Transport for London

SAFETY, HEALTH & ENVIRONMENT COMMITTEE

Meeting No. 31 to be held on 6th March 2007 at 1400hrs
in the Boardroom, 14th Floor Windsor House,
42-50 Victoria Street, London SW1H 0TL

AGENDA

14.00	**1. Apologies for Absence**	-
	2. Minutes of Meeting No. 30 held on 15th November 2006	-
14.05	**3. Matters Arising and Outstanding Actions Report**	-
14.10	**4. Draft Business Planning Guidelines – Health and Safety, Resilience and Sustainability**	Richard Stephenson
14.20	**5. Sustainability Unit Work Plan**	Jeanette Baartman
14.35	**6. Climate Change**	
	6.1 Mayor's Climate Change Action Plan	Mark Evers
	6.2 TfL's Climate Change Fund	Helen Woolston
14.50	**7. Influenza Pandemic Update (Oral)**	Richard Stephenson
15.00	**8. Business HSE Reports**	MDs
	8.1 LUL	Tim O'Toole
	8.2 Surface Transport	David Brown
	8.3 TfL Corporate	Howard Carter
	8.4 Rail	Ian Brown
15.30	**9. Appointment of SHEC Advisors (Oral)**	Richard Stephenson
15.40	**10. Any Other Business**	

Date of next meeting
5th July 2007 at 1000 hours,
Windsor House, 14th Floor, Boardroom

Transport for London

MINUTES OF THE
SAFETY, HEALTH & ENVIRONMENT COMMITTEE MEETING No. 30
held on 15th November 2006 in Boardroom, Windsor House at 14.00 pm

OPEN SESSION

Present:

Members:	Dave Wetzel	Chair
	Kirsten Hearn	
	Paul Moore	
	Tony West	
	Toby Harris	Mins [38/11/06-42/11/06]
Advisers:	Richard Booth	Mins [38/11/06-46/11/06]
	Stuart Nattrass	
In Attendance:	Ian Brown	Managing Director, London Rail
	David Brown	Managing Director, Surface Transport (part time)
	Howard Carter	General Counsel
	Tim O'Toole	Managing Director, London Underground
	Mike Shirbon	Group HSE advisor
	Richard Stephenson	Director of Group Health, Safety & Environment
	Olivia Carlton	Head of Occupational Health
	Jeff Pipe	TfL Corporate Governance Adviser – TfL Secretariat
	James Varley	TfL Secretariat
Secretary:	Virginie Grand-Port	TfL Secretariat

ACTION

38/11/06 Apologies for Absence

No apologies were received.

39/11/06 Minutes of the Previous Meeting

The minutes of Meeting No. 29 held on 7 September 2006 were **AGREED** and signed by the Chair as an accurate record.

40/11/06 Matters Arising and Summary of Action Points

There were no matters arising from the minutes.

41/11/06 Health and Wellbeing (Oral)

The members of the Committee noted the content of the presentation by Olivia Carlton.

It was reported that the TfL sickness absence rate is higher than the public and private sector averages. TfL sickness absence mirrors the LU profile due to the majority of TfL staff being employed by TfL.

'Bad backs' and stress have been identified as the top causes of sickness absence and 'toolkits' have been developed for TfL managers and employees. These have been implemented to good effect in LUL and are now being used in the rest of TfL.

Health and Wellbeing pilots in TfL, outside of LUL which has implemented a programme already used questionnaires to develop a profile of employee health and wellbeing. These results provided focus to fairs and 'roadshows' which communicated self help information to employees. The roadshows and health fairs were very well received by those attending.

Requests were made for further clarity on some of the data provided.

Lord Toby Harris asked if there were separate trends for long and short-term illness, days of the week, sex and age group. **Olivia Carlton**

It was noted that work life balance can also have an impact on (sickness) absence with employees with domestic commitments sometimes calling in sick in order to care for a family member, although very little is know about the extent of such absenteeism. Olivia pointed out that open and honest communication is needed between staff and managers to enable both domestic and work needs to be met, Olivia agreed to check with HR what the details of absence categories. **Olivia Carlton**

It was agreed that the TfL Health and wellbeing pilots should be progressed further and a business case will be developed by Occupational Health and Group HRS in 2007/08. **Olivia Carlton**
The Committee **NOTED** the report.

42/11/06 **LUL Tunnel Ventilation (Oral)**

In a response to a query about communication of the work carried out, Tim O'Toole explained that there was a desire not to oversell the project as the work carried out would only enable LUL to maintain current temperatures as opposed to provide a more comfortable environment. A variety of innovative technologies are being investigated, using international experience and different solutions will be required to meet individual station/lines needs.

It was commented that LUL should increase communications to the public to put across the message that TfL understands and is addressing the problem.

The Members of the Committee **NOTED** the report.

43/11/06 HSE Assurance Letters

Following the 'dry run' in 2005/06, Surface Transport and the Corporate Directorates circulated the outstanding Chief Officer HSE Assurance Letters. HSE Assurance Letters had been received from Rail, Streets and LUL at the last SHEC meeting.

The Committee **NOTED** the report.

44/11/06 TfL Annual Environment Report

It was noted that following consultation across TfL the report was a final draft and that it will be published later this month.

A number of editorial comments were received and Richard Stephenson assured the meeting that these would be addressed as part of the printing process.

Members **NOTED** the report from Richard Stephenson.

45/11/06 Influenza Pandemic Update

Members noted the content of the report introduced by Richard Stephenson. Contingency plans have been developed within TfL and a steering group established to keep plans under review as more information becomes available from Government sources It was reported that outside of LU, consultation with Trade Union had begun.

It was agreed that Tim O'Toole would check whether Trade Union consultation had begun in LUL. **Tim O'Toole**

Members **NOTED** the report.

46/11/06 Business HSE Reports

LUL

Tim O'Toole briefed SHEC on the following:

- No employee major incidents were reported this quarter, for the first time since 2004/05.
- Following the increase in Platform Train Interface (PTI) incidents reported in quarter 1, there has been a reduction recorded for quarter 2. LUL analysis has not identified a root cause but it is thought to relate to seasonal variance and Northern Line disruption.
- LUL continues to work with the BTP to address the use of

falsified contractor licences. **Tim O'Toole**

- A request was made for LUL to report back on the advice given to customers using escalators, particularly those with push chairs. **Tim O'Toole**
- It was agreed that Tim O'Toole would look at the causes behind the fall on escalators statistics including the effect of litter on the overall risk.

Tim O'Toole agreed that in the future data comparisons would be made with like for like quarters (e.g. Q2 and Q2) rather than sequential quarters (e.g. Q1 and Q2).

Surface Transport

David Brown briefed SHEC on the following points:

- A report on bus vs pedestrian fatalities would be provided to SHEC following a review by Surface Transport to identify root causes and trends. The quality of the investigation was identified as key for such analysis work and all bus operators are required to complete an investigation and Surface Transport are working to improve the quality and consistency of bus operator investigations. **David Brown**
- It was reported that by next March, 30% of buses would have fire suppression equipment installed and all would have it by March 2012.

TfL Corporate

- The content of the report was noted.

Rail

Ian Brown briefed SHEC on theft of copper from the operational railway. The BTP are aware of the issue which is localised and other businesses in the area have been affected.

The Committee **NOTED** the reports.

47/11/06 Proposed SHEC Agenda Items

A list of agenda items for the next four meetings was noted. The chair requested that the Road Safety Team provide information on the effect of road safety advertising on road safety data. This request had originated from a meeting of the TfL Board. **David Brown**

48/11/06 Sustainability Update

The members **NOTED** the content of the paper which summarised recent developments and work within TfL including the setting up of the Sustainability Unit, and summarised the recent 'Stern Report' on climate change.

49/11/06 **<u>Any Other Business</u>**

The Chair thanked the two HSE advisers to SHEC (Stuart Natrass and Richard Booth) for their advice to the members and their support in developing SHEC since its inception. The Committee was informed the two posts will be advertised in due course.

The Chair also thanked Mike Shirbon for his contribution to the work of SHEC and wished him well with his new post in London Underground.

A request was made to move future meetings to 1000 hours. Howard Carter will update the members on future meeting times. **Howard Carter**

There being no further business the meeting closed.

Signed: _____ Chair

AGENDA ITEM 3

TRANSPORT FOR LONDON

OPEN SESSION
SAFETY, HEALTH & ENVIRONMENT COMMITTEE
OUTSTANDING ITEMS REPORT AND ACTION LIST 30
AS AT APRIL 2007

OUTSTANDING ITEMS:

Target Meeting Date:	Description:	Action By:	Minute No.
Standing Item	LUL, Rail, ST and Corporate Directorates: HSE Performance Reports	**Tim O'Toole** **Ian Brown** **David Brown** **Howard Carter**	
July 07	Proposed SHEC Agenda Items: The Chair requested that the Road Safety Team provide information on the effect of road safety advertising on road safety data.	**David Brown** (Keith Harwood / Chris Lines)	**Meeting N. 30 47/11/06**
2007/2008	It was agreed that the TfL Health and wellbeing pilots should be progressed further and a business case would be developed by Occupational Health and Groups HRS in 2007/08.	**Olivia Carlton**	**Meeting N. 30 41/11/06**

ACTION LIST:

Status:	Description:	Action By:	Minute No:
September Meeting			
20.02.07 complete	To provide Richard Stephenson with a request for further information regarding the risk of major crowd incidents in LUL station areas.	**Richard Booth**	
15.11.06 - Complete	Examine possibility of having all pedestrian fatalities subject to investigation	**David Brown**	**Meeting No. 29 34/09/06**
15.11.06 - Complete	Speak to DVLA about access to medical information	**David Brown**	**Meeting No. 29 34/09/06**
15.11.06 - Complete	Provide further information about "clusters" identified in the traffic noise action plan.	**David Brown**	**Meeting No. 29 34/09/06**
20.02.06 – Complete	Provide further information on Platform Train Interface incidents. **Further analysis of platform train interface incidents has not been able to identify any definite causes of the quarter 2 peak in the number of incidents on the Northern Line. The number of incidents has now returned to normal levels. – This action is closed.**	**Tim O'Toole**	**Meeting No. 29 36/09/06**

November Meeting			
20.02.07 Complete	Health and Wellbeing: To provide separate trends for long and short-term illness, days of the week, sex and age group to Lord Toby Harris.	**Olivia Carlton**	**Meeting No. 30 41/11/06**
20.02.07 Complete	To check with HR and provide details of absence categories.	**Olivia Carlton**	**Meeting No. 30 41/11/06**

21.02.07 Complete	Influenza Pandemic Update: It was agreed that Tim O'Toole would check whether Trade Union consultation had begun in LUL. **Trades Union Consultation on planning for a possible influenza pandemic has started and will continue as and when plans are changed. – This action is closed.**	**Tim O'Toole**	**Meeting N. 30 45/11/06**
21.02.07 Complete	LUL Business HSE Report: Provide a report on the advice given to customers using escalators, particularly those with push chairs.	**Tim O'Toole**	**Meeting N. 30 46/11/06**
21.02.07 Complete	It was agreed that Tim O'Toole would look at the causes behind the fall on escalators statistics including the effect of litter on the overall risk.	**Tim O'Toole**	**Meeting N. 30 46/11/06**
20.02.07 Complete - Incorporated into SHEC report	ST Business HSE report: A report on bus vs pedestrian fatalities would be provided to SHEC following a review by Surface Transport to identify root causes and trends.	**David Brown**	**Meeting N. 30 46/11/06**
20.02.07 Complete	Any Other Business Howard Carter would update the members on future meeting times.	**Howard Carter**	**Meeting N. 30 49/11/06**

AGENDA ITEM 4

TRANSPORT FOR LONDON

SAFETY HEALTH AND ENVIRONMENT COMMITTEE

SUBJECT: Draft Business Planning Guidelines Relating to Sustainability for 08/09 and Forward

MEETING DATE: 6th March 2007

1. Purpose

To inform Members of the Draft Business Planning Guidelines in relation to Sustainability; including, Equality and Inclusion, Health and Safety, Environment and Resilience matters, for 08/09 and forward.

2. Decision required

None

3. Background

TfL produces Business Planning Guidelines annually to inform the development of the Business Plan. A draft of the Guidelines is circulated for comment in advance of the final Guidelines being produced. The following text is from the current draft of the Business Planning Guidelines.

4. Information

Summary and introduction

4.1 T2025 identifies three transport objectives consistent with the Mayor's vision for a sustainable London. They are:

- Supporting economic development – by improving public transport and managing the road network to reduce traffic congestion
- Tackling climate change and enhancing the environment – by reducing CO2 emissions and noise, and improving air quality and the urban environment
- Improving social inclusion – by making transport more accessible and secure for users

4.2 These objectives must be at the heart of all TfL planning, projects and operations. Specific Mayoral objectives as well as budget and resource restrictions will inevitably inform a process of prioritisation, and it is recognised that some projects and programmes will place more emphasis on one objective than on the other. Each activity, however, must be underpinned by all three.

4.3 Climate change is the Mayor's top priority. The Mayor is committed to preparing London for the climate change that is now inevitable (adaptation) and limiting further climate change by reducing London's carbon dioxide emissions (mitigation). With CO_2 emissions from public transport constituting only 13% of total transport emissions in London, a key focus for TfL will continue to be on influencing modes outside its direct control: cars and motorcycles (which account for 49%), and road freight (23 per cent). In addition, we will need to further reduce emissions from our own operations. The London Climate Change Action Plan (CCAP), which seeks to deliver Mayoral CO2 reduction targets of 60 and 90 per cent against 1990 levels by 2025 and 2050 respectively, has identified measures that can achieve a 22 per cent reduction in CO_2 emissions from transport in London against a 1990 baseline by 2025. Moreover, an interim Mayoral target has now been set, requiring a 10 per cent reduction in CO_2 emissions from *public* transport by 2010, from a 2006 baseline. To achieve this, we will need to further catalyse activity across TfL, and identify a pack of measures that achieves CO_2 reductions and contributes, as much as possible, to all three transport/sustainability objectives.

Sustainability guidance

4.4 There are various definitions of sustainable development, or sustainability. What they have in common is a focus on ensuring a better quality of life for Londoners and all people, both now and in the future, by pursuing environmental, social and economic development needs simultaneously over the long term.

4.5 TfL, through its focus on service delivery, makes a major contribution to the economic development of London, and has the power to improve environment, health, safety and equality and inclusion for its staff and Londoners through its policies and investment programmes. In aiming to deliver an efficient, accessible, secure and clean transport system, TfL is constantly striving to ensure that the London transport system underpins sustainable development.

4.6 Delivery of sustainable development, or sustainability, will require the balancing of the sustainability objectives of economic development, social inclusion and environmental improvement: not pursuing any one element at the expense of others. Alongside the three sustainability objectives, specific Mayoral objectives and strategies (notably the upcoming Mayoral Transport Strategy 2) will continue to inform a pan-TfL strategy and as such require translation into specific strategic objectives and targets for the organisation. For example, achieving mayoral climate change mitigation targets (see Section 1.4) will require a combination of measures and targets for TfL and its businesses, focused on influencing the travel behaviours of Londoners, as well as TfL operational performance.

4.7 Work commenced in February of this year to develop a sustainability framework for TfL. A sustainability framework for TfL will provide the necessary context for understanding collectively what we mean by

sustainability, and, at a high level, how we will structure our thinking and prioritise to deliver against the three objectives of sustainable development in a balanced manner. Work has already started to ensure that key sustainability considerations are embedded into the business processes as soon as practicable (e.g. implementation of the sustainability procurement policy), and a sustainability mainstreaming strategy will be developed later in the year.

Sustainability Commentary

4.8 In previous years, businesses were asked to provide separate E&I and environment commentaries. In the present round, businesses are required to provide an integrated sustainability commentary (including a discussion of E&I and environmental benefits and impacts) as part of the main business plan commentary.

4.9 This is done because delivery of sustainability requires TfL to increasingly define priority issues and programmes and activities that cut across and deliver against the three sustainability objectives (economic, social and environmental) in an integrated way. Inevitably, some programmes or activities will place more emphasis on one objective than on the other, but any such trade-offs should be made in an explicit and transparent way.

4.10 For key activities within the existing settlement and proposals until 2014/15, the commentary should provide an overview of the main sustainability benefits, as well as any significant negative impacts, and proposed mitigation and management thereof. Key benefits of 'shelf projects' should also be highlighted.

4.11 Areas against which a project or programme can deliver benefits or trade-offs could include, for example:

• Climate change (mitigation/adaptation)	• Sustainable procurement
• Air quality	• Regeneration
• Natural and urban environment	• Occupational health and safety
• Managing resources: o Energy efficiency and renewable energy o Waste reduction o Water conservation o Biodiversity conservation	• E&I strategic priorities (for more detail see **figure 3.3**), including: o Accessibility (including affordability) o Road safety o Security
• Broader health issues	

4.12 [A worked example of a programme-related sustainability commentary will be provided.]

4.13 To ensure that TfL delivers a maximum reduction of CO_2 emissions from transport in London, businesses are specifically asked to flag CO_2 reduction benefits of projects. In addition, commentaries should highlight those activities that contribute to climate change adaptation.

4.14 Businesses are further required to provide information regarding sustainability appraisal tools that they currently use or are planning to use to inform decision-making on programmes, the development of a business case, or project management. These can include: (i) integrated sustainability appraisal tools, or appraisal tools that focus on a distinct aspect of sustainability such as strategic environmental assessment, health impact assessment, equalities impact assessment, and environmental impact assessment; or, (ii), more informal appraisals or commentaries on sustainability impacts.

4.15 The equality and inclusion vision and aspiration is shown in **figure 3.3** below, the Equality and Inclusion target groups in **figure 3.4**.

Figure 3.3 – Equality and Inclusion vision and aspiration

TfL's vision is underpinned by its equality policy statement which commits to:

- Promoting equality of opportunity;
- Promoting good relations between different groups/communities;
- Eliminating unlawful discrimination; and
- Provide accessible transport for all.

To this end, Group Equality and Inclusion's **strategic priorities** are:

- ***Mainstreaming -*** *ensuring equal and inclusive outcomes are integral to the delivery of transport services and employment practices;*
- ***Workforce -*** *to establish a workforce reflective of the working population of London, who are equipped to deliver equality and inclusion goals;*
- ***Service Delivery and Our Customers -*** *Increasing safety and personal security and accessibility to overcome key barriers to access;*
- ***Community Engagement and Leadership -*** *Building relationships with London's diverse communities and encouraging joint-working with organisations and businesses to promote the principles of corporate social responsibility; and*
- ***Wealth Creation/Sustainable Communities and Equality -*** *building minority business communities, women owned and disabled people owned businesses to contribute to local/overall economic development and growth. Ensuring transport provides links with economic opportunities*

Figure 3.4 Equality and inclusion target groups

TfL is committed to ensuring that everyone who lives in, works in or visits London has a fair and equal chance to access its transport services. This means promoting equal opportunity for everyone, eliminating discrimination, and promoting good relations between people of different racial groups, religious beliefs and sexual orientation. The equality target groups are:

- Women;
- Disabled people;
- People from black, Asian and minority ethnic groups (or BAME groups);
- Lesbians, gay men, bisexual and transgendered people;
- Older people, children and young people; and
- People of faith and belief.

Where appropriate TfL will also challenge discrimination against, and the social exclusion of, other groups, e.g.

- Job seekers;
- Lone parents;
- People on low income;
- People with caring responsibilities; and
- Refugees and asylum seekers.

Health and Safety

4.16 TfL can achieve improvements in health and safety performance by the development, implementation and continual improvement of H&S management systems. This, with supporting training, will promote an enhanced safety culture throughout the organisation.

4.17 During the preparation of the Business Case for a project, H&S risks associated with the project will have been identified, assessed, and plans for their management to an acceptable level defined. During the development of the Business Plan it is important to ensure risk assessments have been completed and control measures to reduce risks to 'as low as is reasonably practicable' are fully incorporated into the project plans.

4.18 The list below outlines TfL's strategic health and safety objectives, reflecting the key areas of focus for further improvement of health and safety performance.

4.19 Each business area's objectives from last year should be updated to support the strategic ones outlined here. When developing these objectives, each business should consider both short term plans to mitigate areas of

significant risk and longer term strategic plans aimed at improving health and safety performance and culture over a number of years.

4.20 These objectives, along with the activities necessary for their delivery should be incorporated into a Health and Safety Plan addressing the short (up to April 2008) and longer-term (up to 5 years, i.e. 2012) deliverables. For each deliverable there should be an identified role responsible for delivery and a completion date. Plans should be submitted by **26 July**.

Table 3.3: TfL's Strategic health and safety objectives

Health, Safety and Environment (HSE) Management Systems

- Develop, implement and continuously improve HSE Management Systems in line with the requirements of the Group HSE Management System

Health

- Use sickness absence and other available data as a basis for improving health and addressing key areas of sickness absence, focussing on areas of high incidence

Safety

- Identify and mitigate any risks that are above as low as reasonably practicable
- Ensure that during procurement of goods, services and works Health and Safety matters are fully addressed
- Ensure contractors with significant risks are managing these in line with TfL's expectations throughout the lifecycle of the contract
- Continue to seek improvements in the reporting and reduction of customer incidents

Road Safety

Road Safety remains a key issue. Whilst there have been significant improvements there are still high absolute levels of Killed and Seriously Injured (KSI), particularly when contrasted with fatalities within the other modes.

- Achieve the revised casualty reduction targets for 2010

<u>Resilience</u>

4.21 All businesses should have incorporated resilience risk assessments into their project management process and be able to demonstrate how identified risks will be mitigated to a level As Low As Reasonable Practicable (ALARP), in line with the Resilience Policy.

4.22 During the development of the business plan it is important to ensure that activities necessary to ensure the effective management of resilience risks to ALARP are fully incorporated into project plans. These risk assessments should address projects in both operational and non-operational areas. They should consider risks during the project phase, including the

provision of goods and services, and conduct of works. They should also address risks during the operational phase following completion of the project.

4.23 Projects that might have significant implications (positive or negative) on resilience risks in other areas of the business should identify these linkages and the nature of the impacts so that appropriate mitigation measures can be put in place following communication and consultation with the areas affected.

4.24 Recognising that, despite effective risk management, there may still be events that cause significant disruption, all areas of the business, (operational and non-operational) are expected to have, or to be putting in place, appropriate Emergency, Contingency and Recovery Plans.

4.25 All functional areas should also identify, and where appropriate address, the need for additional and possible modification to existing Emergency, Contingency and Recovery Plans that may be required as a result of projects in the business plan; considering both internal and external factors that might affect the risk profiles. Projects that might have significant implications (positive or negative) for Emergency, Contingency and Recovery Plans in other areas of the business should identify these links, and where possible, the nature of the impacts.

5. Equalities implications
There is a requirement to address these in the Business Planning process.

6. Crime and disorder implications
There is a requirement to address these in the Business Planning process.

7. Sustainability
There is a requirement to address this in the Business Planning process.

8. Recommendation(s)
The Committee is recommended to NOTE the contents of the report.

Meeting: Safety Health and Environment Committee

Date: 6th March 2007

Title: Draft Business Planning Guidelines Relating to Sustainability for 08/09 and Forward

Author	**Jeanette Baartman**	
Sponsor	**Howard Carter**	
For queries please contact	**Jeanette Baartman**	

AGENDA ITEM 5

TRANSPORT FOR LONDON

SAFETY HEALTH AND ENVIRONMENT COMMITTEE

SUBJECT: TfL Sustainability Unit Work Plan

MEETING DATE: 6th March 2007

1. Purpose
To inform Members of the TfL Sustainability Work Plan.

2. Decision required
None.

3. Background
The TfL Group Sustainability Unit was set up in September 2006 with the overall objective of supporting the process of mainstreaming sustainability across the organisation.

4. Information

Sustainability Unit Work Plan

4.1 The Sustainability Unit has now developed a Work Plan with three interrelated work streams forming its basis:

- **Develop a sustainability framework and strategy and raise awareness across TfL.** A sustainability framework for TfL will provide the basis for understanding collectively what we mean by sustainability, and at a high level, how we will structure our thinking and prioritise to deliver against the three objectives of sustainable development in a balanced manner. A pan-TfL strategy for mainstreaming sustainability will enable delivery against our key priorities by setting out an agreed approach to embedding sustainability into strategies, plans, projects and reviews
  Development of a sustainability framework for TfL will require engagement of senior management at the outset and subsequent effective communication of it to staff. Therefore two initial key building blocks are:

  - A session with TfL Managing Directors, to define the TfL vision for sustainability, and identify appropriate operating principles to support and facilitate the organisational vision
  - A session with TfL Directors, to strengthen the vision and principles and to gain buy in

The sessions are tentatively being scheduled for April/May 2007.

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- **Enhance sustainability in the wider business planning processes and develop tools to support this**. Whilst this work stream will be informed by the development of the sustainability framework and mainstreaming strategy work has already started to ensure that key sustainability considerations are embedded into the business processes as soon as practicable e.g. implementation of the sustainable procurement policy.

- **Co-ordinate climate change mitigation and adaptation at Group level.** This work stream will provide support to TfL's wider efforts towards the implementation of the London Climate Change Action Plan (CCAP), as well as the upcoming Mayoral Climate Change Adaptation Strategy (adaptation) and Climate Change and Energy Strategy (mitigation).

4.2 A more detailed description of the Work Plan is contained in Appendix 1.

4.3 The Work Plan will be updated as the current work streams develop and as additional work streams emerge.

5. Equalities implications
There are no negative impacts of this Work Plan on E&I matters.

6. Crime and disorder implications
None.

7. Sustainability
The work of the Sustainability Unit is a key element of the development and mainstreaming of sustainability in TfL.

8. Recommendation(s)
The Committee is recommended to NOTE the contents of the report.

Appendix 1

Sustainability Unit Work Plan (Jan 2007 – April 2008)

1. Introduction

Sustainable development, or sustainability, is seen by the GLA as creating a better quality of life for people, both now and in the future. This definition, which is in line with the UK Strategy for sustainable development, sets a context within which the Mayor's objectives of economic development, social inclusion and environmental improvement need to be achieved in a balanced manner over the long term. Transport for London (TfL), through its focus on service delivery, makes a major contribution to the economic development of London, and has the power to improve environment, health, safety and equality and inclusion for its staff and Londoners through its policies and investment programmes.

TfL has identified three main transport objectives that are consistent with the Mayor's vision for a sustainable London, as well as the objectives of the Department for Transport:

- Supporting sustainable economic development – by improving public transport and managing traffic congestion
- Tackling climate change and enhancing the environment – by reducing carbon dioxide (CO_2) emissions, improving air quality, reducing noise, waste and resource consumption, and improving the urban environment
- Improving social inclusion – by making transport more accessible and secure for users

To achieve these objectives, the Capital needs an efficient, accessible, secure and clean transport system. Specifically, delivery of sustainable development will require the balancing of these economic, social and environment objectives: not pursuing any one element at the expense of others. To this end, TfL needs to ensure and demonstrate that sustainability is being mainstreamed – by having mechanism in place to support the prioritising of projects and programmes that deliver integrated economic, social and environmental benefits at the same time.

2. The Sustainability Unit

A TfL Group Sustainability Unit with three staff was set up in September 2006 with the overall objective of supporting the process of mainstreaming sustainability across the organisation.

Specifically, the Unit will:

- develop a framework for implementing sustainability in TfL
- support TfL's business planning process and develop plans and tools to comprehensively and coherently embed sustainability into its planning, projects and operations
- play a key role in TfL's sustainability reporting
- support TfL's wider efforts to deliver against specific mayoral priorities (such as climate change)
- provide a focal point to staff and external stakeholders for information and guidance on key aspects of sustainability.

The Unit sits in Group HSE, in General Counsel.

3. The Work Plan

The Sustainability Unit Work Plan is designed:

- as a management tool to ensure delivery against agreed objectives
- to provide a basis for engaging our internal and external stakeholders in developing our focus and objectives

The Work Plan is based around a number of work streams. Current work streams are described in some detail overleaf. The Work Plan will be updated periodically, as work develops under each work stream, or as additional work streams emerge. In addition, a brief overview is given of some of the Unit's ongoing activities.

As of January 2007, three interrelated Work Streams are in place to:

1. **Develop a sustainability framework and strategy and raise awareness across TfL**

2. **Enhance sustainability in the wider business planning processes and develop tools to support this**

3. **Co-ordinate climate change mitigation and adaptation at Group level**

Whilst the Sustainability Unit will lead on the development of a framework, strategy, processes and tools, the businesses will be responsible for adoption, and delivery of more sustainable planning, projects and operations.

Work Stream 1 - Develop a sustainability framework and strategy and raise awareness across TfL

Rationale

There is as yet no agreed common understanding of what sustainability means for TfL, and how it should be mainstreamed. ‘Sustainability’ still means different things to different people. Some people see it as an ‘add on’ rather than a central process for evaluating what we do, while others see it as a synonym for a single aspect of sustainability, such as environmental improvement.

Delivery of sustainability will require the balancing of the three objectives of economic development, social inclusion and environmental improvement. Increasingly, businesses and organisations develop a high level vision and framework to support this process. A sustainability framework for TfL would provide the necessary context for understanding collectively what we mean by sustainability, and at a high level, how we will structure our thinking and prioritise to deliver against the three objectives.

Once a sustainability framework is in place, a pan-TfL strategy for sustainability mainstreaming can be developed and agreed. The strategy will help to deliver against our key priorities by setting out an agreed approach to embedding of sustainability at strategy, planning, project and review levels.

Work stream objectives

The development and implementation of a sustainability framework and strategy for TfL will require involvement of senior management and staff at many levels of the organisation. The work stream therefore aims to:

- Develop a sustainability framework for TfL that is supported by senior management
- Develop a strategy for mainstreaming sustainability, that addresses our key priorities and forms the basis of strategies and action plans across the businesses
- Ensure that the sustainability agenda is communicated to TfL staff and external stakeholders

Early deliverables

- A session with TfL Managing Directors, to define the TfL vision and operating principles for sustainability
- A session with TfL Directors, to strengthen the vision and principles and to gain further buy-in
- A number of targeted sessions with businesses and staff to highlight sustainability issues

Work Stream 2 – Enhance sustainability in the wider business planning processes and develop tools to support this

Rationale

Over the past few years, aspects of sustainability (e.g. health and safety, resilience, environment and E&I) have increasingly been incorporated into TfL's business planning and project processes (e.g. the business case development manual (BCDM), and the annual business planning round), and management and appraisal tools (e.g. Health, Safety and Environmental Management Systems (HSEMS), Sustainable Procurement tools and guidance, and Equality Impact Assessment tools).

Frequently, however, sustainability considerations are added on as an 'after thought', rather than inform actual decision making on a programme or the development of a business case. And although sustainability appraisal tools are used, they are not used effectively and consistently across the board.

In order to deliver sustainability, TfL will need to ensure that sustainability considerations are embedded in all business processes, from strategy development to project review. Key processes include: strategy development, business case development, Project Review Group (PRG) and other approval processes, business plan and budget submission process, project management, and reviews. Integrated sustainability assessment tools will need to be put in place to inform the above processes, and ensure that sustainability benefits of our activities are optimised.

Work stream objectives

This Work Stream will be implemented alongside Work Stream 1, and will build on the sustainability mainstreaming strategy once it is in place (see **Figure 1** – overleaf)

The work stream will seek to:

- Ensure that sustainability considerations are embedded into all business processes
- Identify or develop sustainability assessment tools for strategies, plans, projects and reviews and embed these in business processes
- Support a move towards more integrated sustainability reporting.

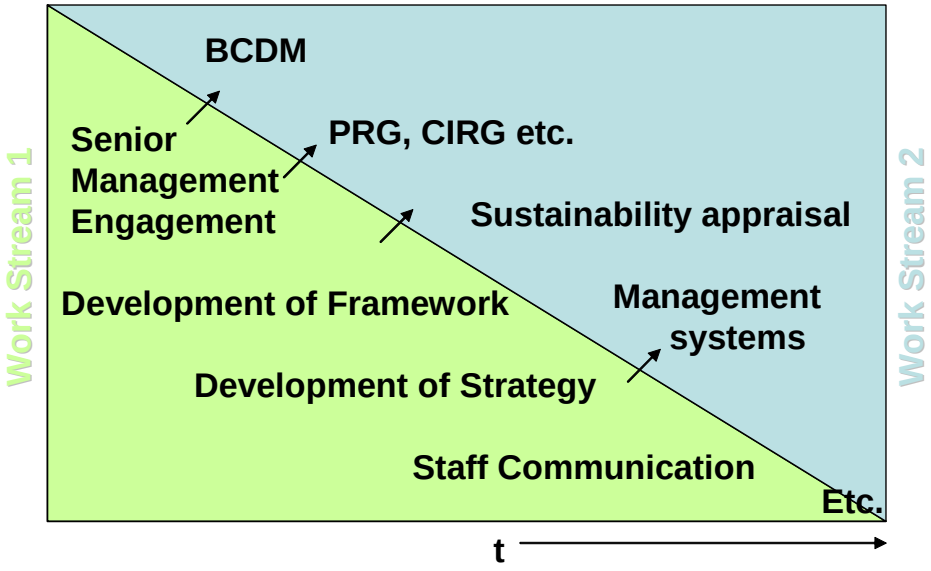
Embedding sustainability into processes across TfL and the development of necessary tools is a significant task that will require significant involvement by the businesses. The role of the Sustainability Unit will be to support the development of tools and the provision of support and advice during implementation.

Early deliverables

- Business planning and performance reporting guidelines

- Initial review of BCDM and PRG processes
- Review of sustainability reporting process
- Support to the further development of Environmental Management Systems (as part of broader HSEMS)
- Integration of sustainability requirements into guidelines for TfL reports to the Board and Committees

Figure 1: The Development of Work Streams 1 and 2



Work Stream 3 - Climate change coordination

Rationale

Contribution to climate change mitigation through the reduction of CO_2 emissions is a high priority for TfL with targets having been set by the Mayor. Adapting to climate change, and thereby ensuring that London's transport system can cope with changing weather conditions is also important.

Work stream objectives

The Sustainability Unit will support TfL's wider efforts towards the implementation of the London Climate Change Action Plan (CCAP), as well as the upcoming Mayoral Climate Change Adaptation Strategy (adaptation) and Climate Change and Energy Strategy (mitigation).

This Work Stream will:

- Manage the Climate Change Fund
- Support the development of a TfL strategy and associated action plans to address CCAP for TfL and transport in London (in close coordination with TfL's Policy Unit)
- Support the development of a pan-TfL adaptation strategy
- Support the development of the Climate Change Adaptation Strategy and the Climate Change and Energy Strategy
- Monitor and report on progress in CO_2 reductions across TfL and from transport in London

Early deliverables

Activities are already underway in all these areas. They include:

- Management of the Climate Change Fund
- Development of a TfL road map to delivering CCAP
- Support to initiative to 'green' TfL's support fleet
- Support to Group Communications regarding the development of a carbon calculator on journey planner
- Carbon offsetting policy
- Reinvigoration of London Climate Change Partnership Transport Sub Group on adaptation to develop a London transport adaptation action plan
- Coordination of a pan-TfL adaptation liaison group

Other ongoing activities

The Unit seeks to increasingly be a focal point to staff and external stakeholders for information and guidance on key aspects of sustainability.

Ongoing activities include:

- Production of the TfL Annual Environment Report
- Ongoing reporting requirements (SHEC, Operational and Financial Report, progress on Green budget items)
- Business planning process inputs
- Coordination of Environmental Liaison Group (ELG)
- GLA liaison on sustainability matters: TfL/GLA Environment meeting, Transport & Environment meeting, Sustainable Development Policy Team, London Climate Change Partnership (LCCP), London Climate Change Agency (LCCA), London Development Agency (LDA)
- Liaison with London Sustainable Development Commission (LSDC), Commission for a Sustainable London 2012, and the London Hydrogen Partnership (LHP).

4. Contact details

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Meeting: Safety Health and Environment Committee

Date: 6th March 2007

Title: Sustainability Unit Work Plan

Author		
Sponsor		
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AGENDA ITEM 6.1

TRANSPORT FOR LONDON

SAFETY HEALTH AND ENVIRONMENT COMMITTEE

SUBJECT: Mayor's Climate Change Action Plan – Ground Based Transport

MEETING DATE: 6th March 2007

1. Purpose

To inform members of the Mayor's Climate Change Action Plan and specifically the implications for ground based transport and TfL.

2. Decision required

None

3. Background

3.1 The Mayor of London is launching a Climate Change Action Plan on 27th February. This Plan focuses on the priorities for action in London – that is, those actions that deliver the most significant CO_2 savings at lowest cost (and in many cases with no net cost, since many actions bring energy savings). It lays out where London's CO_2 emissions come from, how they are projected to grow, and how London can deliver substantial CO_2 savings. It sets out programmes that will put London on course to achieve 60% reductions in CO_2 emissions (based on 1990 levels) by 2025; these include the need for a carbon pricing system and further legislation.

3.2 The Plan covers all CO_2 emitted from London's energy supply and consumption, including the domestic, transport, commercial, MUSH (municipal, universities, schools and hospitals) and industrial sectors. This includes all emissions within the Greater London Authority boundary.

4. Information

4.1 Opportunities to reduce CO_2 emissions from transport are already being pursued in London on a greater scale than in most other cities, but efforts will have to increase dramatically if reduction targets are to be met. To achieve the projected CO_2 savings, the Plan looks at a range of measures such as reducing carbon emissions in London from private vehicles (which make up 50% of the total), reducing emissions from public transport and delivering modal shift to public transport, walking and cycling. Chapter 4.5 of the Mayor's Climate Change Action Plan - 'Emissions from Ground Transport' is attached in full as Appendix 1.

4.2 The Plan forecasts that there will be a 25% increase of CO_2 emissions from ground based transport by 2025 – to 11.7 million tones per annum, in a

Business as Usual Scenario. This is due to additional transport capacity needed to meet population and economic growth predictions.

4.3 A sectoral target for transport of a 60 per cent reduction by 2025 from the 1990 baseline mean would mean ground transport would need to emit 7.1 million tonnes less CO_2 per annum than the Business as Usual Scenario by 2025. Achieving this reduction would be extremely challenging, realistically requiring the establishment of a carbon pricing system and further EU and UK legislation. However, in the current environment, a saving of 4.3 million tonnes is considered to be achievable by 2025 – equivalent to 22% of the 1990 baseline emissions.

4.4 Reductions* in ground based transport emissions can come about through five main types of measures:

- 10-20 per cent reduction can be achieved by making lower-carbon forms of travel (public transport, walking and cycling) more attractive, to deliver mode shift. Better public transport, travel demand management and road pricing will be critical in achieving this shift
- More efficient operation of private and public transport can deliver 10-20 per cent savings
- 5-10 per cent savings can be achieved through “eco-driving” (for example smoother acceleration) on all modes, including buses, underground, freight and private vehicles
- Private and public transport infrastructure can become more energy efficient (for example through adoption of hybrid technology). This can deliver 20-30 per cent emissions savings across the network
- Use of lower-carbon fuels such as low-blend biodiesel is likely to be able to contribute a 10 per cent reduction in emissions
-

(* the percentage savings above are not additive i.e. they indicate the percentage saving in relation to each type of initiative.)

4.5 The TfL Sustainability Unit will be coordinating and monitoring the implementation of the transport related elements of the Climate Change Action Plan.
As a first step a more detailed examination of the planned and possible reduction measures will be carried out.
The results of this work will be available within three months.

5. Equalities implications
None

6. Crime and disorder implications
None

7. Sustainability
The delivery of the Climate Change action Plan will be a very significant contribution to making transport in London and London itself more sustainable.

8. Recommendation(s)
The Committee is recommended to NOTE the contents of the report.

Appendix 1

Mayor's Climate Change Action Plan

Chapter 4.5 – Emissions from Ground Based Transport

4.5 Emissions from ground based transport

4.5.1 Overview

Transport is a significant source of CO_2 in London, although unlike in many other major cities, transport emissions in the capital are currently only about a fifth of overall emissions.

Although London's population and economy have been growing, transport emissions have stayed flat due to a combination of traffic management policies, aggressive investment in the public transport network and technological advancement. Since 2000, London has been the only major city in the world to achieve a shift from private car usage to public transport, cycling and walking. Transport emissions per capita in London are 45 per cent lower than the UK average. However, continued growth will put renewed pressure on the public transport network and could increase emissions substantially (20 per cent or more to 2025) if CO_2-reduction measures are not pursued across all modes.

Opportunities to reduce CO_2 emissions from transport are already being pursued in London on a greater scale than in most other cities, but efforts will have to increase dramatically if reduction targets are to be met. It will be critical to ensure that as many trips as possible are carried on lower-carbon modes: either public transport or walking and cycling. In addition to delivering projected CO_2 savings of up to 1.7 million tonnes each year, accommodating demand growth in this way addresses many other challenges facing London including air quality, noise and road congestion. There is also a wide range of new technologies, alternative fuels, and operational changes that can and should be urgently deployed to reduce emissions from public transport. For example, hybrid buses use 30-40 per cent less fuel than comparable diesel buses, and the rollout of new train features like regenerative braking on the Underground will realise energy savings of a similar size.

Whilst the Mayor is well-placed to deliver CO_2 emissions reductions from most parts of the public transport network, he has much less control over emissions from private vehicles, which constitute nearly half of London's transport emissions. For those trips where the car remains the best mode for the task, the Mayor will promote "eco-driving" approaches. These can reduce emissions and deliver fuel savings of up to 25 per cent - about £250-300 per year savings for an average car driver in London at current fuel prices. However, the greatest opportunity remains the accelerated adoption of low carbon technologies in both cars and freight vehicles. The Mayor will promote action in this area by working with government to establish supportive policies, encouraging vehicle manufacturers to act

responsibly and using pricing mechanisms, including road user charging, to encourage Londoners to make sustainable purchasing decisions.

The rest of this chapter covers

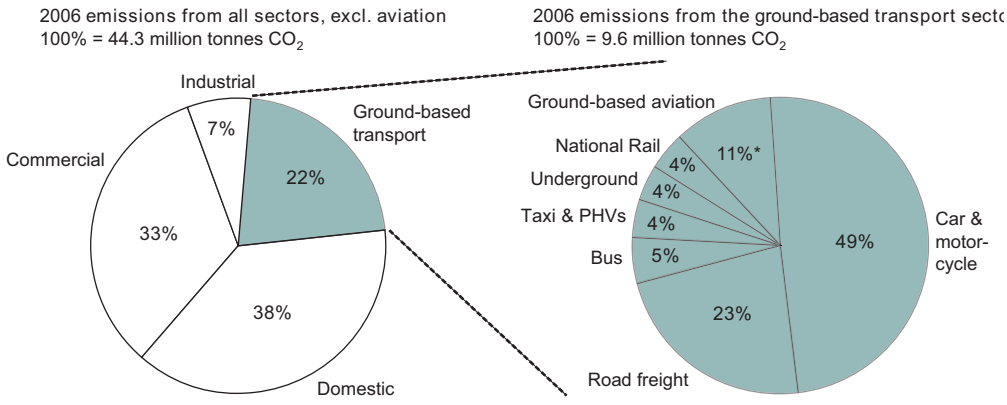
- Current and projected emissions from London's transport sector, including CO_2 reduction targets and an overview of key actions required to deliver the target
- Specific features of London's transport sector
- Summary of potential actions to make transport more energy efficient
- Actions already underway to tackle emissions from London's ground transport
- The Mayor's key priorities for action, with indicative CO_2 impact and cost.

4.5.2 Current and projected emissions from London's transport sector

Current emissions

London currently supports 27 million trips per day, resulting in emissions of 9.6 million tonnes of CO_2 per year, or 22 per cent of London's total emissions. Private road transport accounts for nearly three quarters of these emissions, with cars and motorcycles contributing just under half and road freight around one quarter[1].

Figure 52 2006 CO_2 emissions from the ground based transport sector



Note *Emissions from taxiing aircraft and during take-off and landing

Source London Energy and CO_2 Emissions Inventory, TfL

Future emissions

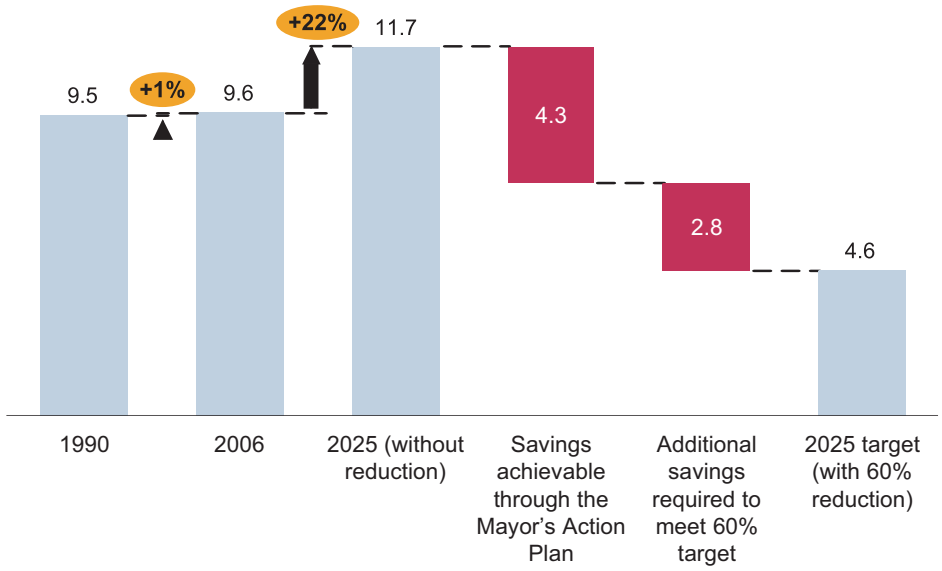
Given projected population and economic growth, demand for transport will increase over the period to 2025. Without intervention, car kilometres in London could increase by as much as eight per cent and freight traffic rise by 30 per cent from today's levels. Additional public transport capacity in the form of more buses and Underground trains will also be needed to meet demand. History would also suggest that realising substantial reductions in per kilometre CO_2 emission levels for new cars, trucks and buses, whilst possible, is by no means guaranteed. In all, this could lead to an increase in CO_2 emissions from ground transport of about two million tonnes to 11.7 million tonnes per annum in 2025, an increase of nearly 25 per cent.

Sectoral target

Taking the target of a 60 per cent reduction by 2025 from the 1990 baseline, ground transport would need to emit 7.1 million tonnes less CO_2 per annum by 2025.

Achieving this reduction will be extremely challenging, realistically requiring the establishment of a carbon pricing system and further EU and UK legislation. However, in the current environment a saving of 4.3 million tonnes is achievable by 2025.

Figure 53 **Ground based transport - comparison of 2025 CO_2 emissions with and without 60 per cent reduction**
Million tonnes of CO_2



How the target can be achieved

Reductions in transport emissions can come about through five main types of measures[2]:

- 10-20 per cent reduction can be achieved by making lower-carbon forms of travel (public transport, walking and cycling) more attractive, to deliver mode shift. Better public transport, travel demand management and road pricing will be critical in achieving this shift.
- More efficient operation of private and public transport can deliver 10-20 per cent savings.
- 5-10 per cent savings can be achieved through "eco-driving" (for example smoother acceleration) on all modes, including buses, Underground, freight and private vehicles.
- Private and public transport infrastructure can become more energy efficient (for example through adoption of hybrid technology). This can deliver 20-30 per cent emissions savings across the network.
- Use of lower-carbon fuels such as low-blend biodiesel is likely to be able to contribute a 10 per cent reduction in emissions[3].

4.5.3 Specific features of London's transport sector

London's current and future ground transport emissions are heavily influenced by mode share, each mode's emissions per passenger kilometre (taking into account the mix of vehicle types), and how each mode is operated.

Mode share

Ground-based transport is dominated by private road traffic; cars and freight together contribute 72 per cent of the sector's emissions:

Major ground transport modes	Number of Vehicles	Annual Vehicle km (bn)	Annual Passenger Journeys (m)
Cars	2.4m	25	3,869
Road freight	n/a	5.0	n/a
Buses	8,025	0.45	1,793
Taxis	21,700	0.89	88
Private hire vehicles	45,000	0.74	73
Underground	4,070 (carriages)	0.07	973
Rail	n/a	0.19	244
DLR	94	0.004	53
Croydon Tramlink	24	0.002	23
River services	39	n/a	2.4
Dial-a-Ride	360	n/a	1.2

Public transport contributes only 17 per cent of total emissions, split roughly equally between the four primary motorised modes (bus, Underground, rail and taxis).

Although road traffic has grown nationally at 1.3 per cent per annum over the past five years, vehicle kilometres in London have remained flat over the same period. Significant investment in the public transport network, including in non-motorised modes such as walking and cycling, coupled with the introduction of the congestion charging scheme (see boxed text), has proven to be very successful at ensuring that the growing demand for travel has been accommodated on modes other than car, especially in central London. In some areas of London, increases in traffic have in part been limited by road congestion. Overall, there has been a five per cent mode shift since 2000 from private vehicles to public transport, cycling and walking in London - a result not achieved in any other major city globally.

Congestion Charging in London

The groundbreaking central London Congestion Charge was introduced in February 2003. Vehicles entering the charging zone between the hours of 7am and 6.30pm on weekdays are now charged £8.

The charge was introduced with several objectives in mind:

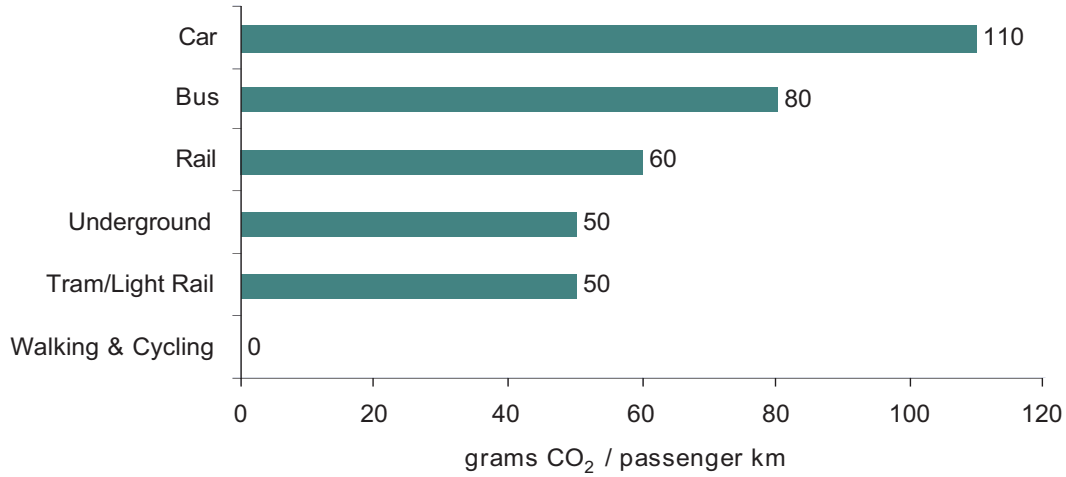
– to reduce congestion
– to enable radical improvements to bus services
– to improve journey time reliability for car users
– to make the distribution of goods and services more efficient.

The charge has proved to be very successful. Congestion within the zone has reduced by 22 per cent compared to pre-charging levels. Public transport continues to successfully accommodate displaced car users, and bus services continue to benefit from improved reliability and ongoing investment. Vehicle traffic inside the zone during charging hours is about 15 per cent below pre-charging levels, resulting in an estimated CO_2 emissions reduction of 16 per cent. This radical scheme, coupled with focussed investment in public transport, walking and cycling, demonstrates that integrated planning can achieve real improvements in transport network performance.

Emissions per passenger kilometre

Each mode's emissions are influenced both by the vehicle's energy consumption and by its occupancy. Cars emit the most CO_2 per passenger kilometre of all ground transport modes. The car emissions levels indicated would be 60 per cent higher with just one person in the car (London average is 1.6 people per car).

Figure 54 Average CO_2 emitted per passenger kilometre across various modes



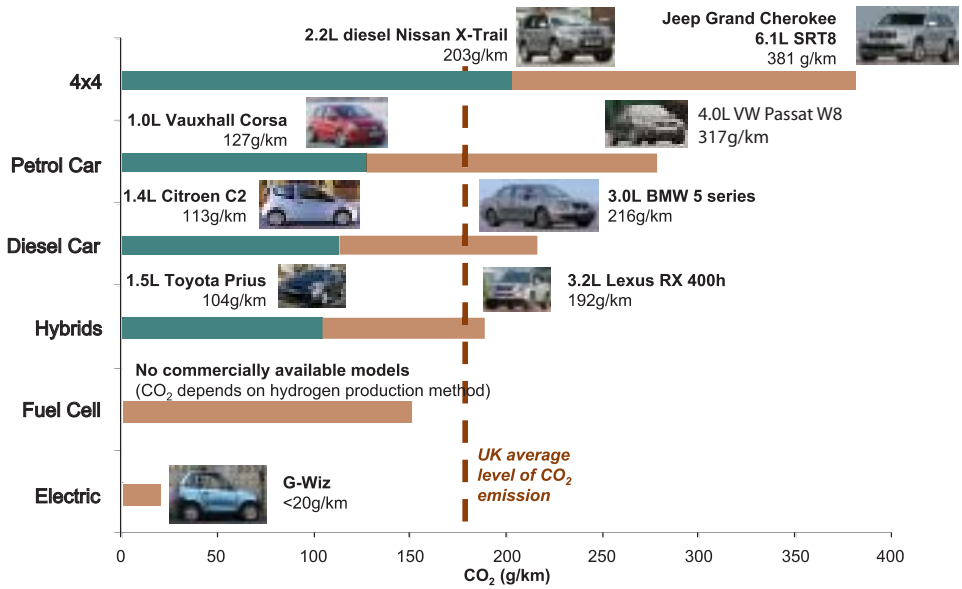
Notes Calculated using current load factors (15 people per bus in London and 1.6 passengers per car nationally)
Source TfL

Currently, the average car in London emits 178g of CO_2 per kilometre. However, the CO_2 performance of a car can vary considerably depending on aspects such as engine type, engine size and vehicle weight.

The importance of weight

Weight is a significant and often-underestimated factor in fuel efficiency: for example, a smaller traditional car may consume less fuel than a larger hybrid car. In fact, **if everyone buying a vehicle bought the most energy efficient vehicle in the class, emissions from private vehicles would be cut by roughly 30 per cent.**

Figure 55 CO_2 emissions from different car types



Operations and degree of influence

The Mayor's ability to shape and influence policy varies across different transport modes.

- The Mayor's transport body, Transport for London (TfL), operates the Underground and manages bus services and thus is able to influence the energy efficiency of these modes, partly through its own behaviour and partly through its contracts with operators.
- TfL also operates a number of smaller modes including the Docklands Light Railway, Croydon Tramlink, the Woolwich Ferry and Dial-a-Ride, although these sectors' contributions to transport emissions are relatively small.
- TfL regulates the black cab and private hire vehicle fleets.
- Overground rail services are operated by a variety of train operating companies, with supporting infrastructure managed by Network Rail. The Mayor has a very limited role in this area apart from being able to provide input into the high-level route strategies for the relevant rail franchises[4].
- The Mayor has some statutory policy powers over freight and private vehicles but does not directly control many aspects of the road network. TfL is responsible for traffic management of major roads (approximately five per cent of the road network), traffic lights and will soon oversee the management of roadworks. Voluntary collaboration with the freight industry is helping to mitigate the impact of freight traffic in London, but is limited by the fragmented nature of the industry.

4.5.4 Summary of potential actions to make transport more energy efficient

There are three broad measures that can be taken to reduce CO_2 emissions from transport:

a Changing the way we travel
b Operating our vehicles more efficiently
c Using improved vehicle and fuel types.

a Changing the way we travel

Encouraging greater use of public transport, walking and cycling is key to reducing CO_2 emissions from the transport sector. Policies aimed at promoting this shift are already being used successfully across London to tackle other important objectives such as improving local air quality. Actions that will have a significant bearing on the way we travel in the future include:

- continued investment in public transport to improve its attractiveness compared to private vehicles
- promotion of walking and cycling, including the creation of attractive urban environments conducive to these modes
- increased use of travel demand management (TDM) policies
- using fare structures and levels to promote public transport usage
- using pricing mechanisms to encourage more responsible private car usage
- reducing the need for travel through land use planning.

b Operating vehicles more efficiently

There are two opportunities capable of reducing CO_2 emissions:

- how drivers choose to operate their vehicles and
- engines' operating parameters.

Firstly, drivers can operate their vehicles in ways to minimise unnecessary fuel consumption. This requires no changes to the existing vehicle. Not only cars can benefit from eco-driving measures: buses, taxis, and freight vehicles can apply many of these measures as well and achieve anywhere from 5-10 per cent fuel savings as a result. Regular maintenance is also a simple way of improving fuel efficiency.

Secondly, vehicle engines can be designed and specified to operate as efficiently as possible. This can include intelligent coasting on the Underground, and so-called Intelligent Speed Adaptation (ISA) in freight

and bus engines. ISA systems automatically limit the speed of a vehicle, reducing fuel usage and providing road safety benefits.

c Using improved vehicle and fuel types

Finally, CO_2 emissions from transport can be reduced by changing type of vehicle or fuel used. Savings can be achieved by:

- Selecting lighter, more fuel efficient vehicles
- New types of engine technology
- Lower carbon energy sources.

Selecting lighter, more fuel efficient vehicles

New technologies and fuels offer the potential for much lower vehicle CO_2 emissions in the future. But you do not have to drive an electric or hybrid car, or fill up with biofuels, to achieve significant CO_2 emissions. And while driving a smaller car is also much better for the environment, simply choosing more fuel efficient cars from the range of vehicles already on the market can have a dramatic impact on your level of fuel consumption. This doesn't necessarily require compromise on car size or style, just consideration of fuel efficiency. For example a new 2.5 litre petrol Ford Focus on average emits 224gCO_2/km and would cost about £1,600 to run each year. In contrast, a new 1.6 litre diesel Ford Focus emits only 125gCO_2/km and has fuels cost of about £850 per year. This represents a CO_2 saving of 44 per cent and a fuel cost saving of 47 per cent.

Similarly, lighter rail and Underground cars require significantly less traction electricity. Weight related energy savings of 10-15 per cent have already been achieved through improvements to the design of steel constructed rolling stock. Carriages manufactured from aluminium alloys are up to 40 per cent lighter again and would deliver even greater savings.

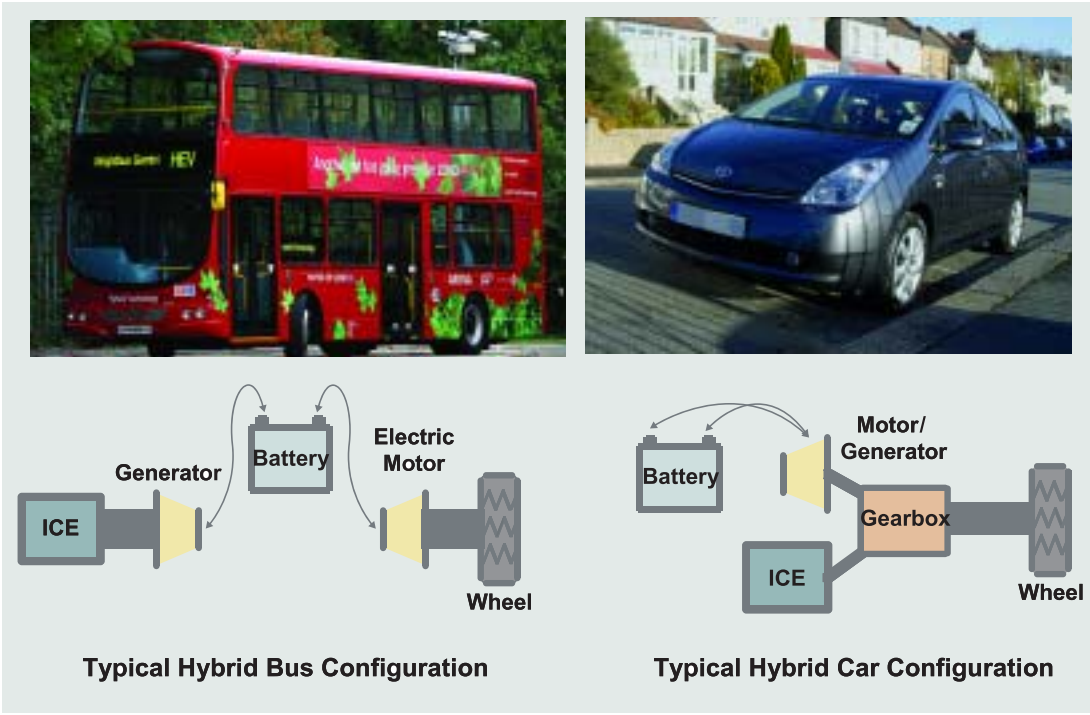
New types of engine technology

The past few years has seen the commercial launch of several new vehicle types that use new, more energy-saving propulsion systems compared to the internal combustion engine used in all vehicles up until very recently. Two current examples are:

- **Hybrid vehicles** use a combination of a standard internal combustion engine (ICE), a battery and an electric motor. Energy that would ordinarily be lost during braking is used to charge the battery, which in turn powers an electric motor that supplements a standard petrol or diesel engine. The battery in a standard hybrid car is not charged from the electricity grid. When operated in city environments, hybrids emit between 30-40 per cent less CO_2 than ordinary vehicles of a similar

size. A new variation on hybrid technology is the "stop and start" engine. In vehicles fitted with this system, the engine automatically stops just before the car comes to a standstill (eg, traffic lights). The engine then automatically restarts when the brake is released. For cars driven in the city this reduces fuel consumption and CO_2 emissions by about 10 per cent.

Figure 56 How a hybrid vehicle works



- **Electric vehicles** use a battery-powered electric motor. Electric motors are more than twice as efficient as internal combustion engines, greatly reducing the energy required and CO_2 emitted by up to 70-90 per cent per kilometre compared to today's average cars. The battery is charged directly from the electricity grid. Current technology is most suited to use in cars and short-route delivery vehicles. Most electric cars have an operating range of 50km, more than enough for the average daily commute and trip to the shops. CO_2 emissions per kilometre are much lower than for normal cars, in the range of 20-50g/km.

The next generation of energy-saving vehicles is already beginning to emerge. There is the potential for some of these vehicles to be zero carbon in the future if they use renewable electricity. Two examples are:

- **Plug-in hybrid electric vehicles** use the same basic propulsion system as current hybrid vehicles, but the battery is larger and can be

charged by the internal combustion engine (ICE) or directly from the electricity grid. As battery technology improves, these vehicles will move towards electric-only - possibly reaching a point in the future where the ICE is no longer required. Depending of the drive cycle, plug-in hybrids can use up to 50-80 per cent less fuel than a standard hybrid, resulting in CO_2 emissions of about 25-50g/km.

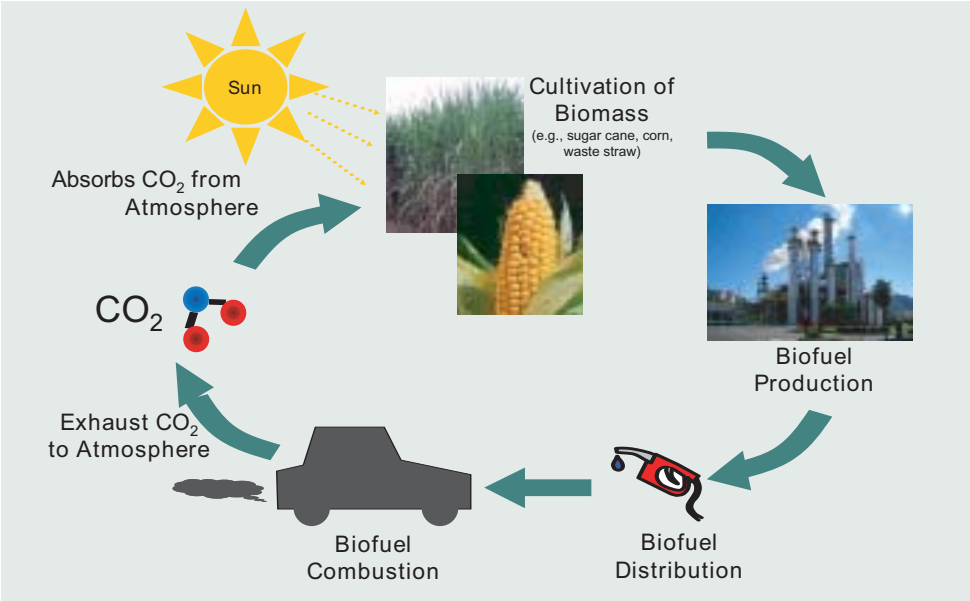
- **Hydrogen fuel cell vehicles** also use an electric motor. However, instead of storing the power they need to operate in a battery, a fuel cell is used to supply electricity to the motor. Inside the fuel cell, hydrogen is combined with oxygen to produce electricity in a chemical reaction. The only exhaust product from the car is water vapour. The overall CO_2 performance of the vehicle depends on the method of hydrogen production. Hydrogen produced from water using renewable electricity would result in truly zero carbon transport. But even using hydrogen made from natural gas, CO_2 savings of around 30 per cent are achieved. London has trialled three hydrogen fuel cell buses since 2004.

Lower carbon energy sources

Biofuels

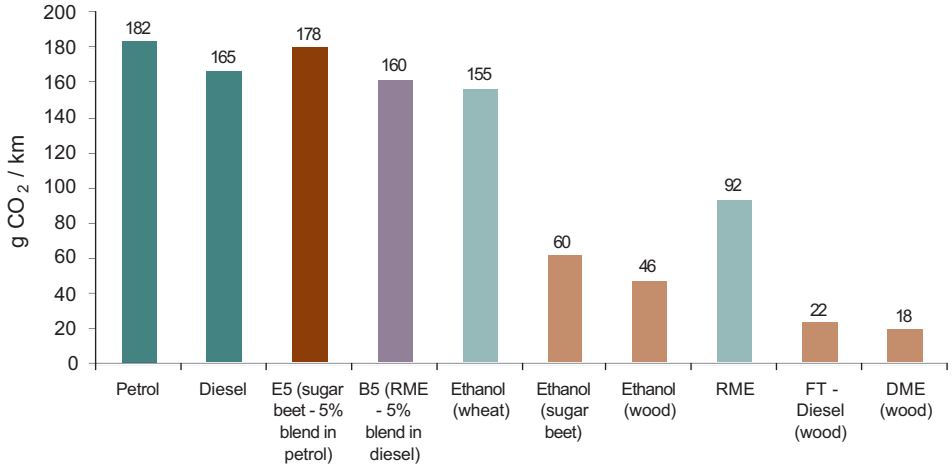
Vehicle emissions can also be reduced by the use of fuels with a lower CO_2 impact. Biofuels are fuels produced from crops (for example, corn, sugar cane) or from agricultural waste (for example, wheat stalks, straw). The net CO_2 emissions from the production and use of biofuels are generally lower than emissions from fossil fuels. This is because CO_2 is absorbed from the atmosphere during the crop growth phase. In contrast, combustion of fossil fuels releases carbon that has been trapped for millions of years below ground.

Figure 57 Biofuel production process



CO_2 reductions achievable from biofuels vary considerably and depend on the type of biomass used, the production method and the percentage in which they are blended with petrol or diesel fuels.

Figure 58 Well-to-wheel CO_2 emissions of various fuel types



Notes Emissions associated with petrol and gasoline production of have not been included. Well-to-tank emissions are estimated to represent about 16 and 11 per cent of the tank-to-wheels emissions for petrol and diesel respectively.
E5=5 per cent bioethanol, B5=5 per cent biodiesel, RME=Rape Methyl Ester, FT-Diesel=Fischer-Tropsch Diesel, DME=Dimethylether

Source Future Road Fuels, UKPIA, 2005

In the near term, typical CO_2 savings from biofuels are likely to be at the lower end of the range, i.e. around 20 per cent. "Second generation" biofuels are capable of delivering much greater savings because they use more efficient production process and greater quantities of waste biomass (i.e., towards 80 per cent), but these production processes have not yet been commercialised on a large scale.

Because the CO_2 saving associated with biofuel production can vary so widely, it will be very important to establish standards to guarantee the level of CO_2 saving associated with the use of a specific fuel. Key sources of variation include:

- Biomass feedstock
- Location of biomass growth
- Production process.

At the moment, there is no way of distinguishing between biofuels that could have very different CO_2 benefits in the marketplace. For example,

corn-based ethanol produced in the United States, which has little or no CO_2 benefit compared to fossil fuels (due to the quantity of energy used to grow corn and convert its kernels into ethanol), is sold on equal terms to Brazilian ethanol made from sugar cane, which is much easier to grow and process and achieves an 80-90 per cent reduction in CO_2 emissions. Standards must also provide assurance that the fuel has been produced sustainably. Otherwise shortsighted cultivation practices could lead to deforestation and loss of biodiversity.

Renewable Electricity

CO_2 emissions from operation of the Underground, Docklands Light Railway, Tramlink and electrified National Rail services will all benefit from the increased generation of electricity from renewable or low carbon sources. Specific opportunities to increase renewable electricity production are dealt with in Chapter 4.4. Increasing London's use of lower-carbon electricity sources will reduce these transport emissions.

4.5.5 Actions already underway to tackle emissions from London's ground transport

Transport for London investments to date

Following its inception in 2000, the Mayor's transport body Transport for London has secured groundbreaking funding agreements with the Government on grant levels and long-term borrowing. This has provided TfL with the opportunity to reverse decades of under-investment in the public transport network. This unprecedented investment will enable the development of a more sustainable network and will be key to achieving CO_2 reductions. Efforts to date include:

- Substantial investment in the public transport network, including a significant increase in bus capacity and the ongoing programme of Underground renewal. Already, approximately £4 billion has been spent since the start of TfL's investment Programme (including £2.3 billion on the Underground and £0.6 billion on buses).
- Increased investment in walking and cycling, for example TfL's cycling budget has increased from £5.5 million in 2000 to £24m in 2006/07. This additional investment has been used to deliver safer road layouts, an expanded London Cycle Network, more cycle parking and cycle training.
- Use of policies to encourage mode shift to more sustainable options. This has included fare incentives such as free travel for under-18s, protecting the Freedom pass for older and disabled Londoners, and the introduction of the congestion charging scheme, which has reduced traffic circulating within the central London zone by 15 per cent

compared to 2002 (pre-charging) levels and cut CO_2 emissions by 16 per cent.
- Increased use of incentives, marketing and information to make people aware of their travel options and promote the use of lower-carbon modes. This has included more than doubling TfL's travel demand management programme over the past three years, including significant progress in the areas of work, school and personal travel planning, support for car sharing and car clubs.

These measures have led to more walking trips and a 72 per cent increase in cycling on the major road network in 2005/06 compared to 2000. Bus ridership has increased by 40 per cent. In a recent MORI poll, the number of Londoners saying they use a car every day had declined by half, from 38 per cent of Londoners to 19 per cent. Since 2000, the net effect has been to avoid 500,000 car journeys each day that would have otherwise taken place - equating to an annual CO_2 saving of about 210,000 tonnes.

Transport sector beyond TfL

Beyond TfL, the main recent developments in energy saving in the transport sector have been:

- Voluntary agreements between the EU and car manufacturing associations
- Development of low-carbon engine technologies
- Proposed Renewable Transport Fuels Obligation
- Government policies to promote of low CO_2 behaviours.

Voluntary agreements

Voluntary agreements were secured by the European Union with international car manufacturing associations in the 1990s to reduce CO_2 emissions from new vehicles. New car emissions have fallen by just over 10 per cent since then - from an average of 190g/km in 1997 to 169g/km last year in the UK. However, the European target of 140g/km by 2008/09 will not be met in the UK and is unlikely to be achieved across the EU. Individual performance of car manufacturers within each of the associations has been mixed. Some have already achieved the 140g/km objective, while others have made little progress. The European Commission recently announced its intent to mandate a reduction in emissions to 120g/km by 2012. Details of this proposal will be consulted on in 2007.

Low-carbon engine technologies

Engine technologies with substantially improved fuel economy are becoming a part of standard vehicle ranges. Cars employing hybrid

engines, capable of operating using either petrol or biofuel, or employing innovative approaches such as automatically switching the engine off after prolonged periods of idling are now regularly seen on the roads of London.

Renewable Transport Fuel Obligation (RTFO)
The government is encouraging the development of the biofuel industry through the RTFO. This requires fuel suppliers to ensure that 5 per cent of their sales are from renewable sources by 2010. It is expected that legislation will be implemented during the first half of 2008.

Government policies
All levels of government are increasingly amending existing and creating new policies to promote low CO_2 behaviour. Recent increases to the vehicle excise duty (VED) on the most CO_2 polluting cars is a start, but by no means goes far enough to catalyse real change. At the local level, several London boroughs are taking positive action. Richmond is proposing differential resident permit charges on the basis of a car's CO_2 emissions and Westminster offers free parking to electric vehicles. A number of boroughs, including Waltham Forest and Islington, offer free resident permits for electric vehicles. Other boroughs in London have already implemented or have expressed interest in adopting similar measures.

4.5.6 The Mayor's key priorities for action

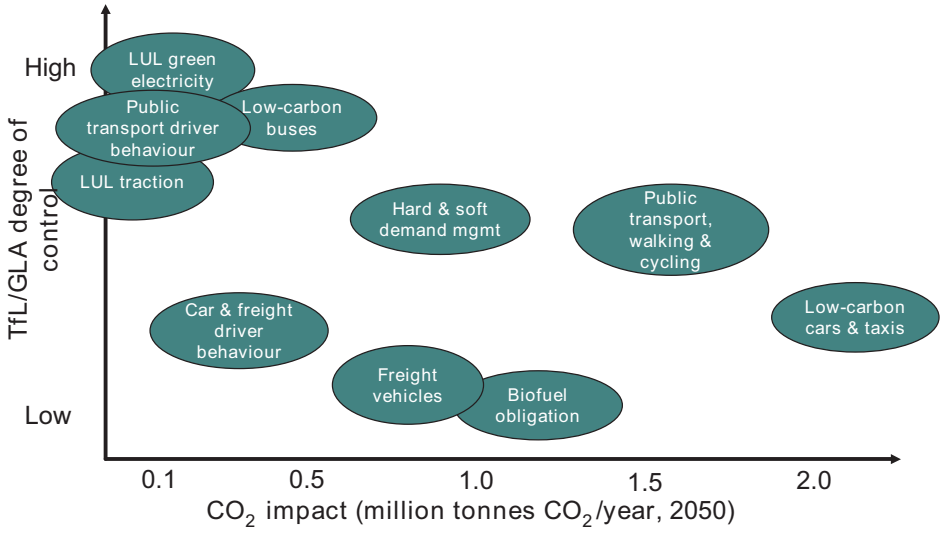
Much has already been done to keep transport CO_2 emissions down in London. In fact, it is the only sector where emissions are flat despite growing demand. But much more can - and must - be done. The Mayor will therefore take action across the three key areas mentioned above to:

a Change the way Londoners travel
b Operate vehicles more efficiently
c Promote the uptake of lower-carbon infrastructure, vehicle and fuel types.

Action across these three areas can deliver total savings of 4.3 million tonnes of CO_2, with changing the way we travel, operating our vehicles more efficiently and using improved vehicle and fuel types delivering 39 per cent, 17 per cent, and 44 per cent respectively.

The degree of influence that the Mayor has to achieve CO_2 savings varies considerably by opportunity. In some instances, savings can be delivered through Mayoral policy and functional body resources. However, in many of the most promising areas, Mayoral powers are far more limited. In these instances influencing individuals and the commercial and public sectors, as well as lobbying government and the EU, will be critical.

Figure 59 Degree of Mayoral control over key transport CO_2 opportunities



Details of Mayoral actions to reduce CO_2 emissions from the transport sector are set out below[5].

a Changing the way Londoners travel

Investments made in public transport, walking and cycling will continue to ensure that growth is accommodated on lower-carbon forms of transport. This has the potential to deliver annual CO_2 savings of 1.7 million tonnes by 2025. However, this will only be achieved by increasing the relative attractiveness of these more sustainable modes, by providing more pleasant, reliable and sometimes faster journeys, by making the most of travel demand management policies, by improving the quality of urban design and environment, and by taking steps to ensure that the cost of each transport mode reflects its true cost in terms of carbon emissions.

Public Transport

The Mayor intends to deliver key public transport projects, in large part through continued implementation of TfL's £13.1 billion investment programme. This is a programme of unprecedented scale and scope for London. Key Investment Programme and other infrastructure projects include:

- continued improvements to the Underground, including an increase in capacity of 28.5 per cent by 2025
- rejuvenation of London's overground rail network, including the Thameslink upgrade and longer, more frequent trains to southern areas of London and the Lea Valley. This will increase rail capacity by 25-30 per cent
- extension and upgrade of the existing East London Underground Line, converting it into a new heavy rail metro train service. The East London Line will be critical in bringing £10 billion worth of economic regeneration benefits to some of London's neediest areas, and will play a pivotal role in increasing capacity on key routes serving the 2012 Olympics
- Docklands Light Railway capacity enhancement (between Poplar and Stratford and an extension to Dagenham Dock)
- continued upgrade and expansion of London's bus network, resulting in a capacity increase of 40 per cent by 2025.

In addition the bill to build Crossrail is going through parliament. Crossrail would deliver an additional 10 per cent boost to the overall capacity of the public transport network and increase peak capacity by an additional 5.8 million passenger kilometres.

All of these projects will require continued funding support from government. The Mayor and TfL will continue to work closely with Government to ensure this funding is available.

Cycling

In addition to these significant public transport improvements, further enhancement of cycling infrastructure in London, together with creating a greater level of awareness of the benefits associated with this mode, will continue to be a focus for the Mayor.

London has targeted an increase in cycling trips of 400 per cent by 2025. To help make this a reality, TfL is committed to a range of measures designed to increase cycling levels, including:

- completing the 900km LCN+ cycle network by 2010
- installing secure cycle parking at schools and London Rail, Underground and DLR stations
- school travel plans for all schools, including making cycle training available to every primary school, including training for parents and carers.

Generating greater interest in cycling and its many benefits is also critical. Hosting Le Grand Départ of this year's Tour de France will bring cycling to the attention of many more Londoners. A Mass Participation Bike Ride in September 2007 will feed off the excitement generated by this world-famous event and momentum will be maintained by several other Tour de France legacy events. Existing cycling programmes will be repackaged and re-launched over this period to take full advantage of heightened levels of interest.

Walking

The Mayor also aims to make London one of the world's most walking-friendly cities over the next decade. An increase in walking of 10 per cent is targeted by 2015, with a longer-term aim of more than one million additional walking trips by 2025. Improvements to the city's streetscape and information to get Londoners using their feet will include:

- improvements to pavements, lighting and green spaces to create more attractive environments for pedestrians
- more permanent and temporary pedestrianised areas
- new and upgraded road crossings
- easy to read and consistently styled walking maps.

A key objective of planned public transport and walking and cycling improvements is to accommodate projected demand growth of four million additional trips a day to 2025 without an increase in car trips. This will avoid additional CO_2 emissions of up to 1.7 million tonnes per year.

Private vehicle transport

Travel Demand Management

The Mayor will continue to increase the use of travel demand management (TDM) policies. TDM refers to a range of tools designed to make most efficient use of available capacity, both on the roads and on public transport. These include:

- work, school and personalised travel plans - making people aware of the full range of travel options and helping them select the most appropriate one. This requires direct contact with Londoners and businesses to understand specific needs and options
- promotion of teleworking and video conferencing by highlighting cost and environmental benefits to business
- support of car sharing to increase passenger occupancy
- promotion and support of car clubs, for example by providing funding to boroughs to provide on-street car spaces
- promoting greater general awareness of public transport, walking and cycling through information campaigns.

Travel demand management is a relatively new policy and as such its effects continue to be tested and proven. To this end, TfL is currently conducting the first fully integrated pilot in collaboration with the borough of Sutton to determine the real impact of a holistic, properly funded TDM programme. £5 million has already been set aside to fund the full three years of the pilot. Measures being employed in Sutton are projected to reduce vehicle kilometres by up to five per cent. Preparation

for a second town centre pilot will commence in 2008/09, with roll out to other metropolitan town centres as soon as possible afterwards. In the interim, best practice from the Sutton pilot will be applied to other boroughs through the ongoing travel demand management programme. If the expected five per cent reduction in car kilometres can be delivered across London, this would reduce 2025 emissions by 0.25 million tonnes annually (about two per cent). The Mayor will also encourage boroughs to utilise the most CO_2 effective ways of calming traffic, for example using camera enforcement rather than speed humps.

Ensuring transport reflects the true cost of carbon

Encouraging a significant shift to more sustainable transport modes will remain challenging whilst the climate change impact associated with a particular mode is not fully incorporated into its cost. Ways the Mayor can ensure transport better reflects the cost of carbon include:

Extending and modifying the congestion charging scheme

Building on the success of the existing central London scheme, a western extension of the scheme, covering Kensington, Chelsea and Westminster, came into effect on 19 February 2007. As well as bringing traffic reduction to these areas, CO_2 savings on a similar relative scale to those realised by the current scheme are expected.

In an attempt to incentivise the purchase of lower CO_2 emitting cars, the Mayor has proposed the incorporation of emissions-influenced charging into the congestion charging scheme. Under the proposal, individuals would be encouraged to buy the most fuel efficient cars through a 100 per cent discount (cars emitting <120g CO_2 per km and meeting Euro IV air quality standards) and dissuaded from purchasing the most polluting vehicles by a higher than standard charge (£25 for cars emitting >225g CO_2 per km). On the current profile of vehicles entering the central London congestion charge zone, around 16,000 vehicles per day would be required to pay the £25 charge. This proposal will undergo a public consultation over the next year.

Supporting complementary national and local government policies

The Mayor will lobby the national government to make more radical changes to the charges on vehicles falling into different Vehicle Excise Duty (VED) bands. The tax levied on the most polluting categories must be increased further if car purchasers are to be influenced to select lower-carbon cars. Similarly, those driving cars in bands A and B must be rewarded. At £210 per year, the current maximum differential in VED is not substantial enough to change many people's purchasing decision. But the potential CO_2 saving is worth the change; even conservative

assumptions indicate that low-carbon vehicles would reduce CO_2 emissions by at least 0.8m tonnes annually by 2025.

The Mayor will also support borough-based "carbon-pricing" initiatives, such as Richmond upon Thames's plan to revise permit-parking charges on the basis of CO_2 emissions.

More widespread carbon pricing is clearly going to be necessary to achieve behavioural change in a number of areas, including the use of road vehicles and the uptake of low-carbon vehicles. Ideally, this would be implemented on a national or even European level. The government has indicated that it wishes to trial national road pricing, perhaps charging vehicles on the basis of mileage. The Mayor has stated that he would support the government in this.

London-wide road pricing is likely to be necessary before 2025 if London is to achieve its carbon emissions targets. However, it is difficult to predict precisely when this measure will become cost effective compared with other carbon reduction measures. At present it would have high costs relative to the carbon reduction benefits, although there would be wider economic benefits in the form of time savings from decongestion. This action plan prioritises other, more affordable, methods of reducing carbon emissions from transport over the next decade.

b Operating vehicles more efficiently

As discussed in previous sections, small and painless changes to driving practices can substantially reduce fuel or electricity consumption (and CO_2 emissions) across all modes.

Cars

Starting later this year, TfL will work with the DfT and other stakeholders to promote fuel-efficient motoring in London. The campaign will link in to national eco-driving campaigns and target both individuals and businesses.

For car drivers, eco-driving measures would include:

- accelerating and decelerating smoothly (5-10 per cent saving)
- keeping tyres inflated to the right level (2-4 per cent saving)
- removing roof racks when not in use (up to a 10 per cent saving)
- turning off engine when idling (allowing the car to idle for longer than 10 seconds uses more fuel than restarting)
- taking the car for regular inspection and servicing (about 4 per cent saving)
- not speeding: driving at 85 mph uses 25 per cent more fuel than driving at 70 mph.

Underground

The Underground will promote behavioural change amongst its staff and contractors to deliver energy savings. Smoother driving of trains in particular can deliver savings of ~5 per cent of the Underground's emissions.

Buses

Bus drivers will also be encouraged to drive their vehicles in ways that are more efficient. The existing BTEC training programme (which all London bus drivers go through) already highlights good practices but with greater emphasis it will be possible to reduce fuel consumption by 5-10 per cent. Bus priority measures, such as bus lanes, are another way of ensuring smoother bus travel and lower fuel consumption. Lower fuel costs mean cheaper fares for Londoners - not to mention a more comfortable and safer ride.

Taxis and private hire vehicles

The Mayor and the Public Carriage Office will work with the taxi and private hire industry to help reduce fuel costs. Fuel consumption can be reduced by more than 10 per cent through eco-driving practices. This will save the average black cab more than £400 per year in fuel costs - savings that will result in Londoner's paying lower taxi fares in the future.

Freight

Road freight is expected to experience dramatic growth - up to 30 per cent increase in vehicle kilometres by 2025. Collaboration with industry will be essential for two schemes targeting behavioural change that can cut fuel consumption:

- A new "Freight Training Initiative". Training will focus on drivers, but will also cover freight load planners and managers. Benchmarks will be used to help individual operators target parts of their operations where greatest fuel savings are possible

- Freight Operator Recognition Scheme (FORS) to reward operators for achieving fuel efficiency, environmental performance and safety objectives.

TfL will work with the freight industry to further develop shared consolidation centres to make freight movements more efficient, and will continue to encourage the use of rail and water for freight. Delivering CO_2 efficiencies is very much in the economic interests of freight operators: fuel typically represents 20-30 per cent of operating costs. Simple changes to delivery planning, vehicle maintenance and driving behaviour can deliver fuel efficiency improvements in excess of 10 per cent. Over the medium term, more substantial changes such as shifting to lower-carbon vehicles will deliver further, even more substantial fuel savings for freight operators. The benefits of this shift will also flow on to all Londoners in the form of improved air quality, quieter lorries and lower prices for food and other goods[6].

c Promote the uptake of lower-carbon infrastructure, vehicle and fuel types

The third key area of action is reducing CO_2 emissions across all public and private modes through the uptake of lower-carbon infrastructure, vehicles and fuels. Within TfL, rapid adoption of low CO_2 vehicles, infrastructure and fuels is being pursued through a range of investment decisions and policies. In addition to existing funding streams, many of these initiatives will be supported by the new £25 million TfL Climate Change Mitigation Fund.

Underground

The Underground is London's largest single user of electricity, accounting for 3.5 per cent of total electricity usage in the capital. Although it represents only four per cent of transport sector emissions, the underground is essentially under Mayoral control, making it possible to deliver real and sustained energy savings through energy-efficiency measures and the "greening" of energy supply.

Achieving these reductions will also benefit the Underground (and hence Londoners) financially. In 2006, the Underground's bill for traction electricity was £55 million, up 80 per cent from the previous year. Putting in the CO_2 savings initiatives described below would reduce this bill by as much as £15-10 million each year[7]. So how will these reductions be delivered?

- **Energy-efficient operations.** The Underground will seek to consistently define its operational specifications to prioritise energy-

efficiency. This could deliver emissions and energy savings of 10-30 per cent. This does not require significant infrastructure replacement. Rather, it involves introducing energy usage minimisation as a key parameter in all operating specifications, and in some cases introducing specific energy-savings measures. These measures - such as intelligent coasting, which reduce traction energy consumption by 20 per cent - are often justified from a railway engineering standpoint anyway, in this case because they reduce wear and tear on trains and track.

- **New infrastructure.** Energy-efficient equipment will be specified as standard during regular upgrade and repair cycles wherever possible and feasible. For example, specifying low-loss conductor rail can deliver 10 per cent savings in energy and emissions. Specifying trains that use regenerative braking, where the train's braking power is fed back into the traction network, can deliver energy savings of 25 per cent. Inverting substations that maximise the benefits of regenerative braking would increase this by a further 10-20 per cent. London Underground will work with the London Climate Change Agency and others to develop combined cooling, heat and power opportunities, including projects associated with cooling the tube. Changes to the power supply voltage are also being investigated, which have the potential to reduce energy losses due to resistance in the electricity supply network.
- **Renewables.** Simply increasing the amount of electricity procured through green tariff contracts may not necessarily result in a reduction in UK CO_2 emissions[8]. With electricity generators already obliged to supply a proportion of their electricity from renewable sources, paying for green tariff electricity may not be the best way to promote additional renewable supply in the long term. The Underground will look to make use of its market power by ensuring that it catalyses new investment in renewable or good quality CCHP infrastructure. Micro-renewables should be explored for station applications, but are not capable of contributing significantly to traction demand.

Buses

Buses are responsible for the emission of 680,000 tonnes of CO_2 annually, making them the largest transport sector emitter over which the Mayor has direct control. London represents one-third of the market for new buses in England due to the Mayor's commitment to continued improvement to the bus fleet and network. As such, London can exert significant influence on the UK bus market as a whole. As demonstrated over the past few years with the introduction of low-floor buses, it is possible to deliver rapid changes in fleet composition when there is a clear mandate to do so. A further benefit is that retired London buses are often sold on to other regions, so improvements to the fleet will have knock-on benefits to the UK's carbon footprint.

- **Hybrid buses:** the Mayor has announced that all new buses will be diesel-electric hybrids as soon as there is volume production available, which appears likely in the next few years. These buses emit between 30-40 per cent less CO_2 than comparably sized diesel buses. This sends a clear signal to manufacturers designed to result in increased production and decreased costs of hybrids. Whilst the initial purchase cost of a hybrid bus will remain higher than diesels for the immediate future, much of this premium is recouped over the operating life of the bus due to lower fuel consumption. In fact, fuel price increases of as little as 15 per cent would make hybrids a more attractive technology than standard diesels solely on financial grounds. TfL already operates six single-deck diesel-electric hybrid buses on route 360, and will trial the world's first double-deck hybrid bus on route 149.

- **Hydrogen fuel cell buses:** in parallel, TfL will also continue its support of hydrogen-powered buses on specific routes to accelerate development and eventual commercialisation of this technology. It will introduce 10 hydrogen fuelled buses as part of the London Hydrogen Partnership Transport Action Plan by 2010.

Hydrogen - potential CO_2-free transport in the future

Many people consider that hydrogen fuel cells will be able to provide CO_2-free energy in the future. The London Hydrogen Partnership, which was launched in April 2002, is working to make this technology a reality.

Producing energy using hydrogen fuel cells has many benefits including:

- reduced CO_2 emissions and noise
- improved air quality
- greater energy security.

The partnership comprises both public and private sector partners and is chaired by the Deputy Mayor. Its members include Air Products, Baxi-SenerTec UK, BP, BMW, BOC, Carbon Trust, DTI, Energy Saving Trust, Fuel Cell Europe, Greater London Authority, Health and Safety Executive, Imperial College, Intelligent Energy, Johnson Matthey, London Development Agency, London First, Rolls-Royce, Thames Water and Transport for London. It aims to develop London's hydrogen economy by:

- producing and implementing a London Hydrogen Action Plan
- establishing and maintaining dialogue among all sectors/actors relevant to the hydrogen economy
- disseminating relevant materials
- providing a platform for funding bids and initiation of projects - creating conditions where these technologies can thrive.

Further details on the activities of the partnership can be found at www.lhp.org.uk

National Rail

With the exception of the North London Railway where TfL takes responsibility for overseeing operations from November 2007, the Mayor does not have direct control over rail CO_2 emissions. However TfL works closely with the Department for Transport and Network Rail and is collaborating with Rail Safety and Standards Board in efforts to reduce traction energy use.

In general, many of the CO_2 reduction opportunities associated with the Underground are also applicable to the National Rail network.

- **Regenerative braking:** Britain has Europe's youngest fleet of rolling stock, almost all of which is already equipped with regenerative braking functionality. TfL will encourage the Department for Transport

and Network Rail to make the necessary upgrades to power supply infrastructure to make sure it can use the energy produced by regenerative braking on the trains.

- **Renewables:** TfL will also encourage Train Operating Companies to source the energy used on electrified sections of track increasingly from renewable sources. TfL is also keen to explore opportunities to use biofuels on the diesel-powered North London Railway, which runs between Gospel Oak and Barking, once TfL controls the concession after November 2007. TfL has also offered use of this line to the DfT for any trials that could reduce CO_2 emissions from local or suburban diesel trains
- **Electrification:** In the longer term, TfL is committed to pursuing the electrification of the North London Line, which would yield a 25-30 per cent CO_2 saving compared to diesel

Taxis

- **New engine technologies:** TfL has already had productive conversations with London Taxis International (LTI) the main supplier of taxis in London, regarding potential opportunities to develop a London taxi that employs engine technology capable of achieving significant improvements in fuel economy. New low-carbon technologies will also help to realise increasingly stringent air quality standards, such as Euro V. TfL's licensing powers and control over fare structures provide practical ways of encouraging uptake of these vehicles

Cars and Freight Vehicles

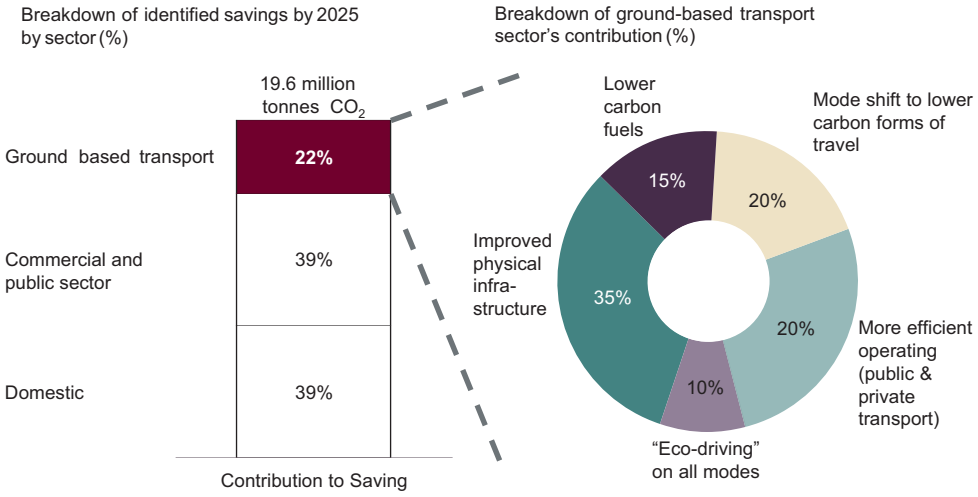
There are very few direct opportunities for the Mayor to directly promote the development and adoption of low carbon technologies and fuels.

Proposed changes to the congestion charging scheme (discussed above) will encourage Londoners to purchase greener cars and implementation of the London Low Emission Zone will over time promote the adoption of newer, cleaner freight vehicles. Beyond these measures, the Mayor will use all indirect channels available to him to promote these technologies and fuels including the following:

- **Passenger car CO_2 targets:** the Mayor will lobby the UK government and EU to establish mandatory reduction targets for car manufacturers to replace existing voluntary agreements that expire in 2008. Association based targets have proven to be ineffective. Manufacturers must be held directly accountable for the delivery of much lower CO_2 emitting cars in the future. A combination of mandatory targets, carbon pricing and carbon trading will be required to catalyse the rapid uptake of low emission vehicles.
- **Greater public awareness:** there is generally poor awareness regarding the wide-ranging CO_2 performance of makes and models across and within vehicle classes. Added to this, fuel efficiency and CO_2 emissions particularly, do not feature prominently amongst the criteria considered when buying a new car. The Mayor and TfL will develop campaigns to make motorists more aware of the climate change impact of their car purchases. It has been estimated that the total amount of CO_2 emitted from private vehicles in the UK could be reduced by as much as 30 per cent if buyers simply chose the most fuel efficient model in their desired vehicle category.
- **Biofuels:** the Mayor will lobby for the establishment of an EU accreditation system for biofuels to ensure sustainable production and guarantee minimum levels of CO_2 reduction. TfL will work with the Low Carbon Vehicle Partnership to help where it can in establishing a robust accreditation system for biofuels to be introduced in conjunction with the UK Renewable Transport Fuel Obligation. The Mayoral group will work with its fuel suppliers to ensure the biofuel it uses (in both low and high blend fuels) are from high quality, approved sources.

Successfully implemented, these mayoral initiatives will facilitate the delivery of CO_2 savings of 4.3 million tonnes annually by 2025.

Figure 60 Ground based transport sector's contribution to CO_2 savings by 2025



References

1 Smaller public transport modes including the DLR, Croydon Tramlink, river services and Dial-a-Ride contribute less than one per cent of total transport CO_2 emissions. Emissions from minor modes are estimated as follows: DLR - 19,350 tonnes, Croydon Tramlink - 5,515 tonnes, Woolwich Ferry (the only river service controlled by TfL) - 2,426 tonnes and Dial-a-Ride - 2,399 tonnes.

2 Percentage savings are not additive. They refer to the potential saving associated with a single initiative type.

3 Clearly low/zero-carbon fuels could deliver massively greater emissions reductions if
a) the rate of technological advance were accelerated, and
b) national and international pricing mechanisms and regulations were in place to incentivise or require faster take-up of these technologies.

4 This is set to change somewhat in 2007, when TfL will take over responsibility for the North London Line.

5 Achieving emissions reductions from ground-based aviation movements will be addressed in the aviation chapter. Smaller modes that represent <1 per cent of transport emissions are not addressed in this document, although emissions reduction programmes are being pursued.

6 The proposed London Low Emissions Zone will also by critical to improving London's air quality.

7 Based on current electricity consumption. Increases in absolute levels of consumption due to imminent line upgrades will increase overall energy costs and the size of potential savings.

8 A green tariff contract requires the energy supplier to obtain an amount of electricity equal to the customer's usage from existing renewable energy sources.

AGENDA ITEM 6.2

TRANSPORT FOR LONDON

SAFETY HEALTH AND ENVIRONMENT COMMITTEE

SUBJECT: TfL's Climate Change Fund

MEETING DATE: 6th March 2007

1. Purpose
To inform members of the progress with TfL's Climate Change Fund.

2. Decision required
None

3. Background
Transport for London (TfL) has established a Climate Change Fund in order to help deliver initiatives that specifically contribute to the Mayoral objectives and targets on climate change mitigation above and beyond existing business plans.

The fund is worth £25m over 3 years, divided into £5m for 2007/8, £10m for 2008/9 and 2009/10 and is being managed by Group HSE.

4. Information
4.1 The fund is aimed at assisting TfL modes to deliver climate change *mitigation*, which essentially means changing our operations or introducing new measures to become more energy efficient, to reduce CO_2 emissions or to facilitate raised awareness and promote behavioural change that will drive energy efficiency or CO_2 emissions reduction.

4.2 The fund does not cover projects aimed at adapting our operations in readiness for impacts of climate change as businesses are expected to factor this risk into their normal forward planning activities.

4.3 Schemes are not limited to capital expenditure and those that will bring CO_2 reductions across the transport sector as well as to TfL's direct CO_2 emissions are admissible. All types of projects will be considered, although three broad categories are envisaged:

- Projects that deliver significant carbon savings in the short to medium term for buildings, operations or vehicles (e.g. through fuel efficiency, alternative fuels, switching to modes with lower carbon footprint in terms of emissions or material resources, existing technologies such as

hybrid engines or the development/delivery of driver training)

- Projects that are capable of delivering significant CO_2 savings in the longer term through a switch to renewable energy supply for buildings, operations or vehicles, but use renewable energy, flagship technologies or promote development of technologies (e.g. independent green energy generation or hydrogen engines)

- Projects that individually will deliver smaller CO_2 savings but offer excellent climate change awareness-raising or drive wider behavioural change (eg travel demand management opportunities, staff and business travel facilities, solar panels or wind turbines on flagship buildings or structures)

4.4 Bids are assessed by an Approvals Group, consisting of senior Directors from the modes and representatives from the Policy Unit and Sustainability Unit and those over £1m reviewed by the Project Review Group (PRG).

4.5 To date two projects have been approved:

- Eco-Driving
  This project will deliver three London-specific marketing campaigns during the next two years, targeted at drivers of private cars in London, who account for 50% of surface transport related $C0_2$ emissions. The Fund is supporting the project at a level of £2.2m over 2 years. The eco/smarter driving initiative provides a cost-effective and practical solution to reducing these emissions, without any loss of utility/accessibility to the driver. The campaigns are forecast to result in a 7% triggered change in car driver behaviour. They will take place alongside a related Department of Transport (DfT) campaign with national coverage. Partners will be sought from relevant organizations such as driving schools and petrol stations. Based on research conducted by the (DfT) together with the Energy Savings Trust (EST) for every driver that responds positively to a campaign a 5 to 20% reduction in individual vehicle emissions is forecast (depending upon the message/action taken).

- Hydrogen Cars and Vans

  This project covers the acquisition of 20 hydrogen cars and vans for the vehicle fleet and is funded at £4m over the next two years. The project supports the Mayor of London and London Hydrogen Partnership in their goal for increasing the proportion of hydrogen-fuelled vehicles.

  The main items for this phase of the project are:
  - Procurement of 20 hydrogen cars/vans
  - Installation of two hydrogen refuelling facilities
  - Hydrogen supply
  - Maintenance and garaging

4.6 A series of other projects are expected to be submitted to the Fund and are expected to include hybrid buses, renewable energy ‘flagship stations’ for LUL and DLR, Freight Unit fuel efficiency programmes and decentralised energy supply for the Palestra building.

4.7 Projects will be monitored to ensure that they deliver their goals and are progressing according to the plan laid out in their business case.

5. Financial implications
A budget of £25m to support the Climate Change Fund has been incorporated into Group HSE’s budget for 07/08 (£5m), 08/09 (£10m) and 09/10 (£10m).

6. Equalities implications
None

7. Crime and disorder implications
None

8. Sustainability
The delivery of the projects funded under the Climate Change Fund will play a significant part in supporting making transport in London and in turn London more sustainable.

9. Recommendation(s)
The Committee is recommended to NOTE the contents of the report.

Meeting: Safety Health and Environment Committee

Date: 6th March 2007

Title: Tfl's Climate Change Fund

Author		
Sponsor		
For queries please contact		

AGENDA ITEM 8.1

TRANSPORT FOR LONDON

SAFETY HEALTH ENVIRONMENT COMMITTEE (SHEC)

SUBJECT: London Underground (LU) Quarterly SHEC Report

MEETING DATE: 6th March 2007

1 Purpose;

1.1 To inform members of the key health, safety and environment (HSE) matters during the last Quarter.

2 Decision Required

2.1 None.

3 Background

3.1 A full report on HSE activities and performance is produced annually. These quarterly reports are to update the Committee on any significant matters from the reporting quarter.

4 Information

4.1 Executive Summary

4.1.1 What went well

- LU have received confirmation from Her Majesty's Railway Inspectorate/Office of the Rail Regulator (HMRI/ORR) that LU's application for safety certification and authorisation under the Railway and Other Guided Transport System (Safety) Regulations 2006 (ROGS) is 'deemed to comply' with the Regulations.
- The overall derailment trend continues downwards with 4 derailments in this quarter. One due to the poor condition of tracks in depots and three due to errors by Infraco shunting staff. A draft shunting practice procedure has been issued by Metronet for review. Following approval staff training will take place.
- A course to improve the way signal passed at danger, SPAD, investigations are conducted has been implemented and has been well received.
- The long term programme for improvements to the LU quantified risk assessment (LU QRA) was agreed between LU, Metronet and Tubelines in December 2006. This will be reflected in the LU Safety Improvement Plan.

- Birse Metro and CBS Outdoor (Viacom) have been accredited to self assure in reviewing, developing and signing off their own method statements and associated risk assessments.
- The overall reduction in the number of staff off work due to back pain, sickness, anxiety and depression has been sustained for 9 months.

4.1.2 Areas for Improvement

- There were two fire contraventions; one at Gloucester Road due to an out of date exemption for a compressor stored on the platform; the other at Arsenal where contractors had cordoned off the main entrance for their signing in/out thus reducing the means of escape without exemption or approval. Corrective actions have been taken at both locations.
- LU had one overdue safety action as tracked via the London Underground Safety Actions Tracking Systems (LUSATs). A plan for implementation of the longer term technical solutions in relation to significant non-compliances in the protection of the Low Voltage lighting main systems, that were identified as a result of the investigation into the failure of the National Grid supplies in 2003 is outstanding and is to be considered by the Directors Assurance Review Team.
- The number of overdue LUSATs actions on Metronet rose significantly from 8 in Quarter 2 to 50 this quarter. This is due to the inclusion of recommendations from Metronet's internal investigations for tracking.
- Following a delay in reaching contractual agreement for signal sighting improvements on the Bakerloo and Central lines, a full programme of work will now be available in February 2007 and has not commenced as reported last quarter.
- Metronet are required to undertake 110 audits during Quarter 4 to meet a revised programme. Slippage has occurred due to over ambitious audit planning and loss of a number of auditors. Recovery is expected by end March 2007.
- Attendance on block training for Customer Service Assistants, Station Supervisors and Train Operators, was below target due to sickness, staff shortages and release required for Enhanced Station Accounting Facilities training.
- The number of Service Control, Signal Operators and Support Managers taking time off due to stress, depression and anxiety has increased for three consecutive quarters. Organisational change is a contributory factor and hotspot work is ongoing to help address.
- The increased number of customer major injuries reported this quarter (57) compared to previous quarters (36) continues. The number of injuries has been shown to be linked to the increase in customer journeys, particularly during period 9.
- Overall workplace violence incidents increased by 36% compared to the same quarters in 2005/6 and 2004/5. Incidents of ticket related disputes (12.5%) and physical abuse (24%) have increased

4.1.3 Significant plans for next quarter

- Replacement of the four LU Health, Safety and Environmental Policies with a pan-TFL HSE Policy.
- Development of the 2007/8 Safety Improvement Plan

- Implementation of the Risk Based Competence Management System on the Northern line commences.

4.2 Progress against LU Safety Improvement Plan (SIP)

4.2.1 Objective 1: Reduce priority residual risks to as low as reasonably practicable

- LU continues to monitor the Tube Lines and Metronet track improvement programmes. All three Infracos are reporting some non-compliance and have undertaken to recover this by the end of quarter 4. Although at present the extent of the non-compliance is comparatively small, it is important that the situation is kept firmly under control.

- The longer term actions in the Corporate SPAD Reduction Programme continue to be implemented. Signal Sighting improvement work is well underway in the Sub-Surface Railway, SSR, and Jubilee, Northern and Piccadilly, JNP Service Delivery Units. During quarter 3 work was completed on both the Metropolitan line (1 signal re-sighted) and Northern Line (9 signal modifications).

- In the last quarter it was reported that Signal Sighting improvement work had commenced on the Bakerloo and Central line, this was not correct. Following a delay in reaching a contractual agreement, a formal letter was sent to Metronet in November 2006 and a full programme will be available the end of Period 11.

- The development and introduction of a course to improve the way SPAD investigations are conducted is now complete. The first course ran 17/18 November 2006 with feedback indicating the course was 'Overall very good and useful'. The course will be delivered to a mix of Duty Manager Trains, Line Service Managers and Health and Safety Representatives. Nine courses are planned through to the end April 2007 after which there will be sufficient trained investigators to evaluate its effectiveness. Arrangements are to be made for courses to be available in the future via SAP.

- The programme to create, set up, launch, monitor and evaluate the new joint BTP/LU Workplace Violence Unit (WPVU) continues through until August 2007. The WPVU is now responsible for investigative follow-up/victim support for all non-detected crime related cases of assault on staff. Work is now underway to evaluate the success of new unit through analysis (cohort study) on 2 stations groups. The Cohort study is scheduled to be completed in July 2007.

- Training in managing workplace violence for Duty Station Managers (DSMs) was completed during Q1 (2006/07). Further courses are to be held for new DSMs and for those groups where DSMs were unable to attend previously. Work is also ongoing to incorporate this training into the ‘New and Promotional’ Duty Managers training on an ongoing basis.

- Development of the long term programme for the LUL QRA model improvements is now complete. The programme was presented to and accepted by the Safety Standards Partnership Group in December 2006 and will form part of the 2007/8 Safety Improvement Plan. In 2005/6 and 2006/7 LU set out to review the QRA Models for Derailment / Collision between Trains / Collision with Object. The models have been reviewed with the relevant parties within the Engineering Directorate, ED, and Chief Operating Officers Organisation, COO. However, further work is required to peer review the draft logic for each model, and to obtain the required data before publishing the new models, this work will now be completed by the end of June 2007.

4.3 Objective 2: Ensure security arrangements are strengthened as far as reasonably practicable

- Progress against this confidential element of the programme is reported separately through the overview database

4.4 Objective 3: Continue to streamline health and safety standards and assurance arrangements

- The date for the implementation of the Technical Assurance Improvement Programme was originally scheduled to be completed in December 2006. However, additional work has been identified and the completion date has now been extended to March 2007. The Category 1 and 5 Standards will enter the proposed standard change (PSC) process in Q4 2006/07. ED has issued standards for Risk Based Intrusion model and accreditation of suppliers.

- LU's application for safety certification and authorisation under the Railway and Other Guided Transport System (Safety) Regulations 2006 (ROGS) has been submitted to Her Majesty's Railway Inspectorate/ Office of the Rail Regulator (HMRI/ORR) for acceptance. LU have subsequently received confirmation from the HMRI/ORR that the case is 'deemed to comply' with ROGS regulations.

- The implementation of recommendations arising out of the 3 yearly review of the Health Safety & Environmental Management System (HSEMS) will be completed in September 2007. The output of the review has been communicated to Trains and Stations and Revenue H&S Councils. A copy is available on the SQE Intranet site. The replacement of the four LUL Health, Safety and Environmental Policies with a pan-TFL HSE Policy forms part of the programme of improvements. The launch of the new policy is expected to be completed by the end of January 2007.

- Draft copies of the new Rule books are now available on the LU intranet for review. Roll out of the new books is scheduled for the end of May 2007 following a comprehensive briefing /communication programme for all those affected.

4.5 Objective 4: Further enhance the health and safety competencies of LU managers and staff

- The programme for the introduction of a Risk Based Competence Management System (CMS) for safety critical workers in Stations, Trains, and Service Control is being monitored in two parts; the first part, incorporating phases 1, 2 and 3, details the progress in development of management processes, assessment documentation and development of standards for use on the Jubilee line. There has been a slight delay in the completion of risk assessments for Service Control, previously scheduled for August 2006 will now be completed by the end of January 2007. The second part of the programme (Phase 4 to 13) covers the progressive development and implementation onto the remaining lines. The Northern line development is scheduled to start in early February 2007.

- The Enhancement of Incident Management Skills and Processes - Development of a course to cascade best practice local incident investigation skills is progressing well and is on target for completion December 2007. The training received in relation to Incident Reporting Forms (IRFs) is being reviewed and developed. Dialogue has been held with Operational Learning to discuss the best way to incorporate the revised IRF training into existing training courses.

- All the existing Occupational Hygiene topic briefings have been reviewed and updated. A gap analysis identified the need for additional briefings / guidance on the following topics: - Noise and Water Contamination. The relevant guidance and associated monitoring results, where applicable, are published on the updated LU SQE Occupational Hygiene intranet site.

4.6 Health of the Management System

- London Underground has one overdue improvement action, the second during 2006/7. This is in relation to significant non-compliances in the protection of the Low Voltage lighting main systems that were identified as a result of the investigation into the failure of (and recovery from) the National Grid supplies in 2003. A plan for implementation of the longer technical solutions is outstanding and is to be considered by the Directors Assurance Review Team.

- Tubelines have 4 overdue LUSATs actions. 2 long term actions, being maintained at red for visibility are in relation to the introduction of walkways compliant with the Electricity at Work Regulations and the installation of roll back protection on the Jubilee line fleet. The other 2 overdue actions arise out of the Tube lines Safety Improvement Plan and are scheduled to be completed in period 11 which relate to development of a wider ‘Being Safe’ communications programme and introduction of Competence assurance within the projects area.

- The total number of overdue actions on Metronet has significantly increased from 8 in Q2 to 50 at the end of Q3. This increase is mainly due to the addition of outstanding recommendations arising from Metronet investigation reports onto LUSATS.

4.7 HSE Performance Statistics

4.7.1 Health

- There was improvement in the number of days lost due to back pain and sickness absence for stress, anxiety and depression compared to the same quarter last year. The improvements have now been sustained over nine months and are likely to reflect several things:
    - o normalisation following the events of July 2005,
    - o increased focus on attendance, making reasonable adjustments and managing staff back to work as quickly as possible
    - o high demand for and use of stress reduction groups
    - o success of “hot spot” work at several locations including Barking train depot and Kings Cross Station group
    - o improved management absence, improved use of physiotherapy service and more use of planned rehabilitation back to work.

  However, Signal Operators and Service Control staff and Support Managers had shown an increased absence. This is likely to reflect organisational changes and there is some hot spot work going on in this area.

- 403 drug and alcohol tests were undertaken in the quarter with four positive results. (One drug related each on the Northern, Central, Victoria and District lines.)

- The most significant development at Drug and Alcohol Assessment and Treatment Services (DAATS) over the last six months has been the rapid increase in the referral of women. 10 women have been worked with which is an increase of 100% on the same time last year and 150% on the year before.

4.7.2 Safety

- Overall, the number of Category A (human error) and B (technical error) SPADs have stabilised. Category A SPADs is stable at an average of 58 per period since period two this year. and Category B SPADs remained stable at an average of 15 per period.

- There were 54 London Fire and emergency Planning Authority, LFEPA, inspections this quarter. Two section 12 contraventions were received.
  - 1 at Arsenal – Site contractors had sectioned off the main entrance for their signing in/out, this reduced the available means of escape. No prior exemption or approval was given. This has now been rectified.
  - 1 at Gloucester Road – Compressor stored on the Piccadilly platform with an out of date exemption certificate. This has now been rectified.

- The upward trend in the number of Platform Train Interface incidents continues into this quarter. Work continues to determine if this is directly linked to the increase in passenger journeys seen during 2006/7.

- Overall, the number of workplace violence incidents reported rose by 36% in comparison with the same quarter last year. The percentage of ticket related disputes has risen by 12.5%. Physical workplace incidents also rose by 24%. Improved levels of reporting and increase in passenger journeys are considered to be contributory factors. A third of the ticket disputes were caused by customers with no ticket and one quarter by oyster irregularities. Victoria, Waterloo, Camden Town, Liverpool Street, Angel were among the top ten stations this quarter.

- 85% of all incidents which are required to be reported under the Reportable Injuries Diseases and Dangerous Occurrences Regulations, RIDDOR, were reported within the required 10 days in quarter 3. This is an improvement over the 82% of all RIDDOR reportable incidents by the end of the 3rd quarter in 2005/06, however further improvement is still required to reach the target of 95%.

- The number of falls on escalators increased at the beginning of 2006/7, this trend is now stable. Most incidents occur at stations with high customer volumes. 89% of all incidents were due to slips and trips and falls.

- The number of Planned General Inspections, undertaken by non-operational directorates has increased from the previous quarter from 6 to 8 but still falls short of the 32 programmed for completion.

- There were 57 major customer injuries reported this quarter compared to 36 in Q2 2006/07 and 36 in Q3 2005/06. The number of injuries has been shown to be linked to the increase in customer journeys, particularly during period 9. Further work is ongoing given this correlation to determine if further mitigation measures are reasonably practicable

4.7.3 Environment

- The 2006/07 energy saving target for stations is 22.5%. At the end of Q3, 27.2% energy savings had been achieved against baseline figures. This corresponds to a saving of 14.3% in real terms since 2000.

  Following on from last quarter, the leaders at the end of period 10 were:

Line	Bakerloo
Group	Charing Cross
Premiership Station	Charing Cross
Championship Station	Elephant & Castle
First Division Station	Chalk Farm
Second Division Station	Plaistow

- Northumberland Park depot reported on quarterly energy consumption for the first time

- The total number of environmental incidents reported this quarter is 167. This was a increase on last quarter's figure of 69, but a significant reduction compared with the quarterly totals in 2005/6. High levels of graffiti incidents were reported with 32 incidents compared to 3 in Q2 2006/7.

- The Q3 Construction & Demolition (C&D) waste recycling rate was 65% and the C&D recycling rate this year was 81% - significantly short of LU's recycling target of 90%. This is as a result of Metronet contractors mis-classifying waste due to a change in Regulation. Metronet have issued an Improvement Notice on their contractors to ensure improved systems are in place by the end of March 2007.

- Noise remains the single largest source of complaints although the number of noise complaints dropped slightly compared to the last quarter. Majority of the noise complaints received were related to contractor activities. The number associated with tannoys and whistles were less than in Q2 2006/7.

- The majority of actions within the Environmental Improvement Programme have been completed or are due for completion by 6th January 2007.

4.8 Major Incidents

- 23rd September 2006 - Trespass at East Ham
  One of a group of three youths was fatally injured when struck by a train as a result of jumping down onto the track. The individuals concerned had earlier been seen sitting on the platform edge and were warned about their conduct by station staff.

- 18th November 2006 – Trespass at Camden Town
  An intoxicated male was killed when he entered the tunnel and was struck by a train as it came into the station.

- 23rd November 2006 - Accidental – Earl's Court.
  Two males fell underneath a train as it entered the station. The incident involved youths who were believed to have been 'play fighting' on the platform, when one of them being carried on the shoulder of a team-mate, fell and knocked into an innocent bystander, resulting in them both falling onto the track into the path of the train. The bystander lost his life.

- 2nd December 2006 – Accidental - Tooting Broadway.
  Alcohol fuelled horseplay resulted in two persons falling under the last train and one was killed.

5 Equalities Implications

None.

6 Crime and disorder implications

Objective 2 of the LU Safety Improvement Plan ensures security arrangements are strengthened as far as reasonably practicable. LU Operational Security and the British Transport Police (BTP) are working in partnership with the Crime and Disorder Partnership Unit to deliver the requirements of section 17 of the Crime and Disorder Act.

7 Sustainability

Actions to maintain and improve sustainability are included in our environmental action plan which is reported on by exception in Section 4.7.3.

8 Recommendation(s)

The Safety Health and environment Committee is recommended to NOTE the content of the report.

Meeting: SAFETY HEALTH ENVIRONMENT COMMITTEE

Date: 6TH MARCH 2007

Title: London Underground Quarterly SHEC Report

Author	**Naomi Ebojoh**	
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AGENDA ITEM 8.2

TRANSPORT FOR LONDON

SAFETY, HEALTH AND ENVIRONMENT COMMITTEE

SUBJECT: Surface Transport Quarter 3, 2006/2007 SHEC Report

MEETING DATE: 6 March 2007

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1. Purpose

To inform Members of the key HSE matters during the last Quarter

2. Decision

None

3. Background

A full report on HSE activities and performance is produced annually. These quarterly reports are to update the Committee on any significant matters from the reporting quarter.

4. Information

4.1. WHAT WENT WELL

4.1.1. London Buses

- The annual programme of unannounced LBSL bus station audits for 2006/2007, undertaken on behalf of London Buses by LUL, continued during this quarter. Seven audits were completed and a notable improvement in the overall scoring, when compared with the previous year, was achieved.

- The review and subsequent amendments to the Bus Operators Health and Safety Audit Regime focussed on management of risk and competence standards. The 2006 / 2007 audit programme continued during this quarter with 70% of audits completed.

- The upgraded version of ATLAS has been rolled out to all operators' garages or agreed reporting points. Consequently, this has improved their ability to submit timely and accurate incident data to T*f*L. A telephone survey revealed that a majority of users believe that the updated version of ATLAS represents an improvement.

- The fitment of engine bay fire suppression systems is now a standard requirement on all new buses and buses subject to refurbishment as part of any contract awards using existing vehicles. In addition, TfL is facilitating a retro-fit programme on Dennis Trident double deck vehicles with support from the bus operators and the bus manufacturer. This programme will see 1,000 additional vehicles fitted by 31 March 2007. It is currently forecast that 30% of the fleet will be fitted 31 March 2007 and that based on existing contract renewal process the whole of the fleet will be fitted by March 2012. Consideration is being given to facilitate further retro-fit programmes during 2007/08 to advance this date.

4.1.2. Other Modes

- The British Safety Council Health and Safety 3 day course, Supervising Staff Safely, continued during this quarter for Surface Transport modal staff. The course will lead to a nationally recognised Level 2 qualification.
- DaR has introduced the last batch of the new Vito Buses. These vehicles offer better access for users and reduced risks as they do not require tail lifts.
- London River Service (LRS) has continued to work with ST Safety Managers to ensure the completion of its H&S procedural actions.
- TPED reported a fall in assaults on Revenue Protection Inspectors (RPI) when compared with previous periods. The improved performance is being linked to the Conflict Management Training RPIs are undertaking. This is in additional to Health and Safety training being delivered to managers across the Directorate

4.1.3. Streets

- A number of workshops have been run for senior managers covering the new requirements placed on TfL as a client under the Construction (Design and Management) Regulations 2007, which come into force on the 6th April 2007.
- All existing documents forming the safety management system have been reviewed, amended and made available on the Intranet. Where relevant and appropriate these document contain environmental considerations forming a single health, safety and environment management system.
- The Streets induction programme has recommenced including a HS&E session.

- Built environment - streetscape pilot projects are continuing under the management of Road Network Development. Business plans are in preparation for three of the pilots; in the others it will be taken forward as part of the network management plan process

4.2. AREAS FOR IMPROVEMENT

4.2.1. London Buses

- Group Safety Services will continues to work with IM, ATLAS Project Team and bus operators to improve incident reporting and the integrity of data submitted to TfL. This is to be done through weekly support phone calls to operators and the provision of training workshops to data inputers.

4.2.2. Other Modes

- ETB and DaR have identified a need to review contractors used for statutory inspections of services including lifts, legionella, fire equipment and hygiene as part of its effort to standardise its regime across the companies and sites.

- ETB has identified the need to improve its safety performance as accidents have increased over the previous quarter. This follows the trend over previous years albeit at a higher number of incidents. Passenger injuries are also increasing in particular injuries to “standees” on the lower deck. However the Driver Quality Monitoring (DQM) for ETB indicates improvement in driving standards.

- TPED Area Managers have identified the need for them to have more detailed information on assault hotspots and how they relate to ticket irregularities as part of their management decision making.

- London Trams has seen a marginal improvement in the submission of regular safety data by TCL. This is an ongoing issue which has been raised with TCL’s Managing Director.

4.2.3. Streets

- Review of current HS&EMS procedure on CDM to ensure that it takes account of new duties and requirements as set out within revised legislation.

- Develop safety file structure on compliance database taking into consideration requirements of revised legislation.

4.3. SIGNIFICANT PLANS FOR NEXT QUARTER

4.3.1. London Buses

- The process to handover the ATLAS application to IM as a packaged and support application is underway. Group Safety Services will be working with IM project team and IM Support to ensure a smooth transition and that users of the application receive adequate support from IM helpdesk in the event of technical problems.

- Group Safety Services is putting plans in place to produce reliable and credible statistical analysis of incidents data across the bus network. This information will be shared with key stakeholders inside and outside TfL.

- London Buses is to carry out a more detailed survey of identified locations with on-highway off side stand facilities. The surveys will review options available for managing off side stand operation and will involve key stakeholders accordingly.

- Discussions are taking place with HR to develop plans for organisational changes to facilitate the merging of the Street and Surface "Public Transport" safety team. This will give one safety team for Surface Transport.

4.3.2. Other Modes

- DaR will be reviewing its revised Safety Management System in conjunction with ST Safety Managers.

- TPED will be rolling out new assault management guidance; this will be further complemented by the introduction of an electronic assault report for RPIs and further improve management decision making

- TPED are putting plans in place to improve the mapping system used to co-ordinate assault statistics with operational deployments and activities for Bus Enforcement.

4.3.3. Streets

- Undertake a review of the HS&EMS across the Streets Directorates and Directorates of Finance and Congestion Charging against the Group HH&S assurance letter.

- Develop outstanding HS&EMS procedures and close out recommendations from the RoSPA audit.

- Noise - the methodology for traffic noise action programme (a commitment in the Mayor's noise strategy) has identified 'hotspots' (now termed 'clusters') but the programme for action is yet to be completed. A specialist noise consultant has been commissioned to assist Streets' Environmental Manager, in liaison with GLA's noise team, to complete the programme of actions, including an overview of the noise element of the Network Management Plan process.

4.4. PROGRESS AGAINST HEALTH AND SAFETY OBJECTIVES

- Health and Safety objectives for London Buses are being reviewed by respective leads. They are tasked with demonstrating performance against agreed key objectives at the London Buses Safety Meeting. The exercise will culminate in new objectives and targets agreed for 2007/08.

- Objectives for other modes are being reviewed by respective modes in conjunction with appointed Safety Managers. Progress against objectives is managed at appropriate Business Management meetings.

- A total of 39 performance objectives were agreed across other modes of Surface Transport, these are reviewed with assigned ST Safety Managers. As of the end of the quarter, other modes have reported either completing or on target to completing 25 (64%) of these objectives

4.5. HSE PERFORMANCE

4.5.1. Safety

- The number of customer and employee major and minor incidents on London Buses' network stands at 325 incidents reported per period. This figure represents a 10% increase on last period. Major incidents averaged 100 (31%) incidents per period. The bulk of the increase could be attributed to improve reporting by operators as a result of more operators' PCs being updated with the latest version of ATLAS. In addition, there were two fatalities (see section 4.6) reported for the quarter.

4.6. MAJOR INCIDENTS

4.6.1. London Buses Major Incidents

Passenger Fatalities Involving Buses

There were two fatalities involving passengers during this quarter.

- On Monday 18 December 2006 at 17.46 hours an elderly female passenger was seriously injured following a fall on a route 159 bus on Streatham High Road. The driver stated that he had to brake hard to avoid a collision with a car and in doing so a female who was standing at the time, fell to the floor. Police and ambulance attended and the female was taken to hospital. Group Safety was advised on the 8th January 2007 that the passenger died from her injuries on 31st December 2006. The CCTV recording of the incident was viewed by the police they also interviewed the driver but only as a formality as they have already stated that no action will be taken against the driver.

- On Thursday 28 December 2006 at 15.01 hours an elderly lady boarded a stationary route 1 bus on Rotherhithe New Road and moments later collapsed by the luggage rack. In doing so she struck her head. Police and ambulance attended and the pedestrian was pronounced dead at the scene. It has since been confirmed that the cause of death was a heart attack.

Pedestrian Fatalities Involving Buses

Four pedestrians were fatally injured in incidents involving buses during the quarter, details are provided below.

- On Thursday 09 November 2006 at 09.30 hours, a male pedestrian was fatally injured following a collision with a route 31 bus on Finchley Road NW3. It is understood that an elderly male alighted from a route 46 bus in Finchley Road, crossed the road from behind the bus and was hit by the route 31 bus. There were no passenger injuries on the bus but the driver was taken to hospital suffering from shock. The operator advised LBSL that the CCTV has been viewed and the incident has been attributed to driver error. It was concluded that the driver adopted the wrong approach when negotiating the lanes of traffic at the location and was looking over his left shoulder for some 15 seconds prior to the impact. The lessons learned have been circulated to other operators who carry out the same manoeuvre at that location.

- On Monday 18 December 2006 at 19.15 hours a young pedestrian was fatally injured following a collision with a route 12 bus (articulated). The driver stated that he was travelling along East Dulwich Road SE15 when a

pedestrian walked out in front of the bus without any warning. The driver has stated he did not have time to take any evasive action prior to the collision. Police and ambulance attended to the pedestrian who was pronounced deceased at the scene. The police investigation has established that the bus driver was not blameworthy.

- On Wednesday 27 December 2006 at 22.32 hours a male pedestrian was pushed off the pavement into the path of a route H37 bus whilst it crossed Richmond Bridge. Despite taking evasive action the driver was unable to avoid a collision with the pedestrian who died as a result. A police vehicle following the bus was immediately on the scene. A suspect (another pedestrian) was detained by the police and has since been charged accordingly.

- On Monday 01 January 2007 at 16.55 hours a female pedestrian was fatally injured following a collision with a route 436 bus (articulated) on Vauxhall Bridge. The bus was travelling on the southbound carriageway, in the offside bus lane when it is understood the driver may have blacked out. Police and ambulance attended and the pedestrian was pronounced dead at the scene. The driver was taken to Kings College Hospital for treatment.

  The bus operator has viewed the CCTV which showed the bus travelling normally in the southbound off side bus lane on Vauxhall Bridge. At a point midway across the bridge the bus started to drift gradually to the left across two lanes and mount the pavement. The CCTV showed 4 pedestrians on the pavement, two of which were hit by the bus (one fatality) as it drifted across the pavement and collided with the wall of the bridge.

  London Buses has been concerned with the increase in the number of bus v pedestrian fatalities since 2003 and commissioned Human Engineering, a specialist human factors consultancy, to undertake an analysis of this type of accident. Whilst the number of fatalities compared to the number of kilometres operated by buses is very small an increasing trend is unwelcome.

  Human Engineering have concluded as part of their study that due to the small size of the fatalities dataset and the limited number of years that the data was susceptible to chance fluctuations. If this is discounted Human Engineering have concluded that the most plausible reasons for an increasing trend in bus v pedestrian fatalities are:

  - Increases in bus volume, particularly in central London

  - Increases in the number of overseas visitors to London

To follow up this study London Buses will continue to review all bus related fatal accidents. It will be engaging in dialogue with Visit London and boroughs particularly in central London to identify any joint work that can be undertaken to mitigate the risk to pedestrians from buses.

Though driver training does not feature as an issue in Human Engineering's findings, consideration is also being given to the content of BTEC training to ensure that awareness of pedestrians is highlighted sufficiently.

Bus Fires

There were 9 reported incidents of fires on buses relating to either a mechanical or electrical defect during this quarter. All incidents have been investigated accordingly. The fires were contained in all but one incident where the rear of the bus was completely burnt out. There were 5 further reported incidents of arson on buses. Three of these resulted in serious damage to the buses. In all cases, there were no injuries to passengers or staff. Please see section 1.1, paragraph 4 for actions being taken to reduce mechanical fire incidents.

Low Bridge Incidents

There were 3 incidents reported of buses, whilst in service, in collision with low bridges during this quarter, details are as below. A further incident was reported involving an out of service bus which has not been identified. In all cases, signage and lighting were found to be adequate. Network Operations continues to survey location of all incidents and raise any signage/lighting shortfall with appropriate highway authorities.

- On 7 October 2006 the driver of a route 345 took a wrong turn and collided with a low bridge on Loughborough Road. No injuries reported
- Route 177 struck a low bridge on Gordon Road on 20 November 2006 after taking a wrong turn whilst on diversion. No injuries were reported.
- On 9 October 2006 the drive of a route 230 took a wrong turn and struck a bridge on Wood Street. No injuries were reported

4.6.2. Streets – Major Accidents and Incidents

- An incident occurred on the A40 were a gas ‘bleed pipe’ fractured when struck by contractor’s JCB whilst excavating highway releasing gas to atmosphere (in excess of 500kg). Bleed pipe was encased in concrete just below road surface. Investigation showed that

contractor's staff had not followed in-house 'permit to dig' procedures. Contractor introduced additional staff training through 'tool box' talks and closer supervision of permit procedure.

4.6.3. TRAMS – Major Accidents and Incidents

- HMRI have taken enforcement action against TCL and have issued 2 Improvement Notices in respect of breaches of the Health and Safety at Work Act and Management of Health and Safety at Work Regulations. TCL have been granted an extension until 30 April 2007 to comply. Following publication of the notices, London Trams have initiated contractual enforcement measures to ensure compliance with HMRI's requirements.

4.6.4. Other Modes- Major Accidents and Incidents

- Nothing to report

5. Equalities implications

- Nothing to report

6. Crime and disorder implications

- Public Carriage Office (PCO) has extended the marshalled taxi rank operation to two new locations, increasing its total to five across London. This initiative, which is a key safety objective, is expected to increase public safety at night and reassure the travelling public.

7. Sustainability

7.1. ENVIRONMENT

- Work has been ongoing to communicate environmental performance reporting requirements to each of the ST modes to ensure a greater level of data capture is obtained for the 06/07 reporting period.

- Work has commenced on the development of an environmental management system for all Surface public transport modes, which will be incorporated into the HSE management system. The EMS will seek to ensure compliance with environmental legislation, reduce environmental impacts in key areas, and strive for continual improvement. An outline work plan for the development and implementation of the EMS has been developed, but for Surface Public

Transport, the implementation will take a phased approach. Operations have been identified as the most suitable department for the first phase of the EMS implementation, with roll out to other modes and departments to be prioritised according to their environmental impacts.

- The tenders for the hydrogen transport programme have been evaluated for both the "Cars/vans" and "Buses" work-streams, with selection of the preferred bus supplier scheduled for February 2007, following commercial negotiations in December. Formal approval to award the hydrogen buses contract was awarded at the 30 January ST Approvals Board meeting.

- The first double deck hybrid was launched by the Mayor at City Hall on 31 October 2006. The vehicle has been manufactured by Wrightbus and is due to enter service with Arriva on route 141 in February 2007. The vehicle's emissions have been tested over the Millbrook test cycle and produced 31% less carbon dioxide compared to a standard Euro IV double deck bus. Plans to introduce between 40-50 Hybrid buses during 2007 and 2008 are currently being developed.

- A review of existing environmental management procedures and general working practice in Streets has been undertaken. Where not incorporated into the HS&EMS procedures, stand alone environmental procedures are being developed to cover environmental standards applicable to Streets, in liaison with other business units.

- Surface Transport have supplied more environmental data as part of this year's business planning round, although the quantity and quality of data from some contractors is disappointing. Reporting requirements have been written into Streets' new term maintenance contracts (starting April 2007) and will be a requirement in all relevant new contracts.

8. RECOMMENDATIONS

The Safety, Health and Environment Committee is asked to note the content of this report.

Meeting: SAFETY, HEALTH AND ENVIRONMENT COMMITTEE

Date: 6 March 2007

Title: Surface Transport Quarter 3, 2006/2007 SHEC Report

Author	**Mike Weston**	
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AGENDA ITEM 8.3

TRANSPORT FOR LONDON

SAFETY HEALTH AND ENVIRONMENT COMMITTEE

SUBJECT: Corporate Directorates Q3 HSE Report

MEETING DATE: 6th March 2007

1. Purpose
To inform Members of the key HSE matters during the last quarter.

2. Decision required
None

3. Background
A full report on HSE activities and performance is produced annually. These quarterly reports are to update the Committee on any significant matters from the reporting quarter.

4. Information

4.1 SUMMARY

4.1.1 What went well

- A review was completed of the Mode's Health, Safety and Environmental Management System (HSE MS). Standards within the System were updated to address organisational and legislative change

- The first of a series of new HSE MS Standards addressing areas of risk specific to the Mode were created and entered consultation.

- Workplace risk assessments were launched/renewed across all four Directorates as part of the 2006/07 Safety Improvement Programme.

4.1.2 Areas for improvement

- Work is still outstanding with Group Human Resources and other relevant stakeholders to ensure that HSE is adequately addressed during the implementation of Organisational Change Policy.

- Further work is needed to raise the visibility of the Mode during early stages of the procurement cycle to ensure delivery of appropriate HSE input – see also 1.3 below.

4.1.3 Other significant plans for next Quarter

- Further HSE input will assist Group HR to ensure that Internal Audit recommendations from reports covering each end of the employment cycle – induction and leavers – are addressed from an HSE standpoint

- An independent audit, by Det Norske Veritas (DNV), is programmed to take place to address Group and Corporate HSE MSs

- Standards (on Personal Protective Equipment and Occupational Driving) presently under consultation will be issued

- Engagement will take place with Computer Services Limited to ensure transition of HSE issues and to continue to raise HSE profile in areas such as equipment specification and Service Request methodology.

4.2. Progress against HSE Plan

- **Corporate Directorate HSE Management System**
  Standards on Personal Protective Equipment Assessment and Occupational Driving Assessment complete consultation during Q4. A Standard addressing Control of Substances Hazardous to Health [COSHH] is programmed to enter DRAFT phase before 2006/07 end.

- **Specific areas of risk**
  Work is programmed to start during Q4 to address the Oyster call centre environment in terms of ergonomic layout and noise management. A new programme of Manual handling risk assessment will take place within the Lost Property Office and manual handling awareness training will be revised for launch within the Mode's generic office environment.

4.3 Health of management system

- 2007/08 Business Plan HSE Chapters for the Mode were agreed.

- Work continues into Q4 with Group HR Employee Relations and other non-LU Modes to compile a DRAFT framework and guidelines for health and safety consultation for trades union partner consideration

- Group Facilities further consolidated its Departmental Safety Management System adding additional Department-specific Standards and Procedures.

4.4 HSE performance statistics

4.4.1 Health

- Staff within the four Corporate Directorates generated 3347 days of sickness absence equivalent to 1.7 days per person. This represents a reduction on equivalent absolute and normalised previous year Q3 data and an improvement on previous Quarters.

4.4.2 Safety

- **Employee safety -** there were 13 employee minor accidents and incidents. There was one RIDDOR-reportable incident involving an employee at Lost Property tearing a tendon whilst getting seated at the customer counter. The incident generated 37 days of sickness absence

  Customer safety - there were no customer accidents or incidents.

  Contractor safety - there were three contractor minor accidents and incidents. One contractor RIDDOR-reportable accident generated 10 days sickness absence a result of dropping a load onto a foot - manual handling assessment and PPE needs were reviewed.

  Third Party safety - there were no third party accidents or incidents.

4.4.3 Sustainability update

- The TfL 07/08 Business Plan, published in November 2006, and the 07/08 TfL Budget Submission to the GLA contain a dedicated section ("Focusing on Sustainability) that highlights TfL activities with particular sustainability benefits. Work is being undertaken to further integrate sustainability into the upcoming Business Planning Round (08/09).

- The 2006 TfL Environment Report was published in December.

- The TfL Board approved a £25m Climate Change Fund at its November meeting. The business owner of the CCF is Group HSE. The first application round is open and applications will be considered by an Approvals Group that meets quarterly.

- The TfL personal travel plan programme for 06/07 was completed. The main proportion of TDM spend will be in Q4 when borough reports

are submitted.

- Group Communications implemented a ‘Winter 2006 Campaign’ focused on “going greener”.

- As part of TfL’s agenda to ensure green procurement and supplier diversity (as required by the Sustainable Procurement Policy), requirements were applied to the East London Transit and Road Term Maintenance contracts.

- TfL was awarded accreditation under the Energy Efficiency Accreditation Scheme. The award recognises TfL’s commitment to energy efficiency in its Head Office buildings.

- A Work Plan was developed for the Group Sustainability Unit.

4.5 Major Incidents

None.

5. Equalities implications
None

6. Crime and disorder implications
None

7. Sustainability implications
Addressed under 4.4.3 above.

8. Recommendation(s)
The Committee is recommended to NOTE the contents of the report.

Meeting: Safety Health and Environment Committee

Date: 6th March 2007

Title: Corporate Directorates Q3 HSE Report

Author		
Sponsor		
For queries please contact		

AGENDA ITEM 8.4

TRANSPORT FOR LONDON
SAFETY, HEALTH & ENVIRONMENT COMMITTEE

SUBJECT: LONDON RAIL SAFETY AND HEALTH PERFORMANCE QUARTER 3

MEETING DATE: 6TH MARCH 2007

1.0 Purpose.

The purpose of this paper is to inform Members of the key HSE matters during the last Quarter.

2.0 Decision required.

None

3.0 Background.

A full report on HSE activities and performance is produced annually. These quarterly reports are to update the Committee on any significant matters from the reporting quarter.

4.0 Information

4.1 London Rail & Docklands Light Railway Ltd (DLRL)

DLRL have submitted their Safety Authorisation document as Infrastructure Manager to the Office of Rail Regulation (ORR) on 1st December 2006. The ORR has confirmed that they will take 14 days to scan the submission to ensure that it contains sufficient detail. All "affected parties" have 28 days starting from the 1st December to make representation to the ORR regarding the submission. At the end of the 28 days the ORR will begin to assess the submission, asking for additional information as they see fit.

4.2 East London Line Project

Although there have been no reportable incidents in over 500,000 working hours, there were 5 minor accidents reported in period 8. The enabling works contractor has identified that incident numbers have been higher than normal over the last 2 periods. This cannot be explained purely by the increasing number of working hours. Local investigations have revealed that possible contributory factors are the increase in 'new starters' on the site (with little or no construction experience) and having English as a second language. Measures have been put in place to improve the incident rate.

4.3 Significant plans for next quarter

- London Rail – detailed review of Safety Responsibilities in light of forth coming appointment of Concessionaire for the North London Line.

- Preparatory work for the development of next years Safety Objectives
- DLRL - Gap analysis comparing Railway Safety Case requirements against those of the Railways and Other Guided Transport Systems Regulations (ROGs).
- DLRL - Benchmarking exercise comparing DLRL safety culture and contractor management with that of other railway organizations.

5.0 Progress against HSE Plans

- DLRL (Docklands Light Railway Limited): 5 objectives have been completed in full. One objective has missed its completion date – Change Control Process, this is primarily due to process undergoing a further review and a desire to meet Railways and Other Guided Transport Systems (Safety) Regulations (ROGS) requirements. Revised deadline set to end of quarter 4. All other Safety Improvement Plan (SIP) objectives are ongoing and remain on target.
- SD (Serco Docklands): Three objectives are completed and the rest are progressing well.
- CGRL (City Greenwich Lewisham Rail Link): Two objectives in the SIP, intended for earlier completion, have been rescheduled to be complete by the year end. Other objectives are on target.
- CARE (City Airport Rail Enterprise): There is no change to the status of these plans and the objectives remain on target.
- East London Line Project: One objective is complete and progress has been made on most of the others.

6.0 HSE performance

6.1 Health

There were no significant staff occupational illness and/or sickness issues within London Rail this quarter.

Sickness absence figures for London Rail core, DLR and East London Line are as follows: a total 31 instances of sickness during quarter 3, resulting in 162 days lost. These figures represent an increase on the previous two quarters, but include three individual items of long term sickness.

6.2 Safety (significant incidents)

24th October 2006 – a DLR train emergency braked in Bank tunnel, with loss of air pressure. First Line Response Technicians attended but were unable to rectify the problem. Power was discharged and Short Circuiting Devices were deployed. The train was evacuated along the tunnel to Bank platform. Once completed, power was restored and the failed vehicle was moved into the Headshunt. This incident and the lessons learnt are the subject of an investigation.

8th November 2006 - a DLR train arrived at Westferry Station. Whilst attempting to proceed, the Passenger Service Assistant (PSA) was unable to get the Ready to Depart indication. On investigation it was found that the trackside doors had enabled but had not physically opened. Having established that nobody was injured, passengers were

detrained and the vehicle routed (out of service) towards Beckton Depot. At approximately 07:15, whilst the train was stationary behind a service train outside Prince Regent Station, the doors were again enabled. The PSA reset the doors and the vehicle continued to Beckton Depot where it was quarantined pending further investigation. An electrical short circuit caused by the chaffing of two wires 'shorting' against a piece of 'unbonded' metal channelling was confirmed as the cause of this failure. Other vehicles within the fleet have been checked by Serco and no faults found. A study has been commissioned by Serco to identify any other necessary actions.

3rd December 2006 – an elderly female passenger reported falling on escalator 4 at Canary Wharf. The lady reported that she was holding the right hand handrail when it stopped suddenly causing her to lose balance. She suffered abrasions to her leg and was removed to hospital by ambulance. Kone (escalator maintainer) attended the escalator and reported that bolts holding the securing plate to the drive wheel had sheared. All escalators on DLR have been checked and no similar defects found. Kone have been requested to report on the cause(s) of the failure.

7.0 Equalities implications

Nil to report

8.0 Crime and disorder implications

Nil to report

9.0 Sustainability

Nil to report

10.0 Recommendations

The Safety Health and Environment Committee is recommended to NOTE the content of the report

Meeting: SAFETY, HEALTH & ENVIRONMENT COMMITTEE

Date: 6th MARCH 2007

Title: LONDON RAIL SAFETY AND HEALTH PERFORMANCE QUARTER 3

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