

**Draft Transport and Air Quality  
Strategy Revisions:  
London Low Emission Zone**

**Consultation with the London Assembly and the  
Greater London Authority Functional Bodies**

**TfL's REPORT TO THE MAYOR ON  
CONSULTATION**

**January 2006**

## **1. Introduction and Summary**

### *1.1 Consultation with the London Assembly and GLA Functional Bodies*

1.1.1 On behalf of the Mayor of London, Transport for London (TfL) conducted a consultation on the *Transport and Air Quality Strategy Revisions: London Low Emission Zone* from 10 October to 14 November 2005, with the London Assembly and the Greater London Authority (GLA) 'functional bodies', (i.e. the London Development Agency, Transport for London, the Metropolitan Police Authority and the London Fire and Emergency Planning Authority). The Greater London Authority Act 1999, that established the Mayor and the GLA, stipulates that these organisations must be consulted ahead of consultation with local authorities, groups representing people with mobility problems and others. The two GLA Commissions (the Health Commission and the Sustainable Development Commission) were also consulted. In line with the Strategic Environmental Assessment Regulations, TfL also consulted the four statutory environmental consultees (English Heritage, English Nature, the Countryside Agency and the Environment Agency).

1.1.2 The consultation concerned draft revisions to the Mayor's Air Quality and Transport Strategies to allow for a Low Emission Zone (LEZ). The consultation ran for five weeks and commenced on 10 October 2005, with TfL distributing a package of documents to the twenty-five members of the London Assembly, Chairs and Chief Executives of the GLA Functional Bodies, and the Chairs of the two GLA Commissions. The consultation package contained:

- Draft Transport and Air Quality Strategy revisions;
- A Supplementary Information document; and
- A Strategic Environmental Assessment Scoping Report.

1.1.3 A formal representation to the consultation was received from the London Sustainable Development Commission. The London Fire and Emergency Planning Authority responded that it had no comments at this stage, but would take a more considered view during future wider consultation exercises. The Health Commission, the Metropolitan Police Authority and the London Development Agency were all contacted during the consultation period, but decided not to submit representations to the consultation at this stage.

1.1.4 Representations were also received from the following London Assembly party groups and individual London Assembly Members:

- The Conservative Party Group of the London Assembly
- The Green Party Group of the London Assembly
- Peter Hulme-Cross, Assembly Member
- Murad Qureshi, Assembly Member.

1.1.5 The Assembly's Environment Committee will be considering the proposed LEZ at a scrutiny hearing on January 17 2006.

1.1.6 In addition, representations were received from the following Government Departments and Agencies:

- The Environment Agency
- The Department of Health
- English Nature
- The Countryside Agency.

1.1.7 Three other organisations responded to the consultation. These were:

- Sadler Consultants (an environmental consultancy)
- Per-Tec Ltd (a manufacturer of retrofit pollution abatement equipment)
- The Society of Motor Manufacturers and Traders (SMMT).

1.1.8 In order to ensure that the Mayor is able to make decisions based on the fullest information available, these representations are also considered in this report.

1.1.9 Chapter 2 of this report considers the representations made by these respondents on a topic-by-topic basis, together with TfL's responses to the issues raised.

1.1.10 The overall position of these respondents was as follows:

- **The London Sustainable Development Commission (LSDC)**

The London Sustainable Development Commission (LSDC) welcomed the proposed LEZ, though they were concerned that it would not prevent European Union (EU) air quality targets for 2010 being missed. For this reason they supported the extension of the scheme to Light Goods Vehicles (LGVs) in 2010. The LSDC also raised the possibility that the introduction of the LEZ could encourage operators either to switch from Heavy Goods Vehicles (HGVs) to LGVs or from diesel to petrol engines to avoid paying the charge. This would, they suggested, adversely affect carbon emissions. The LSDC stressed that the impact on industry, particularly small businesses, needed to be properly considered, and that the LEZ needed to be better placed in the context of other initiatives which were also aimed at reducing vehicle emissions.

- **Conservative Group of the London Assembly**

Whilst the Conservative Group widely welcomed the intentions of the proposed LEZ, they expressed concerns over the low benefit to cost ratio of the scheme. They also sought assurances that TfL had properly allowed for risks and potential rises in the costs of the scheme. The Conservative Group commented that the proposed LEZ could adversely affect vehicle operators, particularly small businesses, and they felt that more research would be needed before the inclusion of LGVs in the scheme. They reported that the lack of communication on the potential charge for non-compliant vehicles was a cause of irritation for operators. They were also concerned by the potential impact of the displacement of non-compliant vehicles onto roads around Greater London. On enforcement, the Conservative Group stressed the

importance for the equal application of the LEZ to UK and foreign-registered vehicles and felt that the proposals for a combined camera system of fixed and mobile units were not entirely clear.

- **Green Group of the London Assembly**

The Green Group welcomed the creation of the proposed LEZ. However, they felt that the Strategy Revisions needed to show how the LEZ would help achieve EU limit values on air quality. They felt that the GLA had a duty to submit a strategy for the Government's consideration which the Mayor believed would enable London to meet the EU limit values. It would then be for the Government to respond to that Strategy. The Green Group hoped that cars would be included in the LEZ from 2010, and they requested that a feasibility study be undertaken to examine this.

- **Peter Hulme-Cross, Assembly Member**

Peter Hulme-Cross felt that it was unreasonable to expect commercial vehicle and coach operators to change their procurement and operation processes for a scheme that would be redundant by 2015. He commented that the natural vehicle replacement cycle would achieve air quality targets in 2015 in any case. He would prefer a six-year rolling age limit similar to that used in the Gothenburg LEZ. This would, it was claimed, reduce compliance costs, whilst still being challenging for operators.

- **Murad Qureshi, Assembly Member**

Murad Qureshi welcomed the proposal for a LEZ. He felt that the LEZ could be linked to other plans to provide better management of freight in London, both by road and rail.

- **The Environment Agency**

The Environment Agency was fully supportive of the introduction of a LEZ. They felt that it was important that the Strategic Environmental Assessment process should be transparent and provide a clear audit trail for decision-making.

- **The Department of Health**

The Department of Health was consulted on the Scoping Report for a Health Impact Assessment (HIA) on the proposed LEZ. They made some suggestions for the development of the HIA. They were concerned that it was not clear how the HIA would feed into the decision making process.

- **English Nature**

English Nature believed that the proposed LEZ would deliver environmental benefits. However, without the inclusion of private cars in the scheme, the benefits to nature conservation would, they suggested, be marginal.

- **The Countryside Agency**

The Countryside Agency felt that whilst the proposed LEZ could improve air quality, with resulting benefits in health and the enjoyment of the landscape, it would have little impact on the landscape itself.

- **Other organisations**

Comments made by other respondents included detailed technical suggestions on how the proposed revisions to the Transport and Air Quality Strategies could be adjusted. It was felt that TfL needed to work closely with the pollution abatement equipment manufacturing sector, to establish what equipment is available and to help the industry prepare for the introduction of the proposed LEZ. It was also suggested that the scheme should be extended beyond 2015, as there were likely to be more stringent air quality targets in place by then. One of these respondents felt that an age-based standard would be preferable to the proposed use of Euro standards.

## **2. Analysis of Representations**

### *2.1 Introduction*

2.1.1 For the purposes of analysis, the representations have been categorised into broad themes according to the issues raised, and under each theme, TfL offers its responses and recommendations. This means that a representation from a respondent that dealt with more than one issue will be split up accordingly and dealt with under the appropriate theme. The themes are as follows:

- The business case for the LEZ
- Air Quality targets
- The proposed emission standards
- Retrofitting of vehicles
- The potential impact of the LEZ on business
- The inclusion of cars within the LEZ
- Enforcement
- Displacement of polluting vehicles outside Greater London
- Increase in carbon emissions
- Alternatives to a LEZ
- Impact assessments
- Linkages to freight management initiatives.

2.1.2 When analysing the representations to the consultation, best endeavours have been made to accurately record and classify them. Copies of the representations themselves have been provided by TfL to the Mayor so that they can be reviewed directly.

## 2.2 The business case for the LEZ

2.2.1 The Conservative Group felt that the benefit to cost ratio of 0.4:1 under the DEFRA methodology and between 0.6:1 and 0.7:1 under the EU methodology needed to be seen in the context of potential risks to the proposed scheme. These risks included potential lack of DfT support for the Reduced Pollution Certificate (RPC) scheme so that TfL would have to bear the costs of an alternative scheme. A further risk was that new Euro IV vehicles would produce higher levels of emissions during urban operation than had been previously predicted, reducing the actual benefits that would be delivered. The Conservative Group was also concerned that the initial estimate of costs for the proposed LEZ in the TfL 5-year Investment Programme and Business Plan were already some £44 - £38m less than currently envisaged, due to insufficient allowances in a number of cost areas. The Conservative Group wanted to be sure that TfL's current plans had not overlooked spending areas.

### TfL Response

TfL has examined alternatives to the proposed LEZ, and has concluded that in the absence of national initiatives, the proposed LEZ represents the most effective way to reduce the most harmful transport related emissions between 2008 and 2015. Following analysis of other implementation methods, the Strategic Review, published in 2005, concluded that the preferred option of a LEZ introduced through a Scheme Order under the GLA Act 1999 would achieve the best balance between costs and air quality and health benefits.

The LEZ would promote the earlier introduction into the fleet of cleaner Euro IV and Euro V vehicles which are manufactured to meet tighter European emissions limits. Whilst it is possible that under certain driving conditions the emissions from these vehicles may exceed the predicted levels, these vehicles will be cleaner than the older vehicles they will have replaced.

The current estimate of scheme implementation and running costs was based on a bottom-up review of all cost components and referred back to the experience of implementing the central London congestion charging scheme. A contingency allowance of 30% has also been included based on an assessment of project delivery risks. These risks are kept under continual review. Since the consultation with the GLA functional bodies TfL has received a positive response from the Secretary of State for Transport regarding support for use of the RPC scheme, so this risk has diminished.

The updated estimated net costs are as reported to the TfL Board on 28 September 2005 and are some £44 to £38 million (operating and capital costs) more than previously allowed for in the old TfL Business Plan. The Business Plan figures were based upon the output of the Feasibility Study which reported in July 2003.

TfL has carried out a further detailed analysis of the implementation,

operation and enforcement alternatives for the proposed LEZ and developed an approach which provides the earliest introduction in order to maximise the benefits from the scheme. This shows that the feasibility study figures were an underestimate because:

- It assumed that the LEZ would be enabled by a TRO and made only a small provision for the costs associated with the introduction of a scheme.
- The enforcement strategy assumed a heavy reliance on data captured by congestion charging cameras. In practice, the majority of the heavy vehicles operating in the Greater London area do not enter the congestion charging zone and hence alternative enforcement arrangements are required.
- It made insufficient allowance for the project management, legal, public information and scheme monitoring costs and did not allow for a revision to the Air Quality and Transport Strategies or a Scheme Order and their associated consultations.
- Based upon current expectations, service provider costs for operating the scheme would be higher than allowed for in the Feasibility Study.

## 2.3 Air Quality targets

2.3.1 The Green Group felt that the revisions to the Mayor's strategies needed to show how they would achieve European air quality limit values. Whilst social and economic considerations were important, they felt that these should not prevent emission limits from being achieved. The social and economic considerations should help define how these limits are to be reached, rather than providing an argument as to why they are too expensive.

### TfL Response

In its Air Quality Strategy, the Government has set objectives for nine main air pollutants. Two of these pollutants are being tackled at the national and European level, but responsibility for addressing the remaining seven is devolved to local authorities. Within London, the Mayor has a statutory duty to take steps towards achieving the objectives for the seven locally managed pollutants. London is expected to meet the objectives for five out of the seven pollutants. However, based on provisional data it has not met the annual mean objective for NO<sub>2</sub> (date for achievement, end 2005) or the daily mean objective for PM<sub>10</sub> (which applied from the end of 2004). In particular, both objectives were expected to have been exceeded at locations in the vicinity of the main road network.

The LEZ represents the most effective option for helping London move

towards meeting these objectives. While the introduction of the proposed LEZ would not meet the 2010 objectives in all locations, it should reduce the areas of London that exceed these objectives, and most importantly the exposure of Londoners to these pollutants.

However, the LEZ is not the only initiative that the Mayor is proposing to reduce transport related emissions. Within his Transport and Air Quality Strategies, for example there are initiatives which encourage a modal shift away from private vehicles and on to public transport, as well as encouraging people to cycle and walk. Furthermore, all London buses under contract to TfL met a minimum of Euro II emission standards for all pollutants by the end of 2005. Through the fitting of particulate traps on all Euro II and III buses, the fleet also met a minimum of Euro IV emission standards for particulates by the end of 2005. Similarly, the Taxi Emissions Strategy will require all London licensed taxis to meet Euro III emission standards for PM<sub>10</sub> and NO<sub>x</sub> by mid 2008.

These represent significant measures being taken in London to support moving towards the achievement of national air quality objectives and EU limit values. TfL will assess the economic impact of any proposal, balancing cost and affordability with achieving maximum air quality and health benefits.

2.3.2 The London Sustainable Development Commission was disappointed that the impact of the proposed LEZ would still not ensure that London would reach the 2010 EU targets for PM<sub>10</sub> and NO<sub>x</sub>. It suggested that it would be helpful if the proposed LEZ were to have a longer-term future, contributing to plans to meet the post 2010 requirements of the EU Air Quality Framework Directive. Sadler Consultants also felt that the LEZ should be continued after 2015, especially as the EU was likely to have produced a new PM<sub>2.5</sub> objective by then. On the other hand, Peter Hulme-Cross felt that the proposed LEZ would be redundant after 2015, as by then the requirements for PM<sub>10</sub> and NO<sub>x</sub> would have been achieved through the natural vehicle replacement cycle.

2.3.3 The Conservative Group felt that given the natural vehicle replacement cycle, the LEZ would effectively be redundant by 2015. They suggested that more stringent standards should be promoted by offering incentives for vehicles which comply with Euro V sooner rather than later.

#### TfL Response

The future of the proposed LEZ after 2015 would be determined in light of the scheme's performance, and what national and EU air quality objectives were in place at the time.

The implementation of the proposed LEZ would bring forward the introduction of cleaner vehicles into the fleet, but by 2015 would deliver diminishing benefits (if the standards were as proposed) as the natural fleet renewal process reduces its impact. Specific LEZ standards for 2015 cannot be proposed at this stage as they would be determined by the national and

European targets that are in place at that time. When considering how best to comply with the LEZ it would be most economic for operators in the long term to purchase the cleanest vehicles available, as this would allow them entry into the LEZ for a longer period of time.

Other types of incentives for purchasing cleaner vehicles, such as grants or tax rebates, can only be introduced by national government as they have to be available for vehicles across the UK, not just those that come to London.

## **2.4 The proposed emission standards**

2.4.1 Sadler Consultants suggested that a LEZ scheme which included vehicles fitted with particulate traps for Euro III PM<sub>10</sub> would be dependent on the continuation of the RPC scheme, as would a scheme that included a NO<sub>x</sub> standard. The consultant felt that if Treasury or DfT wanted to remove the tax element of the RPC, this would not prevent the certification aspect being retained. In fact, removing the tax element would also remove any requirement for primary legislation to include NO<sub>x</sub> certification. Sadler Consultants also referred to modelling carried out on behalf of the GLA which showed that introducing the Euro IV standard for NO<sub>x</sub> as the LEZ standard would contribute greatly to London meeting its 2010 EU limit values for NO<sub>2</sub>.

### TfL Response

The Government has indicated its intention that vehicles registered before October 2006 would still continue to be able to get an RPC certificate and a VED discount if the vehicle's particulate emissions levels were improved. This means that the RPC scheme will continue for the foreseeable future.

The Mayor has recently received a supportive letter from the Secretary of State for Transport. As well as offering support in principle for the proposed LEZ, the Secretary of State offered support for use of the RPC scheme to enable the LEZ scheme to identify vehicles that have been modified to meet an improved emissions level for particulates.

A standard of Euro IV for NO<sub>x</sub> would be very useful in moving London towards meeting air quality objectives for this pollutant. However, such a standard would be dependent on the availability of certified retrofit NO<sub>x</sub> abatement equipment, to provide an economic route for operators to achieve this standard.

There are a number of reasons why it would be more difficult to introduce a NO<sub>x</sub> standard for the proposed LEZ. Since there is currently no equivalent of the RPC for NO<sub>x</sub> abatement, a new certification register would be required. This would probably require TfL to undertake registration of retrofitted vehicles, since this information would not be recorded by DVLA. NO<sub>x</sub> abatement retrofit technology is an evolving technology and more complex than equipment for PM<sub>10</sub>. Correct operation and maintenance of the systems is vital, as if they fail to operate properly, they may be more polluting than the original base vehicle. This requires standards for on board diagnostics, and

agreed tests and inspection regimes for their operation. Retrofit technology for London buses is being trialled and TfL will be better placed to assess its effectiveness from March 2006, when these trials conclude.

TfL is in discussions with equipment manufacturers (both within the UK and abroad), as well as DfT and its agencies regarding the development of appropriate standards, certification mechanisms and inspection and maintenance regimes for NO<sub>x</sub> retrofit abatement equipment.

2.4.2 The SMMT argued for an age-based criterion rather than use of Euro standards. It felt that use of the Euro standards did not take into account deterioration in the vehicle/ engine performance concerning tail-pipe emissions, which tended to occur as a result of a lack of appropriate maintenance. They gave the example that in 2003 a vehicle constructed to Euro II standards (which became mandatory in 1996) could be between two and seven years old. However, the newer vehicles would probably be more compliant to the actual Euro II standard than the older ones. Use of an age-based criterion would, it was suggested, prevent some of these apparently compliant vehicles from driving within the zone without charge.

2.4.3 SMMT proposed a number of other factors in support of an age-based criterion. They argued that it would be easier to determine the vehicle age than its Euro standard status, and more easily understood by operators. An age-based system would also be easier to enforce, it was argued. It would encourage road safety, as newer vehicles would be fitted with better safety systems. The system would also evolve naturally, without the need for adjustment to technical developments (which in turn require separate certification methods such as the RPC scheme). Finally, it was suggested, it would obviate the purchasing difficulties associated with the Euro standards (by which, for example, operators are reluctant to buy Euro III vehicle pending the introduction of Euro IV).

2.4.4 The SMMT accepted that there would be exceptions, for example where a vehicle was produced to a higher Euro standard than was mandatory at the time of the vehicle's registration. In these cases, they argued for derogations for a certain number of years.

#### TfL Response

In setting the proposed standards for the LEZ, TfL wants to encourage operators to run vehicles that have been manufactured or modified to meet a minimum emissions level. An age-based scheme would not necessarily do this. A purely age based approach does not encourage operators to buy cleaner, higher Euro standard vehicles sooner; indeed it would encourage operators to consider the cheapest possible vehicle irrespective of its emissions. It also does not support the fitting of retro-fit devices which may be a more economic solution for operators of some classes of older vehicle. If retrofitting is not supported, the only option open to operators would be to sell vehicles outside the zone, so potentially increasing displacement of

dirty vehicles.

TfL recognises the complications of identifying the Euro class of a vehicle as this is not currently routinely recorded by DVLA. It is proposed that the date of first registration would be used as a proxy for the Euro standard. In other words, TfL would assume that vehicles manufactured after a certain date (probably October 2001, when Euro III became mandatory) would be Euro III compliant for particulates. TfL would then require operators of Euro III vehicles manufactured before that date to provide proof to them of their Euro standard. These numbers are relatively low since there has been a tendency for operators to avoid purchasing higher standard vehicles until they become mandatory.

It is intended that the standard would be tightened further in 2010. Operators would be advised to take into account the proposed standard for 2010 when purchasing vehicles.

## **2.5 Retrofitting of vehicles**

2.5.1 Per Tec Ltd (a retrofit equipment manufacturer) argued that retrofit technology is already available for fitting to LGVs. It was therefore suggested vital for TfL to engage with the retrofit industry to better understand what equipment is already on the market, and what could be developed over the coming years. Without a clear plan from TfL, it was suggested, there would be no incentive for operators to retrofit their vehicles, and the retrofit industry would not be able to develop new technology with any confidence. Sadler Consultants made a similar point. Suitable technology was available, but it was argued that the limiting factor was likely to be its cost effectiveness and acceptability to operators. It was suggested that more investigation would be required to ascertain whether manufacturers could produce the equipment in sufficient volumes, as well as establishing what equipment was available for highly specialised vehicles.

2.5.2 Both these respondents felt that TfL should consult with the Environmental Industries Commission. The equipment manufacturer suggested that TfL should set up an Emissions Centre, where fleet operators could find out what technology is available and deliverable.

### **TfL Response**

TfL is working very closely with the retrofit industry through the auspices of the Environmental Industries Commission (the industry body representing abatement equipment manufacturers), to ensure that the implementation method chosen is one that is practicable for the retrofit industry. TfL is looking to develop the most suitable standards for LGVs, and is considering what retrofit technology is available. However, it should be noted that at present, the manufacturing sector providing retrofit technology for LGVs is relatively small.

## 2.6 Potential impact of the LEZ on business

2.6.1 Peter Hulme-Cross AM understood that under the proposed system, from 2010 no commercial vehicle or coach more than four years old would be able to enter the LEZ without paying a significant financial penalty, and claimed that this would not be reasonable. Commercial vehicles, it was suggested, have a life cycle of between five and eight years, and coaches of up to 15 years. It was unreasonable, it was suggested, to expect operators to change their whole procurement processes.

2.6.2 The Conservative Group made a similar point. They were particularly concerned about the potential cost to small businesses, and feared that the costs would be passed onto customers in London. This would be of particular concern if LGVs were included in the scheme from 2010. The Conservative Group also suggested that the lack of information on the proposed cost for entering the LEZ and fines for non-compliance is a matter of considerable frustration for operating companies attempting to plan for future budgets.

2.6.3 The London Sustainable Development Commission hoped that TfL modelling would find the right balance between putting in place incentives for industry to comply with the proposed LEZ standards and sanctions for operators who did not comply.

### TfL Response

TfL is currently carrying out further analysis on the costs to businesses of both the core proposals and the potential additional options to extend the scheme to NO<sub>x</sub> and LGVs in 2010. The proposed LEZ would be just one of many factors which would influence the business planning of HGV, bus and coach operators. TfL estimated that the proposed LEZ would have no impact on approximately two thirds of operators who drive in London as their vehicles would already be compliant with the proposed standards.

The proposed LEZ entry criteria are based on emissions standards, rather than age, thereby enabling vehicle owners to choose from a range of options, including fitting abatement devices, which may be more economic for certain classes and ages of vehicle.

If the LEZ standard in 2010 were to be Euro IV for PM<sub>10</sub>, Euro IV vehicles which are available to purchase today would be able to enter the LEZ without paying a charge. Also, any Euro III vehicle fitted with a particulate trap would be able to enter the LEZ without paying a charge.

If the LEZ standard in 2010 were to be Euro IV for PM<sub>10</sub> and NO<sub>x</sub>, Euro IV vehicles would be able to enter the LEZ without paying a charge. Euro III or Euro II vehicles would have to be fitted with both PM<sub>10</sub> and NO<sub>x</sub> abatement equipment before being able to enter the LEZ without paying a charge, and TfL is assessing the impact on business of this requirement.

TfL recognises that there may be particular issues relating to LGVs. In the

ongoing development of the LEZ proposals, TfL is trying to balance the objectives of improving air quality and health with affordability for the business community. The design of the scheme and the setting of emission standards is not intended to create a negative impact on the London economy.

## 2.7 Inclusion of cars within the LEZ

2.7.1 The Green Group expressed the hope that cars would be included in the scheme from 2010. They acknowledged the reasons why cars had not been included in the proposed scheme, but felt that since cars account for a relatively high proportion of NO<sub>x</sub> and PM<sub>10</sub> emissions the Mayor had a duty to submit a strategy for the Government's consideration that would enable London to meet its EU limits. The Green Group therefore proposed that a feasibility study should look in more detail at how cars could be included in 2010 and examine how social equity issues could be addressed through the promotion of alternatives to car ownership.

### TfL Response

Data analysed as part of the London Low Emission Zone Feasibility Study showed that for 2004 in London, car emissions were responsible for 39% of transport-related NO<sub>x</sub> emissions and 33% of transport-related PM<sub>10</sub> emissions. Whilst it is acknowledged that the sheer number of cars contributes substantially to road transport related pollution, the cost of administering and enforcing a scheme which included cars would be prohibitive. It would also be impractical to consider retrofitting several hundred thousand cars to make them compliant with a LEZ. Polluting cars can better be targeted through other initiatives to discourage car use, such as the congestion charge or by improving the accessibility and reliability of London's public transport.

Despite the relative contribution to emissions from the car population, heavier vehicles emit more pollutants per vehicle kilometre driven. This is the key reason that heavier vehicles have been identified as a priority for a LEZ, as it is possible to have a large impact in reducing emissions by tackling a relatively smaller number of vehicles.

Modelling has shown that any variant of the LEZ proposals that included cars would further reduce exceedences of air quality objectives for PM<sub>10</sub> and NO<sub>x</sub> at monitoring receptor points. There are, however, no cases where the inclusion of cars in the LEZ would mean the difference between London reaching a statutory air quality objective or not.

## **2.8 Enforcement**

2.8.1 The Conservative Group felt that the proposed revised text to the Strategies did not sufficiently set out how the LEZ would be enforced. This was, it was suggested, vital to the success of the scheme.

2.8.2 They also sought further clarification as to how the LEZ would be enforced against non-UK registered vehicles, as it was important that there was, and was perceived to be, an equal application of the LEZ to UK and foreign-registered vehicles.

### TfL Response

It is planned that the LEZ would use Automatic Number Plate Recognition (ANPR) cameras similar to those used for Congestion Charging, supported by mobile ANPR units. Vehicles identified by the cameras would be matched against a database of excluded vehicles. This technology has the advantage of being tried and tested, as well as being relatively straightforward to implement.

The proposed LEZ would apply in the same way to overseas operators as to UK-based ones. It is estimated that non-UK registered vehicles would account for some 2% of all heavy vehicles driving within Greater London. HGV and coach operators from abroad would have to register with TfL prior to driving within the Greater London area if registration data was not available from their home countries. Non-UK registered operators would have to pay to enter the proposed LEZ if their vehicles were non-compliant with the proposed emission standards. TfL is involved in a number of initiatives at national and EU level looking to improve the enforcement of penalties issued to vehicle operators based overseas.

## **2.9 Displacement of polluting vehicles outside Greater London**

2.9.1 The Conservative Group sought further information on whether the LEZ would displace some diesel-engined vehicles to other parts of the country.

### TfL Response

It is estimated that the introduction of cleaner vehicles travelling in and outside London would result in an overall positive net impact both within and beyond Greater London. The 2005 operator survey carried out by TfL suggested that whilst some operators said they would transfer their non-compliant vehicles out of the Greater London area, this would be more than counterbalanced by the number of vehicles made cleaner as a result of the proposed LEZ, either through bringing forward new vehicle purchase or fitting pollution abatement devices. Using calculations based on vehicle mileage and place of registration, it is estimated that the LEZ would bring about a net equivalent of around 6,000 additional cleaner vehicles being used outside of London.

## **2.10 Increase in carbon emissions**

2.10.1 The London Sustainable Development Commission noted that the LEZ may result in perverse incentives being created by encouraging operators to move from heavy goods vehicles to light goods vehicles, or to switch from diesel-engined vehicles to petrol vehicles. This could potentially cause carbon emissions to rise. They felt that this issue needed to be considered during the scheme's development.

### TfL Response

The operator study undertaken in 2005 by TfL produced little evidence of operators planning to switch from HGVs to LGVs. It is considered unlikely that many operators would do this as other overheads would be incurred such as additional drivers. For technical reasons it would be very difficult for HGVs and coaches to be run on petrol rather than diesel and very few petrol HGVs, coaches or LGVs are manufactured today.

## **2.11 Alternatives to a LEZ**

2.11.1 The Conservative Group was interested in understanding better what alternative methods had been considered by TfL for reducing emissions. The Green Group also proposed that substantial traffic reduction and a large-scale switch to cleaner fuels could achieve the same results as the LEZ, if there was a binding commitment to meet targets and to make air quality a top priority.

### TfL Response

A number of alternatives to reduce emissions caused by road transport have been considered by TfL. However, many of these, such as schemes to encourage cleaner fuels, grants to scrap older vehicles and national road user charging, are dependent on central government support. The LEZ represents the most effective mechanism available to the Mayor for reducing the most harmful vehicle emissions between 2008 and 2015. However, as the TfL Response at paragraph 2.3.1 sets out, the LEZ would be just one of a number of initiatives aimed at reducing road transport related emissions in London.

## **2.12 Impact assessments**

2.12.1 The Environment Agency felt that it was important that the Strategic Environmental Assessment process was transparent, and provided a clear audit trail for decision making. Similarly, the Department for Health stated that it was unclear how the Health Impact Assessment would feed into the decision making process.

## TfL Response

The conclusions of the Environmental Report and the Health Impact Assessment would be made available for the Public and Stakeholder consultation. They will provide information that would be considered during the development of the proposed LEZ, as well as guidance on what key indicators would be monitored should the LEZ be introduced.

### **2.13 Linkages to freight management initiatives**

2.13.1 The London Sustainable Development Commission felt that the LEZ proposal would benefit from being better placed in the context of what else is being done to rationalise the number of unnecessary road trips made into London, particularly where linkages between supplier and receiver are made more direct. Murad Qureshi AM noted that the LEZ proposal could be improved by being linked to better management of road and rail freight.

## TfL Response

The TfL Freight Unit is working with the London Sustainable Distribution Partnership and the Freight Transport Association to produce a comprehensive freight strategy - the London Freight Plan (LFP). The proposed LEZ would be fully integrated with the LFP.

The aim of the LFP is to improve the efficiency of freight and servicing trips in London while minimising their impact on the environment and society.

When implemented, the plan will aim to:

- Support London's growth in population and economy;
- Improve the efficiency of freight distribution and servicing within London;
- Balance the needs of freight transport and servicing with those of other transport users and other demands for London's resources;
- Improve air quality in London by reducing emissions of local air pollutants and carbon dioxide caused by freight and servicing;
- Improve the quality of life in London by minimising the impact of noise and vibration on the public;
- Improve health and safety in London by reducing the number of deaths and injuries associated with freight movement and servicing;
- Improve the quality of life in London by reducing the negative impacts of freight and servicing in London.

A full consultation draft of the plan is due in spring 2006, with the final plan published later in the year.

### **3. Conclusions and recommendations**

3.1 Overall, the balance of opinion supported the need for action to be taken to reduce transport-related emissions in London. Nine of the 13 respondents also supported the creation of a London Low Emission Zone in principle. However, some areas of concern were highlighted by respondents.

#### **3.2 *Transport for London's recommendations to the Mayor***

3.2.1 As a result of these findings, TfL recommends that the Draft Transport and Air Quality Strategies: London Low Emission Zone be amended to:

- (i) Address the main points that have emerged from the consultation
- (ii) Outline the pros and cons of including a NO<sub>x</sub> standard from 2010
- (iii) Provide further information on the advantages of the Euro emission standards over age-based standards
- (iv) Provide further information on the proposed enforcement mechanism.

3.2.2 TfL recommends that the amended Strategy Revisions should be published for consultation with the public and stakeholders.

3.2.3 If the Mayor determines to publish revisions to the Strategies, TfL would take forward implementation of the proposed LEZ. TfL would move to implement the proposed LEZ by Order, and further public and stakeholder consultation would then be carried out. Should it subsequently be decided to proceed, the earliest possible date for implementation of the proposed LEZ would be early 2008.

3.2.4 Throughout the consultation process on the Draft Transport and Air Quality Strategy Revisions, and any subsequent Order, TfL will consider all representations received, and may recommend changes to the proposals to the Mayor, if appropriate.