

Perth & Kinross Council **Air Quality Action Plan**



Executive Summary

This document sets out Perth & Kinross Council's Air Quality Action Plan for the area designated as an AQMA on 5 May 2006. The aim of this plan is to outline measures Perth & Kinross Council will take to reduce emissions of nitrogen oxides and fine particulate material within the city of Perth, thereby working towards achievement of the Air Quality Strategy objectives as required by the Environment Act 1995.

The Air Quality Management Area was designated as a result of a series of air quality investigations within the city, which predicted that the national objective for nitrogen dioxide would not be achieved at a number of locations. The AQMA comprises the whole built up area of Perth, an area much greater than the minimum required by legislation.

Nitrogen oxides react to form nitrogen dioxide, and in Perth over 80% of nitrogen oxides within the AQMA originate from road vehicles so this is our natural focus for action. The situation with particulates is different in that the greatest proportion of the measured concentrations comes from background sources - approximately 79% across the city as an average (although the traffic component at the worst locations is much more significant). At our worst hotspots we require to reduce concentrations of nitrogen dioxide and particulates by around 33% therefore the traffic reductions required are very challenging. We have a greater chance of success for nitrogen dioxide for the reasons outlined though we will be unlikely to meet the Scottish annual mean particulate objective in the whole AQMA (though we currently do not exceed the UK objective).

We have developed a package of measures that we believe will reduce concentrations of these pollutants in Perth to acceptable levels although we cannot say at this point when we will achieve the objectives as previous national future projections have proven to be quite optimistic and pollution has not fallen by as much as was originally predicted. Some of the measures could result in significant traffic reductions though we can only estimate what these might be at this point. We face a particularly difficult task in achieving the Scottish particulate objective, as the background is so dominant in the total concentrations measured and predicted across the city, and we risk never being able to achieve the Scottish target for this pollutant at all locations. That said, we are still committed to doing all we can in pursuit of all air quality objectives.

The measures in the plan are wide ranging and are targeted towards those vehicle types (predominantly buses and heavy goods vehicles) identified in the Further Assessment of air quality as contributing most to the measured and modelled concentrations of nitrogen dioxide and particulates.

Whilst we will target the most polluting vehicles, we must also implement measures that will reduce the number of private cars transiting the AQMA as congestion at peak times is a key problem in Perth. The plan includes initiatives on bus and freight quality, green travel planning, eco driver training, Park + Ride, integration of air quality and planning and an ambitious road scheme which could deliver substantial benefits should it be realised.

Successful delivery of the plan will require us to work closely with our regional partners to deliver many of the individual measures, and we will report annually on the progress we are making, and revisit this plan as required.

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September 2009

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1 Introduction

There are few things as fundamental to human life as having clean air to breathe. Adult lungs have a huge surface area made up of delicate structures in intimate contact with the air that surrounds us. Air pollution has a well understood negative impact on human health and the surrounding environment. Tackling air pollution is about preventing ill health, improving health and life expectancies, and benefiting our environment and quality of life.

We are increasingly aware that modern life can come at a significant cost to the environment and public understanding of issues like climate change, air and water quality and waste management is developing as are regulatory frameworks set up to address them. One aspect of our behaviour that can have a negative impact on our environment is our reliance on private road transport, particularly the prevalence of cars in areas where infrastructure cannot cope with the sheer volume of traffic.

There are other related issues beyond those that are purely related to traffic emissions. Climate Change is an obvious international, national, regional and even local concern and society will have to mobilise to mitigate and adapt to its effects. Tackling air pollution and Climate Change in a joined up way is important and this plan has many measures that could have benefits to both.

Air quality policy has synergies with many other environmental policy areas. For instance, persons living adjacent to busy, and hence noisy, roads are also more likely to suffer from cardiovascular disease and early death. The Royal Commission on Environmental Pollution refers to the interconnectedness of urban issues such as car ownership, obesity, traffic pollution, respiratory health, road noise etc as a 'wicked problem'. We cannot solve the problem by resolving one issue but must augment our efforts to maximise our gains. It is clear that tackling traffic related air pollution has synergies with tackling climate change, noise pollution and many other issues to make our District a more pleasant and healthier environment in which to live.

In many parts of Scotland people are surprised to learn that we have areas of poor air quality. These 'Air Quality Management Areas' (AQMAs) relate to traffic emissions on parts of the road network, that is at times, operating beyond its designed capacity. Poor air quality is a symptom of the way our society has developed and operates. The significant challenge is to change some of our dependencies and long engrained habits.

2 An Air Quality Action Plan for Perth

This Air Quality Action Plan (AQAP) has been prepared by Perth & Kinross Council (PKC) under the Local Air Quality Management (LAQM) framework as it applies in Scotland.

Periodically, PKC will need to review the plan to ensure that it remains appropriate for the air quality situation in Perth. Therefore, it is possible that the plan may be varied in future in response to new information, challenges or opportunities.

This AQAP looks in detail at the local air quality issues that have led to the declaration of the built up area of Perth as a traffic related AQMA (AQMA). The plan sets out measures that PKC deem appropriate to achieve the following:

- *improve local air quality, in pursuit of the Scottish air quality objectives for nitrogen dioxide (NO₂) and particulate material (PM₁₀) that are currently exceeded at several locations within the AQMA;*
- *contribute to improving the health and wellbeing of the local community by reducing air pollution in Perth;*
- *enable members of the community, where and when possible, to change their transportation mode to a more sustainable means;*
- *reduce the economic impacts associated with health related air pollution impacts;*
- *integrate air quality into PKC decision making and relevant plans and strategies.*

This AQAP will rely heavily on effective partnership working as the measures making up the plan are implemented. Relevant departments within PKC will have to collaborate closely to take the measures forward, but will also need to work with regional partners such as Tayside and Central Scotland Transport Partnership (TACTRAN) on some of the bigger initiatives. This will obviously need good lines of communication to be maintained through the life of the plan while we strive to keep air quality high on the agenda.

In subsequent sections of this plan we explain the air quality issues we currently face in Perth, describe the scientific justification for the plan, broadly outline the measures we propose to take to address poor air quality and outline an indicative timetable for our AQAP.

3 Policy Context

There are a number of related plans and strategies at the local, regional and national level that are directly aligned with the aims of the AQAP, and will help to contribute to overall improvements in air quality across the PKC area. This chapter sets out the main links between these strategies and the AQAP.

3.1 The 2007 Air Quality Strategy (AQS)

DEFRA and the Devolved Administrations recently published the new Air Quality Strategy which introduced new objectives and policy measures, including:

- *early uptake of new tighter European vehicle emission standards (Euro standards);*
- *incentives for cleaner vehicles;*
- *the following measures that are considered to require additional development work:*
 - *reducing emissions from small combustion plants;*
 - *retrofitting of particulate filters to HGVs;*
 - *low emission zones;*
 - *a national road pricing scheme.*

3.2 Other Policies and Plans

3.2.1 Tayside and Central Scotland Transport Partnership (TACTRAN)

Regional Transport Partnerships (RTPs) were established in 2005 to strengthen the planning and delivery of regional transport in Scotland so that it better serves the needs of people and business. The main task of each RTP is to prepare a Regional Transport Strategy (RTS). Some RTPs are also responsible for the delivery of transport services, and all RTPs will be able to seek additional powers if required to deliver their strategies.

TACTRAN is a statutory body, established under Transport (Scotland) Act 2005. The Partnership includes Angus, Dundee City, Perth & Kinross and Stirling Councils. Its role is to bring together the local authorities and other key regional stakeholders, to take a strategic approach to transport in the region.

TACTRAN's RTS was developed in accordance with the Transport (Scotland) Act 2005. It sets out a vision and strategy for improving the region's transport infrastructure, services and other facilities, over the 15 years to 2023.

The RTS provides an analysis of current transport characteristics and provision within the TACTRAN region. It includes examples of good practice that can be adopted in delivering transport improvements.

Objectives have been defined under six broad themes: Economy; Accessibility, Equity and Social Inclusion; Environment; Health and Well-being; Safety and Security; and Integration. These have been mapped to the Scottish Government's Strategic Objectives.

In developing the RTS, TACTRAN have identified and examined the main transport problems, constraints and opportunities within the region. The Strategy seeks to build on and develop existing good practice across the region, and also through developing new measures ensure that TACTRAN's Vision and Objectives are achieved. The Strategy has at its heart three key strategic themes:

- *delivering economic prosperity;*
- *connecting communities and being socially inclusive;*
- *environmental sustainability and promoting health and wellbeing (this is closely aligned to the aims of this AQAP).*

The Minister for Transport, Infrastructure and Climate Change confirmed Scottish Government approval of the RTS on 24 June 2008. The RTS now has the statutory status provided for in the Transport (Scotland) Act 2005. The approved Strategy was published in 2008.

The RTS contains commitments to develop various sub-Strategies. Sub-Strategies have been produced for Buses; Park + Ride; Travel Information and Walking & Cycling. The development of each of these involved an audit of existing provision and a review of best practice, and extensive stakeholder consultation. This process developed objectives for each sub-Strategy that nest within the overarching RTS objectives and also identified key issues, gaps and opportunities. Following this, actions that address the issues and best achieve the sub-Strategy objectives were developed and an Action Plan produced identifying each action as either High, Medium or Low priority. Each sub-Strategy Action Plan will feed into the overall RTS Delivery Plan.

TACTRAN has published an indicative *RTS Delivery Plan (RTS DP)*, which focused on how the plan will unfold over the next 15 years.

The Perth specific measures in the RTS DP are central to this AQAP and many of the measures we have selected are derived from it. TACTRAN are a key partner in delivering measures that could benefit air quality in the Perth AQMA, and similarly they recognise PKC as a key partner in delivering the RTS DP. Close partnership working between these two organisations is an important aspect of delivering this AQAP.

The approved RTS DP will set out a proposed programme for the first three years of the Strategy from 2009/10 to 2011/12 and indicative programme of priorities in the medium (years 4-9) and longer (years 10-15) terms. It will be developed through continuing consultation with partner Councils and other stakeholders, and will take account of and inform Councils' evolving Single Outcome Agreements. It will also address resources and funding, and identify delivery responsibilities.

3.2.2 Perth and Kinross Local Transport Strategy

Local Transport Strategies (LTSs) are significant for LAQM as they set out local authorities' plans and priorities for the development of an integrated transport policy within their area of responsibility. They cover all forms of local authority provided transport and set out how authorities plan to tackle the associated problems, including those related to poor air quality. Among other things, Strategies may contain any proposals to utilise the road user charging powers, promote Green Transport Plans, and provide the context for Quality Bus Partnerships and walking and cycling strategies. The Scottish Government considers it important that AQAPs and local air quality strategies are consistent with, and where appropriate linked to, Local Transport Strategies.

The Scottish Government and Transport Scotland work closely with local authorities to ensure that Local Transport Strategies are properly co-ordinated with Regional Transport Strategies.

The PKC Local Transport Strategy was published in 2000 and sets out the Council's transport vision over the next 20 years. Through their LTS PKC have made a strong commitment to restricting the growth of traffic in Perth city centre and have given more priority to sustainable modes of transport. The LTS contains targets to increase the number of trips made as pedestrians, by bicycle and by public transport and policies have been implemented to achieve these targets. Policies have been put in place so that new developments should be located in existing centres or close to strategic transport links and that adequate pedestrian and cycling facilities are provided.

Commitments have been made in the LTS to support the Council's Environmental Strategy which aims to minimise the need to travel and encourage and promote the use of less environmentally damaging modes. The LTS encourages the increased use of public transport where appropriate and to work in partnership with transport operators, the private sector and voluntary groups to develop innovative transport and distribution solutions to increase levels of accessibility and access to employment and other services from rural areas.

3.2.3 PKC Structure and Local Plans

Under the statutory obligations of the Town and Country Planning (Scotland) Act 1997 PKC has a duty to prepare Development Plans, ie Structure and Local Plans. Perth and Kinross is also an individual Structure Plan area.

Structure Plan

This gives broad guidance for land use throughout the whole of Perth and Kinross, and covers a 20 year period. Providing for change in population, employment and environmental conditions, the Structure Plan indicates what sort of development should be encouraged and where this should take place.

The Approved Perth and Kinross Structure Plan is based on three key themes: sustainable communities, a sustainable economy, and sustaining the environment and resources. The plan provides a spatial strategy for Perth and Kinross, describes how the strategy can be delivered, and details the monitoring process to assess the continuing relevance of the plan.

The Structure Plan includes a Strategic Planning Objective which has an obvious link to this AQAP:

"To improve air quality, reduce pollution problems and congestion"

In addition, a headline indicator (Air Quality H10) is also included, with an associated measure of progress, namely "Number of days of air pollution". While this is not directly aligned with the terms of reference of the air quality objectives that are being exceeded in Perth, it shows that air quality is already a consideration in PKC planning policy.

The Perth and Kinross Structure Plan was produced in finalised form in July 2002, and was published after consultation, becoming active on 13 June 2003.

Local Plans

The purpose of the Local Plan is to guide development and change in land use in the way that can best serve the community interest. One of the prime functions is directly aligned with this AQAP:

"To encourage economic, social and environmental regeneration"

There are currently six Local Plans in Perth and Kinross, though this will be reduced to five when Perth Central and Perth Area Local Plan are amalgamated. Further amendments to the planning system are detailed at the end of this section.

The Perth Central Local Plan covers Perth City Centre. Its boundaries are the North and South Inches, the River Tay and to the west Caledonian Road. It contains detailed guidance on where we will encourage development and where it is unlikely to be allowed. It guides day-to-day planning decisions and influences the determination of planning applications.

The key aims of the Plan are:

- *To concentrate development in the city centre to minimise land requirements and reduce the need to travel.*
- *To maintain Perth City as the main centre for shopping, commercial, leisure and service activity.*

The reduction of traffic is a top priority in the Plan as this will improve the environment of the town centre. This will be achieved through further pedestrianisation, traffic calming and improved public transport including the provision of Park + Ride facilities.

The Perth Area Local Plan is the land-use plan covering Perth City (with the exception of the Central Area), the surrounding countryside and villages. It contains detailed guidance on where PKC will encourage development and where it is unlikely to be allowed. It guides day-to-day planning decisions and influences the determination of planning applications.

The aims of the Perth Area Local Plan are:

- *To develop Perth City as the main focus for economic activity within Perth and Kinross.*
- *To develop Perth City as the main centre for services.*
- *To sustain rural and village community services by allowing modest development within villages.*

Improvements to transport are proposed in the plan, including initiatives such as a new road crossing over the River Tay to the north of Perth, upgrading the A90, improvements to rail facilities, and a safe pedestrian crossing over the western bypass at Inveralmond.

A new system of development Planning is in the process of being implemented by PKC under the Town and Country Planning (Development Planning) (Scotland) Regulations 2008. The above mentioned Development Plan System of Structure Plans and Local Plans will eventually be replaced, once the new Plans are adopted under the new system.

The New Development Plan System for Perth and Kinross will consist of two tiers of Plans:

- 1. A Strategic Development Plan System (The Development Plan Scheme has been Published)*
- 2. A Single Local Development Plan*

3.2.4 Climate Change Declaration

Scotland's Climate Change Declaration acknowledges the reality and importance of climate change and is a means of demonstrating local leadership and commitment to action: all of Scotland's 32 local authorities are signatories. The Declaration includes commitments both to mitigate our impact on climate change through reducing greenhouse gas emissions and to adapt to predicted climate change impacts.

PKC is a signatory to the Declaration and some of the commitments are closely aligned to this AQAP. Where carbon dioxide (CO₂) emissions from the PKC operations are mitigated by reducing use of road transport or fossil fuels, there will be a direct positive effect on air quality in the AQMA. In addition, the Council are committed to working with the community to help them to reduce CO₂ and similarly, where these could be delivered by a reduction in either road transport or general fossil fuel combustion, there will be a co-benefit to air quality in the Perth AQMA.

3.2.5 City Centre Traffic Management Review

In April 2006 PKC approved the Perth City Centre Traffic Management Review (CCTMR). The recommendations agreed, included the promotion of a Traffic Regulation Order (TRO) to reverse the one-way for traffic in High Street between Scott Street and South Methven Street, alter the waiting restrictions in High Street, and restrict access to Murray Street to taxis and bicycles.

The preferred CCTMR option as advised by PKC included:

- *High Street (between Scott Street and South Methven Street) one-way westbound*
- *Murray Street Taxis and Pedal Cycles only*
- *Charterhouse Lane one lane approach to King Street and reversal of Priorities*
- *Traffic Calming in the New Row area*

4 Local Air Quality Management

Most of Perth and Kinross does not have an air quality problem. However, high concentrations of NO_2 and PM_{10} are observed and predicted within Perth city centre and along major routes into the city. It is highly likely that the annual average NO_2 objective for 2005 and the annual average PM_{10} objective for 2010 will continue to be exceeded at a number of locations for the foreseeable future if action is not taken. PKC have a statutory duty to work towards achievement of these objectives.

4.1 Impacts of Poor Air Quality

Air pollution can have a serious effect on aspects of people's health. Exposure to air pollution can have a long-term effect on health, associated in particular with premature mortality due to cardiopulmonary (heart and lung) effects. In the short-term, high pollution episodes can trigger increased admissions to hospital and contribute to the premature death of those people that are more vulnerable to daily changes in levels of air pollutants. Air pollution also has negative impacts on our environment, both in terms of direct effects of pollutants on vegetation, and indirectly through effects on the acid and nutrient status of soils and waters. Air pollution is currently estimated to reduce the life expectancy of every person in the UK by an average of 7-8 months, and this is a key reason for managing air quality.

4.2 Air Pollution in Perth

4.2.1 Nitrogen Oxides

Nitrogen oxides (NO_x) are formed during high temperature combustion processes from the oxidation of nitrogen in the air or fuel. The principal source of nitrogen oxides, nitric oxide (NO) and NO_2 , collectively known as NO_x , is road traffic. NO and NO_2 concentrations are therefore greatest in urban areas where traffic is heaviest. Other important sources are power stations, heating plant and industrial processes. NO_x is released into the atmosphere mainly in the form of NO , which is then readily converted to NO_2 by reaction with ozone in the air. Elevated levels of NO_x occur in urban environments under stable meteorological conditions, when the air mass is unable to disperse.

NO_2 has a variety of environmental and health impacts. It is a respiratory irritant, may exacerbate asthma and possibly increase susceptibility to infections. In the presence of sunlight, it reacts with hydrocarbons to produce photochemical pollutants such as ozone at ground level. In addition, NO_x can be converted to nitric acid, which contributes to acid deposition. NO_2 is monitored by passive diffusion tubes at 52 sites in Perth and Kinross and by real-time automatic monitors in High Street (near the junction with Scott Street) and Atholl Street between North William Street and North Methven Street. A full up-to-date discussion of the current NO_2 issue in Perth is provided in subsequent sections.

4.2.2 Particles

Airborne PM_{10} varies widely in its physical and chemical composition, source and particle size. Particles are often classed as either primary (those emitted directly into the atmosphere) or secondary (those formed or modified in the atmosphere from condensation and growth). PM_{10} particles (the fraction of particulates in air of very small size, ie less than $10\mu\text{m}$ in diameter) can potentially pose significant health risks, as they are small enough to penetrate deep into the lungs.

A major source of fine primary particles is combustion processes, in particular diesel combustion. Secondary particles are typically formed when low volatility products are generated in the atmosphere. The atmospheric lifetime of PM₁₀ is strongly related to particle size, but may be as long as 10 days for particles of about 1 µm in diameter.

Concern about the potential health impacts of PM₁₀ has increased very rapidly over recent years. Increasingly, attention has been turning towards monitoring the smaller particle fraction, PM_{2.5}, which is capable of penetrating deeper into the lungs, or to even smaller size fractions or total particle numbers.

PM₁₀ is monitored in Perth by real-time automatic monitors in High Street (near the junction with Scott Street and Atholl Street (between North William Street and North Methven Street). A full up-to-date discussion of the current PM₁₀ issue in Perth is provided in subsequent sections.

4.3 Air Quality Strategy Objectives

Since there are health risks associated with poor air quality, the UK, in line with all other EU Member States has set down (in the UK Air Quality Strategy) air quality objectives for certain substances. Their achievement should provide even the most vulnerable members of society with adequate protection against the harmful effects of poor air quality. The objectives are reviewed periodically to ensure that they remain the most relevant method of assessing whether air quality presents a significant health risk.

Specific objectives apply for some pollutants in Scotland. They provide a better level of protection but may be harder to achieve. There is currently no risk of exceedence of the majority of the AQS pollutants. In common with many other local authorities who have declared AQMAs, the pollutants of concern are primarily associated with combustion of petrochemicals by road vehicles. The pollutants of concern (NO₂ and PM₁₀) in Perth and their air quality objectives are presented in Table 4.1 below.

Table 4.1: Objectives included in the Air Quality Regulations for the purpose of Local Air Quality Management

Pollutant	Concentration	Measured as	Date to be Achieved
NO ₂	200µg/m ³ not to be exceeded more than 18 times a year	1 hour mean	31.12.2005
	40µg/m ³	annual mean	31.12.2005
Particles (PM ₁₀) (gravimetric) ^a All authorities	50µg m ⁻³ not to be exceeded more than 35 times a year	24 hour mean	31.12.2004
	40µg/m ³	annual mean	31.12.2004
Authorities in Scotland only ^b	50µg/m ³ not to be exceeded more than 7 times a year	24 hour mean	31.12.2010
	18µg/m ³	annual mean	31.12.2010

^a Measured using the European gravimetric transfer sampler or equivalent

^b These 2010 Air Quality Objectives for PM₁₀ apply in Scotland only, as set out in the Air Quality (Scotland) Amendment Regulations 2002

The UK Government and the devolved administrations have recently set national air quality objectives for PM_{2.5}, which are set out in Figure 4.1. These objectives have not been incorporated into LAQM Regulations, and authorities have no statutory obligation to review and assess air quality against them, though this obligation may exist in future as a result of recent changes in EU legislation.

Figure 4.1: Proposed new PM_{2.5} objectives (not included in Regulations)

Region	Air Quality Objective		Date to be achieved
	Concentration	Measured as	
UK (except Scotland) ^a	25 µg/m ³	annual mean	2020
Scotland ^a	12 µg/m ³	annual mean	2020
UK urban areas	Target of 15% reduction in concentrations at urban background locations	3 year mean	Between 2010 and 2020

^a The concentration cap is to be seen in conjunction with the 15% exposure reduction target

Efforts to achieve the NO₂ and PM₁₀ objectives should be focused on locations where members of the public are likely to be exposed over the averaging period of the objective. Figure 4.2 summarises the locations where these objectives should and should not apply.

Figure 4.2: Typical locations where the NO₂ and PM₁₀ objectives should and should not apply

Averaging Period	Pollutants	Objectives should apply at ...	Objectives should not generally apply at ...
Annual mean	NO ₂ PM ₁₀	All background locations where members of the public might be regularly exposed. Building facades of residential properties, schools, hospitals, libraries etc.	Building facades of offices or other places of work where members of the public do not have regular access. Gardens of residential properties. Kerbside sites (as opposed to locations at the building facade), or any other location where public exposure is expected to be short term
24 hour mean	PM ₁₀	All locations where the annual mean objective would apply. Gardens of residential properties.	Kerbside sites (as opposed to locations at the building facade), or any other location where public exposure is expected to be short term.
1 hour mean	NO ₂	All locations where the annual mean and 24 and 8-hour mean objectives apply. Kerbside sites (eg pavements of busy shopping streets). Those parts of car parks and railway stations etc which are not fully enclosed. Any outdoor locations to which the public might reasonably be expected to have access.	Kerbside sites where the public would not be expected to have regular access.

4.4 Policy Framework for Achieving the Objectives

Several key policies have been introduced by the EU with the aim of reducing emissions to air of these harmful compounds. These policies have also been adopted by the UK, including Scotland. Key policies include:

- *a stringent regulatory framework that controls the environmental impacts from industry (including the Pollution Prevention and Control regulations);*
- *increasingly stringent emissions controls on new road vehicles (so-called Euro standards);*
- *increasingly stringent rules on the quality of liquid fuels and on the control of vapour from these fuels at each stage of their transfer.*

These policies are focussed on the reduction of harmful substances into the atmosphere and have achieved very large reductions since their introduction. Increasingly the emphasis is on finding ways to combine these with measures to reduce emissions of substances that contribute to climate change.

In addition to these the UK has a local air quality policy framework called Local Air Quality Management (LAQM). This is complementary to the national policies but concentrates on local air quality issues and policies. The Environment Act 1995 Part IV sets out the requirements of LAQM which are statutory duties for local authorities. This draft AQAP is therefore being prepared specifically in order to comply with the requirements of the Act.

Note that local authorities are not legally obliged to meet the air quality objectives but must demonstrate that they are working towards them. SEPA reserve powers under the Environment Act 1995 to direct local authorities where it appears they are not meeting their obligations under the Act, subject to the approval of Scottish Ministers. Invoking these powers is regarded as a last resort with priority given to providing support and information on local, technical and process issues.

5 LAQM in Perth and Kinross

This section provides information on the best current understanding of the air quality in the PKC area (though we have concentrated on providing information pertinent to Perth AQMA). It draws on the results of previous reports carried out by PKC to fulfil their statutory obligations under LAQM.

PKC has been reporting under the LAQM framework since 1997. The most pertinent results and discussion from the published reports are provided below. We provide a substantial amount of information from the Further Assessment, as this provides the scientific basis for the development of this AQAP.

5.1 2004 Detailed Assessment

A Detailed Assessment, completed in 2004 for PKC, found that it was likely that the annual mean NO₂ objective for 2005 would be exceeded and the PM₁₀ objectives for 2010 will be exceeded in areas where personal relevant exposure occurs. The report concluded that PKC needed to declare an AQMA to cover the area of exceedence in the Atholl Street/Barrack Street Junction and possibly other areas of Perth City. Subsequently the whole of the city of Perth was declared an AQMA for NO₂ and PM₁₀.

5.2 2006 Updating and Screening Assessment

An Updating and Screening Assessment for PKC was completed in 2006. At this stage monitoring data and modelling indicated a number of exceedences of the annual mean objective for NO₂ at busy junctions in Perth and no exceedences of the 2004 objectives for PM₁₀ in the PKC area. Projections to 2010 indicated that the annual mean objective for PM₁₀ is unlikely to be met at a number of locations close to junctions in central Perth. All predicted and measured exceedences were inside the existing AQMA. The report concluded that PKC was not required to carry out a Detailed Assessment for carbon monoxide, benzene, 1,3-butadiene, lead, sulphur dioxide, NO₂ and PM₁₀ (both NO₂ and PM₁₀ had already been the subject of a Detailed Assessment and would be looked at in the coming Further Assessment).

5.3 2007 Further Assessment

Since an AQMA was declared PKC were obliged to complete a Further Assessment of air quality for Perth. The objective of the Further Assessment was to confirm the conclusions of the Detailed Assessment and to test city centre traffic management scenarios to assess the likely impact they may have on pollutant concentrations in future years, and therefore their likely effectiveness. This report investigated current and potential future NO₂ and PM₁₀ levels through an examination of the location and size of principal traffic emission sources, emissions modelling exercises and by reference to monitored air quality data.

At the time of writing, the following potential action plan scenarios were proposed, all of which were taken into account within the traffic modelling and were planned over the next 13 years, forming three scenarios to be modelled: *2005 Base Case*, *2005 with CCTMR* and *2018 with CCTMR and new Cross Tay Link*, the details of which are described below.

2018 Local Plan Developments with new Cross Tay Link. This included:

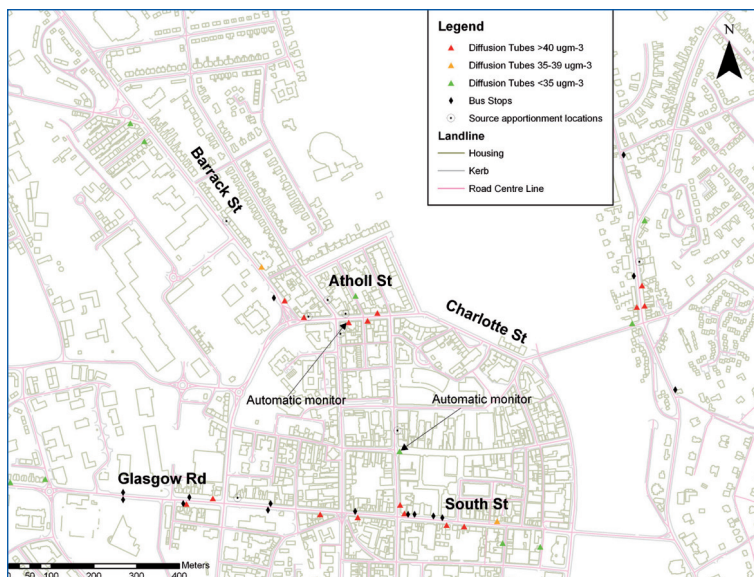
- *New River Crossing from A9 North of Inveralmond to A93 and A94*
- *Inveralmond Improvements*

- Broxden Improvements
- Crieff Road Improvements
- New A9 Over bridge from Crieff Road
- Localised Junction Improvements
- CCTMR Preferred Option

The report included an assessment of source apportionment, which is the process whereby the contributions from different sources of a pollutant are determined. Relevant sources could include traffic, local background, industrial and domestic. Contributions from the different types of vehicles (for example, cars, lorries and buses) can also be considered to highlight which class of vehicle is contributing most to the emissions from traffic. Source apportionment allows the most important source or sources to be identified and options to reduce ambient concentrations of pollutants can then be considered and assessed.

Source apportionment has been considered at those locations in Perth where the assessment predicted the highest concentration of NO₂ in 2005 at or near to a relevant receptor. Figure 5.1 shows the eight locations in question.

Figure 5.1: Source apportionment locations in Perth



The locations and their OS grid co-ordinates were:

1. Barrack Street (311284, 724165)
2. Atholl Street 1 (311476, 723942)
3. Melville Street (311521, 723981)
4. North Methven Street (311551, 723902)
5. Atholl Street 2 (311563, 723949)
6. Main Street (312250, 724070)
7. York Place (311310, 723520)
8. Kinnoull Street (311684, 723676)

5.3.1 NO₂ Results

Both monitoring and modelling generally indicate that in each scenario concentrations are likely to be above the required annual mean concentration at several locations in Perth City Centre. At fewer locations it is possible that the hourly NO₂ objective will be exceeded. An example of the mapped results for the 2005 base case is reproduced in Figure 5.2 below. This indicates a pattern of higher concentrations along roads and especially at junctions.

The concentration of NO₂ is influenced by several factors but key among them is the total concentration of nitrogen oxides (NO_x). This is a group of closely related substances including NO₂. The concentration of each substance varies with time and location. Therefore, to ease the management of NO₂ concentrations (particularly when considering the sources of NO₂) there is a convention to consider total NO_x concentrations rather than NO₂.

Figure 5.2: Predicted Annual Mean NO₂ concentrations in Perth, 2005

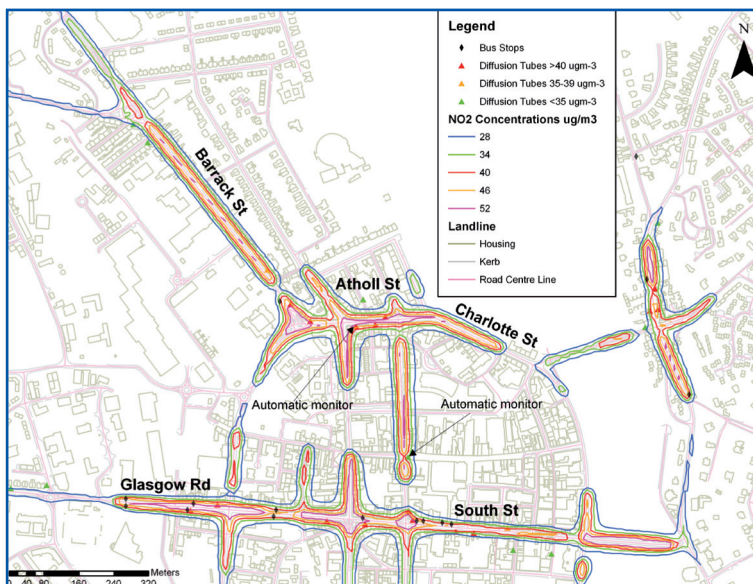


Figure 5.3 and Figure 5.4 overleaf present the results of the source apportionment assessment in terms of the relative contribution from several sources towards the total NO_x concentration at the receptors.

The background concentration is the contribution from sources outside of Perth City Centre. Industrial, road transport and heating activity across a large area contribute to the background concentration. This is, on average, a small contribution (13%) to total NO_x concentrations in Perth City Centre.

Figure 5.3: Source apportionment results for NO_x in 2005
(relative contributions of three different sources at each receptor location)

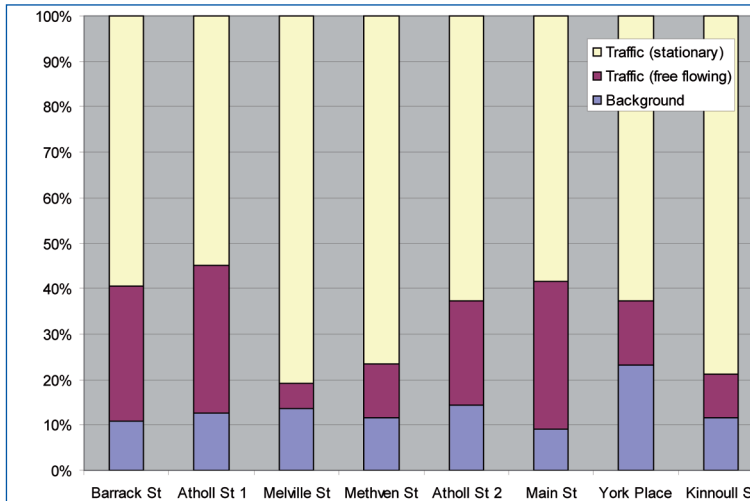
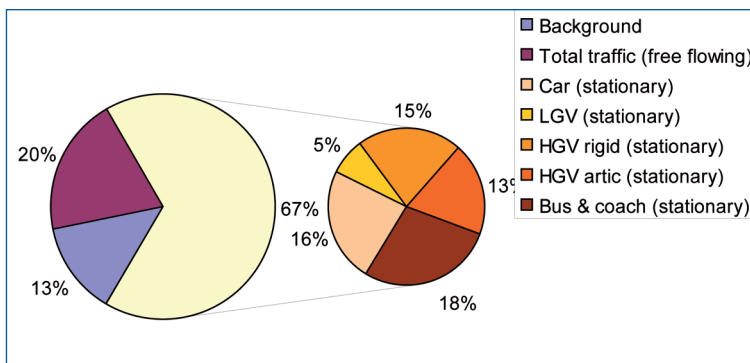


Figure 5.4: Source apportionment results for NO_x in 2005
(contributions of several different sources averaged across all receptor locations)



Results indicate that freely moving road traffic on roads in the City Centre is a relatively small contributor (20% on average) to total NO_x concentrations. This contribution is somewhat variable by location being up to 30% on some important routes in the north of the city (eg Atholl Street).

By far the largest contribution is from stationary road traffic (due to the high traffic volumes and queuing at light-controlled junctions) being 67% of total NO_x on average. Looking more closely at this contribution (Figure 5.4) it is seen that heavy duty vehicles (buses, coaches and heavy goods vehicles) contribute most and may be responsible for approximately 50% of total NO_x concentration. These vehicle types are typically only a small part of the total traffic on the roads.

The source apportionment analysis suggests that local efforts to manage NO₂ concentration should focus on:

1. Reducing the amount of time that traffic is stationary in Perth city centre
2. Reducing the impacts of heavy duty vehicles (HDVs) including buses, coaches and HGVs

5.3.2 PM₁₀ Results

The Further Assessment confirmed that, in 2005, PM₁₀ concentrations are likely to achieve the objectives in Perth city centre. However, by 2010 a significant risk exists of exceedence of the Scottish annual mean objective for PM₁₀ in Perth (the Scottish objective is much more stringent than that for the UK as a whole). Assessment for 2018 with the CCTMR and Cross Tay Link in place also confirmed a significant risk of exceedence of the both the 2010 Scottish annual mean objective for PM₁₀ and the 2010 daily mean objective set for Scotland. An example of the mapped results for the 2005 base case is reproduced in Figure 5.5. This indicates a pattern of higher concentrations along roads and especially at junctions.

Figure 5.5: Predicted Annual Mean PM₁₀ concentrations in Perth, 2005

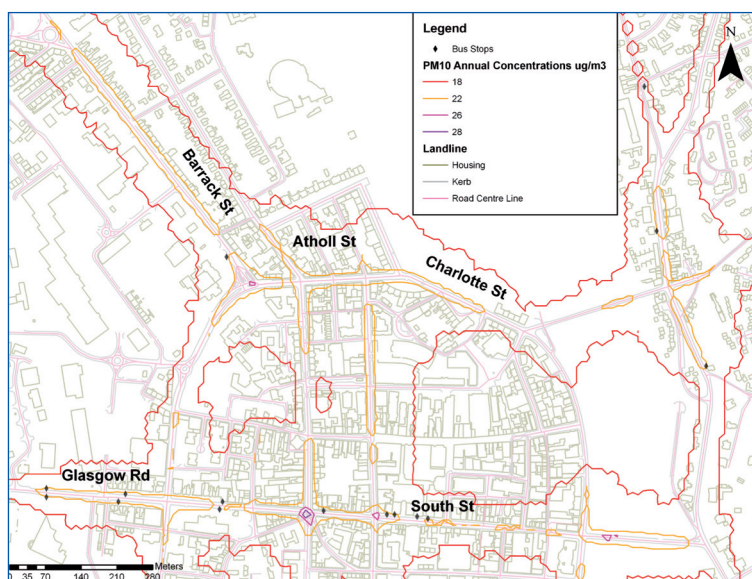


Figure 5.6 and Figure 5.7 present the results of the source apportionment assessment in terms of the relative contribution from several sources towards the total PM₁₀ concentration at the receptors.

Figure 5.6: Source apportionment results for PM₁₀ in 2005
(relative contributions of three different sources at each receptor location)

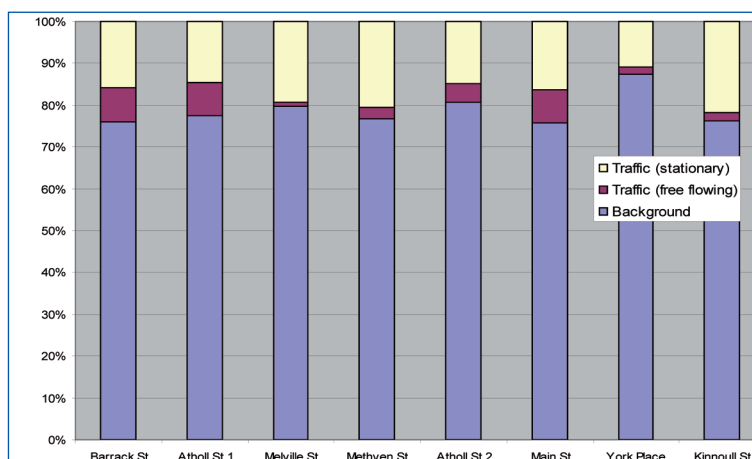
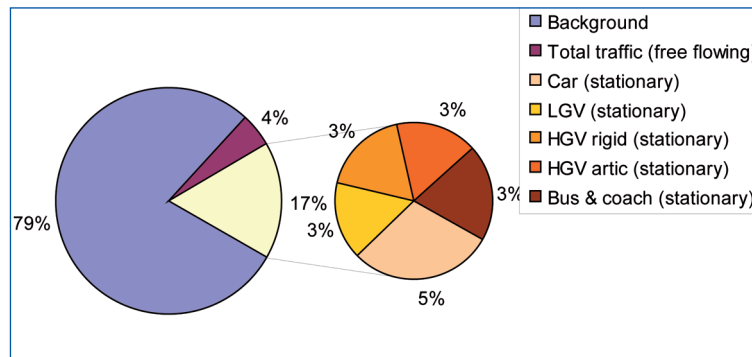


Figure 5.7: Source apportionment results for PM₁₀ in 2005
(contributions of several different sources averaged across all receptor locations)



The background concentration is the contribution from sources outside of Perth City Centre. Industrial, road transport and heating activity across a large area contribute to the background concentration. In addition, processes in the atmosphere transform gaseous pollutants into particulate matter and in this way sources many kilometres distant from Perth contribute to concentrations in the city. This is the largest contribution (79% on average) to total PM₁₀ concentrations in Perth City Centre.

Stationary road traffic makes a small contribution being 17% of total PM₁₀ on average. Looking more closely at this contribution Figure 5.7 it is seen that heavy duty vehicles (buses, coaches and heavy goods vehicles) contribute most and may be responsible for approximately 80% of the stationary traffic contribution. These vehicle types are typically only a small part of the total traffic on the roads. Road traffic moving freely on roads in the City Centre is apparently a small contributor (4% on average) to total PM₁₀ concentrations.

The source apportionment analysis suggests that local efforts to manage PM₁₀ concentration should focus on:

- 1. Reducing the background concentration of PM₁₀ via renewed efforts at the national and international scale as well as the whole of PKC area.**
- 2. Reducing the impacts of heavy duty vehicles (HDVs) including buses, coaches and HGVs particularly their impacts when stationary.**

The Further Assessment recommended that PKC retain their city wide AQMA for both NO₂ and PM₁₀, and proceed with preparation of an action plan to reduce concentrations.

Reductions in road traffic emissions, particularly aimed at reducing HDV traffic and the amount of time that traffic is stationary, would reduce both NO₂ and PM₁₀ concentrations locally. These actions could be focused on the most congested streets in the north and centrally through the City but would be better focused on all city centre roads since the relocation of congestion from one place to another is not a sustainable solution to the poor air quality in the City. However, although these actions are predicted to be particularly effective for NO₂, the impact on local PM₁₀ concentrations is predicted to be small.

Additional policies to reduce traffic, industrial and domestic emissions across Perth and Kinross, Scotland and the rest of the EU are necessary to make a significant reduction in local PM₁₀ concentrations and thereby achieve the stringent Scottish objective.

Another key set of conclusions from the Further Assessment were that the CCTMR and Cross Tay Link scenarios reveal additional insight into effective emission reduction strategies.

These two measures provide improvements in city centre NO₂ and PM₁₀ concentrations over and above those that would otherwise be the case. However, they are not predicted to remove all risk that the air quality objectives for these two pollutants will be eliminated either by 2010 or for at least several more years thereafter. This is partly due to the more stringent objectives that will apply in Scotland from 2010 onwards but also to the remaining high volumes of traffic on Perth's roads.

5.4 Progress Report 2008

The most recent Review and Assessment report produced by PKC was a Progress Report in 2008. This is a basic assessment which looks at monitoring data for the previous year and considers any new development which could impact air quality, though in this case the assessment considers the whole PKC area, not just the AQMA (as in the Further Assessment). We propose to supply 2008 data in the final version of this plan by which time the automatic measurements will be ratified.

NO₂ Monitoring

Automatic monitoring data for the AQMA shows that Atholl Street was at the hourly objective and breached the annual mean, and High Street achieved both NO₂ objectives (see Table 5.1). Diffusion tube monitoring for 2007 shows that 19 sites in Perth exceeded the annual mean objective with four sites recording concentrations of 35 to 40µg.m⁻³. All the sites in Perth which are above or close to the objectives lie within the city centre or close to it on the main through routes and are within the existing AQMA (see Table 5.2 for a summary of data from High Street and Atholl Street).

Table 5.1: Automatic monitoring data for NO₂ within the AQMA for 2007 (µg/m³)

Location	Objective Averaging Period	Objective Concentration	Measured	Exceedences	Data Capture
High Street	Hourly mean	200µg/m ³	155µg.m ⁻³ (max)	0	96.2%
	Annual mean	40µg/m ³	28µg.m ⁻³	0	
Atholl Street	Hourly mean	200µg/m ³	294µg.m ⁻³ (max)	18	99.1%
	Annual mean	40µg/m ³	60µg.m ⁻³	1	

Table 5.2: Diffusion tube data for NO₂ within the AQMA for 2007 (µg/m³)

Location	Objective	2003	2004	2005	2006	2007
High Street	40µg/m ³	29.7	28	28	28	28
Atholl Street	40µg/m ³	-	40 (estimate)	54	57	60

Bias adjusted diffusion tube data for 2008 is unavailable at present. An initial screening check of these data shows no improvement in concentration at either site.

PM₁₀ Monitoring

Monitoring for PM₁₀ during 2007 at High Street showed the 24 hour objective was breached five times, and that the 2004 annual mean objective was achieved, but that the 2010 annual mean objective would not be achieved. At Atholl Street the 24 hour objective was exceeded on 6 occasions, with the same conclusions on the 2004 and 2010 objectives. It is clear that the 2010 PM₁₀ objective of 18µg.m⁻³, represents a major challenge to PKC, when we consider the dominance of the background contribution that the Council cannot influence to any great degree.

Monitoring data for 2007 is shown for both automatic sites compared to the 24 hour PM₁₀ objective (Table 5.3) and the 2004 and 2010 annual mean objectives (Table 5.4).

Table 5.3: Automatic PM₁₀ monitoring data for the AQMA in 2007 - 24hr Objective (µg/m³)

Location	24 Hour Objective	Measured	Exceedences	Data Capture
High Street	50µg/m ³	55µg/m ³ (max) 71.5µg/m ³ (max x 1.3)	5	99.4%
Atholl Street	50µg/m ³	60µg/m ³ (max) 78µg/m ³ (max x 1.3)	6	94.7%

Table 5.4: Automatic PM₁₀ monitoring data for the AQMA in 2007- 2004, 2010 annual mean objectives (µg/m³)

Location	2004 Annual Objective	2010 Annual Objective	Correction Factor	2004	2005	2006	2007
High Street	40µg/m ³	18µg/m ³	1.3	17	18	21	20
			1.14	15	16	18	17
Atholl Street	40µg/m ³	18µg/m ³	1.3	25	25	29	27
			1.14	22	22	25	24

It should be noted that the procedure for correcting the PM₁₀ data has been revised for the new Technical Guidance (previously the data was multiplied by 1.3 and 1.14 to correct for TEOM under reading) so when 2008 data are presented, we will use the new methodology to correct it. This will be provided in the first monitoring report on this AQAP in April 2011.

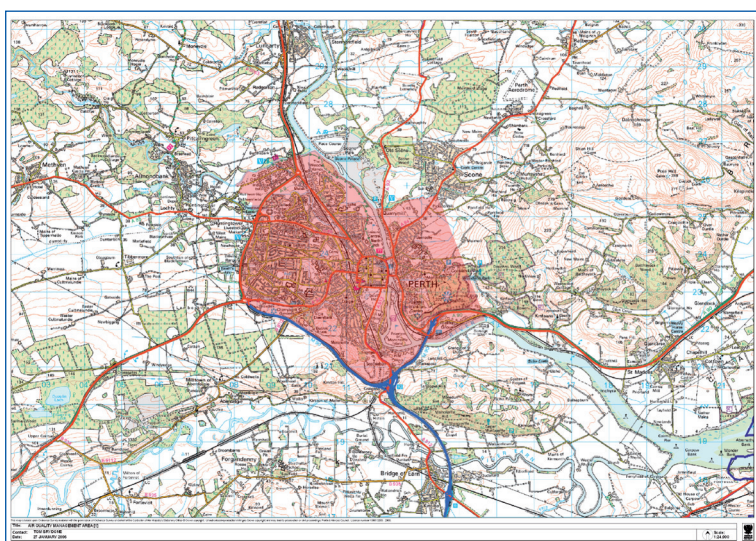
When we consider the monitoring data it is clear that the air quality problems in Perth show no sign of improving in the worst locations in the short to medium term, thereby reinforcing the need for this AQAP.

6 Perth Air Quality Management Area

PKC formally declared an AQMA in 2006 to cover the areas of exceedence in the Atholl Street/Barrack Street Junction and other areas of Perth identified in the Detailed and Further Assessments. *Perth & Kinross Council Air Quality Management Area (No 1)* came into effect on 5 May 2006. A copy of the order is provided in Appendix 3.

The whole of the city of Perth was declared an AQMA for NO₂ and PM₁₀ and development of this action plan is the first step in tackling the problem. A map of the AQMA is provided in Figure 6.1, which also shows (in red and blue) all major routes into, through and out of the city.

Figure 6.1: Perth AQMA



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7 Development of the Air Quality Action Plan

This action plan has been developed in line with guidance and has involved meetings with several departments of the local authority and other stakeholders. This section describes the processes followed so far, the consultation activities carried out by PKC, the options that were not carried forward to the final plan, and a discussion of those options selected for the plan.

7.1 Guidance and Legislation

In Scotland the relevant action planning guidance for Local Authorities is:

- *Part IV of the Environment Act 1995 - Local Air Quality Management - Technical Guidance, LAQM.TG(09)*
- *Part IV of the Environment Act 1995 - Local Air Quality Management Policy Guidance (Scotland), LAQM.PG(S)(09)*

The plan has been developed so far with due regard to this guidance and previous versions as appropriate.

The plan has also been developed with due regard to the Scottish legislation on Strategic Environmental Assessment:

- *Environmental Assessment (Scotland) Act 2005*

7.2 AQAP Steering Group

A steering group was formed to oversee the development of the AQAP. The steering group includes local authority officers and other individuals from relevant stakeholder groups. The steering group includes:

- *PKC officers from the following services:*
 - *Environmental Health*
 - *Sustainable Development*
 - *Roads*
 - *Transport Planning*
 - *Public Transport*
 - *Property*
 - *Economic Development*
 - *Fleet Management*
- *Representatives from TACTRAN, our key regional partner in delivering transportation initiatives*
- *Representatives from Tayside Police, a Community Planning partner*
- *Consultants engaged by the Council to assist the deliberations of the steering group*

7.3 Development Process

The steering group has met several times between July 2006 and March 2009. These meetings have included the following agendas:

- *Overview of the requirements of the action planning process*
- *Review of air quality management options for the steering group to consider as potential measures within the AQAP*
- *Steering group meeting to further consider the options*
- *Review of the draft assessment of air quality management options*
- *Steering group meeting to further consider this assessment*
- *Meeting with elected members to outline the options in the draft plan*
- *Steering group meeting to consider outcomes of the public consultation exercise, and assign responsibility for each option*
- *Meetings with individual PKC and TACTRAN officers who have assumed responsibility for the final options*

The steering group has followed the relevant guidance in developing the plan. In summary this states that the AQAP should include:

1. *quantification of the source contributions...[to] allow...measures to be effectively targeted;*
2. *evidence that all available options have been considered on the grounds of cost and feasibility;*
3. *how the authority will use its powers and also work with others;*
4. *clear timescales within which...to implement the measure;*
5. *quantification of expected impacts and...an indication as to whether these will be sufficient;*
6. *how the authority intends to monitor and evaluate the effectiveness of the plan.*

The development process outlined above has produced a set of individual options that PKC propose to implement with its regional partners to address the air quality problems Perth currently faces.

7.4 Climate Change Impact Assessment

One of the concerns of PKC is the effect of the proposed AQAP on greenhouse gas emissions (GHG). As a result, a study was commissioned¹ to undertake a study in terms of the effect of the AQAP on GHG emissions for the whole of Perth and Kinross, rather than just the AQMA area and to also consider other forms of mitigation, for the Perth and Kinross area as a whole. This work was carried out in the context of development of a GHG emissions inventory for the whole authority, with aspects of the report specifically dedicated to the impact of the AQAP. Some of the measures included in this AQAP were subject to an assessment of how they might impact on GHG in PKC. It should be noted that the AQAP was at a reasonable early stage in its development so only some of the final measures are included in the GHG assessment. In general, measures that reduce emissions of air pollutants also reduce emissions of GHG. The key findings are presented in Table 7.1 overleaf.

¹ *Perth and Kinross Greenhouse Gas Emissions Study, Perth & Kinross Council, 2007*

Table 7.1: Greenhouse Gas Impacts of Selected AQAP Measures

Type of Initiative That Could Reduce GHG Emissions	Explanation	Cost of Initiatives to P&K Council	Annual CO ₂ Saving	Cost-Effectiveness	Risk to Emission Savings
Cross Tay Link combined with city centre management to minimise car use	The link will divert through traffic around the city and reduce the volume of traffic within the city. A simultaneous increase in development of cycle and pedestrian routes, coupled with restrictions on travel would remove incentives to drive into town. Emissions savings should result from a reduction in number of stationary vehicles.	££££	▽▽	LOW	With ineffective city centre traffic control, the number of vehicles may increase to match road capacity.
Increased number of bus routes and frequency of services	Many rural destinations are poorly served by buses. An increased frequency of service may encourage some onto the buses	££	▽▽	MEDIUM	Empty buses may cause more pollution than cars
Higher fuel efficiency specifications for buses on non-commercial routes	Some of the private buses in service are old and not the most fuel-efficient models	£	▽	LOW	Cost of replacement vehicles could be passed on to the Council
Increased public information on public transport options and promotion of incentives for tourists	Visitors to the area are unfamiliar with transport options. The more information and clear signage there is, the more people are likely to use public transport	££	▽▽	MEDIUM	Increasing use of public transport is as much about changing the mindset of tourists.
A new Park + Ride scheme into the town centre	A reduction in the number of vehicles travelling into Perth will reduce emissions from both moving and stationary vehicles	£££	▽	LOW	More drivers take to the road to take advantage of reduced traffic

Key

£	£0-30,000 (eg for small surveys or campaigns, changes in procedures, policies or systems, or other options)
££	£30,000-60,000 (eg for bigger campaigns, or for a full time officer)
£££	£60,000-200,000 (eg for small traffic management schemes)
££££	£200,000+ (eg for new infrastructure)
▽	10 to 100 tonnes CO ₂ /yr
▽▽	100 to 1,000 tonnes CO ₂ /yr
▽▽▽	1,000 to 10,000 tonnes CO ₂ /yr

Cost-effectiveness is based on the combination of cost and carbon savings. The mid-point of the ranges was taken and divided cost by carbon savings to produce a values in £/tonnes CO₂. Where the costs are in the range £0-10/tonnes CO₂, we have assigned a 'high' cost-effectiveness score; costs in the range £10-100/tonnes CO₂ are assigned a 'medium' score; and costs in the £100+ /tonnes CO₂ range a 'low' score. We are only interested in the cost-effectiveness of emissions savings, so no score is given for initiatives that increase emissions.

7.5 Strategic Environmental Assessment

In addition to estimating the impact of the AQAP on GHG emissions, PKC commissioned a Strategic Environmental Assessment (SEA) of the Plan². SEA aims to:

- *integrate environmental factors into plan preparation and decision-making;*
- *improve plans and enhance environmental protection;*
- *increase public participation in decision making; and*
- *facilitate openness and transparency of decision-making.*

SEA is required by the Environmental Assessment (Scotland) Act 2005. The full findings of the SEA are available in the Environmental Report, though for this AQAP we have summarised the key findings of the SEA categorised by those that involve:

- *construction activities*
- *traffic management*
- *increasing use of less polluting vehicles*
- *better access to public transport and other alternatives to cars*
- *measures aimed at business*
- *taxes or regulations*
- *strategic level options*

Impact of Options Involving New Construction

In this AQAP, there are measures which could require new construction projects, and may include measures such as *better access to alternative modes, implement a new Park + Ride, construct Cross Tay Link*. In these cases, the main environmental impacts depend on location and scale of development. Construction of a Cross Tay Link could impact the integrity of the River and the species and habitats it contains. Depending on the exact location of the new crossing, they could also have a significant detrimental impact on protected species, on Scheduled Ancient Monuments and on a number of listed buildings located near Perth Bridge. Impacts during the construction phase would also be significant in terms of use of natural resources and waste arising. The Cross Tay Link would reduce traffic through Perth and therefore offer improvements in air pollution. If a new Park + Ride is constructed, this could potentially have an impact on soil/cultural heritage/archaeology/landscape resources.

Impact of Options Involving Traffic Management Measures

City Centre Traffic Management Review and *improve signage* are traffic management measures that would be designed to make traffic in the city centre smoother, reducing the need to stop and slowing the traffic down. Signage could be more specifically aimed at routing traffic away from the centre towards either parking spaces situated in the outskirts of Perth or towards alternatives routes from through access.

The CCTMR would not reduce traffic but could slightly reduce air pollution, Greenhouse Gases (GHG) emissions, traffic noise and vibration in the city centre via reduction in congestion. This could however slightly worsen pedestrian access, as a reduction in congestion increases vehicles' speed. Improved

² *Perth and Kinross Air Quality Action Plan Strategic Environmental Assessment (SEA) - Environmental Report, PKC, 2008*

signage would move some traffic away from the city centre and therefore reduce traffic-related impacts in the city centre, including improving pedestrian access. As before, none of these options would affect any protected species or habitats, or areas protected for nature conservation, cultural heritage or landscape conservation purposes.

Impact of Options Aiming at Increasing the Use or Purchase of Less Polluting Vehicles

Green Procurement, Bus Quality Partnership, and Freight Quality Partnerships aim to encourage the shift towards using less polluting vehicles. Eco-Driving Training which would encourage more fuel efficient driving styles is also covered in this section.

The main effects of these Options are a reduction of air pollutant emissions, a slight increase in CO₂ emissions (except for Green Procurement) and a slight increase in vehicle scrappage rate. A change of bus or freight fleet for the purpose of reducing air pollutant emissions is more likely to result in a slight increase in greenhouse gas emissions overall. Green Procurement would aim to shift the main public fleet to use cleaner vehicles that also have reduced level of GHG emissions compared to older vehicles.

Except for eco-driver training, vehicle scrappage rates might slightly increase for older vehicles. Eco-driver training would improve fuel efficiency therefore reducing air pollutants and CO₂ emissions.

It is anticipated that the options described in this section would not affect other environmental issues.

Impact of Options Dealing with Increasing the Access to Public Transport

Provision of travel information and better access to public transport aim to improve the use of public transport, without requiring the construction of new transport infrastructures. Providing more detailed and reliable travel information would encourage people to use public transport more regularly and is likely to lead to small positive changes in transport behaviour and air emissions. It is assumed that better access would consist of improving bus routes or providing more frequent bus services. This could indeed result in a noticeable but slight modal shift from private cars to public transport.

These options are considered to be environmentally benign.

Impact of Options Aimed at Businesses

A commercial delivery strategy would reduce the number of HGVs driving to the city centre. This would have an overall slight positive impact on traffic, air pollution, GHG emissions and pedestrian access to the city centre.

Developing *Green Travel Plans* for large businesses or institutions would encourage a modal shift from private cars to alternative transport modes such as public transport, cycling and walking. These plans generally include specific annual modal shift targets and a monitoring programme to check progress.

Although no data is available to assess quantitatively the environmental impact of such schemes, it is expected that they could have an overall a slight positive impact on modal shift, traffic, air pollution and GHG emissions and a negligible impact on other environmental issues.

Impact of Options Involving Taxes or Regulations

The only measure selected for the final plan in this category is enforcement of vehicle idling regulations within the city centre and would mainly help reduce slightly air emissions, including GHG emissions.

Impact of Strategic Level Options

Measures in this category ie *planning condition policies, integrate AQAP into the Local Transport Strategy, and Supplementary Planning Guidance* are more strategic options. We have assumed that integration with LTS would overall reduce exposure to air pollution and improve air quality and help improve traffic issues, reduce congestion and allow a better access to public transport, cycling and walking.

Planning conditions and supplementary guidance would contain requirements and advice for the implementation of air pollution mitigation measures in new developments. Although air pollution mitigation measures can help minimise air pollution impacts, they cannot reduce them as new developments would in any case attract new activities and therefore generally, more traffic.

In general, the environmental impacts of the AQAP are predicted to be largely positive as reduction in emissions of pollutants has obvious benefits to other environmental priorities. Many of the measures are predicted to be largely environmentally benign, though a few do have negative environmental impacts, though these mainly relate to construction of new transport infrastructure. Where appropriate, mitigation measures are suggested in the main SEA report. We have not reproduced these here, though in broad terms they relate to issues such as ensuring effective project EIA is used for infrastructure projects, using recycled materials where possible, liaising with SEPA on flood risks of new developments, use of sustainable urban drainage, eco driving training for private bus drivers, and minimising visual impact for the population.

7.6 Consultation and Stakeholder Engagement

PKC have a serious commitment to open and accessible consultation and therefore carried out a wide ranging consultation exercise beginning in spring 2008. This involved production of draft AQAP documents and associated consultation response forms which were made available to relevant stakeholders both in hard copy, and in a specially created section of the PKC website. The website also allowed online submission of consultation responses which were collated at the end of the consultation period. In addition, a public meeting was held in Perth to allow relevant stakeholders to contribute to the development of the plan. Several workshops were also held at other PKC offices to allow people to consult on the plan in geographical locations outside of Perth. The consultation process ran for four months during 2008 and a summary of the responses is provided in Appendix 4. Example extracts from the consultation documents are provided in Appendix 1 and 2

7.6.1 Consultation Process Post-Adoption

This document is intended to be organic in nature and will in effect be subject to ongoing consultation as it evolves. Guidance on consultation relating to air quality places emphasis on the consensus building by engaging as wide a section of the community as possible. This includes residents, local community groups and businesses. We intend that consultation will be an opportunity to meet to discuss the issues and be able to feedback on the document and proposed actions. As such, we will investigate the possibility of setting up an air quality forum group. Invitees to this group may broadly mirror the steering group and could include internal PKC colleagues, TACTRAN, and members of the community, in particular those parts of the community directly in the AQMA. Such a group would continue to meet periodically after adoption of this plan. This would be so as to monitor and encourage progress in delivering actions and in continuing to promote development of the Plan.

7.6.2 Measures considered but not included in this AQAP

All measures available to PKC were considered though for reasons described below have not been taken further in this plan. Many of these arose during discussion between the steering group, elected members and the community but have been discounted for the reasons described. These are described in Table 7.2 below.

Table 7.2: Measures considered but not taken forward in the AQAP

Measure Considered	Reason for Excluding in this Plan
Move receptors away from AQMA	The AQMA is large and this option is prohibitively expensive, and in any case does not reduce pollution.
Relocate major employers	Again, this option is prohibitively expensive and in any case, PKC do not have the necessary power to enforce such an initiative.
Use trees as pollutant sinks	This is largely unproven in pollution reduction and would be very expensive to implement.
Control access for cars	This option was deemed unacceptable as the public transport system is currently not good enough to offer a real alternative, it would require fundamental long term behavioural change, would be very costly, and could potentially make the city unattractive to employers and visitors.
Control access for buses	The steering group did not support this option and deemed it unacceptable as there could be negative social implications, it would be very costly, and in any case, bus operators work in a deregulated market.
Change traffic light timing and speed controls	The steering group offered only neutral support but deemed the option acceptable as, while it could improve air quality, it could also prove costly with only very limited improvements being available. In any case, PKC officers stress that the current SCOOT system is optimised.
Low emission zone	The steering group offered neutral support and acceptability to such a scheme in Perth. It was predicted that air pollution benefits could be observed in the city centre though costs would be very high, and regulatory control measures are as yet untested.
Public Carriage Office policy (Taxi Licensing Scheme)	The steering group supported such a scheme for Perth although the impact on air quality would likely be minimal if implemented. This option would be costly to develop so it has not been taken forward, though could be implemented at a later date should the plan require to be reviewed.
Differentiate parking charges	Although the steering group supported this option, the council only has control over its own parking sites. Perth has a significant number of private parking spaces available so the option as a whole would probably offer little benefit, and there is potential to relocate emissions.
Vehicle scrappage incentives	The steering group offered neutral support, as there are doubts about effectiveness. The option would be costly to implement and would offer limited improvements in air pollution in the city.
Infrastructure for cleaner fuels and their use in Council fleets and public transport	The option would involve significant expenditure for conversion of fuel depots and filling stations, and in the vehicles that will use the fuel. The steering group offered neutral support for this option, as many stakeholders could be involved, and costs are high. In any case, the pollution reduction benefits of some "clean" fuels are not proven as combustion still forms the basis of the technology.
Road use charging and workplace parking levy	The steering group offered neutral support for this option and deemed it unacceptable due to the need for complex regulation and very high cost.

8 The Air Quality Action Plan

This section describes the options PKC have decided to implement in accordance with our statutory duty to work towards achieving the relevant air quality objectives. As with many AQAPs, the options described will be taken forward not only by PKC, but also by working closely with our regional transport partner TACTRAN who have many measures in their RTS DP with direct relevance to air quality in Perth. Many of the measures are also at various stages of development and some will need feasibility work to be carried out either by PKC or TACTRAN.

We hope the plan demonstrates that PKC are already trying to improve air quality in Perth through existing initiatives, while committing to additional work to allow us to progress towards achieving the objectives.

Table 9.1 presents the AQAP options in full, with (among other parameters) an assessment of the impact each could have on traffic flows, the associated predicted air quality benefit, and estimate of cost, and who is responsible for the measure. PKC published a consultation draft containing a basic cost benefit analysis for each of the main types of intervention. The costs presented in the table are sourced from this document and the same scoring criteria have been used (provided at the end of the table for reference).

8.1 Indicators of Progress

It is important to develop meaningful indicators of progress with the measures in the plan and we have attempted to identify quantitative surrogate indicators where possible (eg traffic flow reductions, avoided trips, emission reductions from fleet greening). As is the case with all AQAPs, the plan consists of a wide variety of measures some of which it is impossible to set quantitative indicators for; to show progress with such measures we will still report annually but in more qualitative terms (eg outcomes of feasibility work or procurement decisions).

Although we have developed surrogate indicators for each of the measures in the AQAP, there is still a need to report against “headline” indicators. We carry out extensive monitoring in the AQMA so it is natural that our first headline indicator is concentrations of NO₂ and PM₁₀. There are issues with comparing year on year monitoring data as meteorology often influences measured concentrations. That said it is meaningful to discuss trends in concentration, as these are more reliable. The concentrations of these pollutants are the reason we have had to formulate this AQAP, so it is vital that progress is ultimately measured in these terms.

We will also continue to monitor traffic in the AQMA and will report annual traffic counts to support progress with the AQAP. PKC already measure traffic at various locations and we should report this data in the context of the plan. Even in years where meteorology has an influence on concentrations it does not influence traffic counts, so we can use these data to show improvements in traffic flows. In this regard, our second headline indicator for this AQAP is traffic flow and fleet mix in the AQMA.

8.2 Outline of AQAP Measures

8.2.1 Cross Tay Link

Proposals are currently developing to provide a new crossing of the Tay linking the A9 to the A94 north of Scone, including a package of associated bus priority, cycle and pedestrian measures thereby ‘locking in the benefits’ to Perth city centre. At present the funding sources for this

scheme are not clear although it is a priority in the RTS Delivery Plan. Clearly this is a long term measure with potential for air quality benefits in Perth which we will report on as it develops so it is difficult to develop a quantitative indicator. That said, the scheme will be assessed by Transport Scotland using the Scottish Transport Appraisal Guidance air assessment methodology. PKC will be consulted on the findings of this assessment so we will be able to report the anticipated air quality effect in future progress reports.

If there are major updates regarding this scheme, we will report these in future progress reports.

8.2.2 Integrate AQAP into Regional Transport Strategy

Regional Transport Partnerships have a duty under the Transport (Scotland) Act 2005 to develop a Regional Transport Strategy (RTS), which sets out a Vision and Objectives over a 10-15 year horizon for meeting the transport needs of people and businesses throughout their region. The Tayside and Central Scotland Transport Partnership (TACTRAN) has developed the first RTS for the TACTRAN Region, covering the Angus, Dundee City, Perth & Kinross and Stirling Council areas, in compliance with statutory requirements and Guidance issued by the Scottish Executive. An indicative delivery plan has been prepared which is subject to ministerial approval and consultation.

The RTS has a few important environmental aspects and sub-objectives, the most pertinent being:

- *To promote a transport system that respects both the natural and the built environment*
- *To promote a shift towards more sustainable modes*
- *To help meet or better all statutory air quality requirements in the TACTRAN area*

We propose to integrate the Perth AQAP with the RTS to ensure that air quality is considered in initiatives that are enabled by the RTS. We also believe that integrating the AQAP could lend additional credence to some of the measures outlined in the RTS Delivery Plan as many have potential for obvious air quality benefits eg Park + Ride, Regional Bridge, Travel Planning.

This is a strategic measure and will mainly involve effective lines of communication being maintained between PKC and our partners in TACTRAN. We anticipate that our organisations will regularly meet to discuss progress with our respective initiatives so that air quality considerations can have appropriate influence on the measures for Perth contained in the RTS. This would probably be best achieved through formation of an Air Quality Forum, or could simply be achieved by maintaining the current AQAP steering group. We will have to report on the outcomes of these discussions, and how the RTS and AQAP are influencing each other. These will form the main progress indicator for this measure.

8.2.3 Integrate AQAP into Local Transport Strategy

The current version of the Perth and Kinross Local Transport Strategy covers the period from 2001 to 2004 so it is reasonably dated in the context of this plan. PKC are currently undertaking a transport study covering the whole authority that could inform future development of an updated LTS. The fact that a new LTS will require significant work and lengthy development represents an opportunity to PKC to integrate the AQAP into any developing strategy. Indeed, many of the measures contained in this plan may be common to those in an updated LTS, in much the same way as those that are analogous to TACTRAN's RTS.

This may mean that the AQAP will be subject to revision as the new LTS develops, though we envisage this being in terms of setting out responsibilities and refining timescales etc, not suggesting new measures unless something with substantial AQ benefits is developed for the LTS that has been overlooked in this AQAP. It should be noted that a new LTS will not be developed in the short term as PKC are keen to support the RTS at present to deliver environmental gains. As this important strategy is not yet published and there is no indication as to when this might happen, we propose to provide commentary on how integration will proceed as and when developments occur. We hope that the close integration of the RTS with this AQAP covers most of the measures typical of AQAPs and that future LTS integration can only improve.

8.2.4 Park + Ride

The rail and bus networks in the region provide opportunities for the development of Park + Ride or Park and Choose schemes. Currently there are two bus-based Park + Ride sites operating reducing the amount of traffic entering Perth centre. Perth (Broxden) Park + Ride, located on the A9 approach to Perth, adjacent to the Broxden roundabout has been particularly successful. This site, with over 500 free car parking spaces and services running Monday to Saturday, has proved extremely successful so we are enthusiastic about developing further Park + Ride provision. The Broxden site was recently expanded to its current capacity due to the popularity of the scheme so there is obvious support in the locality for such schemes. We also operate a smaller Park + Ride site at Scone to the north of Perth that has a parking capacity of 50 spaces. We will provide annual activity data as our indicator of progress in this measure, this may require survey work to be carried out as current data relates to the number of passengers using the buses supporting the locations, not the number of vehicles.

PKC will continue to work with TACTRAN to both maintain the success of Park + Ride schemes in the area and we will continue to collect activity data at the sites. We will present this data in our annual progress report to demonstrate our continued commitment to this important aspect of our AQAP.

We are also committed to continued improvements to the facilities and will regularly report any work carried out to make them safer or more comfortable.

Looking further into the future, we will investigate the provision of additional Park + Ride facilities with TACTRAN. This is included in the RTS Delivery Plan and a site is already earmarked for future investigation (Walnut Grove) that could catch traffic coming from the Dundee side of Perth. We will regularly report progress on development of new Park + Ride facilities, including the findings of any feasibility work carried out by TACTRAN.

In summary, our Park + Ride measures are:

- *Maintain high levels of use at existing sites*
- *Improvements to existing sites*
- *Investigate provision of additional Park + Ride*

8.2.5 Bus Quality Improvements

Buses and other heavy vehicles currently contribute a significant proportion of the emissions of NO_x and PM₁₀ that are causing the air quality problem in Perth. This means that a key focus of the AQAP should be to try to limit emissions by improving the quality of services operating in the city,

with a knock on effect of reducing their emissions. This can obviously be thought of as a strategic package of measures that will develop over time, influenced by factors such as timing of renewal of bus contracts, regional initiatives to improve wider bus quality and the power PKC actually have to influence what is effectively a deregulated market.

TACTRAN are keen to develop a bus quality strategy and obviously PKC can support development of this. PKC will seek to keep air quality high on the agenda as this plan develops and it is hoped that the potential environmental benefits (also in terms of reduced CO₂ emissions) can provide additional impetus to the plan. We will report on how the plan is progressing in our annual reporting. In addition, TACTRAN plan to monitor modal shift as part of the evaluation process for the RTS Delivery Plan. We will seek these data from TACTRAN annually to demonstrate progress with delivery of bus improvements.

PKC can also lead on some measures relating to bus quality. We propose to ask local bus operators for a catalogue of the buses currently operating in the Perth AQMA so that we can establish a baseline of current bus quality. This will allow us to better understand the benefits of fleet upgrades as and when they occur (which we will obviously encourage in our regular discussions with operators). We hope to report the findings of the fleet survey in year one of this plan, and any subsequent improvements to fleet as they occur.

The way PKC procure bus services is also an area where we can influence uptake of cleaner vehicles in a meaningful way. At present, air quality is not formally considered in the tender evaluation process and we propose to enact this in the short term. We will report the outcome of any procurement decisions where air quality has been a consideration, and if cleaner vehicles are procured, we will attempt to quantify the reduction in emissions that result.

In summary, our bus quality measures are:

- *Develop bus strategy and bus quality partnership*
- *Work to improve local bus quality*
- *Encourage fleet operators to report fleet improvements*
- *Ensure emissions are formally included in procurement decisions for public transport*

8.2.6 Freight Improvements

TACTRAN aim to develop a Freight Quality Partnership, in liaison with freight interests and member Councils drawing upon established guidance, to help deliver cost-effective packages of freight related interventions across the region. It is not clear at this time what the measures will involve but PKC will support the development of the Partnership to ensure air quality is a consideration as it moves forward. Freight is also an important source of NO_x and PM₁₀ and any measures that can improve the freight fleet should have a beneficial impact on concentrations in the Perth AQMA. At this point it is impossible to assign a quantitative indicator to this measure but we propose to liaise with our colleagues in TACTRAN and report progress with the Partnership, and where applicable, discuss any sub-measures and the potential impact on air quality in the AQMA.

Other regions (Bristol City Council is a good example) have developed successful freight consolidation centres, which reduce the number of delivery vehicles entering a geographical area. The impact of freight activity on air quality in Perth centre is thought to be significant so measures

to manage goods traffic in the city could offer significant environmental benefits. Such a project would be led by TACTRAN in partnership with PKC, and could involve construction of a central depot on the periphery of Perth for delivering goods to the city centre using comparatively cleaner vehicles. The Bristol scheme has been successful in removing 80% of delivery traffic destined for the Broadmead retail centre equating to over 226,000 lorry kilometers avoided. A total of 70 retailers take part in the scheme and there is potential for Perth to run a similar initiative though it will be important to effectively engage our retail partners in the process. Clearly such an ambitious scheme will require a significant effort to assess its feasibility and we will carry this out if funding streams can be secured. We will report annually on any feasibility work

In summary, our freight improvement measures are:

- *Support TACTRAN in the development of a Regional Freight Quality Partnership*
- *Investigate the development of a regional freight consolidation centre*

8.2.7 Green Travel Planning

Workplace travel plans encourage employees to use alternatives to single occupancy car-use. Such plans could include:

- *Car sharing schemes*
- *Improved facilities to encourage cycling (secure bike parking and showers)*
- *Dedicated bus services*
- *Preferential access to reduced price parking for car sharers*
- *Staff bicycles to encourage local journeys to be made sustainably*
- *Flexible working practices such as remote working enabled by remote IT access*
- *Video conferencing*
- *Preferential rate loans to purchase bikes for commuting*
- *Interest free season ticket loans for public transport*
- *Information for staff to encourage green vehicle awareness when purchasing a car*

TACTRAN and PKC have worked with some local employers such that they already have Travel Plans, however, PKC do not currently operate such a plan, though one is currently in preparation. We will report more fully on the contents of the PKC Travel Plan in our final AQAP. We propose to monitor the activity of this plan in quantitative terms and report on this annually, possibly by estimating the vehicle kilometers avoided by the plan.

A similar approach will be attempted in our major employers and schools to allow us to assess the air quality benefits of their plans.

Supporting our schools in developing Travel Plans is crucial as a high proportion of peak hour traffic is derived from the “school run”. We will continue to work with our schools to not only develop GTPs, but to monitor their use in such a way as to allow the data to quantify the benefits in either emissions or km reduced.

PKC already seek Travel Plans from large new developments under existing planning arrangements. We will continue to require this and we will provide data annually as to how many plans have been adopted, and if possible, some estimation of effect on traffic reduction.

Some innovative work is currently being carried out by TACTRAN to promote car and lift sharing. A website is available which can match users with people making the same journey to allow them to car share, or alternatively users can seek a “lift” from a person making the required journey. The website has a high match rate and detailed activity data is collected annually. The scheme is available for the general public but also has sub-sections devoted to PKC employees, Scottish Southern Energy and Perth Royal Infirmary. We will liaise with TACTRAN annually to source activity data and present it in our progress reports. Data on the site suggests that the average commuter can save £784 per year by sharing their journey. The website is available at www.TACTRANliftshare.com

In summary, our Travel Planning measures are:

- *Publish and monitor the PKC Green Travel Plan*
- *Work with TACTRAN to encourage travel planning in our large employers*
- *Support our schools in developing Green Travel Plans*
- *Green Travel Plans for new developments*
- *Regional/PKC Car and Lift Share schemes*

8.2.8 Traffic Management

Traffic management in Perth centre is assessed and optimised whenever possible under the remit of the City Centre Traffic Management Review (described earlier). The Review is mainly concerned with optimising flows of traffic and we will continue to reassess it regularly and update it as necessary. We propose to report annually on any changes that are made to the CCTMR and where possible we will try to assess the impact on air quality in the AQMA.

8.2.9 Integrate Air Quality and Planning

The local planning process has an important role to play in improving air quality and reducing exposure to air pollutants. This is the case at the strategic level, through planning policy and local development frameworks, and at the local level, through development control.

New developments have the potential to affect air quality. When appropriate, the planning application for the development will be accompanied by an air quality assessment. Local authorities, as planning authorities, are tasked with determining these local planning applications against a whole range of social, economic and environmental criteria. Air quality may be one of the material considerations, which local authorities have a duty to take into account, as part of the local planning and development control decision-making processes.

PKC is currently devising a Local Development Plan and we will integrate air quality into this plan at the earliest opportunity. Scottish Government expects the land use planning system to make an appropriate contribution to the achievement of air quality objectives so integration of these is important. It is impossible to define a quantitative indicator for this measure though we will report annually on the development of the LDP and provide evidence as to how air quality considerations have been formalised within it.

In addition there is an opportunity to develop supplementary planning guidance and we will explore this in the first year of the AQAP. This would ensure that developers fully appreciate the importance of air quality to PKC when they apply for planning permission for a development, and would allow PKC to develop a standardised and transparent approach to how air quality impacts are assessed in such applications. We will report on development of such guidance in our annual progress reports, and may present data as to when air quality has been a material consideration in the reporting period (which can be an issue where development is proposed to take place in an AQMA).

In summary, our planning measures are:

- *Integrate air quality in the Local Development Plan*
- *Investigate development of supplementary planning guidance on air quality*
- *Consider air quality in planning decisions and formalise decision making process/interaction with Environmental Health*

8.2.10 Procurement and Air Quality

PKC have substantial purchasing power which could be used to influence the uptake of more fuel efficient and therefore less emission intensive vehicles. We need to develop and formalise a system for considering air quality when we buy new vehicles. As a starting point we will carry out a fleet survey to establish our baseline for future improvements, this will be reported in year one of the AQAP. PKC currently have strict Euro standard requirements when buying vehicles but this needs to be formalised and reported so that we can assess the impact of this. We propose to report the number of vehicles replaced, their Euro standards, along with an estimation of the emissions savings realised. If new additional vehicles are purchased, this has an obvious negative effect on emissions so these will need to be reported also.

8.2.11 Eco-Driving Training

PKC already run an eco-driving training programme for its drivers and we are keen to expand this by employing up to four additional trainers. Our findings to date and those from other organisations who have carried out similar training suggest significant fuel savings are possible. Lower fuel use in our fleet could also reduce emissions in the AQMA helping us to work towards the objectives, while also contributing to our efforts to mitigate climate change.

We will report the number of drivers trained each year and we propose to assess drivers after the training and report on anticipated fuel savings. This may allow us to provide an estimate of emissions avoided.

8.2.12 Provision of Travel Information

Our partners in TACTRAN recently published their Travel Information Strategy, which through the RTS Delivery Plan aims to develop, promote and maintain a comprehensive Travel Information System, covering all modes and users and make this information available in hard-copy and on-line formats. A timetable of feasibility work has already been formulated in the Delivery Plan and we will report progress with this as it happens, and as the measures pertinent to Perth come on stream.

Experience in other local authorities shows that provision of real time travel information in bus stops can increase patronage. Such a scheme would require a feasibility study and we propose to report on this as and when it is carried out.

PKC currently produce a number of Travel Guides and a section on our website to enable the public to make informed choices when planning a journey. We will report annually on provision of materials and if possible, on market penetration of these.

In their Delivery Plan, TACTRAN are committed to initiate a “Hearts and Minds” campaign to promote sustainable travel options. Through our interaction with TACTRAN we will report annually on the outcomes of this work.

In summary, our travel information measures are:

- *Develop, promote and maintain a comprehensive Travel Information System*
- *Investigate and develop the provision of real time travel information for bus stops in Perth*
- *Maintain current Public Transport Guides and section on PKC website*
- *Hearts and Minds campaign to promote sustainable travel options*

8.2.13 Signage

Work by other local authorities has shown that providing air quality information and promoting public transport can play an important role in encouraging modal shift during times of poor air quality. There is potential to improve existing signage to incorporate air quality information derived from automatic monitoring stations within the city. We will investigate the potential for implementing this in Perth and report on our feasibility work as it arises.

8.2.14 Alternative Modes of Transport

Our partners TACTRAN have developed a Walking and Cycling Strategy for the region. This strategy sets out the principles to help to improve the cycling and walking network across the region and to promote the two sustainable modes of transport and sits within the wider RTS. A number of the early actions within the RTS involve developing sub-strategies that set out in more detail the policy and delivery framework for specific strands of the RTS. The strategy is responding specifically to TACTRAN’s desire to work closely with key stakeholders to prepare a walking and cycling strategy for the region. We will work with TACTRAN to deliver the strategy as the measures that will develop from it could have obvious beneficial impacts on air quality in Perth. We will report on the outcomes of our liaison work with TACTRAN, and report individual strategy measures as they arise.

8.2.15 Improve Access to Public Transport

PKC already seek to improve access to public transport through assessing development applications and their requirements for access. We also continually review public transport provision and act when we can to make changes to infrastructure to encourage use. We will continue to operate this system though we will improve data gathering on its application to enable us to report annually on any modifications made to the public transport system in Perth.

8.2.16 Idling Emissions Reduction

PKC have powers to compel drivers to switch off idling vehicles. The scheme could be enforced by a Traffic Regulation Order and could initially target public service vehicles, before applying to all vehicles depending on the effect on air quality. Fixed penalty notices would be issued to those who refuse to co-operate. PKC propose to carry out a feasibility study.

8.2.17 Road Emission Testing

Roadside emission testing may be used by Scottish local authorities under s.83 of the Environment Act 1995. Under these provisions, authorised personnel may carry out a roadside test. If emissions exceed the permitted level a fixed penalty notice may be issued, or the driver may be asked to produce a certificate demonstrating that the vehicle has been fixed. PKC intend to carry out a feasibility study with surrounding local authorities to see if a combined implementation programme is viable.

8.2.18 LAQM Marketing

Providing information to the public on the air quality and climate change impacts of their travel choices could influence their behaviour and encourage use of other, less polluting modes. We will increase our activity in this area and plan to organise publicity initiatives for our own organisation, public sector colleagues, local schools, large employers and in the media and our own website. We will report annually on the materials we produce and any events we hold.

8.2.19 LAQM Monitoring and Reporting

PKC have been reporting under the LAQM framework since 1997. In Perth we have two automatic air quality monitoring stations in the city centre and a network of non-automatic monitoring locations across other areas of the city. We will continue to meet our statutory requirement to Review and Assess air quality in our authority, and maintain LAQM reporting in a timely manner. The monitoring and reporting required under the LAQM framework will ultimately be the measure of success of this AQAP and therefore it is important we continue to produce the required information in a timely manner each year.

8.3 Impact Assessment of Proposed Measures

Scottish Government requires Local Authorities to consider measures they have identified within their action plans according to their cost (in terms of both financial and other environmental impacts) and the improvements to air quality that each measure might bring. A detailed cost benefit analysis is not required as it would be both impracticable and technically difficult to quantify the air quality impacts associated with every proposed measure in the AQAP. We have assessed the cost and benefits using a simple matrix approach based on the best judgement of the steering group. Full details of the approach were published in the consultation draft of this document which is available on the PKC website.

We have attempted to predict the potential air quality benefits of the options using the professional judgement of the steering group and experiences gained by other Local Authorities. We believe that the plan, if fully implemented (including the more ambitious measures), will allow us to achieve the objectives although we cannot say at this moment when this will occur. We note that predictions across the UK that air pollution arising from traffic would reduce over time have not been realised in some circumstances (despite more stringent Euro standards), so we are reluctant to make such a prediction

here. Suffice to say, business as usual is not an option for PKC as there would then be no prospect of achieving the objectives at all locations in Perth.

It is proposed that PKC keep the impact of the plan under periodic review, with use of modelling as appropriate to assess the impact of the measures as they develop. Many of the measures in the plan are at very early stages of development, and will need a significant amount of feasibility work, though the potential benefits from them warrant this careful approach. It is our intention to assess the air quality impact of these initiatives as part of overall feasibility work and report the outputs of studies as they arise in future progress reports. Clearly, if some of the more ambitious initiatives cannot be taken forward the emphasis will shift to the rest of the plan, and the AQAP may need revision. Therefore, if the best available evidence suggests that the plan is not going to deliver the necessary air quality benefits, we are committed to revise it as required.

The majority of the measures listed in the table below are classified as feasible. Options that were considered impractical were excluded during the screening stage in the previous chapter, as described in Table 7.2. The structure of the impact assessment table that follows is based upon the example given in the statutory guidance for this work, with added columns as appropriate.

Following the completion of the consultation on this document the final actions will be agreed. At that time, where possible and subject to funding, the air quality impacts of the proposed actions may be modelled using an air dispersion model though this could be very time consuming due to the need to collect traffic data and potentially utilise a traffic model. Further more detailed modelling may be carried out over wider areas of the town depending on our ongoing air pollution monitoring results. Many of the actions proposed in this draft document for consultation are in any case generic in nature. That is to say they do not target specific vehicle types or groups of people but are aimed at the whole of Perth. The impact of such measures directly on the AQMA will be difficult to model with any accuracy though there is definite potential to model certain measures separately from the rest of the plan (eg Park + Ride, freight consolidation, regional bridge).

8.4 Funding the AQAP

Ultimately the delivery of the actions listed in this document is dependant upon adequate levels of staffing resource and monies - some of these measures will involve significant effort by PKC and our partners. This document is seen as the beginning of a long process and staff/funding must be available into the medium and long term in order to maximise the benefits. Some of the AQAP involves work that is already being done and may need enhanced in some way, and it is anticipated that such measures could continue to be funded by the relevant departmental budgets. This discussion is not exhaustive and funding sources are likely to change throughout the life of the plan.

8.4.1 Air Quality Grant Programme

It is anticipated that PKC will be required to seek funding from Scottish Government to implement some of the measures contained in this plan. This will be done when the plan is formally adopted. It is anticipated that this will pertain to the 2010 round of funding due to the timing of the plan (if it becomes apparent that money can be sought in advance of plan finalisation we will pursue this as appropriate).

It is likely that grant monies could mainly be available for “smart” measures such as travel planning in our schools and business, marketing campaigns, working with community partners, encouraging modal shift, though there is potential to apply for money for signage improvements

and other aspects of the plan. As mentioned previously, we may also seek funding to carry out additional dispersion modelling work to support implementation of some of the plan should this be required by our statutory consultees.

8.4.2 TACTRAN

Some of the measures in this AQAP are common to the RTS Delivery Plan so it is important for PKC to support the plan, which it already does by providing a contribution to TACTRAN funding. The funding of the Delivery Plan is through allocations from all the TACTRAN Councils. If opportunities arise for any *ad-hoc* funding (eg from EU) then these will be used, though currently no such sources have been identified. The explanation of the current capital funding is that the Scottish Government formerly gave a capital grant to the RTPs. As part of the Scottish Government Spending Review in December 2007 they decided to allocate the former RTP Capital Grant direct to the constituent Councils as part of their Base Capital Grant. The Councils are asked by TACTRAN to allocate the (former) RTP Capital Grant through a pooling arrangement to support delivery of the RTS. PKC has agreed to pool its 2008/09 and 2009/10 allocations to support delivery of a regional Capital Programme. Obviously the delivery of the measures in the AQAP common to the RTS are dependent on funding being available, and will largely depend on PKC maintaining its contribution to the pooling arrangement.

8.5 Keeping the Action Plan Under Review

Local authorities have a duty to keep their action plans up to date. Section 84(4) of the 1995 Act states, "that an authority may from time to time revise an action plan". Whenever an action plan is revised, local authorities must consult the Scottish Ministers and other statutory consultees (see Schedule 11(1)(c) of the 1995 Act). PKC are committed to regular review of our AQAP and will make changes to it as and when evidence supports this.

In order to ensure that local authorities implement the measures within an action plan by the timescales indicated within that plan, the Scottish Government expects authorities to submit annual progress reports once the final action plan has been implemented. These progress reports list the measures within the action plan and include the timescales by when they are/were due to be implemented and give an update on progress in terms of implementation.

The progress report should be submitted by the end of April each year. It is recommended that the report is combined with the Review and Assessment Progress Report in years when these are submitted.

9 AQAP Measures

Table 9.1: AQAP Measure

Intervention Category	Measure	AQ Impact	Possible Flow Reduction	Timing	Target	Cost	Other Benefits	Progress Indicator (in addition to headline indicators)	Responsible Authority
Cross Tay Link Funding sources are not clear at present but this is a RTS priority.	New crossing of the Tay linking the A9 to the A94 north of Scone, including a package of associated bus priority, cycle and pedestrian measures 'locking in the benefits' to Perth city centre.	High	High	2009 - ongoing to circa 2018 Timescales will be subject to alteration as the project develops	It is not appropriate to set a target for this measure, though a delivery target may follow if the scheme goes forward.	Very high	Reduced traffic flows in Perth centre leads to safer, more attractive City. Enables growth to take place to the north and east of the city as part of the development plan strategy.	It is not possible at this stage to assign a quantitative indicator. We will report outputs of feasibility work/ air quality assessments as they arise and update timescales as appropriate.	PKC TACTRAN Transport Scotland
Integrate AQ into Regional Transport Strategy.	Ensure that this AQAP is integrated into the delivery of the Regional Transport Strategy.	Medium - High	Potentially very high as TACTRAN lead on many measures in the AQAP.	2009/10 and as RTS is delivered	N/A	Low	Initiatives in the RTS Delivery Plan can be given added impetus.	We will report annually on our meetings with TACTRAN, and provide a discussion as to how the AQAP is influencing delivery of the RTS.	PKC TACTRAN
Integrate AQ into Local Transport Strategy.	Ensure that this AQAP is integrated into the delivery of the Local Transport Strategy. A new strategy is being developed so there is an opportunity to integrate AQ fully into this.	Depends on policies though could be significant.	Potentially high	LTS published by year 3 of this AQAP, then ongoing implementation of schemes	N/A	Low	Initiatives under LTS can be given added impetus.	This is a strategic option but we will report on development of the new LTS and comment on specific air quality provisions contained in it. As the Strategy unfolds we may need to reassess this measure and make it more specific.	PKC

Intervention Category	Measure	AQ Impact	Possible Flow Reduction	Timing	Target	Cost	Other Benefits	Progress Indicator (in addition to headline indicators)	Responsible Authority
Park + Ride	Operate existing Park + Ride schemes and maintain high levels of usage. We will carry out intermittent surveys to assess vehicles using the site.	Medium	5% car reduction in AQMA at peak times assumed.	2009 - ongoing	Maintain current levels of patronage.	Low	Reduction in emissions of CO ₂	Annual usage statistics. A calculation of avoided NO _x /PM ₁₀ will be provided annually.	PKC
	Investigate a new Park + Ride/Park and Choose site at Walnut Grove, Perth.	High	5% car reduction in AQMA at peak times assumed.	2009 - ongoing to circa 2018 A feasibility study is underway and will report during year 1 of this plan. More specific timescales are available in TACTRAN RTS Delivery Plan.	N/A at present, targets will be assigned if scheme goes ahead.	Low for feasibility work High for construction	Reduction in emissions of CO ₂ Local benefits to economy/labour force during construction. Potential new bus contract when complete.	We will report outputs of feasibility work/air quality assessments led by TACTRAN as they arise and update timescales as appropriate.	TACTRAN PKC
	Programme of improvements to existing P+R sites (eg better waiting areas, lighting etc).	Small (indirect benefits to other measures)	No direct reduction, though helps maintain patronage.	2009 - ongoing	N/A	Medium	Indirect benefits to CO ₂ emissions.	Report of any improvements made, tied into occupancy rates.	PKC

Intervention Category	Measure	AQ Impact	Possible Flow Reduction	Timing	Target	Cost	Other Benefits	Progress Indicator (in addition to headline indicators)	Responsible Authority
Bus quality improvements	<p>Bus Strategy and Quality Bus Partnerships.</p> <p>PKC - Work with TACTRAN, operators and other relevant stakeholders to create a bus strategy for the region.</p> <p>TACTRAN - Work in partnership with Councils, bus operators and other relevant stakeholders to identify and deliver improvements to the quality and accessibility of vehicles, services and associated facilities across the Region, particularly maximising funding and grant opportunities in support of these measures.</p>	Medium	No direct flow reduction; mainly emissions reduction.	<p>2009 - ongoing to 2024</p> <p>More specific timescales are available in TACTRAN RTS Delivery Plan/ capital and revenue programmes.</p>	N/A	Low	<p>More fuel efficient vehicles so lower CO₂ emissions.</p> <p>Better punctuality and quality of services.</p> <p>Public perception of public transport enhanced.</p>	Shift to alternative modes - this will be monitored by TACTRAN as part of the evaluation process of their RTS Delivery Plan.	TACTRAN PKC
	<p>Main bus operators will be encouraged to report on improvements to their fleet so that air quality benefits can be quantified.</p> <p>A fleet survey will be carried out in the short term to establish the baseline.</p>	Medium	No direct flow reduction; mainly emissions reduction.	2009 then ongoing	N/A	Low	<p>More fuel efficient vehicles so lower CO₂ emissions.</p> <p>Newer buses have better accessibility.</p> <p>Public perception of public transport enhanced.</p>	<p>Fleet improvements will be reported annually and a calculation provided as to reduced emissions of NO_x and PM₁₀.</p> <p>Outcome of initial fleet survey reported in Year 1 of AQAP.</p>	PKC

Intervention Category	Measure	AQ Impact	Possible Flow Reduction	Timing	Target	Cost	Other Benefits	Progress Indicator (in addition to headline indicators)	Responsible Authority
	Ensure air quality is formally considered in future public transport procurement decisions (ie for subsidised public services, school buses, school taxis).	Medium	No direct flow reduction; mainly emissions reduction	2009 then Ongoing (as contracts are renewed)	N/A	Low	More fuel efficient vehicles so lower CO ₂ emissions. Could be localised improvement in air quality around schools if cleaner buses/taxis are specified.	Outcome of any procurement decisions. As cleaner vehicles come on stream, an annual calculation of the avoided NO _x and PM ₁₀ will be provided.	PKC
Freight improvements	Establish a TACTRAN-wide Freight Quality Partnership, in liaison with freight interests and Councils drawing upon established guidance, to help deliver cost-effective packages of freight related interventions across the region.	High	Depends on measures adopted though assumed up to 10% reduction in freight movements.	Ongoing to 2024 More specific timescales are available in TACTRAN RTS Delivery Plan/ capital and revenue programmes.	Delivery of FQP as outlined in RTS Delivery Plan.	Medium - high	Not clear at this time as this initiative is not developed, though assumed reduction in regional CO ₂ but also localised safety improvements.	PKC will seek regular updates from TACTRAN on progress and report on these annually.	TACTRAN PKC
	Development of a freight consolidation scheme or commercial delivery strategy.	Medium - high	Depends on the scale of such a centre though reductions in delivery vehicle movements of up to 80% for participating retailers are possible.	Feasibility work, subject to funding, will be carried out in Years 1 and 2 of this AQAP.	Report first round of feasibility work within 2 years of this AQAP being adopted.	Low for feasibility, potentially very high if developed fully	Reduced CO ₂ emissions from freight. Retailers could have cardboard and plastic collected at same time.	Initially we will report on feasibility work as and when it is carried out. If developed we could use the number of vehicle km avoided to calculate emissions savings.	TACTRAN PKC

Intervention Category	Measure	AQ Impact	Possible Flow Reduction	Timing	Target	Cost	Other Benefits	Progress Indicator (in addition to headline indicators)	Responsible Authority
Travel Planning	PKC Staff Travel Plan; including encouraging flexible working, car/lift sharing/alternative modes, salary sacrifice bicycle scheme.	Medium	PKC is a major employer in the AQMA, assumed 2-300 vehicle reduction in peak traffic possible.	Initiated year 2 of this AQAP then ongoing.	Target to follow.	Low	Reduced carbon footprint for PKC associated activities. Can be quality of life benefits from flexible working. Improved patronage of public transport.	Activity data will be collected by survey to support the working of the PKC GTP. A base survey of staff travel habits will also be carried out. We will estimate vehicle km avoided in the AQMA and report reduced emissions of NO _x and PM ₁₀ .	PKC
	We will work with our regional partners to further encourage development and employee use of Green Travel Plans in our large employers.	Medium	Assumed 5% vehicle reduction in peak traffic possible (along with other GTP measures).	2009 then ongoing	Target for patronage of GTP, and useage in our large employers to follow.	Medium	Reduced CO ₂ emissions from staff commute. Reduction in peak flows can lead to improved safety in AQMA. Local employers can see that PKC is providing leadership on air quality issues.	Activity data will be sought from the main employers as to the journeys avoided from their GTPs. If this is provided will estimate vehicle km avoided in the AQMA and report reduction in emissions of NO _x and PM ₁₀ .	TACTRAN (through the green travel group) PKC

Intervention Category	Measure	AQ Impact	Possible Flow Reduction	Timing	Target	Cost	Other Benefits	Progress Indicator (in addition to headline indicators)	Responsible Authority
	We will continue to support schools in developing Green Travel Plans through our school co-ordinator and collect activity data to assess their use through our school co-ordinators.	Medium	Assumed 5% vehicle reduction in peak traffic possible (along with other GTP measures).	2009 then ongoing	Target for number of schools with active GTPs to follow. An initial travel survey will be carried out by year 2 of this AQAP.	Low	Reduction in peak flows can lead to improved safety in AQMA and particularly around local schools.	Survey data will be requested from PKC schools as to the journeys avoided from their GTPs. We will estimate vehicle km avoided in the AQMA and report reduction in emissions of NO _x and PM ₁₀ .	PKC
	Regional/PKC Car and Lift Share schemes - there is both a wider scheme, and one specific to PKC employees. We will improve use of the PKC scheme through our own GTP.	Small - Medium	Will contribute to achieving reductions through the PKC GTP.	2009 then ongoing	To increase the number of journeys registered on TACTRANliftshare, com by 10% per annum.	Medium	Reduced CO ₂ emissions from staff commute. Reduction in peak flows can lead to improved safety in AQMA.	Activity data will be collected annually from both schemes and we will estimate vehicle km avoided in the AQMA and report reduction in emissions of NO _x and PM ₁₀ .	TACTRAN PKC
	Green Travel Plans for new developments. We will continue to seek travel plans from large developments under existing planning arrangements.	Small - Medium	Will not reduce flow, but can mitigate effect of new flows.	2009 then ongoing	N/A	Low	Reduced CO ₂ emissions from new developments. Reduction in peak flows can lead to improved safety in AQMA.	Number of GTPs and estimation of effect specified in reporting year.	PKC

Intervention Category	Measure	AQ Impact	Possible Flow Reduction	Timing	Target	Cost	Other Benefits	Progress Indicator (in addition to headline indicators)	Responsible Authority
Traffic management	Keep "City Centre Traffic Management Review" under continual review. Our Traffic and Environmental teams will liaise regularly to discuss the effects of component measures of the CCTMR on air quality.	Small - Medium	Will optimise flow rather than reduce vehicle numbers in the AQMA.	Ongoing as required	N/A	Medium	Improved safety, reduced congestion makes the City more attractive.	We will report annually on any changes to the CCTMR and how we anticipate these affecting air quality.	PKC
Planning and air quality	Consider air quality as an issue for the Local Development Plan.	Medium	May not reduce flow, but can mitigate effect of new flows, thereby locking in gains from other areas of the plan.	2009-12	N/A	Low	Can help mitigate climate change impacts of new developments.	It is not possible to assign a quantitative indicator. We will report on delivery of Local Development Plan, and provide evidence that air quality considerations have been formalised within it.	PKC
	Investigate development of supplementary planning guidance on air quality.	Small	Indirect effect but will help formalise air quality assessments.	2010-14	If appropriate - production of supplementary planning guidance by 2014.	Low	Enhances and standardises air quality assessments submitted. Developers will increasingly see PKC's commitment to environmental protection.	It is not possible to assign a quantitative indicator. We will report progress on development of new guidance, though it is explicitly linked to the forthcoming LDP.	PKC

Intervention Category	Measure	AQ Impact	Possible Flow Reduction	Timing	Target	Cost	Other Benefits	Progress Indicator (in addition to headline indicators)	Responsible Authority
	Consider air quality in planning decisions and formalise decision making process/interaction with Environmental Health. This can relate not only to new transportation sources, but also to new biomass installations or industrial sources.	Small	May not reduce concentrations, but can protect air quality gains.	Ongoing as required	N/A	Low	Biomass installations can provide CO ₂ savings while abatement specified in planning conditions can also protect air quality.	It is not possible to assign a quantitative indicator. We will report on cases where air quality was a consideration in the reporting period, and the outcome of any decisions made.	PKC
Procurement and air quality	Air quality will be formally considered in the tender process for new PKC vehicles. PKC currently specify a more stringent Euro standard than necessary. A fleet survey will be necessary in the short term to establish the baseline for improvements.	Small - Medium	Will not reduce flows, but will reduce emissions from Council fleet.	Fleet survey in year 1 of AQAP, then ongoing as tenders arise	N/A	High (cleaner vehicles could be more expensive)	PKC's own emissions of CO ₂ will be reduced as more fuel efficient vehicles come on stream. This benefit could be captured by the Council's climate change work.	If vehicles are replaced like for like, the number will be reported annually, with their Euro standard and that of the vehicle replaced. This will be fed into an emissions calculation and the saving in NO _x and PM ₁₀ will be reported annually. If additional vehicles are bought, their Euro standard will be reported and an estimation of the impact of specifying a more stringent standard than necessary will be reported.	PKC

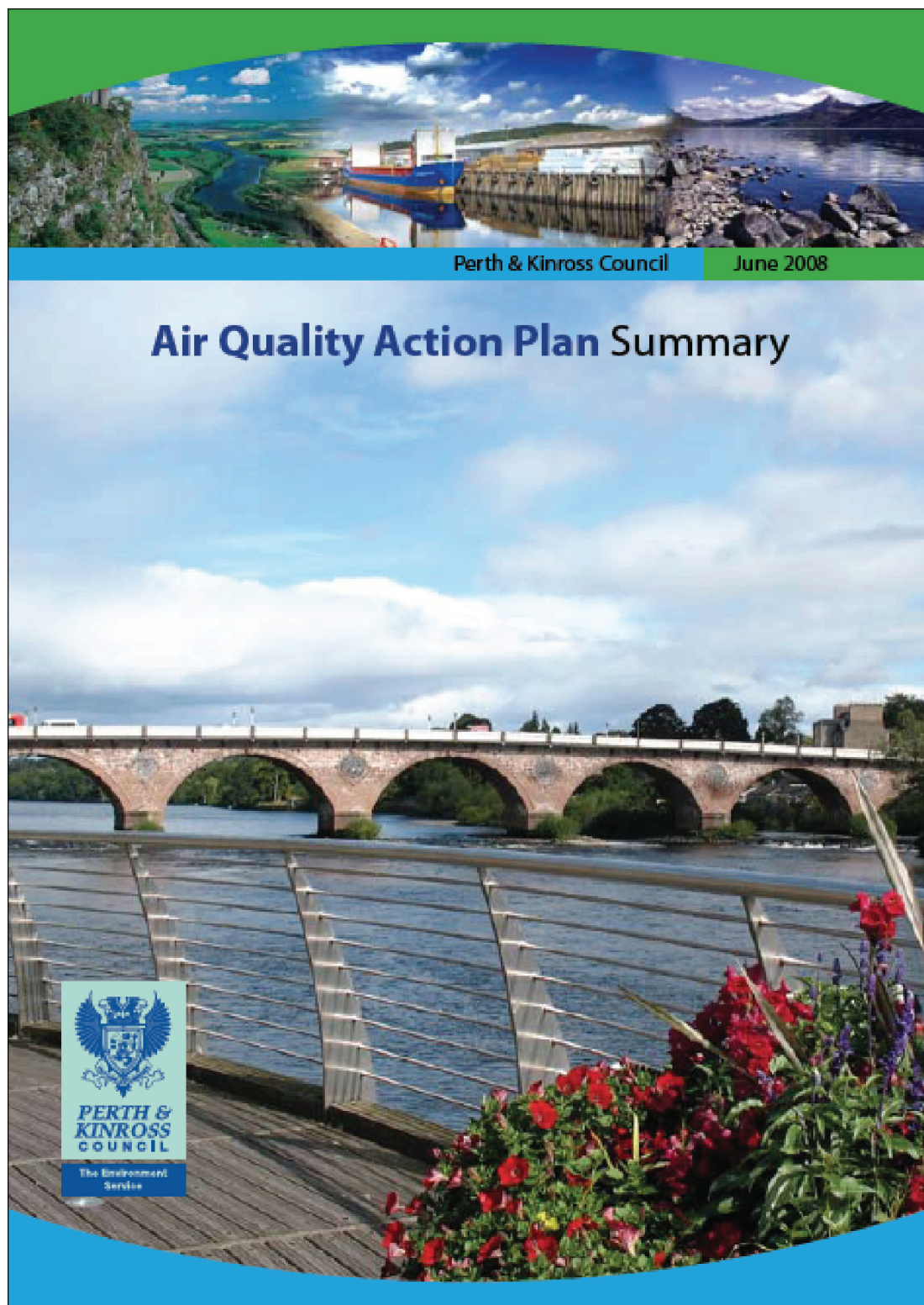
Intervention Category	Measure	AQ Impact	Possible Flow Reduction	Timing	Target	Cost	Other Benefits	Progress Indicator (in addition to headline indicators)	Responsible Authority
Eco-driver training	<p>PKC will seek to expand the existing provision of eco-driver training by utilising the newly formed training team to develop and add an eco-driving training course into our existing modular training syllabus.</p> <p>The eco-driving module will become part of our regular driver CPC training package which will be delivered to all LGV drivers on an ongoing basis. The eco-module will also form part of future training modules for all council drivers as part of the driver assessment programme, which will also cover the driver's responsibilities on legislation and what pre-use vehicle checks need to be carried out and documented.</p>	Small - Medium	Will not reduce flows, but could reduce emissions from fleet by 10%.	Expanded programme by 2011 then ongoing.	4 officers trained by end 2010	Medium - High if 4 officers appointed	<p>PKC's own emissions of CO₂ will be reduced as more drivers modify their behaviour. This benefit could be captured by the Council's climate change work.</p>	<p>PKC intend to assess drivers after they have completed the training. The outcomes of these assessments (ie the fuel saving per driver) will allow simple calculation of avoided emissions of NOx and PM₁₀.</p>	PKC

Intervention Category	Measure	AQ Impact	Possible Flow Reduction	Timing	Target	Cost	Other Benefits	Progress Indicator (in addition to headline indicators)	Responsible Authority
Provision of travel information	Develop, promote and maintain a comprehensive Travel Information System, covering all modes and users and make this information available in hard-copy and on-line formats. Delivered through TACTRAN's Regional Travel Information Strategy.	Medium	Up to 10% reduction in flow possible in conjunction with other public transport measures.	Study/develop strategy by 2011 Specific measures ongoing to circa 2018	Target for development of TIS strategy to be completed by March 2011.	Medium	Improved patronage of local public transport. Reduced flows could improve safety in the AQMA.	We will liaise with TACTRAN and report annually on the findings of the feasibility work. As initiatives are implemented we will report progress on these individually.	TACTRAN PKC
	Investigate and develop the provision of real time travel information for bus stops in Perth.	Small	No direct effect on flow though can help success of other public transport measures.	Study by end 2009 Implementation 2010-2018	N/A at present- if scheme develops we will target its delivery.	Low for feasibility work Could be high if implemented	Improved bus patronage.	We will report annually the findings of any feasibility work that is carried out and report on implementation as it is carried out.	TACTRAN PKC
	Maintain current Public Transport Guides and section on PKC website.	Small	Difficult to assess as not clear what uptake of materials currently is.	2009 - ongoing	Target of % penetration of materials to follow.	Low	Improved bus patronage, possible to tie in with wider environmental agenda.	We will report on provision of materials and attempt to gauge penetration of these.	PKC
	Hearts and Minds campaign to promote sustainable travel options.	Medium	Hard to assess but could be significant if education is successful.	Ongoing to circa-2018	N/A	Medium	Reduced CO ₂ emissions. Increased public transport patronage. Better public awareness of environmental issues.	We will liaise with TACTRAN and report annually on how what initiatives have been developed.	TACTRAN PKC

Intervention Category	Measure	AQ Impact	Possible Flow Reduction	Timing	Target	Cost	Other Benefits	Progress Indicator (in addition to headline indicators)	Responsible Authority
Signage	Investigate the potential of Variable Message Signage linked to pollution monitoring systems.	Medium if measure is implemented	No flow reduction, but could divert most polluting vehicles away from pollution hotspots.	Feasibility work by 2011	N/A at present - if scheme develops we will target its delivery.	Low for feasibility work - could be medium if implemented	Enhances awareness of the air quality problem in Perth.	We will report annually the findings of any feasibility work that is carried out and develop the measure further based on their findings.	PKC
Alternative modes	Work closely with TACTRAN to aid delivery of the Walking and Cycling Strategy for the region to ensure walking and cycling are part of an integrated transport system.	Medium	Around 2% reduction in car movements.	Initial study - 2009/10 Ongoing liaison/ review	N/A	Medium	Health benefits to people choosing walking/ cycling.	We will liaise with TACTRAN annually and report progress with individual measures implemented under the Strategy.	TACTRAN PKC
Better access to public transport (note: access to services, not person access to individual buses)	Work with planning colleagues to assess provision of public transport at new and existing developments.	Small	No direct reduction but could displace some vehicles which would otherwise enter the AQMA.	2009 then Ongoing	Achieve all statutory reporting requirements.	Low	Reduction in CO ₂ emissions from private cars.	We will report on findings of reviews and any improvements made to the existing public transport network and on new developments that have been given public transport facilities.	PKC
Idling emissions reduction	Enforce Vehicle Idling Regulations.	Small	No reduction in flow, but lower emissions from stationary sources.	Feasibility study 2010	Not appropriate to set a target as we do not know the scale of enforcement necessary.	Medium	Enhanced public awareness of air quality and potentially carbon emissions.	Number of vehicles subject to enforcement.	PKC

Intervention Category	Measure	AQ Impact	Possible Flow Reduction	Timing	Target	Cost	Other Benefits	Progress Indicator (in addition to headline indicators)	Responsible Authority
Roadside Emission Testing	Authorised Personnel to carry out roadside testing	Small	No reduction in flow, but will improve quality emissions from vehicles	Feasibility study involving surrounding Local Authorities by end 2010	Not appropriate to set a target as we do not know the scale of roadside testing necessary.	Low	Enhance public awareness of air quality and potentially carbon emissions.	Number of vehicles subject to enforcement.	PKC initially
LAQM marketing	Enhance existing provisions of publicity materials and ensure they reach their target audience. Organise publicity initiatives in schools, large employers, public sector.	Small - Medium	Depends on campaigns	Commence 2009, then ongoing	Target to follow on penetration of publicity and increased public awareness.	Medium	Enhanced public awareness of air quality and potentially carbon emissions.	Publication of materials, events held, website statistics.	PKC
LAQM monitoring and reporting	PKC will continue to monitor air pollution in the City and will meet its statutory reporting requirements.	Small	No direct reduction	Ongoing		Medium	The data can be used in publicity campaigns.	Monitoring data will be provided in annual progress reports to track the overall effect of the AQAP.	PKC
Potential AQ Benefit Criteria		Assessment of Potential Cost							
Small (0-0.5 µg/m³ for NO ₂ 0-0.2 µg/m³ for PM ₁₀)		Cost neutral							
Medium (0.5-1 µg/m³ for NO ₂ 0.2-0.5 µg/m³ for PM ₁₀)		Low costs (up to £30k annually eg for small surveys or campaigns or other options using current resources)							
High (>1 µg/m³ for NO ₂ >0.5 µg/m³ for PM ₁₀)		Medium costs (up to £60k annually eg for a full time officer and resources)							
Based on a combination of the Further Assessment results and expert judgement.		High costs (up to £200k annually eg for small traffic management schemes)							
		Very high costs (above £200k annually eg for new infrastructure)							

Appendix 1: *AQAP Summary Consultation Document, June 2008*



Appendix 2: Draft AQAP Consultation Questionnaire, June 2008



Draft AQAP Consultation Questionnaire

When complete, please return this form to:

Tom Brydone, The Environment Service, Perth & Kinross Council,
Pullar House, 35 Kinnoull Street, PERTH PH1 5GD

Option	Please Indicate Support for Option (tick below)				
	Strongly Disagree	Disagree	Neutral	Support	Strongly Support
1.1 Move Receptors Away From AQMA					
1.2 Consider Air Quality in Planning Decisions					
1.3 Relocate Major Employers to Reduce Exposure and Traffic Movements					
1.4 Use Trees as Pollutant Sinks					
2.1 Build Local Bypass					
2.2 Control Access for Freight					
2.3 Control Access for Cars					
2.4 Control Access for Buses					
2.5 Additional Regional and Transport Scotland Policies					
2.6 Intervention in Traffic Management, Public Transport Systems and Planning Policy					
3.1 Change Traffic Light Timing					
3.2 City Centre Traffic Management Review					
3.3 Improve Signage on Routing and Parking					
3.4 Speed Controls					
4.1 Green Procurement					
4.2 Bus Quality Partnerships					
4.3 Low Emission Zone					
4.4 Freight Quality Partnerships					
4.5 Public Carriage Office Policy					
4.6 Differentiate Parking Charges					
4.7 Vehicle Scrappage Incentives					
4.8 Planning Conditions Policy					
4.9 Eco-Driving Training					
4.10 Infrastructure for Cleaner Fuels and their Use in Council Fleets and Public Transport					
4.11 Roadside Emissions Testing					
5.1 Provision of Travel Information					
5.2 Better Access to Public Transport					
5.3 Better Access to Alternative Modes					

Option	Please Indicate Support for Option (tick below)				
	Strongly Disagree	Disagree	Neutral	Support	Strongly Support
5.4 Green Travel Plans for Large Businesses and Institutions					
5.5 Review Parking Provision and Provide Park + Ride					
5.6 Commercial Delivery Strategy					
5.7 Road Use Charging and Workplace Parking Levy					
5.8 Vehicle Idling Regulations					
6.1 Air Quality Strategy Integration					
6.2 Integrate AQAP into the Local Transport Strategy					
6.3 Supplementary Planning Guidance and Policies					
6.4 Additional National Policy					
6.5 Local Air Quality Management Marketing and Information					
6.6 Routine Use of Section 75 Arrangements					

If you wish to provide additional comments on any option or other associated matters, please use the space below.

Comments/Suggestions (please continue on a separate sheet if necessary)

If you or someone you know would like a copy of this document in another language or format, (on occasion, only a summary of the document will be provided in translation), this can be arranged by contacting Tom Brydone on 01738 476457.



Council Text Phone Number 01738 442573

All Council Services can offer a telephone translation facility

Data Protection Act 1998

In terms of the Data Protection Act 1998, you are entitled to know what personal information Perth & Kinross Council hold about you, on payment of a fee of £10. Application should be made to the Executive Director (Environment), The Environment Service, Perth & Kinross Council, Pullar House, 35 Kinnoull Street, PERTH PH1 5GD.

Designed by Chief Executive's Service (2007750 - May 08)

Appendix 3: AQMA Order

Environment Act 1995 Part IV Section 83(1)

Perth and Kinross Council AQMA Order

Perth and Kinross Council, in exercise of the powers conferred upon it by Section 83(1) of the Environment Act 1995, hereby makes the following Order.

This Order may be referred to as the "Perth and Kinross Council Air Quality Management Area (No 1) Order 2006" and shall come into effect on the Fifth day of May 2006.

The area shown in red on the attached map is to be designated as an air quality management area ("the designated area").

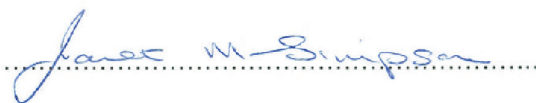
The designated area incorporates an area within this boundary line:- from a point mid-stream of the River Tay directly under Friarton Bridge, follow the M90 road back to Broxden roundabout continuing down the A9 towards Inveralmond roundabout until the Ward 25 (Hillyland) boundary line crosses it; follow the ward boundary to the River Almond and then the mid-stream line of the River Almond till it meets the River Tay; follow the mid-stream line of the River Tay until the Annaty Burn junction; follow the Annaty Burn until it crosses under the mid-point of the A94 road; from this point take a straight line through the mid point of the eastern junction on the A90(T) road to Walnut Grove to the mid-stream of the River Tay; from this point return up the River Tay to the start point under the Friarton Bridge.

This Order and map may be viewed at all public Council offices, all libraries (including mobile ones) and on the Council Website.

This area is designated in relation to a likely breach of the nitrogen dioxide and fine particles (annual mean) objectives as specified in the Air Quality (Scotland) Regulations 2000, as amended.

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

This Order together with the attached map are sealed with the Common Seal of Perth and Kinross Council and subscribed for them and on their behalf by Janet Mary Simpson their Legal Manager and Proper Officer for the purposes hereof at Perth on the Twenty-sixth day of April Two thousand and six.





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If you or someone you know would like a copy of this document in another language or format, (on occasion only a summary of the document will be provided in translation), this can be arranged by contacting
The Environment Service on 01738 476476

إن احتجت أنت أو أي شخص تعرفه نسخة من هذه الوثيقة بلغة أخرى أو تصميم آخر فيمكن الحصول عليها (أو على نسخة معدلة لمخصص هذه الوثيقة مترجمة بلغة أخرى) بالاتصال ب:
الاسم: The Environment Service
رقم هاتف للاتصال المباشر: 01738 476476

اگر آپ کو یا آپ کے کسی جاننے والے کو اس دستاویز کی نقل دوسری زبان یا فارمیٹ (بعض دفعہ اس دستاویز کے خلاصہ کا ترجمہ فراہم کیا جائے گا) میں درکار ہے تو اس کا بندوبست سروس ڈیولپمنٹ The Environment Service سے فون نمبر 01738 476476 پر رابطہ کر کے کیا جاسکتا ہے۔

如果你或你的朋友希望得到這文件的其他語言版本或形式 (某些時候，這些文件只會是概要式的翻譯)，請聯絡
The Environment Service 01738 476476
來替你安排。

Jeżeli chciałbyś lub ktoś chciałby uzyskać kopię owego dokumentu w innym języku niż język angielski lub w innym formacie (istnieje możliwość uzyskania streszczenia owego dokumentu w innym języku niż język angielski), Proszę kontaktować się z
The Environment Service 01738 476476

P ejete-li si Vy, anebo n kdo, koho znáte, kopii této listiny v jiném jazyce anebo jiném formátu (v n kterých p ípadech bude p eložen pouze stru ný obsah listiny) Kontaktujte prosím The Environment Service 01738 476476 na vy ízení této požadavky.

Если вам или кому либо кого вы знаете необходима копия этого документа на другом языке или в другом формате, вы можете запросить сокращенную копию документа обратившись
The Environment Service 01738 476476



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