hybrid vehicles currently make up only a very small percentage (less than 0.4 %♦) of the vehicles travelling in the city. Glasgow City Council is keen to encourage the use of such vehicles which also produce less of the greenhouse gas CO₂. The provision of differential parking charges based on emission levels is one way in which the Council could offer incentives for the uptake of such vehicles.

Potential for air pollution reduction in the AQMAs

Low

Environmental, Socio-Economic Impact

There is potential for this action to have a positive impact on greenhouse gasses and other environmental factors such as noise.

Socio-economic impacts are not anticipated.

♦ The UK Automotive Sector Sustainability – Eighth Annual Report, 2007. The Society of Motor Manufacturers and Traders (SMMT)

M. Fire Reduction

(Action to Investigate)

Action: The Council will investigate multi-agency strategic level actions aimed at reducing the number of fires and harmful emissions.

Background

Glasgow has historically suffered higher levels of accidental and non-accidental fires than comparable cities♦, consequently the effect of fire upon the environment and in particular on air quality is higher than elsewhere.

There are on average of 8,500 fires each year in Glasgow requiring an emergency fire attendance, together with several thousand unreported bonfires and small fires. Around 40% of all primary fires within Glasgow (those involving occupied buildings/properties/vehicles) are non accidental and over 90% of all secondary fires (those involving rubbish/refuse, skips/refuse containers, trees/grass, derelict buildings and abandoned vehicles etc) are a direct result of deliberate fire setting.

Traditionally Glasgow City Council, like many other local authorities, has used nuisance legislation to deal with problem smoke from fires where possible, however the Antisocial Behaviour (Scotland) Act 2004 and the Waste Scotland Regulations 2005 now allow for a more proactive use of recent legislation.

Strategic level actions combined across multiple agencies such as the restriction on the sale of matches and lighters to children and media campaigns could lead to fewer fires and therefore bring about a reduction in air pollution.

Potential for air pollution reduction in the AQMAs

Low

♦ Strathclyde Fire and Rescue 2008

Environmental, Socio-Economic Impact

There is potential for this action to have a long term positive impact on greenhouse gasses and other environmental factors such as noise.

Social impacts of fewer fires would be positive in terms of reducing accidents and helping address environmental incivility.

Economic impacts could be positive through less property damage through fire.

N. Tree Planting

(Action to Investigate)

Action: The Council will investigate the potential for a programme of tree planting as a means of City Centre PM₁₀ reduction.

Background

There is some evidence to support a programme of tree planting as a measure to bring about a reduction in levels of PM₁₀.

Trees can be effective scavengers of both gaseous and particulate matter depending on the percentage tree cover in an area, the species of tree and whether or not they are in-leaf. A study in 2007♦ suggested that a reduction in PM₁₀ levels in Glasgow may be possible if trees are planted in identified available areas. The actual PM₁₀ reduction possible in the city centre AQMA will be dependent on where and in what numbers trees can be planted and further study will be required.

Tree planting could also provide climate change benefits by offsetting some greenhouse gas emissions in the city.

Potential for air pollution reduction in the AQMAs

Low

Environmental, Socio-Economic Impact

There is potential for this action to have a positive impact on greenhouse gasses and biodiversity.

Social impacts of tree planting may be positive by way of contribution to the city landscape.

Economic impacts are not expected.

♦ Bealey, W.J. et al., 2007 Journal of Environmental Management 85, 44-58

O. Public Service Vehicles

(Action to Request)

Action: The Council will pursue the use of traffic regulation conditions to control bus emissions within AQMAs.

Background

Buses are the most frequently used public transport option for local journeys in the Greater Glasgow area with bus passengers accounting for around 22% of journeys into and around the city. The bus services are operated by a number of different companies using vehicles of varying types and Euro emission categories. The overall contribution to road traffic emission NO₂ and PM₁₀ levels within the AQMAs from buses will be significant.

Strathclyde Partnership for Transport (SPT) are undertaking a Bus Scoping Study to look into bus services in Glasgow and as part of that analysis will be considering the implications of this AQAP. In addition Glasgow City Council is developing a bus Quality Partnership Scheme with companies operating in the city, however, approximately 85% of the current bus fleet remain below Euro 3 standard♦.

Recent legislation, (The Public Service Vehicles (Traffic Regulation Conditions) Amendment (Scotland) Regulations 2007) has allowed Traffic Commissioners to regulate the emission levels of vehicles used in local bus services.

The use of traffic regulation conditions (TRCs) to control bus emissions within AQMAs will therefore be investigated. The investigation will consider the use of TRCs as means of controlling bus emissions in a LEZ action, and separately as a stand alone option.

Where the investigation concludes that TRCs would be beneficial to air quality the Council may request that the Traffic Commissioners include the condition on operator licenses.

♦ Strathclyde Partnership for Transport

Potential for air pollution reduction in the AQMAs

Medium

Environmental, Socio-Economic Impact

There is likely to be an overall neutral impact on greenhouse gasses and other environmental factors such as noise.

Economic impacts may be felt by bus operators requiring to replace/upgrade older vehicles, however in the longer term, newer, less polluting public service vehicles may lead to increased patronage and associated revenue.

14 Actions Not Proceeded With.

14.1 Road User Charging (Congestion Charging)

Road user charging is a concept that allows local authorities to require certain road users to pay to enter certain highly congested roads with the aim of promoting the use of transport options other than private cars. Although the main aim of such schemes is to reduce congestion, the overall effect should be that less vehicles use the roads that are affected by the charge, leading to fewer emissions and improved air quality.

The City Council's view is that control over the availability and cost of car parking is a more appropriate form of road user charging for urban areas. This is discussed in detail in the Local Transport Strategy 2007 (LTS2007). There is no reason to believe that the factors considered before coming to the conclusions within the LTS 2007 have changed to a degree that would justify reconsidering congestion charging as an option.

Road User Charging was therefore discounted at the steering group stage and not taken forward for public consultation.

14.2 Car Sharing Schemes

The term 'car share' refers to the practice of more than one person driving together rather than driving alone. It is also known as "lift sharing", "ride sharing", "drive sharing" and "carpooling". The person getting the lift gives the driver a cash contribution towards the fuel costs, so both of them save money. The amount of money that changes hands is up to the parties concerned, but the driver is not participating on a "for profit" basis.

Where more than one car driver elects to car share rather than use their cars individually there are potential environmental benefits with regard to congestion and air quality.

On considering the matter the steering group agreed that, although such a scheme would bring environmental benefits, administering a city wide scheme for the public would be costly and fraught with personal safety and liability concerns and was therefore not taken forward for public consultation.

Location specific schemes, such as those related to a workplace or a grouping of workplaces (e.g. a business park) continue to be encouraged. These location specific schemes may be voluntary (promoted by SPT), or a requirement through the planning process.

Car sharing by Council employees will be considered separately in the City Council Workplace Travel Plan.

14.3 Parking Levies

Glasgow City Council has introduced controlled parking across the entire city centre and west to Kelvingrove Park with the aim of reducing traffic volumes by increasing the use of public transport and non-motorised transport.

If parking control is to be successful in reducing traffic flows, measures may need to be put in place to enable greater local authority control of the availability and cost of car parking than is currently the case. One of the ways this can be done is for local authorities to influence the charging regimes of privately operated public car parks (including those currently operated without charges at superstores, retail parks etc.) and to influence the provision and use of non-residential private parking spaces at existing developments.

On review of the feedback from the consultation undertaken on an earlier draft of this action plan it was concluded by the steering group that this action would not be taken further within the Action Plan. The action was the least supported by both the public and stakeholder responses and was not reasoned to be likely to lead to an improvement in air quality within the AQMAs.

15 Conclusions

This air quality action plan represents what Glasgow City Council believe to be the best way forward in tackling air pollution in the city. Measures presented within the plan include direct actions (e.g. Vehicle Idling Enforcement, Planning Guidance, Leading by Example) actions the council will investigate further (e.g. Low Emission Zones, Tree Planting) and actions the council will take to persuade others to take action (e.g. Public Service Vehicles).

It will be essential that the implementation of this action plan is closely monitored alongside the improvement in air quality. Glasgow City Council's Environmental Health professionals will take the lead role in monitoring the implementation of the Action Plan and will report annually on the progress of implementation.

Finally, it should be noted that there is no legal requirement for Local Authorities to achieve the national air quality objectives within their area. The trans-boundary nature of air pollution and other factors not under local authority control mean that there is no certainty that measures proposed within local authority air quality action plans will reduce pollution levels by the required amount. Local authorities are, however, legally required to identify measures that can reduce air pollution with the aim of achieving the objective levels and we believe this plan delivers that requirement.

16. Summary of Actions Table

Action	Timescale	Cost to Council Low < £50K Medium £50 K- £500K High > £500K	Air Quality Benefit Low/Medium/High For PM ₁₀ & NO ₂ (either combined or individually)	Socio-economic impact	Environmental Impacts	Source of Funding
Direct Actions						
A. Idling Vehicles	Current	Low	Low	Neutral	Positive	Council shared with Scottish Government
B. Emission Testing	Current	Medium (including purchase of new equipment)	Low	Neutral	Positive	Council shared with Scottish Government
C. Cleaner Taxis	Short Term	Low	Low	Negative	Neutral	Council (Note: initial cost to taxi operators to be recouped from hire levy)
D. Council Travel Plan	Short Term	Low	Low	Positive	Positive	Council
E. Construction Sites	Short Term	Low	Low	Neutral	Positive	Council
F. Boiler Emissions	Short Term	Low	Low	Positive	Positive	Council
G. Planning Guidance	Short Term	Low	Low to Medium	Positive	Positive	Council
H. Leading by Example	Medium Term	Medium	Low (Medium if encourages others)	Positive	Positive	Council
I. Air Quality Information	Short Term	Medium	Low	Positive	Neutral	Council
J. Car Clubs	Short Term	Low	Low	Positive	Neutral	Council
Actions to Investigate						
K. Low Emission Zones (i) Feasibility Study (ii) LEZ implementation	(i) Short Term (ii) Medium Term	(i) Low (ii) High	(i) N/A (ii) High	Negative	Neutral	(i) Council + Scottish Government (ii) Council, + Scottish Government (Note: cost to bus operators, haulage companies may be high)
L. Promote Greener Vehicles	Medium Term	Medium	Low	Neutral	Positive	Council
M. Fire Reduction	Medium Term	Low	Low	Positive	Positive	Council + Strathclyde F&R
N. Tree Planting	Short Term (feasibility study) Long Term (tree planting)	Low (feasibility study) High (tree planting programme)	Low	Positive	Positive	Council (possible grants available)
Lobby For Action						
O. Public Service Vehicles	Medium Term	Low	Medium	Neutral	Neutral	Council (Note: cost to bus operators may be high)

Appendix A

Air Quality Management Areas



Glasgow City Council

Environment Act 1995 Part IV Section 83(1)

The City of Glasgow Parkhead Cross Air Quality Management Area Order 2007

Glasgow City Council, in exercise of the powers conferred upon it by Section 83(1) of the Environment Act 1995, hereby makes the following Order:

1. This Order may be cited as the City of Glasgow Parkhead Cross Air Quality Management Area Order 2007 and shall come into effect on **1st July 2007**;
2. The area outlined on the plan annexed to this Order and sealed with the Common Seal of the Council is declared to be an Air Quality Management Area ("the designated area"). The map can be viewed at the offices of the Council at 231 George Street, Glasgow G1 1RX;
3. This Order may be varied or revoked by a subsequent Order;
4. A written action plan will be prepared in order to pursue the achievement of air quality standards and objectives in the designated area. The written action plan shall include a timetable for the Council's implementation of each of the proposed measures identified;
5. The Council may revise the action plan from time to time.

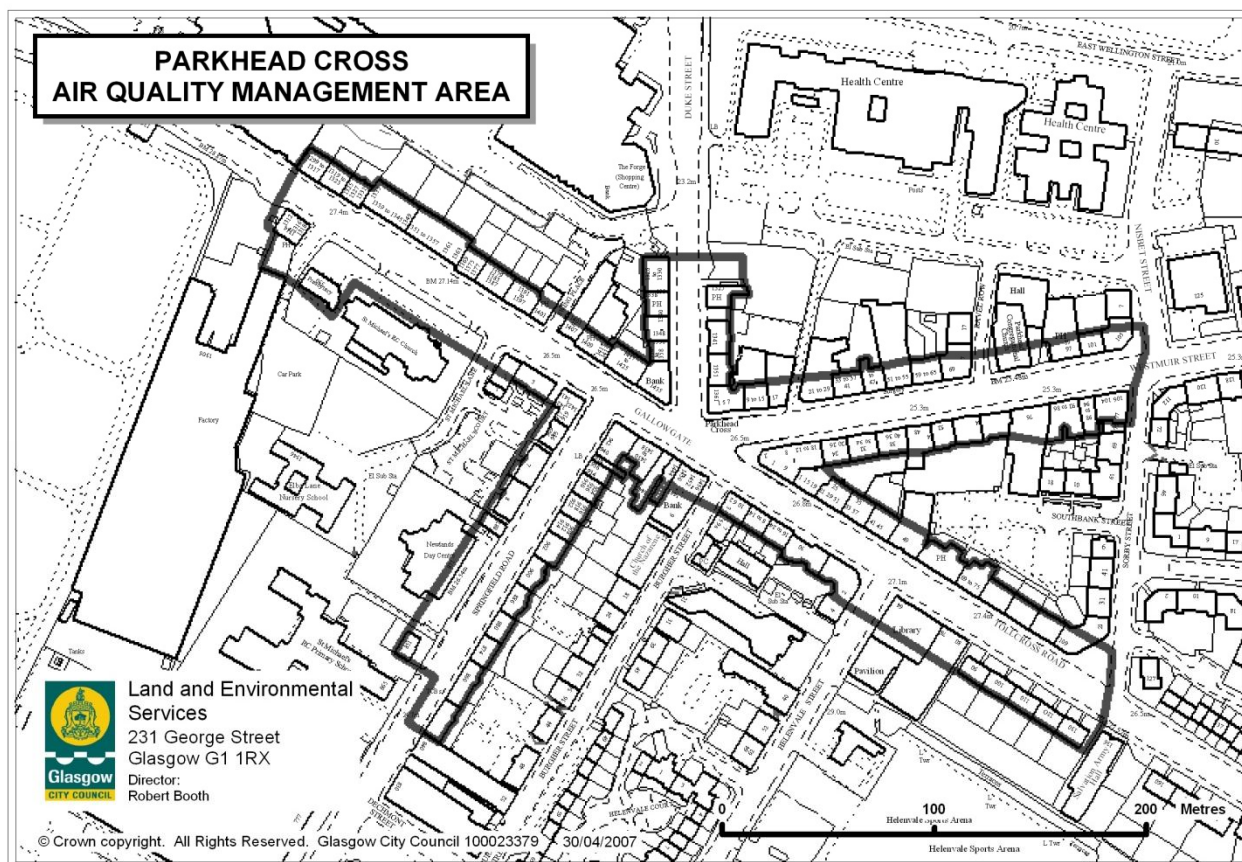
Sealed with the Common Seal of the Council and signed by

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on behalf of the Council this day of

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**Annex to the City of Glasgow Parkhead Cross Air Quality Management Area
Order 2007**



The area shown on the attached map is to be designated as an Air Quality Management Area. The designated area incorporates Parkhead Cross and including (the full widths of) surrounding streets;

Approximately 200 metres east of Parkhead Cross on the Gallowgate;
Northwards from Parkhead Cross along Duke Street terminating prior to the Forge Shopping Centre;
North-eastwards from Parkhead Cross, following Westmuir Street until the junction with Nisbet Street;
South-eastwards from Parkhead Cross along Tollcross Road until the junction with Sorby Street;
Incorporating Springfield Road approximately 180 metres south of Parkhead Cross.

This Area is designated in relation to a likely breach of the **nitrogen dioxide (annual mean) objective** as specified in the Air Quality (Scotland) Regulations 2000.

This Order shall remain in force until it is varied or revoked by a subsequent order.

Sealed with the Common Seal of the Council and signed by

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on behalf of the Council this day of



Glasgow City Council

Environment Act 1995 Part IV Section 83(1)

The City of Glasgow Byres Road/Dumbarton Road Air Quality Management Area Order 2007

Glasgow City Council, in exercise of the powers conferred upon it by Section 83(1) of the Environment Act 1995, hereby makes the following Order:

6. This Order may be cited as the City of Glasgow Byres Road/Dumbarton Road Air Quality Management Area Order 2007 and shall come into effect on **1st July 2007**;
7. The area outlined on the plan annexed to this Order and sealed with the Common Seal of the Council is declared to be an Air Quality Management Area (“the designated area”). The map can be viewed at the offices of the Council at 231 George Street, Glasgow G1 1RX;
8. This Order may be varied or revoked by a subsequent Order;
9. A written action plan will be prepared in order to pursue the achievement of air quality standards and objectives in the designated area. The written action plan shall include a timetable for the Council’s implementation of each of the proposed measures identified;
10. The Council may revise the action plan from time to time.

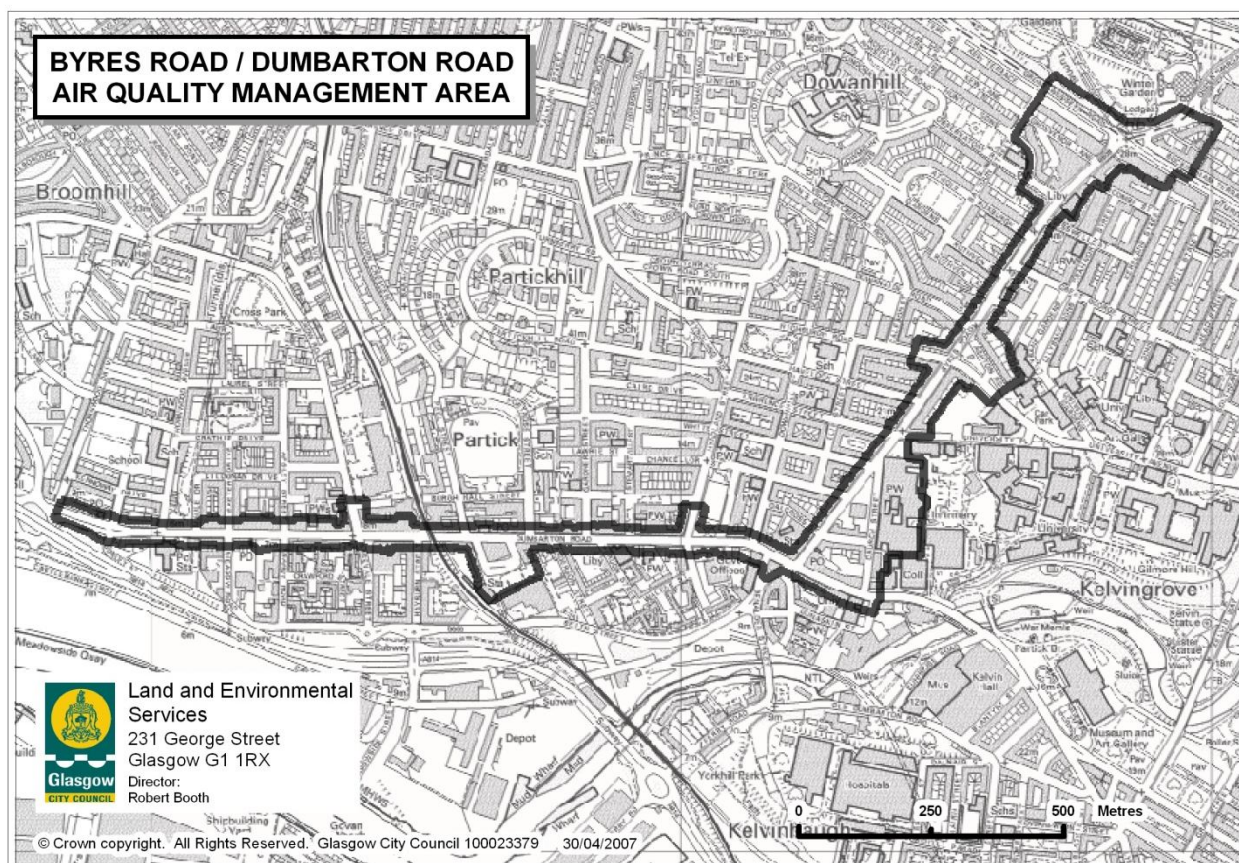
Sealed with the Common Seal of the Council and signed by

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on behalf of the Council this day of

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**Annex to the City of Glasgow Byres Road/Dumbarton Road Air Quality
Management Area Order 2007**



The area shown on the attached map is to be designated as an Air Quality Management Area. The designated area incorporates the following area (including the full widths of the streets);

South of Thornwood Drive, incorporating the full width (and first line of buildings to the North and South) of Dumbarton Road;
Eastwards along Dumbarton Road incorporating Crow Road to the junction with Norval Street;
Eastwards along Dumbarton Road incorporating Partick Bus Station at Merkland Street and Vine Street;
Continuing eastwards along Dumbarton Road incorporating Hyndland Street to the junction with Fordyce Street;
Continuing eastwards incorporating the triangle junction with Benalder Street;
Continuing eastwards to the junction of Dumbarton Road with Dunaskin Street;
Northwards from Dunaskin Street heading towards Byres Road, incorporating the hospital buildings fronting Church Street;
Continuing north along Byres Road (including line of buildings east and west of the Road) incorporating the junction of Byres Road with Highburgh Road to junction with Caledon Lane;

And incorporating the junction of Byres Road with University Avenue (including Ashton Road), along Ashton Lane and joining back to Byres Road;
Continuing northwards along Byres Road and incorporating the following area;
Along Observatory Road to Grosvenor Crescent;
Along Grosvenor Crescent to Saltoun Street;
Saltoun Street from Grosvenor Crescent north-eastward to Great Western Road;
Incorporating Great Western Road south-eastwards to the junction with Queen Margaret Drive;
Queen Margaret Drive from the junction with Great Western Road north-eastward to the roundabout adjacent to Hamilton Drive;
Eastwards along Hamilton Drive to the junction with Buckingham Street
South- westward along Buckingham Street to Great Western Road;
Continuing westwards to Kersland Street, then southwards to the junction of Kersland Street with Sandringham Lane;
Westwards along the projected line of Sandringham Lane joining back to Byres Road.

This Area is designated in relation to a likely breach of the **nitrogen dioxide (annual mean) objective** as specified in the Air Quality (Scotland) Regulations 2000.

This Order shall remain in force until it is varied or revoked by a subsequent order.

Sealed with the Common Seal of the Council and signed by

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on behalf of the Council this day of

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Glasgow City Council

Environment Act 1995 Part IV Section 83(1)

The City of Glasgow City Centre Air Quality Management Area Amendment Order 2007

Glasgow City Council, in exercise of the powers conferred upon it by Section 83(1) of the Environment Act 1995, hereby makes the following Order:

11. This Order may be cited as the City of Glasgow City Centre Air Quality Management Area Amendment Order 2007 and shall come into effect on **1st July 2007**;
12. This Order amends the City of Glasgow Air Quality Management Area Order 2001, which originally designated Glasgow City Centre as an Air Quality Management Area;
13. The area outlined on the plan annexed to this Order and sealed with the Common Seal of the Council is declared to be an Air Quality Management Area ("the designated area"). The map can be viewed at the offices of the Council at 231 George Street, Glasgow G1 1RX;
14. This Order may be varied or revoked by a subsequent Order;
15. A written action plan will be prepared in order to pursue the achievement of air quality standards and objectives in the designated area. The written action plan shall include a timetable for the Council's implementation of each of the proposed measures identified;
16. The Council may revise the action plan from time to time.

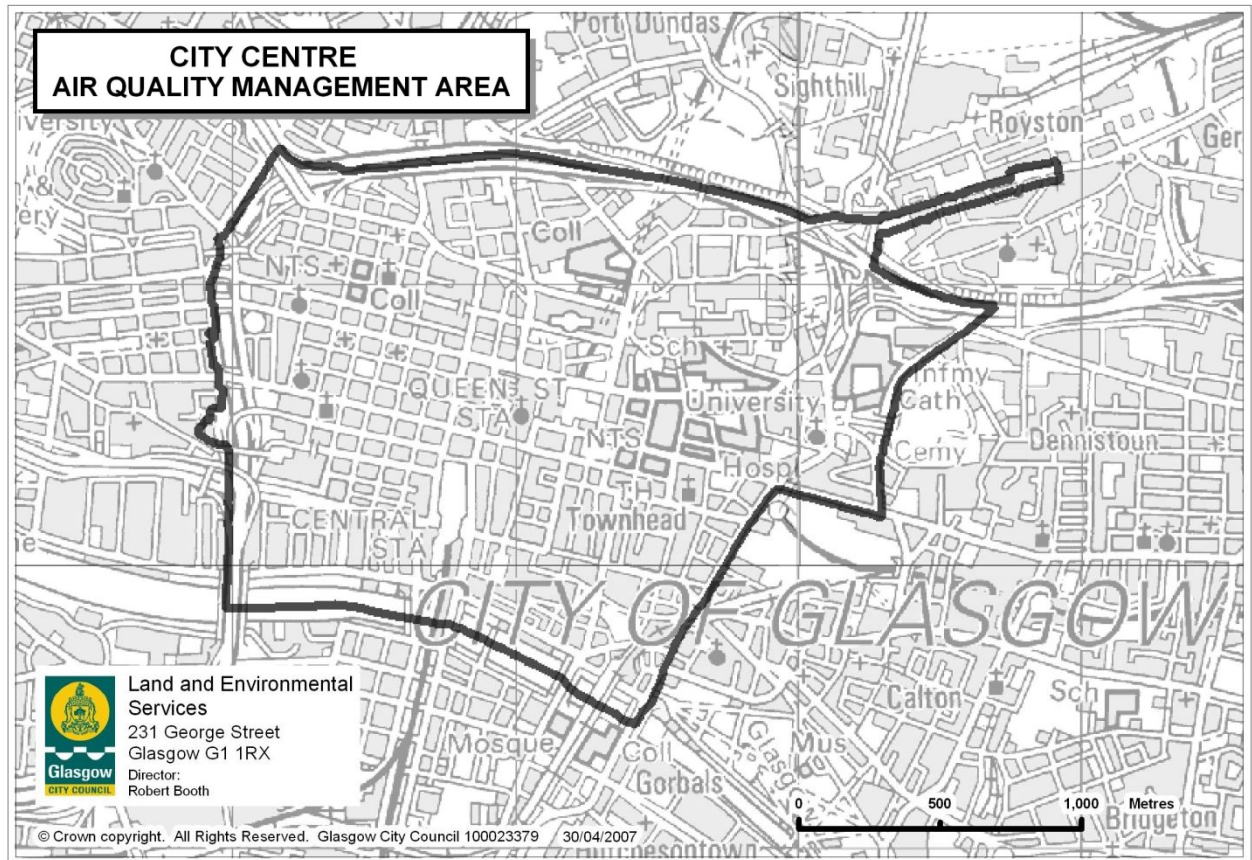
Sealed with the Common Seal of the Council and signed by

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on behalf of the Council this day of

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**Annex to The City of Glasgow City Centre Air Quality Management Area
Amendment Order 2007**



The area shown on the attached map is to be designated as an Air Quality Management Area. The designated area incorporates;

Kingston Bridge/M8 Motorway, from the centreline of the River Clyde to the junction of Piccadilly Street and North Street;

The full width of North Street (incorporating the line of buildings on the western side of the street including St. Patrick's Primary School) from the junction with Piccadilly Street to Woodlands Road;

Saint George's Road from Woodlands to Phoenix road;

Phoenix Road, from Saint George's Road to the M8 Motorway;

M8 Motorway from Phoenix Road to Baird Street;

Baird Street, from M8 Motorway eastwards incorporating full width of Royston Road (including buildings north and south of Royston Road) to the junction with Garnock Street;

Royston Road westwards from the junction with Garnock Street to the junction with Castle Street;

Castle Street from Baird Street to M8 on-ramp;

M8 Motorway (including on-ramp), from Castle Street to the projected line of the southeast side of Wishart Street;

Southeast side of Wishart Street, from the M8 Motorway to Alexandra Parade;

Wishart Street, from Alexandra parade to Lady well Street;

John Knox Street, from Ladywell Street to Duke Street;

Duke Street, from John Knox Street to High Street;
High Street from Duke Street to Trongate;
Saltmarket, from Trongate to Clyde Street;
Albert Bridge, from Clyde Street to the Centreline of the River Clyde;
The centreline of the River Clyde from Albert Bridge to the Kingston Bridge/M8
Motorway.

This Area is designated in relation to a likely breach of the **nitrogen dioxide (annual mean) objective** and the **particles PM₁₀ (annual mean) objective** as specified in the Air Quality (Scotland) Regulations 2000.

This Order shall remain in force until it is varied or revoked by a subsequent order.

Sealed with the Common Seal of the Council and signed by

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on behalf of the Council this day of

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Appendix B

Local Transport Strategy Actions

Glasgow's Local Transport Strategy (LTS)

Actions

LTS Reference Number	Action
SIA1	Develop a methodology for assessing the social inclusion impact of major transportation projects by the end of 2008.
SIA2	Encourage, through the Regional Transport Partnership the provision of appropriate subsidised bus services between residential areas and areas of employment, health care and training.
SIA3	Encourage, through the Regional Transport Partnership, public transport timetabling to reflect multi modal trips and shift working.
SIA4	Provide transport services to take school children to parks and leisure facilities through the 'Class Connections' project and children and adults with special needs to education and work scheme initiatives.
SIA5	Develop accessibility planning as a tool by 2008, including the development and use of the latest accessibility modelling software.
MDA1	Upgrade pedestrian dropped kerb facilities to incorporate designs sympathetic to the needs of people with disabilities and older people, including those that are blind and partially sighted.
MDA2	Provide textured paving at all controlled pedestrian crossing points at new and major upgraded schemes.
MDA3	Seek funding to expand the introduction of real time audio timetable information at bus stops.
MDA4	Continue to provide the M.I.D.A.S. drivers and P.A.T.S escorts training schemes.
MDA5	Ensure that parking schemes accommodate the needs of disabled people.
MDA6	In roads where parking is not statutorily controlled, provide advisory disabled parking bays subject to approved criteria.
MDA7	Encourage bus operators to introduce low floor accessible buses on Streamline and other routes via Quality Partnerships.

MDA8	Ensure that new transport infrastructure incorporates facilities for blind and partially sighted people
MDA9	Support the SPT in the promotion of 'Dial-a-Bus'.
MDA10	Include groups representing people with disabilities in consultations undertaken by the Council
W1A	Ensure consideration is given to the needs of women in the promotion of transport services and infrastructure.
EMA1	Support, through the Regional Transport Partnership, schemes to provide appropriate timetable translations.
EMA2	Support the Council's Race Equality Scheme 2005-08 by including, where appropriate, translations of Council transportation documents in different community languages.
EMA3	Engage with ethnic minority press for consultation.
OAA1	Encourage bus companies in the training of bus drivers in order to improve customer care in relation to young people.
OAA2	Develop the Young Scot card scheme so that it can be utilised in the proposed young person concessionary fare scheme.
CTA1	Investigate how the use of existing resources, with regard to special needs transport, could be better utilised to enhance community transport throughout the City.
CTA2	Continue to monitor the funding and operation of Community Transport Glasgow.
CTA3	Seek additional funding to expand the Community Transport operation within Glasgow.
PTA1	Lobby the Scottish Executive, directly and through the Regional Transport Partnership, for greater regulation of bus services.
PTA2	Lobby through the Regional Transport Partnership for the extension of operating hours of the Subway system.
PTA3	Assess suitable routes or areas for establishing Statutory Quality Partnership Schemes or Quality Contracts by March 2008.
PTA4	Review camera enforcement for bus lane violation and seek regulation to enable enforcement to take place (decision by 2008).
PTA5	Seek funding for the extension of the Bus Priority and Real Time Information system.

PTA6	Review existing Streamline routes by 2008 and seek funding for additional Streamline Routes.
PTA7	Investigate opportunities to assist commuter and express bus services including those that use the motorway network.
PTA8	Work with agencies to facilitate the introduction of LRT, BRT, Crossrail and the Glasgow Airport Rail Link.
PTA9	Introduce bus stop clearways to prevent waiting and loading by other vehicles at bus stops as appropriate on Streamline corridors and review requirements elsewhere.
PTA10	Review the need for further upgrading of bus stops to provide improved access and timetable displays and the installation of quality bus shelters.
PTA11	Promote the introduction of a Bus Rapid Transit System (Clyde Fastlink) to serve the development areas of the North Clyde Corridor between the City Centre and Glasgow Harbour by 2009 and undertake further development work on Phases 2 and 3 to Clydebank and Renfrew riverside.
PTA12	Undertake further investigation into the possibility of providing a transport link from Kelvingrove Art Gallery to the new Riverside Transport Museum.
PTA13	Work with the Regional Transport Partnership towards the delivery of railway stations at Parkhead Forge, Millerston and Jordanhill West and an upgrade of Dalmarnock Station.
PTA14	Lobby to secure additional stations at Blochairn/Garngard, Bogleshole, Drumchapel (west), Germiston, Ibrox, Robroyston, Glasgow Cross and the Crossrail stations of the Gorbals, High Street (relocation) and West Street.
PTA15	Work with SPT to ensure that proposals resulting from SPT Study into public transport and the future of the subway meet the needs of the City.
PTA16	Support proposals for high speed rail links to Edinburgh and English cities.
PTA17	Prepare a request to the Traffic Commissioner to include a traffic regulation condition in bus operator licences which will include for bus layover restrictions and ensuring only allocated bus stops are used in the City Centre.
PTA18	Seek changes in legislation to allow the Council to enforce yellow box

	road markings.
PTA19	Support SPT in the on-going conurbation study.
PRA1	Work with the Regional Transport Partnership to identify appropriate locations for the expansion of existing Park and Ride sites and the provision of new Park and Ride sites.
WPA1	Liaise with the Regional Transport Partnership and Scottish Executive, to integrate walking with public transport and as an important means of transport in its own right.
WPA2	Seek funding to extend and improve infrastructure facilities for pedestrians.
WPA3	Provide where appropriate 'green aspect' pedestrian crossing facilities where appropriate and minimise wait time for pedestrians.
WPA5	Publish, promote and distribute promotional material, such as the 'Fit for Life' leaflet
WPA6	Review and update the pedestrian signage within the City Centre and in the West End to include the display of estimated journey time on foot as well as distance to destination.
WPA7	Provide directional signage with times and distances to destinations, city wide for paths by 2010.
WPA8	Develop a Core Path Plan for Glasgow and review the Glasgow Outdoor Access and Walking Strategy by 2008.
WPA9	Continue to promote the Scottish Outdoor Access Code by leaflets via the park ranger service.
WPA10	Continue to facilitate/host the Glasgow Outdoor Access Forum.
WPA11	Ensure that vegetation is sympathetically maintained such that it does not obstruct paths or reduce passive surveillance from surrounding buildings and roads.
WPA12	Complete 11 path network feasibility studies by 2011.
WPA13	Seek to implement 4 projects per annum arising from feasibility studies following the completion of the Core Path Plan.
WPA14	Develop a Paths to Health Action Plan and 12 local projects City (Health Walks Initiatives) by 2007.
WPA15	Prepare and publish streetscape design guides by 2008 for the

	materials and infrastructure used when constructing walking schemes to create a high quality walking environment.
CPA1	Review the cycle strategy by September 2008, including developing an action plan for increasing cycling in Glasgow.
CPA2	Develop a monitoring strategy for cycling by September 2007.
CPA3	Promote , through the Regional Transport Partnership and Scottish Executive, the integration of cycling with public transport.
CPA4	Exempt cyclists from road closures, one-way streets and banned turns where appropriate to minimise the impact of traffic management proposals on accessibility for cyclists.
CPA5	Identify and promote strategic long distance cycle routes in liaison with adjacent Councils and the Regional Transport Partnership.
CPA6	Review progress and bring forward proposals for the City Centre network linking to the National Cycle Routes by 2007.
CPA7	Allow bicycles to use bus lanes as they are implemented.
CPA8	Continue to ensure wherever possible that bus lanes are of adequate width to allow cyclists to use them safely.
CPA9	Review, improve and expand the network of cycle routes in Glasgow.
CPA10	Increase by 100 per annum for the next three years the number of 'Sheffield' cycle parking racks available to schools and on-road.
CPA11	Review the school Bicycle Loan Scheme by the end of 2007.
CPA12	Investigate with appropriate agencies the need for funding for a regional cycling coach based at Bellahouston Cycling Activity Centre.
CPA13	Continue to work with partners to develop and enhance cycle training throughout the city.
CPA14	Provide and continue to promote the Council's employee cycle mileage rate
CPA15	Hold and support events to promote cycling as an active and environmentally friendly form of transport.
CPA16	Undertake a scoping study of cycling issues in Glasgow and market research to identify the barriers to cycling and potential triggers to increase cycling by March 2008.

CPA17	Investigate the potential for additional pedestrian/cycle bridges across the River Clyde between George V Bridge and the Clyde Tunnel.
CPA18	Develop, in partnership with other bodies, the provision and distribution of cycle route maps.
CPA19	Make available via the Council's website details of cycle routes, events etc.
CPA20	Seek funding for an award scheme to recognise organisations which establish best practice in effective cycling initiatives by 2008.
CPA21	Develop proposals for a mountain bike circuit at Cathkin Braes by September 2007 and seek funding for implementation.
PA22	Develop a lighting strategy for cycle paths by July 2008.
TXA1	When designing taxi ranks ensure where possible that provision is made for access by disabled people.
TXA2	Assess on an annual basis the unmet demand for taxis and utilise the results in setting a ceiling on the number of taxi licences issued.
TXA3	Liaise with appropriate bodies to ensure adequate security at taxi ranks.
TXA4	Review the taxi fare tariff every 18 months.
TXA5	Support the taxi driver training scheme by approving the content of the course.
TXA6	Provide a Taxi and Private Car Enforcement Unit to enforce taxi legislation.
TXA7	Provide taxi marshals as part of the 'nitezone' initiative.
PTWA1	Monitor the evidence from the various UK trials with regard to allowing motorcyclists access to bus lanes.
PTWA2	Provide an appropriate level of secure motorcycle parking.
CRA1	Seek funding to provide further access points including pontoons and additional slipways along the River Clyde.
CRA2	Work with others to provide information to users of canals and rivers to enable them to enjoy a safe experience without causing damage to wildlife and habitats.

CRA3	Undertake the development of a transport strategy to cater for a local development strategy for the Forth and Clyde Canal corridor.
CRA4	Manage and maintain the quay walls and river banks to manage the risk of flooding to the adjacent road, cycle and walkway network.
CRA5	Seek funding for a study into the interface of waterborne transport with land transport, including ferries, river taxis and barges and for a study into waterborne transport on the River Clyde.
PA1	Review parking charges annually.
PA2	Undertake 5 yearly surveys of parking supply and demand (next survey 2009).
PA3	Research and bring forward proposals for using new technology in parking control.
PA4	Consult on a second phase of restricted parking to the west of the city centre by October 2007.
PA5	Investigate on road parking control around stadia.
PA6	Review existing parking restrictions city wide by March 2010.
PA7	Promote the management of off road car parks as a separate company.
PA8	Bring forward proposals to prohibit footway parking except where specifically authorised.
TCA1	Provide monitoring of traffic conditions through the City's traffic control systems (CITRAC/BIAS).
TCA2	Develop CITRAC/BIAS as a Traffic Management Centre incorporating control over the network's traffic signals, enforcement of parking controls and roadworks control to improve traffic flows across the city.
TCA3	Continue to deploy demand responsive traffic signal control (e.g. Split Cycle Optimisation Offset Technique - SCOOT).
TCA4	Undertake linkage of traffic signal timings on main roads into and through the City Centre to optimise their operation.
TCA5	Develop and implement facilities for improved dissemination of road, traffic and event information to road users through the implementation of roadside VMS on key routes and improved web and mobile phone (SMS) based information services.
TCA6	Continue, via membership of European and UK ITS networks and

	through collaboration with other major European cities, to influence the development of best practice in the use of transport technologies.
TCA7	Develop and implement facilities to monitor the operational performance of bus corridors and main traffic routes.
TCA8	Expand car park monitoring and variable information signing to other areas of the city to reduce unnecessary traffic movements within the City Centre. Expand to all major public owned car parks in the east and west of the City by the end of 2007.
TCA9	Continue to introduce, where appropriate, traffic control facilities that meets the needs of pedestrians and cyclists. For example demand responsive pedestrian crossings (PUFFINS).
TCA10	Collaborate with Transport Scotland to ensure effective integrated management of the local and strategic road networks in Glasgow.
TCA11	Provide systems to support bus management, passenger information and bus traffic signal priority systems.
TCA12	Provide real time passenger information at strategic bus stops on Streamline routes and at off-route locations of high public demand such as hospitals, shopping centres and travel interchanges.
TCA13	Install traffic monitoring cameras at an additional 20 sites by the end of 2008.
TCA14	Commence preparation of transport Telematics Strategy by August 2007.
RPA1	Encourage the Scottish Executive to introduce legislation to enable a charge to be levied for all trip-end off road non residential parking.
RPA2	Bring forward proposals to influence the charging regimes at privately operated public car parks in Glasgow.
DMA1	Ensure that all developments include appropriate provision for public transport access, cycling, walking and freight.
DMA2	Ensure that where a Transport Assessment is required it is undertaken in line with SPP17, PAN75 and the Scottish Executive Transport Assessment and Implementation Guide and accommodates City Plan requirements.
DMA3	Require the provision of a least one off road car parking space for each

	dwelling created except for developments within and at least 100m from the boundary of a controlled or restricted parking zone.
DMA4	Identify opportunities for developer contributions to the Council's transport programmes.
DMA5	Review and update the Council's Roads Development Guide by 2010 to reflect new thinking on the design of residential areas.
DMA6	Maintain the operational efficiency of the road network by minimising new accesses on local strategic routes (refer to Figure 6.2) and other routes where it would be inappropriate.
DMA7	Impose maximum parking standards for trip-end developments as set out in Table 6.1 and the City Plan.
DMA8	Within controlled parking zones make on road spaces available for car club vehicles.
DMA9	Require all new housing developments to be designed to facilitate the introduction of 20 mph zones on appropriate residential roads and design new residential roads to encourage speeds of less than 10 mph.
DMA10	Progressively encourage employers, including health agencies, universities and colleges, to reduce their travel impacts by adopting Travel Plans.
DMA11	Seek funding for specific officers to monitor the enforcement of travel plans by 2010.
DMA12	Encourage the Scottish Executive to introduce legislation to make travel plans obligatory for all work places.
DMA13	Encourage and support employers and other organisations wishing to establish Car Clubs for new developments.
EPA1	Continuously maintain and review procedures for liaison with Emergency Services, RALF, adjacent authorities, the City's Emergencies Planning Officer, and the Strathclyde Emergencies Coordination Group (SECG).
EPA2	Continue representation on the SECG at the strategic, tactical and local levels.
EPA3	Review the Clyde Tunnel Contingency Plan as appropriate.
EPA4	Prepare a diversionary route strategy plan detailing potential diversion routes for use as and when necessary.

EPA5	Utilise the city's traffic information displays and those available on the local trunk road network through Transport Scotland.
EPA6	Provide on a 24 hour a day basis the ability to respond to any emergency in the City within a 2 hour period.
EPA7	Work with the City's Emergencies Planning Officer to develop a Business Continuity Plan to demonstrate the Council's ability to respond to emergencies under the Civil Contingencies Act 2004 (Contingency Planning) (Scotland) Regulations 2005.
TAA1	Work with schools to develop School Travel Plans and Safer Routes to School schemes in accordance with Scottish Executive guidance, identifying issues that are a barrier to healthy, sustainable and active travel.
TAA2	Develop a City Council Travel Plan by 2008.
TAA3	Work with the SPT to support the development of workplace, further education and leisure and retail travel plans.
TAA4	Promote the Scottish Cycle Training Scheme in all schools to encourage cycling from an early age.
TAA5	Seek funding to implement any changes to the road layout, where the need for such changes are identified in School Travel Plans as being integral to a Safer Routes to School scheme.
TAA6	Work with the SPT in the development of an effective Car Sharing Scheme.
TAA7	Develop a 'Smarter Choices' strategy to take forward travel awareness and behavioural change.
RSA1	Maintain a specialised Road Safety Unit to provide road safety education and training and publicity programmes.
RSA2	Maintain and utilise a safety audit procedure for the design and implementation of new schemes.
RSA3	Continually review the number of sites automatically monitored by speed and red light cameras.
RSA4	Implement traffic calming or other measures (including 20 mph zones) in selected residential areas focusing on areas of high pedestrian activity with known problems of injury.
RSA5	With community involvement identify and implement advisory 'Twenty's Plenty' 20mph Zones in appropriate residential areas.

RSA6	Complete implementation and provide central control of signs associated with the Twenty Limits around Schools (TWELAS) project (complete implementation by 2007/08).
RSA7	Maintain a list of sites with the worst injury accident record and review the list every 2 years. Undertake remedial measures at 15% of problem sites identified in the above list.
RSA8	Produce an annual summary report including annual tables of casualty types and trends.
RSA9	Seek funding to undertake a mass action campaign on one type of accident per year.
RSA10	Contact each school every year with regard to road safety training.
RSA11	Ensure every Primary School within the Glasgow City boundary is invited to put forward Primary 6 pupils they wish to participate in the Scottish Cycle Training Scheme.
RSA12	Promote a city wide order for no stopping/waiting at schools by 2009.
RSA13	Continue to promote driver training schemes: <ul style="list-style-type: none"> - Council Accident Reduction Scheme - Learn to Teach - Company Driver
RSA14	Continue to provide and expand Kerbcraft and road safety training.
RSA15	Investigate the feasibility of mandatory 20mph limits in appropriate residential areas, supported by an appropriate enforcement regime, as an alternative to traffic calming.
RIA1	Deliver the East End Regeneration Route by 2010 subject to funding availability.
RIA2	Progress construction of the M74 completion in partnership with Transport Scotland, South Lanarkshire and Renfrewshire Councils.
RIA3	Promote the development of the North Clydeside Development Route (Stage 1) allowing for future phases of Fastlink with the planning application lodged by the end of 2007.
RIA4	Upgrade Gartloch Road and support the delivery of the Easterhouse Regeneration Route in conjunction with new housing development.

RIA5	Review in conjunction with Transport Scotland, improvements to the gateway approaches to the City Centre.
RIA6	Encourage Transport Scotland and Strathclyde Partnership for Transport to fully consider the potential of a north circumferential route from M73 to the north side of the Erskine Bridge in any investigation to address capacity issues on the M8 through Glasgow.
RIA7	Use the development control process to encourage developers as part of new developments to provide transport infrastructure that improves circumferential movements through the City (e.g. from Daldowie to Baillieston).
RIA8	Investigate the feasibility of providing improved circumferential routes through the north of the city between Anniesland and Provan.
RIA9	Develop a transport plan to support the city's bid for the 2014 Commonwealth Games. The bid is to be submitted by May 2007.
FTA1	Support Strathclyde Partnership for Transport in the development of a Freight Quality Partnership.
FTA2	Review as appropriate time restrictions giving delivery vehicles access to pedestrian areas.
FTA3	Ensure adequate loading facilities when reviewing parking restrictions.
FTA4	Assist in the expansion of inter-modal freight development.
FTA5	Support proposals by airport and sea port operators to improve the connectivity of Glasgow, especially internationally.
MNA1	Continually review mechanisms for the maintenance of the road and cycle network and ensure an appropriate maintenance regime is in place.
MNA2	Effectively use an integrated Roads Management System to help target expenditure and utilise it to prioritise reconstruction and resurfacing works.
MNA3	Monitor and review the service levels provided by the Access Centre.
MNA4	Develop a cycle network maintenance regime by March 2008.
MNA5	Review the City Centre Public Realm Management and Maintenance Procedures Manual and make it more widely available (e.g. on the Council's web site) and seek to procure appropriate funding for maintenance.

MNA6	Develop a Roads Asset Management Plan (RAMP) by 2011.
MNA7	Continue participation in the joint Scottish Road Maintenance Survey 2007-2011.
MNA8	Endeavour to maximise the use of recycled materials in road maintenance schemes.
MNA9	Undertake safety inspection in accordance with current maintenance code of practice.
MNA10	Ensure, where appropriate, the needs of disabled people are taken into account during maintenance schemes (e.g. dropped kerbs, access through works).
MSA1	Complete the programme of strength assessment of all bridges by December 2008.
MSA2	Complete, subject to available funding, strengthening of a further 4 bridges.
MSA3	Manage sub-standard bridges by applying appropriate interim restrictions.
MSA4	Carry out General Inspections of all Council owned bridges on a rolling 2 yearly cycle (50% of total per year) using the national Bridge Condition Indicator (BCI).
MSA5	Carry out Principal Inspections of all Council owned bridges on a rolling 6 yearly cycle (16.7% of total per year) using the national Bridge Condition Indicator.
MSA6	Ensure an appropriate maintenance regime is in place for the Clyde Tunnel and other structures.
MSA7	Implement the national Code of Practice for the Management of Highway Structures by 2011.
MSA8	Introduce and develop improved Bridge Management System by summer 2007.
MSA9	Seek funding for the use of data capture devices to improve asset inventory information e.g. for retaining walls etc.
MSA10	Liaise with other bridge owners in the city on inspection, maintenance and operational issues.
MSA11	Complete replacement of Clyde Tunnel fire resistant secondary lining during 2007.

MRA1	Continue the local coring contract via the materials testing consultancy programme to ensure adequacy of reinstatements.
MRA2	Continue to invite applications for the Lay Assessors scheme.
MRA3	Support roadwork co-ordination via Traffic Scotland.
MRA4	Continue to implement the considerate contractors scheme-voluntary code of practice.
MRA5	Subscribe to the new Street Works register for Scotland.
MRA6	Develop the availability of online permits, skips and scaffolds via the Council's website.
MRA7	Provide information on road works on the Council's website.
MWA1	Produce, prior to the onset of winter, a Winter Emergency Plan outlining responsibilities within Land Services, setting priorities for treatment routes, specifications for treatments, resources to be used and liaison with other agencies and adjoining authorities.
MWA2	Continue to modify treatment routes using optimisation techniques for carriageways and footways to reflect changes in the network.
MWA3	Utilise new technology and materials for more efficient route treatment.
MWA4	In normal overnight frost conditions ensure that the public road and footway network selected for treatment is completed within the prescribed timescale.
MWA5	Improve public access to information by putting gritting routes on the Council website.
MWA6	Continue to utilise partnership and liaison with adjacent authorities to employ weather forecasting services(joint contract) and cross boundary gritting.
MWA7	Investigate new procedures and materials to minimise the environmental impact of winter maintenance.
MLA1	Maintain lighting to appropriate standards by operating a Roads Operation Service Delivery agreement.
MLA2	Carry out, a 6 yearly electrical inspection and testing programme, with records kept of certificates and remedial works to restore to safe operational condition.

MLA3	Review delivery mechanisms for maintaining street and sign lighting to appropriate standards.
MLA4	Undertake a 2 yearly structural inspection of all lighting plant.
MLA5	<p>Prioritise schemes in the lighting capital programme for:</p> <ul style="list-style-type: none"> - Compliance with Electricity at Work Regulations - Replacement of Scottish Power (5th core) Connections to street lighting by 2010 - Corroded steel and concrete lighting column replacement.
MLA6	Improve performance through the use of Data Capture Devices (DCD), software and asset management.
MLA7	Continue to seek funding to ensure the delivery city wide of the City's lighting strategy via the lighting network renewal (LNR) programme.
MSLA1	When implementing traffic signs use reflectorised sign faces in place of direct illumination wherever possible.
MSLA2	Introduced planned maintenance regime for road markings and signs by 2012.
MSLA3	Utilise GIS database for maintenance of signs and yellow road markings by 2012.
MSLA4	Develop and implement an asset assessment regime by 2009 to ensure that refurbishment of traffic signals is prioritised on the basis of complying with safety regulations and maintaining operational efficiency.
MSLA5	Review the classification of all roads and all strategic directional signing within the City by 2012.
DA1	Ensure design service encompasses the disciplines of roads, structures, geotechnical, lighting, environment and traffic.
DA2	Ensure the Design Service is registered to EN ISO 9001: 2000.
DA3	Ensure Contract Documentation where appropriate contains a Recycled Material Certificate.
DA4	Adopt a proactive approach at the design stage in material selection including consideration of availability, durability and maintainability.
DA5	When required by the Client undertake a whole life costing exercise for project evaluation.

DA6	Ensure low noise road surfacing is considered for all appropriate projects.
DA7	In sensitive areas (e.g. Conservation Areas) ensure all signing, street furniture etc. is designed to a quality appropriate to the location.
DA8	Ensure that clutter due to signage and street furniture is minimised in all new designs.
DA9	Utilise surface sustainable urban drainage techniques wherever appropriate.
AQA1	Undertake a programme of assessment and monitoring of air pollution. £40,000 per annum
AQA2	Undertake a study into the use of alternative fuels and energy conservation measures for the Council's fleet of vehicles.
AQA3	Undertake vehicle emission testing and enforcement in partnership with adjacent Local Authorities.
AQA4	Produce an Action Plan for any designated Air Quality Management Areas in accordance with Scottish Executive Guidelines.
AQA5	Continue to enforce the regulations regarding drivers leaving engines running whilst stationary.
AQA6	Carry out an environmental assessment of all major new transport infrastructure in accordance with EIA Guidelines.
AQA7	Investigate the benefits of introducing Low Emission Zones in the City and the practicalities of enforcement.
AQA8	Investigate using Traffic Regulation Condition powers to improve the emission levels from buses when required legislation to allow this becomes available.
NPA1	Provide input to the Scottish Executive as required to produce a noise map for Glasgow by June 2007.
NPA2	Provide input to the Scottish Executive as required to produce a noise action plan by June 2008.
NPA3	Continue to implement the Noise Insulation (Scotland) Regulations 1975 by assessing new road schemes following implementation and at 5 yearly intervals to assess whether noise thresholds are breached and implementing mitigation measures as appropriate.
VA1	Complete phase 2 of Merchant City Streetscape by 2008. £1.5 m GCC

	SEG
VA2	Deliver International Financial Services District Streetscape Phase 2
VA3	Minimise visually intrusive signing, including the use of yellow lines, to delineate waiting restrictions.
BA1	Ensure that all new infrastructure projects and maintenance works have due regard to the network of designated wildlife sites (SSSIs, LNRs, SINCs and wildlife corridors); species of conservation concern (as listed in the Glasgow Biodiversity Audit); and the appropriate habitat and species plans of Glasgow's Local Biodiversity Action Plan.
BA2	Ensure that specific landscape and environmental features are incorporated within designs to maintain existing habitats and/or create new habitats, with the objective of compensating for, or enhancing affected landscapes and wildlife habitats.
BA3	Ensure no net loss of trees as a result of transportation infrastructure projects or maintenance.
BA4	Undertake maintenance works in a manner aimed at protecting and/or enhancing biodiversity, in support of Glasgow's Local Biodiversity Action Plan.
CCA1	Undertake a review and update of the City Centre traffic management strategy. Develop an integrated transport and public realm plan and seek funding for implementation.
CCA2	Expand car park VMS signing to all permanent car parks in the city centre by 2008.
CCA3	Develop and consider proposals for introducing a mandatory 20mph zone throughout the city centre.
CCA4	Review and evaluate the provision of late night transport from Glasgow city centre.
CCA5	Implement an integrated transport and public realm plan for Glasgow city centre.

Appendix C

Report on Consultation

Consultation Report

1.0 Introduction

On 3rd October 2008, Glasgow City Council commenced an extensive consultation exercise over three months ending on 31st December 2008. The consultation involved distributing both a Consultation Summary Questionnaire and the full version of the Draft Air Quality Action Plan to the general public and relevant external organisations.

The Draft Action Plan and the Consultation Summary Questionnaire were prominently posted on the City Council Website, distributed to statutory consultees and sent out by post on request. Copies were also available at the Council Offices and 5 public libraries in the Air Quality Management Areas. Consultation Questionnaires could be completed on-line or returned Freepost to Council Offices.

Two consultation workshops also took place during the consultation period; a stakeholder workshop aimed at statutory consultees and organisations with an interest in air quality and a local workshop aimed at local community councils and interested individuals. A Summary of the workshop findings is presented in Section 4.0



Fig 1 Action Plan Consultation Booklet

2.0 Draft Air Quality Action Plan: Consultation Report

This report summarises the responses to the Draft Air Quality Action Plan that were received from the general public and representatives of various organisations including statutory consultees during the consultation period. Detailed written submissions from a number of external organisations are included in Appendix A.

The Consultation Booklet, distributed during the consultation period and posted on the Council website, outlined the air quality management areas and the main air quality problems within the city. 16 draft Action Plan proposals arrived at by the Air Quality Action Plan steering group were presented and opinions sought by means of both a questionnaire and written comments (shown below).

Questionnaire
What do you think of each of the actions being taken to improve air quality?
(Please tick the appropriate box)

Action	strongly agree	tend to agree	tend to disagree	strongly disagree	don't know
Low Emission Zones					
Public Service Vehicle Emissions					
Idling Vehicles					
Emission Testing					
Cleaner Taxis					
Council Workplace Travel Plan					
Construction Site Emissions					
Domestic Emissions					
Promote Greener Vehicles					
Prohibition of Bonfires					
Planning Guidance					
Leading by Example					
Parking Levies					
Air Quality Information					
Car Clubs					
Tree Planting					

Please turn over to continue

Do you think the Air Quality Action Plan has identified all the actions needed to improve air quality in Glasgow? (please circle)

Agree Disagree Not Sure

If you disagree, what other actions you would like to see included?

Do you have any other comments on the Draft Air Quality Action Plan?

Please tear off and post (no stamp required)

Glasgow City Council
Public Health Unit
Land and Environmental Services
FREEPOST NAT2684
231 George Street
Glasgow G1 1RX

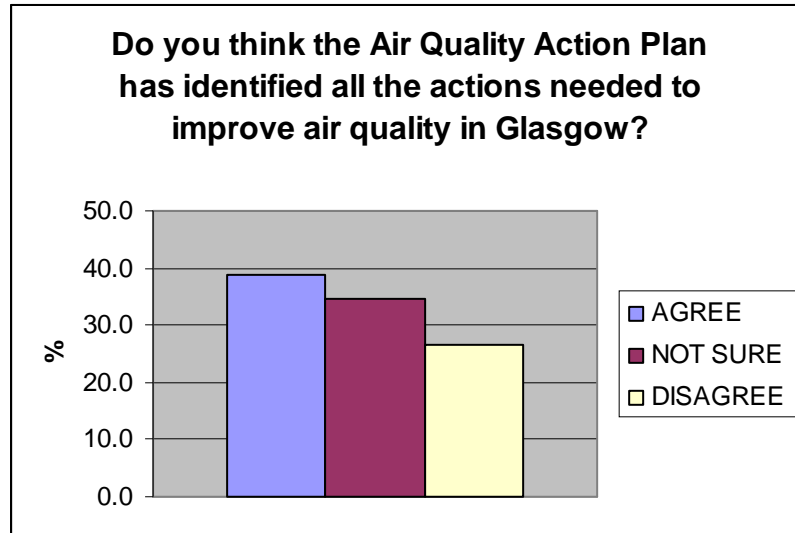
Figure 2 Questionnaire and Comments

Over 350 responses to the consultation were received to the Draft Action Plan and in general the reaction was positive with over 39% of responses agreeing that the Action Plan identified **all** the actions needed to improve air quality within the AQMAs 26% disagreed and 35% were not sure.

Note - all values have been rounded up or down to the nearest percent therefore addition of values may not total exactly 100%.

3.0 Responses

3.1 Response to question; Do you think the Air Quality Action Plan has identified all the actions needed to improve air quality in Glasgow?



3.2 Response to question; If you disagree, what other actions would you like to see included?

The majority of responses to this question related to improvements to public transport, better traffic management, less congestion and for making the city more cycle friendly. A selection of the responses is given below.

Public transport

- Work with public transport providers to improve services - frequency, comfort, ticket prices
- (Several calls for) Introduction of modern tram system to encourage less car use and replace buses.
- A much more *integrated* approach to public transport must be part of the solution, this must include *single payment travel schemes on all Strathclyde public transport (buses, local trains, underground, river taxi) *improved opening hours of the metro, extending the metro network *improving the security issues that affect people's reluctance to use public transport at night.
- Better located and larger Park & Ride schemes could play a large part in improving air quality as well as congestion and quality of life in Glasgow.
- Measures to drive a modal shift to more sustainable transport should be included.
- Better public transport within Glasgow to help public works there get to work quicker. i.e. more direct routes going straight to town centre from outlying areas. at present bus journeys are too long and have combined various routes

Congestion & Traffic Management

- Traffic Management measures to prohibit all through traffic in AQM Areas.
- You should consider congestion charging to discourage commuting from suburbs
- More stringent restrictions on motor vehicle access to Glasgow City centre.

- Drastic reduction in private car use, which has reached chaotic and unsustainable levels.
- Deal with congestion in City Centre and Byres Road
- Better traffic management in the city centre, with greater priority for pedestrians, cyclists and buses.
- More 'public transport only' areas.
- Provision of priority bus routes through Glasgow city centre - Hope Street and Renfield Street/Union Street/ Jamaica Street corridor. at peak times these buses can take 20 minutes to get from top of Renfield st to Jamaica St
- The AQAP fails to recognise the ease of flow of traffic to and around the city...Overall, I think traffic could flow better through Glasgow.
- There is far too much traffic going through residential areas where people live...This...needs to be addressed, by redirecting traffic onto roads where there are fewer homes.
- Be far bolder (other cities are) - ban cars from the city centre except to access the multis, phase traffic lights to allow long runs, have few, well spaced out bus stops etc
- (Several calls for) More pedestrianised streets - including Nelson Mandela Place, Byres Rd, Glassford Road, Nelson Mandela Place, Queen Street.
- Doesn't address the key problem of traffic emissions from M8 motorway

Cycling

- Several responses requested better safer cycling lanes, provision of secure parking for bikes, changing showering areas at work.
- There were also calls for easy cycle hire facilities similar to the Velo-libre system in Paris

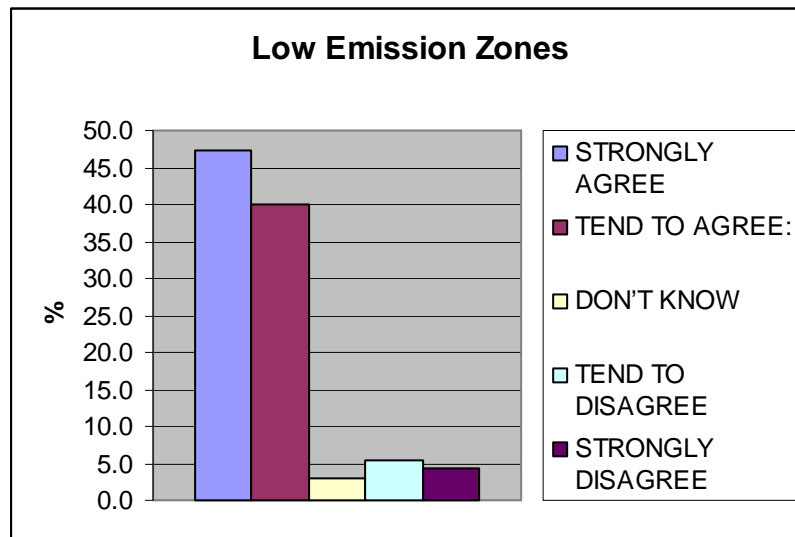
Other Ideas suggested

- Following failure of proposed extension residential parking, create a marketing strategy to promote green transport - introduce congestion charges for those coming into city from other areas - lobby the government to surcharge adjoining areas - quantify and publicise the number of residents who develop cancer or asthma as result of air pollution. Publish all councillors' emissions from travel.

3.3 Responses to each of the 16 actions outlined in the action plan were generally pretty favourable and are outlined below;-

Low Emission Zones

87% of responses strongly agreed or tended to agree with the proposals for a Low Emission Zone feasibility study followed by the introduction of Low Emission Zones. 9% disagreed and 3% did not know.

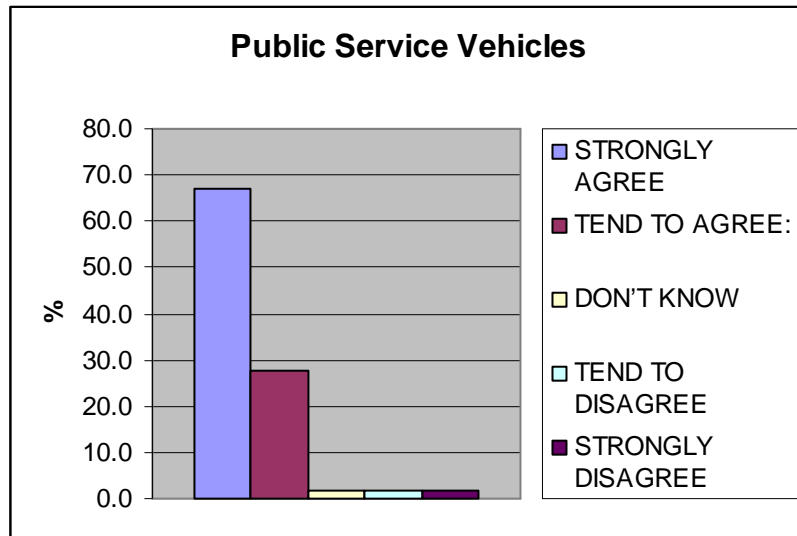


Comments received re the LEZ included -

- Reducing traffic and ideally removing high polluting vehicles (e.g. pre Euro 3 buses) within the City Centre is the key action, which will necessitate bold traffic management measures and significant amendments to the City's bus network.
- Concern that the zones would only apply to HGVs and buses and not apply to private cars.

Public Service Vehicles

95% of responses strongly agreed or tended to agree that the Council should tackle emissions from buses. 3% disagreed and 2% did not know.

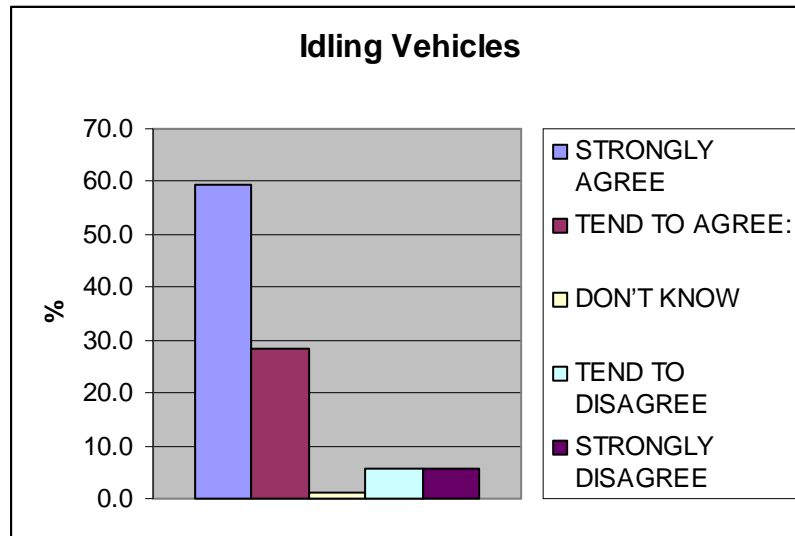


Comments received regarding Public Service Vehicles included

- As I use public transport or walk as much as possible, I feel you should be more active in targeting the old buses and taxis that continually belch out black smoke through the city.
- Insufficient effort to target polluting buses. Many of these vehicles use bus stands as termini and others need to be tested at their terminal points outside the city.

Idling Vehicles

87% of the responses strongly agreed or tended to agree with the proposals for expansion of the vehicle idling enforcement programme. 12% disagreed and 1 % did not know.

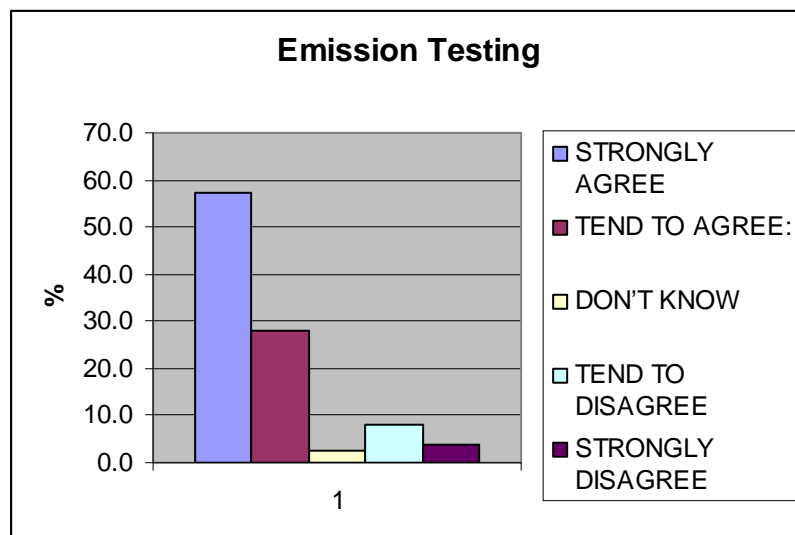


Comments received regarding Idling work included

- All commercial transport vehicles should display beside the driver the message / warning not to idle.

Emission Testing

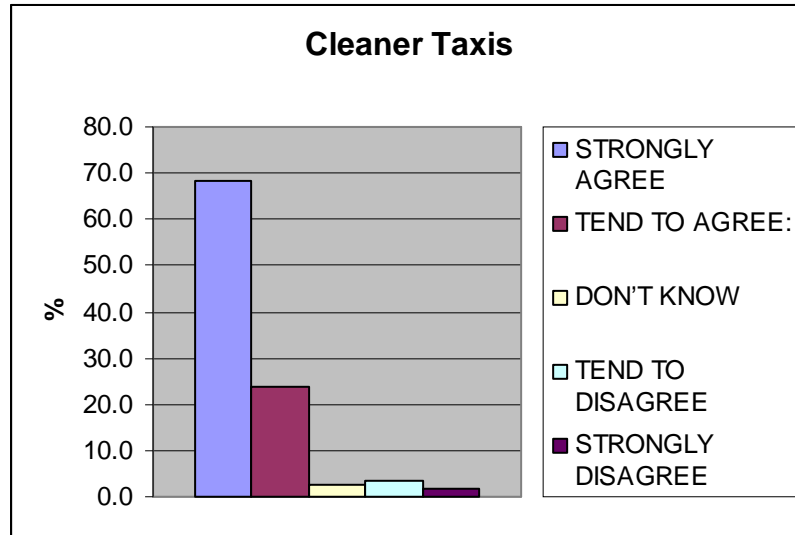
85% of the responses strongly agreed or tended to agree with the continuation of the current vehicle emission testing programme. 12% disagreed and a further 3% did not know.



No comments regarding Emission Testing were received.

Cleaner Taxis

83% of the responses strongly agreed or tended to agree with the proposals for a Taxi Emission Strategy. 5% disagreed and a further 3% did not know.

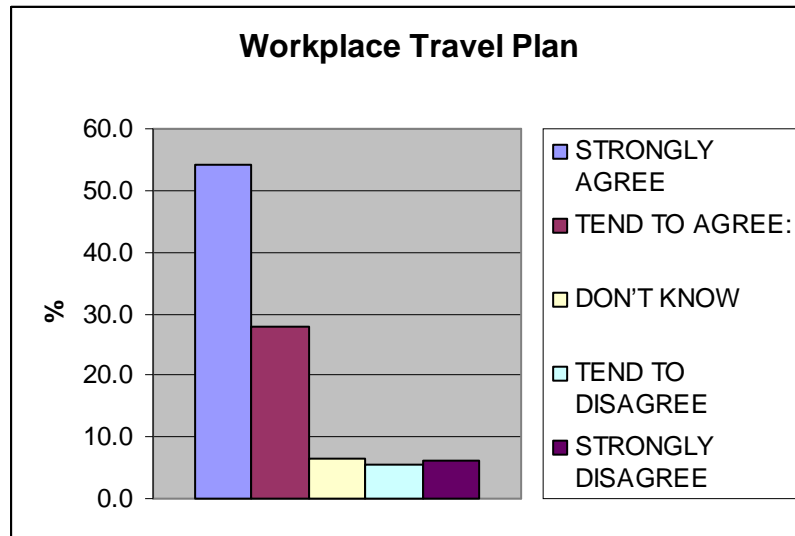


Comments received regarding Cleaner Taxis included

- As I use public transport or walk as much as possible, I feel you should be more active in targeting the old buses and taxis that continually belch out black smoke through the city.
- Why have you not insisted all taxis companies operating public taxis in Glasgow have "clean" taxis. I.e. either running on gas or fitted with latest particulates filters?
- Black cabs are amongst the most polluting vehicles on the road. Please ban them and replace with modern small displacement diesel passenger cars. For example modern Skoda Octavias have far less emissions and use far less fuel.
- More taxi ranks should be provided in the city centre. At the moment the ranks are not large enough meaning cars have to keep circling in the city centre waiting for a space or a hire – producing unnecessary pollution and adding to congestion.

Council Workplace Travel Plan

82% of the responses strongly agreed or tended to agree with the production of a Council Workplace Travel Plan. 11% disagreed and a further 6% did not know.

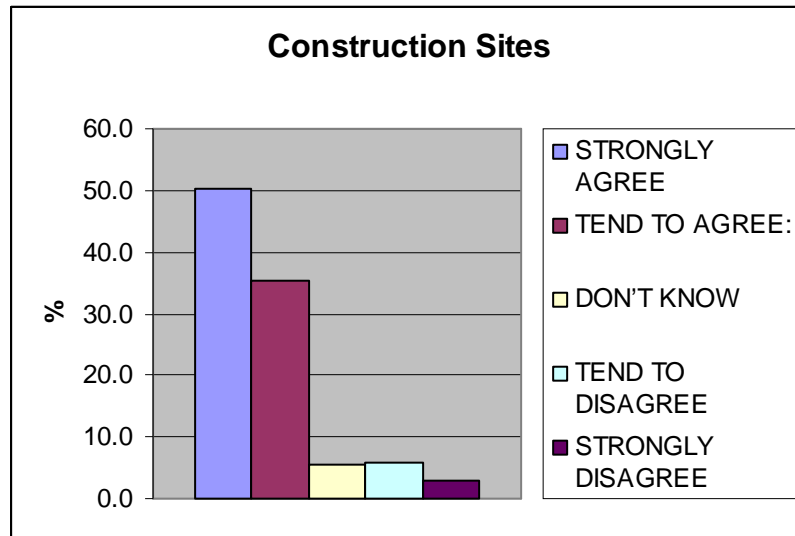


Comments received regarding the Workplace Travel Plan included;

- Council workplace travel plan should be high priority.
- A pool of greener cars provided for peripatetic teachers would help reduce emissions.
- Council staff should be encouraged to work more at home to reduce their carbon footprint.

Construction Site Emissions

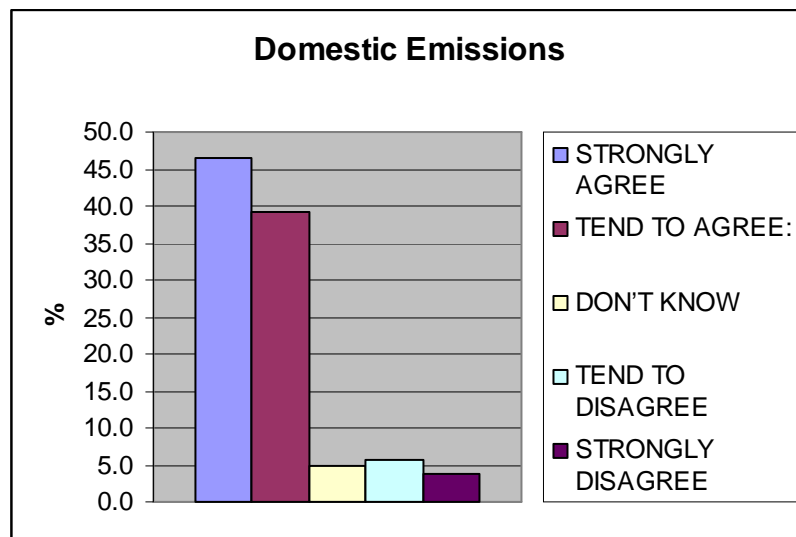
86% of the responses strongly agreed or tended to agree with the proposals to tackle construction site emissions. 9% disagreed and a further 6% did not know.



No comments received regarding Construction Sites included

Domestic Emissions

85% of the responses strongly agreed or tended to agree with the proposals to raise awareness and provide information of energy efficiency in the home. 10% disagreed and a further 5% did not know.



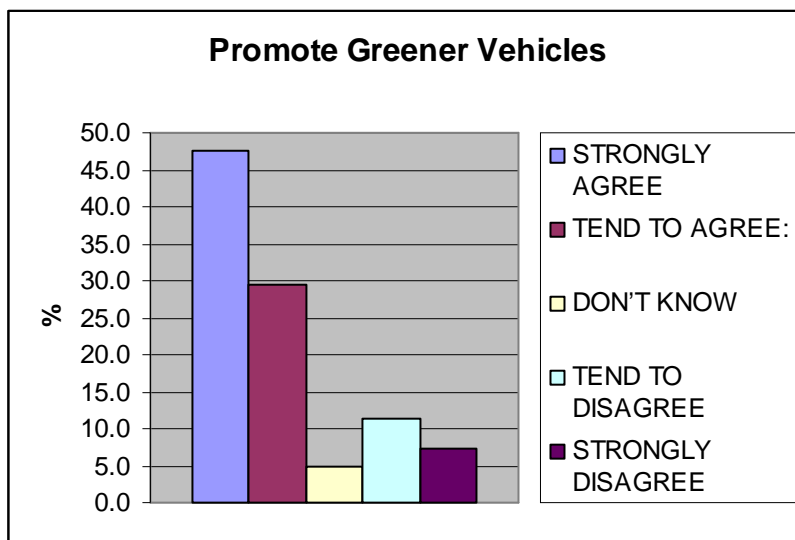
Comments received regarding the Domestic Emissions

- Further information required in respect of domestic gas heating before any comment should have been asked for.
- Regular flue gas analysis should be carried out on domestic and non domestic boilers.

- Some proposals to provide information and advice on energy conservation etc is duplicating information already readily available on national websites etc.

Promote Greener Vehicles

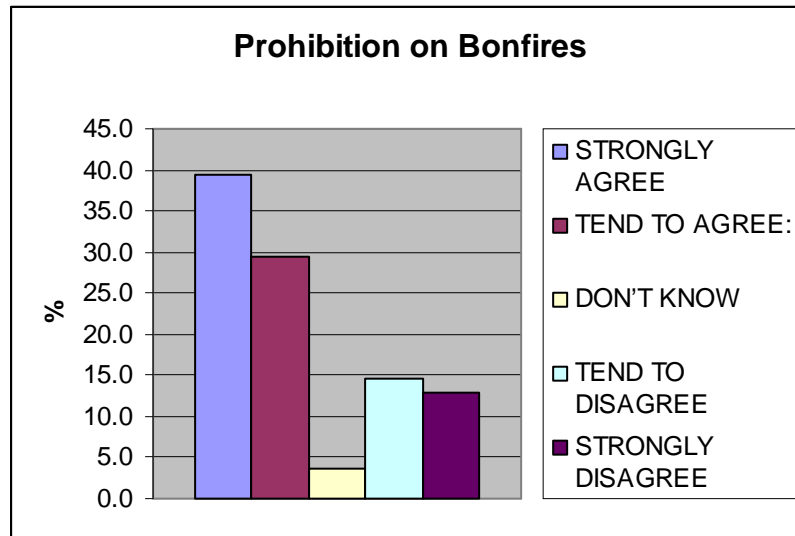
77% of the responses strongly agreed or tended to agree with the proposals for differential parking charges for electric and hybrid vehicles. 18% disagreed and a further 5% did not know.



No comments were received regarding the promotion of Greener Vehicles.

Prohibition of Bonfires

69% of the responses strongly agreed or tended to agree with the proposals for a prohibition on bonfires. 28% disagreed and a further 4% did not know.



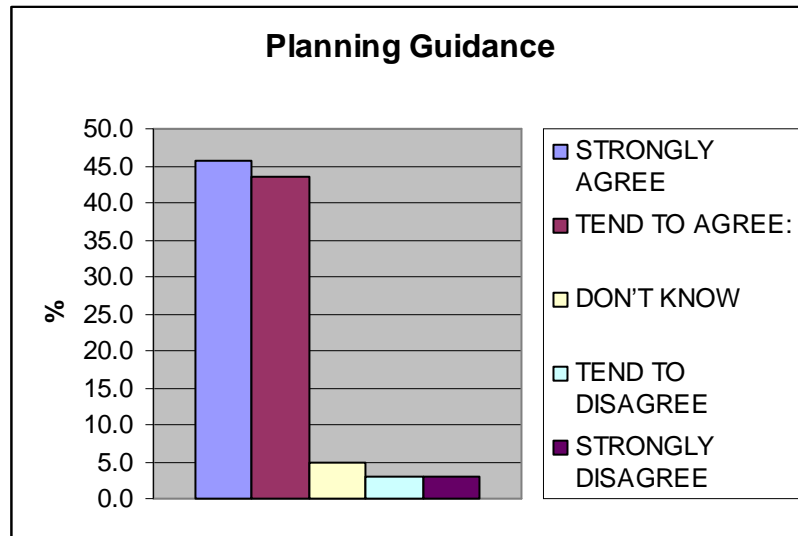
Comments received regarding the Prohibition of bonfires included;

- The prohibition of bonfires seems like a step too far for a problem that doesn't really exist. How many bonfires (outside of 5th November) take place within Glasgow each day?
- Banning Domestic bonfires is ridiculous how many does the city really have to contend with? What REAL difference will these make when large vehicles are spouting out black fumes by the thousands every day
- Regarding domestic bonfires, I believe that allowance must be given to allow allotment holders to have a limited number of bonfires per year this is to allow controlled, approved bonfires where a level of responsibility is undertaken by the allotment society, which will ensure health and safety issues are taken on-board.

A detailed written submission on this action was received from Strathclyde Fire and Rescue.

Planning Guidance

90% of the responses strongly agreed or tended to agree with the proposals for new planning guidance. 6% disagreed and a further 5% did not know.

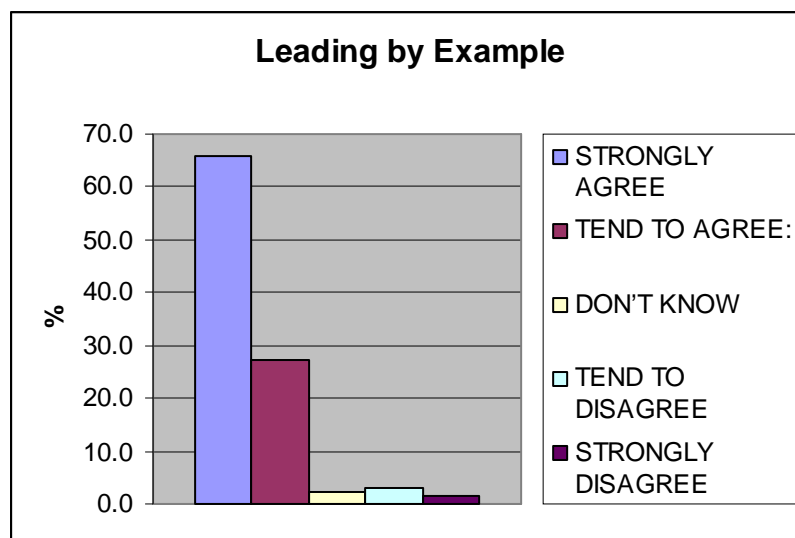


Comments received regarding the Planning Guidance included;

- Actions *should be* linked to other authorities to enable a uniform outcome/result.
- Developer contribution to public transport provision to mitigate the impact of development proposals *would be desirable*
- Encourage non-vehicular travel (walking/cycling) and stronger use of planning regulations.

Leading By Example

93% of the responses strongly agreed or tended to agree with Glasgow leading by example and demonstrating best practice. 4% disagreed and a further 2% did not know.

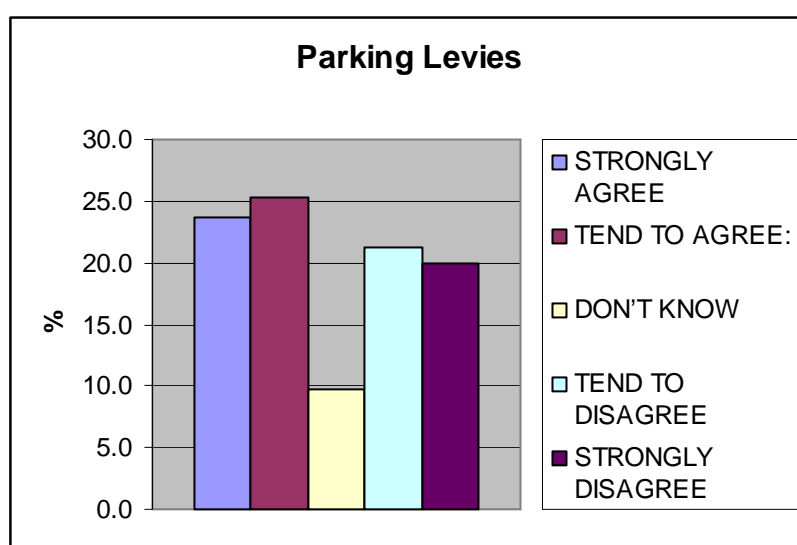


Comments received regarding Leading by Example included;

- This should include councillor's cars as well.
- You have been talking about this for a long time but little has been achieved. Council staff don't lead by example.
- I don't think that GCC has provided enough information regarding making their own fleet greener.
- Get rid of Lord Provosts Limo and get something cheaper and cleaner.

Parking Levies

49% of the responses strongly agreed or tended to agree with the proposals for trip end non-residential parking levies. 41% disagreed and a further 10% did not know.

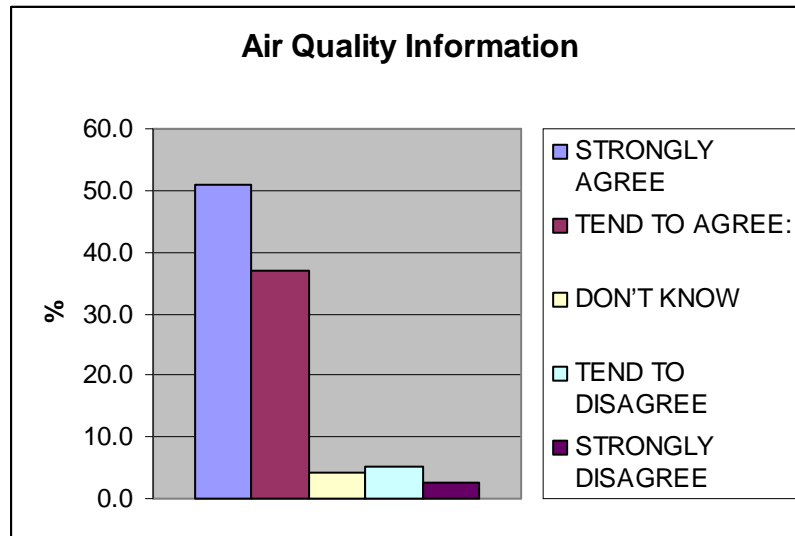


Comments received regarding Parking Levies included;

- Attempts to control non Council off-road parking are ill-advised and more driven by commercial greed than any "environmental" considerations.
- Increasing parking charges appears to be a method of increasing revenue rather than reducing emissions.
- Note - A number of other comments were received regarding parking levies that actually related to on-street parking charges and are therefore not repeated here.

Air Quality Information

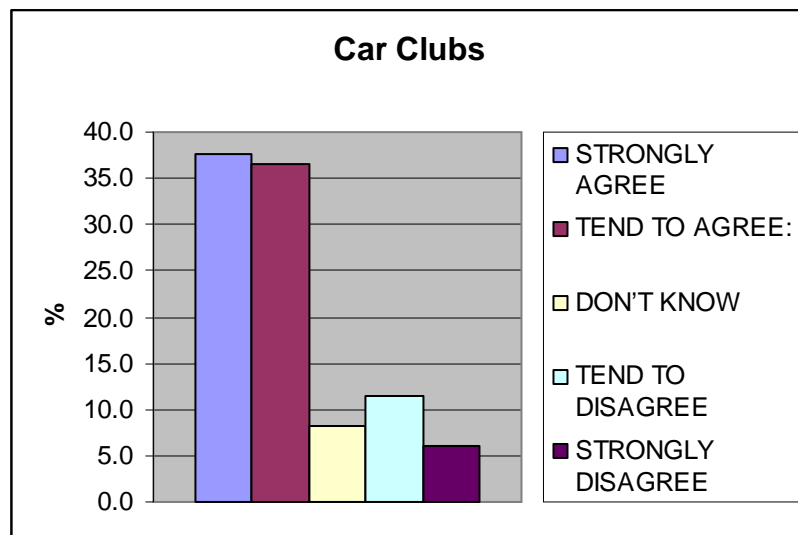
88% of the responses strongly agreed or tended to agree with the proposals for distributing air quality information. 8% disagreed and a further 4% did not know.



No comments regarding distribution of air quality information were received.

Car Clubs

Over 73% of the responses strongly agreed or tended to agree with the proposals for car clubs. 18% disagreed and a further 8% did not know.

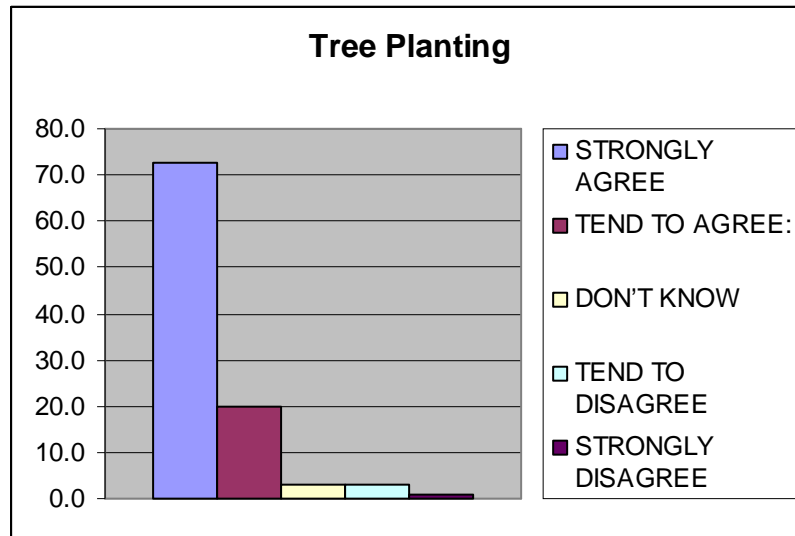


Comments received regarding Car Clubs included

- Car clubs are essential and should be rolled out throughout the city.

Tree Planting

Over 90% of the responses strongly agreed or tended to agree with the proposals for tree planting. Less than 5% disagreed and a further 3% did not know.



Comments received regarding tree planting included:

- *It should be focussed in the areas where it will have most effect, and should not be to the detriment of other wildlife habitats.*
- *Suggest....we purposely designate an area to plant trees using monies from fines raised by the AQAP.*
- *Trees enhance the streetscape, help absorb pollution and provide micro eco islands. Obviously we should plant more trees, irrespective of your Consultation.*
- *Would like to question the tree planning initiative - in my area, trees are cut down without Council permission.*
- *Careful consideration must be given to the type and location of trees which are planted. When trees are planted on the street, their roots destroy the pavements and their leaves cause slipping hazards if arrangements are not put in place to pick them up.*
- *Tree planting of fruit trees should be a legacy of the Glasgow 2014 commonwealth games...particularly in urban areas. Not only will you reconnect children with green spaces / healthy living food sources you will also improve the aesthetics of the environment and offset 2014's carbon footprint.*

3.4 A selection of comments received in support of the actions proposed;

- Whilst the range of measures listed in the document are laudable and no doubt the easiest / cost effective range of measures to implement, the reduction of cross City Centre traffic would remove the source of the problem. The worry for the City is that the EU will force us to take action in the future that does not allow us to ease the measures in gradually and at a cost we can afford.
- I think you've covered all the main areas though and i look forward to the outcomes of your proposed studies and investigations.
- Well doneon....getting the prospect of a LEZ underway.
- Very much in favour of all the actions - a challenging but necessary agenda.
- Well researched and presented, easy to follow and understand.
- This is a very important ongoing issue and I am glad that the Council are tackling it.
- Excellent plan.
- Seems to be a good idea.
- I think the environment is taken for granted and I think the air quality affects our health so action is needed and it's good to know people are doing something about this issue.
- I think it's great that the Council are finally doing something. Although my concern is it's just report writing and feasibility studies, without any concrete action as a consequence.
- I fully support any action plan that aims to improve the environment.

3.5 A selection of comments critical of the actions proposed

- Not enough immediate action
- It's all a con to screw more money out of the motorist.
- I for one couldn't care less about this action plan. It is always the same - grasping onto legislation in order to generate income from the small people. Legislate for industrial culprits first.
- Charging people using their cars will not be seen by the public as doing the right thing for the environment but to fund local government.
- For an 'Action Plan' there's very little action being proposed. The majority of the actions are investigation or feasibility studies.
- Very disappointed that it has taken so long to propose such obvious and actions already well established elsewhere measures. Yet again there are no timescales so this will allow yet further delays on basics travel plans, car clubs etc.
- Is it just yet another way to tax the motorist extra?
- Its a bit fluffy in its direct approach to tackling the issues. More action less dithering.
- I strongly disagree with any measures which will penalise drivers, particularly those delivering goods or providing services. I think it is important not to take any measures which would threaten driver's jobs.
- Too much emphasis on tinkering with the marginal problems, too much "investigate potential", "carry out feasibility study, rather than "doing".

4.0 Action Plan Workshops

As part of this wider public consultation, the Council decided to hold two workshops to enable a range of interests to discuss their reactions to the proposals in the plan.

The first workshop was held in the Mitchell Library in October 2008. 46 people attended, including 9 Councillors and participants from 22 other agencies.

The second workshop was held in December 2008 in Glasgow City Chambers. It aimed to enable people from the two new AQMAs to attend, and also those from community groups unable to attend during the working day. 11 people attended in addition to the facilitation team, and while the number was small, it was rewarding that no less than 6 community councils fielded representatives.

4.1 Workshop Format

The design of the workshop programme took into account the experience of similar workshops held for Glasgow City Council and other local authorities. Both events started with a series of briefing presentations, then the bulk of the consultation was undertaken in breakout groups, each of which discussed their reactions to the 16 proposals in the draft Action Plan. They then identified what they saw as strengths of these proposals, and the topics warranting further discussion. These topics were then discussed in greater depth in a further session of breakout groups in the longer time available for the 28th October workshop. At the end of that workshop, the groups identified three main points from their discussions, and all delegates were invited to vote to indicate the overall priorities identified at the workshop. In addition to this group work, all delegates at both workshops were invited to complete the brief questionnaire included within the wider public consultation brochure.

4.2 Workshop Conclusions

At the two consultation workshops, **nearly every participant supported most of the 16 proposed actions to improve air quality**. None of the action points was rejected as inappropriate for inclusion in the Action Plan. In general, they welcomed the more focussed approach of the Action Plan, and particularly that several of the actions can be taken now by the Council with its existing powers.

The table below aims to distil the essence of the outcomes of the many different discussion groups and the questionnaire responses from the two workshops:

16 Key Proposed Actions	Assessment
Low Emission Zones	Support in principle, but many questions. Thorough assessment and stakeholder consultation (Councils, business, freight and bus) essential. Include cars?
Public Service Vehicles	Strong support, but noted not at the Council's own hand; possibility of grants for small operators should be investigated.
Idling Vehicles	Strong support and at Council's own hand. Needs to be higher profile and supported by awareness raising.
Emission Testing	
Cleaner Taxis	Strong support and at Council's own hand. Close consultation with taxi operators highly desirable.
Council Workplace Travel	Fairly strong support, but needs to be adaptable and implications not clear (e.g. concern of risk to jobs)

Plan	
Construction Sites	Fairly strong support, including for Considerate Contractors Scheme and liaison with SEPA
Domestic Emissions	Support but uncertainty about scope in tenements, and whether should extend to commercial buildings
Promote Greener Vehicles	Strong support, and linked to Leading by Example (the Council's own fleet); potential for electric and hybrid vehicles
Prohibition of Bonfires	Some support, but differing views and uncertainty about need; implications for Bonfire Night
Planning Guidance	Strong support. There is a widely endorsed view that comprehensive and effective guidance is needed
Leading by Example	See Promote Greener Vehicles (above)
Parking Levies	The least supported proposal. Its effectiveness questioned and concern that it risks being unpopular and damaging. Careful assessment needed
Air Quality Information	Fairly strong support; need for more effective communications. Case for wider awareness raising and education
Car Clubs	Some support, but hesitant. Reactions not bottomed out at the workshops, but perhaps not seen as contributing much to AQ
Tree Planting	Some support, but concerns about effectiveness and limited potential. Otherwise positive aspect of greening

5.0 Questionnaire Response Scoring

Scoring for the questionnaire responses was based on the following:-

+2 for Strongly Agree; +1 for Tend to Agree; -1 for Tend to Disagree; -2 for Strongly Disagree

Action	Workshops Overall score	Workshops Placing	Public Consultation Overall score	Public Consultation Placing	Combined Overall Placing
Low Emission Zones	47	7	359	10	8
Public Service Vehicles Emissions	63	1	468	1	1
Idling Vehicles	54	5	385	6	4
Emission Testing	51	6	377	7	6
Cleaner Taxis	59	2	459	2	2

Council Workplace Travel Plan	42	8	350	12	10
Construction Site Emissions	42	8	363	9	8
Domestic Emissions	37	9	351	11	10
Promote Greener Vehicles	51	6	289	13	9
Prohibition of Bonfires	26	12	200	15	11 Joint 2 nd last
Planning Guidance	55	4	369	8	5
Leading by Example	57	3	456	3	3
Parking Levies	15	14	34	16	12 Last
Air Quality Information	35	10	386	5	7
Car Clubs	20	13	260	14	11 Joint 2 nd last
Tree Planting	28	11	449	4	7

5.1 Scoring Conclusion

While noting that there is general support for all of the actions proposed, the weighted scoring system in this section presents some interesting points for further discussion.

It was noted that the top three and bottom three scoring actions were the same in both the wider public consultation and the stakeholder workshops. Low Emission Zones, Cleaner Taxis and Leading by Example were the highest rated actions in the plan. These actions should therefore be given high priority when the plan is established.

Parking Levies (by some distance), Prohibition of Bonfires and Car Clubs were the lowest scoring of the actions. There may be a number of reasons for these actions attaining low scores (see also the relevant comments to be found in Section 3) including lack of sufficient detail, a lack of understanding the actions presented, or just disagreement that these actions are suitable.

6.0 Action Plan Revisions

Following a review of the consultation exercise and workshop outcomes by the steering group the action plan was revised as follows;

Structure

In order to help explain the actions within the plan and to better structure the proposals, the actions were split into 3 different categories:

- Practical actions that the Council can undertake directly, or are already underway (e.g. Emissions Testing, Idling Vehicles, Council Workplace Travel Plan)
- Actions the Council will investigate further, i.e. no action will be taken until an investigation or feasibility study has been completed, and then only if justified (e.g. Low Emission Zones, Tree Planting)
- Actions the Council will take to press for widening the scope of the powers which could be available to it, or persuading others to take action (e.g. Public Service Vehicle Emissions)

Co-operation/Partnership Working

The need for both inter-authority working and adequate consultation with stakeholders and other relevant parties was recognised by consultees to be essential to progression of the measures within the plan. The plan was therefore revised to take account of the need for further co-operation.

Benefits and Costs

The need for assessing the effectiveness of the proposed measures in terms of their costs and benefits (including environmental and socio-economic) and contribution to meeting the objectives for air quality in the AQMAs was highlighted during the consultation. The plan was therefore revised accordingly.

Transport Strategy

A need to better outline the relationship between the Local Transport Strategy (LTS) and the Air Quality Action Plan was noted in both the workshops and the consultation responses. In particular questions were asked of why the plan did not contain actions to improve public transport, cycling and walking facilities. This was notwithstanding the decision that the current Action Plan would focus on topics “within the air quality remit” and not duplicate matters in the Local Transport Strategy. The plan was therefore revised in order to better explain the relationship between the LTS and the AQAP in improving air quality.

Bonfires

Consultation feedback suggested that the proposed banning of bonfires for garden waste would be thought to be excessive and that this was unlikely to be a significant source of air pollution. Legislation is already in place to tackle nuisance from garden fires and separate

legislation allows for the issuing of fixed penalty notices for unsatisfactory disposal of domestic waste by burning.

A detailed submission from Strathclyde Fire and Rescue (SF&R) indicated that Glasgow has historically suffered higher levels of both accidental and non accidental fires than comparable cities; consequently the detrimental effect upon the environment, air quality and health is greater than elsewhere in Scotland. The submission also called for the proactive use of existing legislation together with strategic actions such as the restriction on the sale of matches and cigarette lighters to children.

This action therefore became “Fire Reduction” and was amended to instead look to develop Council cooperation with SF&R with a view to proactive enforcement and education in this area.

Parking Levies

This action was the least supported of all the actions in the Draft Action Plan. The action was likely to receive strong resistance from both public and businesses sectors. Consultation responses also indicated that this action was unlikely to improve local air quality and would fit better within the Local Transport Strategy. This action was therefore removed from the action plan.

Car Clubs

It was understood at the workshops that some of the resistance to the introduction of car clubs stemmed from the lack of understanding of how a car club worked and how it would contribute to improving air quality. In some instances respondents confused Car Sharing Schemes for Car Clubs. Transport and environment groups however, were very positive in their support of car clubs in Glasgow. In view of the relatively low level of cost and infrastructure required for this action and the potential benefits the decision was taken to proceed with this action.

Planning Guidance

Consultation responses indicated a widespread perception of the need for a comprehensive approach to planning to improve air quality. Responses called for this to extend from local plans to master plans, to prioritising public transport over cars in new developments. While air quality impact assessments are already required for all developments in AQMAs consultees asked for mitigation measures and proportionate financial obligations to be placed on developers.

Guidance is also seen as a topic which requires both a joined-up approach (including liaison with, and training for planners) within the Council, and consultation or joint working with all Clyde Valley local authorities, not least to ensure consistency of approach.

This action was therefore amended to take account of these comments.

Low Emission Zones

The reaction to Low Emission Zones was positive in principle, but thorough assessment and full consultation will be essential. It was particularly welcome to receive input from key organisations such as Strathclyde Partnership for Transport, the Freight Transport Association and the Road Haulage Association. This action, while broadly supported, should be considered for a range of vehicles and not just HGVs and engagement with operators was highly desirable. The action was amended to take account of these comments

Alternative fuelled vehicles

There was broad support for alternative fuelled vehicles to be used where possible in the city, either directly by the Council or that the Council should assist in providing incentives for these vehicles. Actions were amended that LPG vehicles be included in the feasibility study and that electric vehicles were included in the Leading by Example action.

Appendix D

Option Testing Assessment