

Board

**Transport
for London**



Date: 6 November 2013

**Item 6: TfL Health, Safety and Environment Annual Report
2012/13**

This paper will be considered in public

1 Summary

- 1.1 The purpose of this paper is to ask the Board to note the Health, Safety and Environment (HSE) Annual Report for 2012/13.
- 1.2 The Safety and Sustainability Panel reviewed the report at its meeting on 9 October 2013.

2 Recommendation

- 2.1 **The Board is asked to note the TfL Health, Safety and Environment Report 2012/13.**

3 The Annual HSE Report

- 3.1 The Annual HSE Report has been published as a stand alone report for a number of years. This provides an effective focus on this important subject area, and is in line with best industry practice. The report provides details and comment, for most of TfL this covers the year 2012/13, but for road safety the details are for year 2012 as a calendar year.
- 3.2 This report shows continued improvements in a number of areas, in health, safety and environment, including: a significant reduction in the number of customer accidents that lead to a fatality across TfL; reductions in Customer Major Injuries in Surface Transport (ST) and London Rail (LR); reductions across TfL in assaults to staff; meeting the Mayor's Target set for Carbon Reduction in 2017/18 already in this year. TfL is on track to meet the target for recycling and there are improvements in sickness absence in LU and ST. All this is set against record service provision increases, significant upgrades coming on line and the challenges of the 2012 Games.
- 3.3 The report also shows that there remain challenges for TfL. The number of assaults (mainly non physical, and mainly related to revenue issues) to TfL contractors fell, but remains higher than 2008; there have been improvements in Road Safety, but the number of KSI casualties has risen after a number of years of a falling trend; there has been a rise in noise complaints. Each business has annual and longer term plans to enhance their HSE performance, and explanations of some of these can be found in the report.
- 3.4 The report is attached at Appendix 1.

4 Views of the Safety and Sustainability Panel

- 4.1 At its meeting on 9 October 2013, the Panel considered the HSE Annual Report and the views of its advisers and their comments have been incorporated into the report.

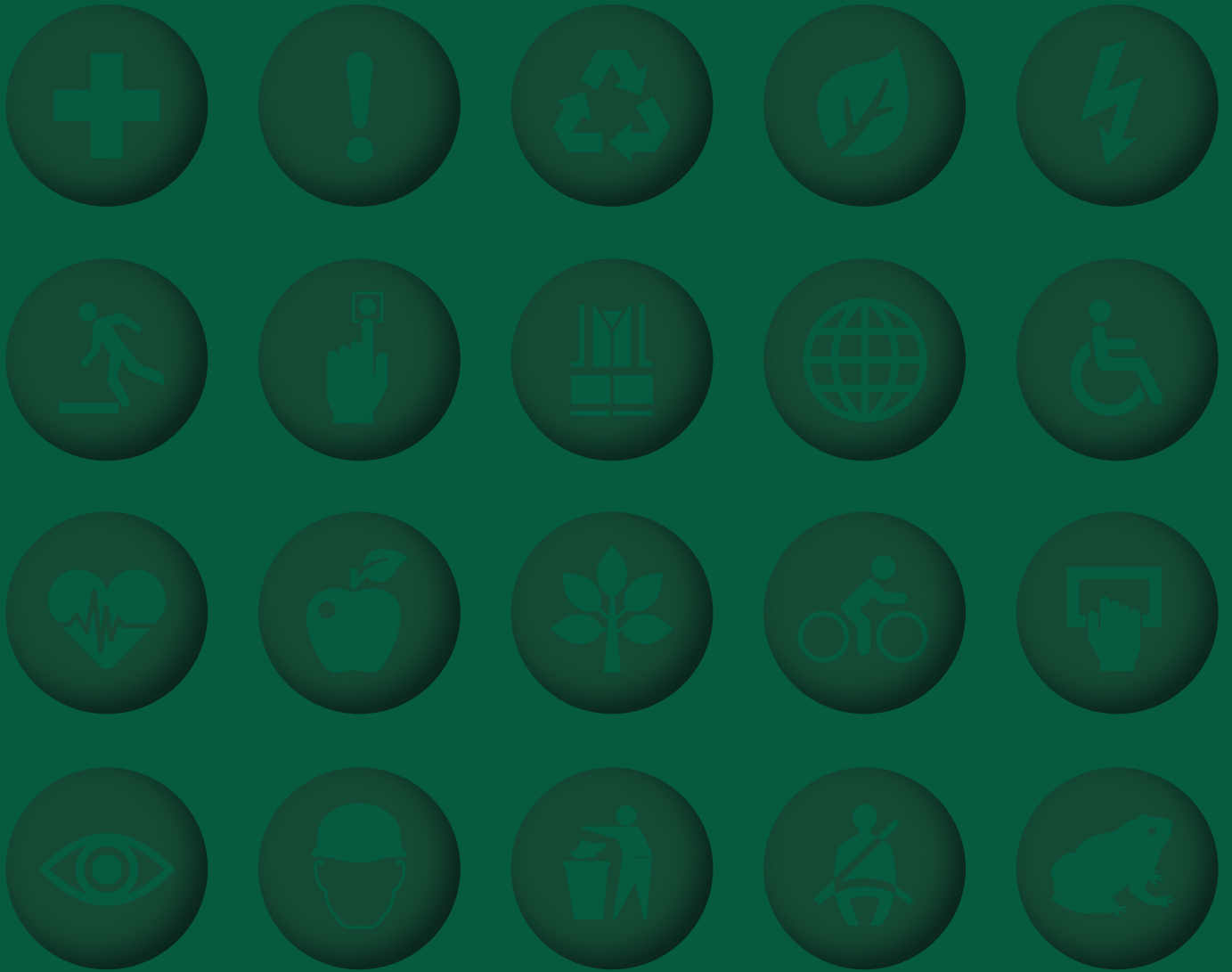
List of appendices to this report:

Appendix 1 – HSE Annual Report 2012/13

List of Background Papers:

Paper to the Safety and Sustainability Panel on 9 October 2013.

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Health, Safety and Environment report

2012/13



Contents

- 4 Message from the Commissioner
- 6 About this report
- 10 Health, Safety and environment management in TfL
- 12 Occupational health and wellbeing
- 15 Safety
- 23 Road safety
- 28 Reducing carbon emissions
- 33 Improving air quality and noise
- 38 Resource consumption and waste recycling
- 41 Annex I: Summary of TfL HSE key performance indicators

Message from the Commissioner

This was a remarkable year for Transport for London (TfL). We played a major role in the success of the 2012 Games, our networks are now carrying more customers than ever and our services are even more reliable, safe and efficient. We have expanded and invested in our services to improve them so they can continue to support the Capital's growth.

The extent to which public transport was used to access Olympic venues helped the Games achieve its target to be the most sustainable ever. It has been publicly acknowledged that we provided an exemplary service with minimal travel disruptions during the events. Our work with businesses and other key organisations across the Capital now aims to continue building on this legacy and to provide further improved travel and freight transport.

This was also a year of anniversaries. The Tube celebrated 150 years of serving London, and the Docklands Light Railway (DLR) achieved 25 years of operation. The Tube saw 1.23 billion journeys, while the DLR, Overground and Tramlink broke previous records. Our bus network carried passenger numbers not seen since the 1950s.

We continued to undertake one of the largest transport renewal investment programmes in the world. We introduced new signalling, trains and other key infrastructure developments on the London Underground to improve our services, we opened the Emirates Air Line,

expanded the Barclays Cycle Hire scheme and completed the London Overground extension to deliver the first orbital rail service since the Circle line in 1884.

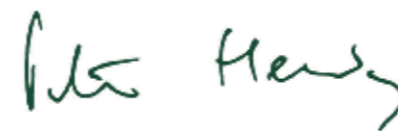
On London's roads, we have seen improvements in the number of collisions and fatalities since last year and a reduction in the number of casualties compared to the baseline. We aim to improve this further as we work with our partners to carry out the recommendations of 'Safe Streets for London', the Capital's new road safety action plan. We have begun a major initiative to enhance cycling safety by encouraging fleet operators to improve the safety of their vehicles and are promoting road awareness and training for goods vehicle drivers and cyclists.

We are continuing to embed strong health, safety and environment principals into everything we do. Performance in almost all of our major health and safety measures has improved. We have promoted safer behaviour on our networks which focused on changing the way customers behave to avoid slips, trips and falls; worked with our contractors to embed safety standards; and continued with staff health and safety improvement initiatives.

We set targets for the reduction and re-use of construction, demolition and commercial waste, as well as the reduction of carbon dioxide (CO₂) up to 2017/18. We met the target for waste this year.

We have continued to address the issue of the Capital's air quality through improvements to our bus fleet with the New Bus for London now operating on complete routes going through central London.

I look forward to the coming year. We will see further station and service upgrades, and the continued development of all our Surface Transport services. In all of this, we will continue to deliver our excellent health, safety and environmental performance.



Sir Peter Hendy CBE
Commissioner of Transport



About this report

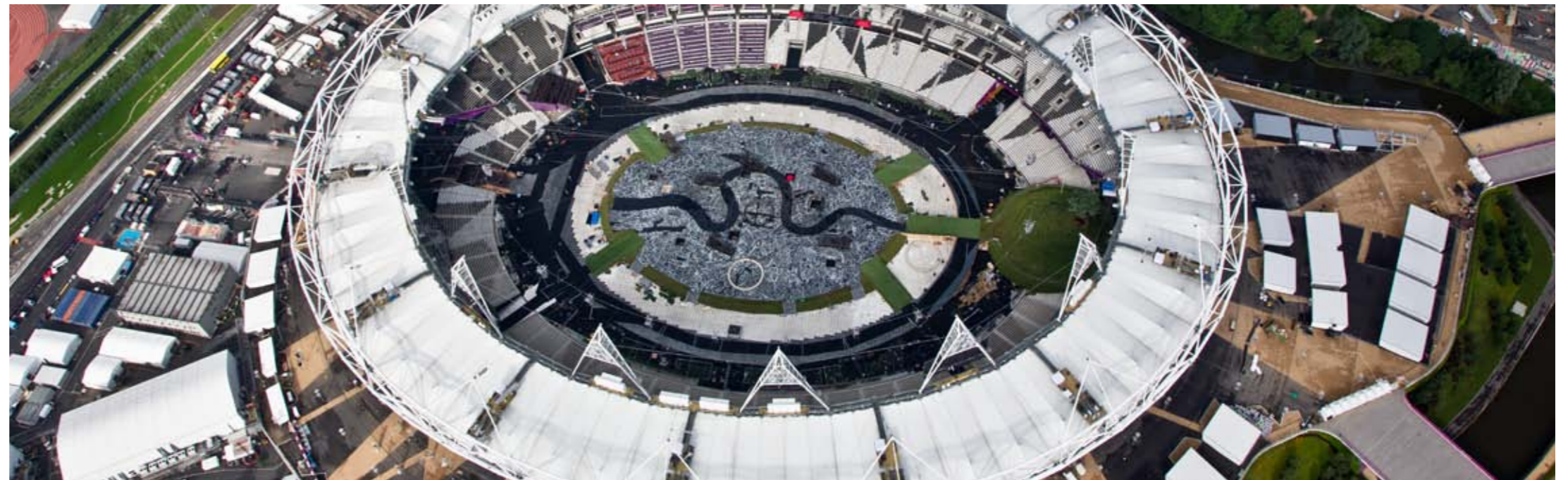
Transport for London (TfL) produces this report covering health, safety and environment (HSE), to provide stakeholders with better information and more defined data about this important area of our business than is possible with our Annual Report.

Performance data and scope

The report provides an update on HSE performance across our business, which comprises London Underground, London Rail, Surface Transport, our Corporate Directorates and Crossrail. Generally the report covers the normal financial year (from 1 April 2012 to 31 March 2013). However, the road safety data for Greater London and the Transport for London Road Network (TLRN) covers the calendar year (from January to December 2012).

The safety data includes customer, employee and contractor safety. Health data relates to employee wellbeing and includes employee sickness absence but does not cover contractor or customer health issues. Environment data covers London's public transport operations, including taxis and private hire vehicles (PHVs), plus the work activities we and our contractors undertake.

Our continual effort to provide more accurate data means that there are some changes to the figures reported last year. Where possible, data is compared over five years and where appropriate, comparisons have been made with previous years (a summary is in Annex 1).



Developments during the year

The most significant activity during the year was the 2012 Olympic and Paralympic Games. This tested all parts of our business, including our management of HSE.

The re-organisation of our structure has continued, creating two stronger operational-focused organisations:

- London Rail and London Underground for the rail-based modes, and
- Surface Transport for the bus, road and river operations, regulation of taxi and private hire vehicles and other schemes which support these activities

The activities managed by Tube Lines Limited were brought into TfL during the year, but full integration did not occur until the start of the 2013/14 financial year, and therefore the Tube Lines data is not included in this report.

We operated more than 3.8 billion passenger journeys in 2012/13, with an increasing number of people using all services. In a year that marked significant anniversaries for London Underground (150th) and the Docklands Light Railway (25th), previous performance records were broken for a number of our services – 1.23 billion passenger journeys on London Underground, 100 million passenger journeys on the Docklands Light Railway (DLR), 125 million passenger journeys on London

Overground and 30 million passenger journeys on London Tramlink. London Buses carried 2.34 billion passengers in 2012/13; London River Services were used by 2.6 million people while Dial-a-Ride carried 1.4 million passengers.

Further information

Outside the scope of this report:

- Information associated with privately owned vehicles, except for road safety
- Regulatory HSE legal compliance and enforcement data

For more information about the TfL Business Plan, which covers the period to 2014/15, visit tfl.gov.uk

Overview of 2012/13



TfL

TfL played a major role in the success of the London 2012 Games. A wide range of transport projects contributed to making the event a major success. Planning started well in advance and some initiatives were in place specifically for the Games, such as the Olympic and Paralympic Route Networks (ORN and PRN), which facilitated improved journey times. Other projects, such as the significant improvements to key stations and enhancements in transport accessibility, will leave lasting benefits for Londoners.



London Underground

- During the year, the Metropolitan line introduced the full fleet of new air-conditioned 'S' stock trains
- Increased service levels for the Jubilee and Victoria lines, which now run 33 trains an hour during the peak – less than two minutes between trains. The first stage of the new signalling system on the Northern line was also introduced
- Ongoing work at major stations to increase capacity – Victoria, Tottenham Court Road and Bond Street. Work has now started on other significant projects, such as the Bank station capacity upgrade project and the Northern Line Extension



London Rail

London Tramlink began operating six additional and more modern trams to boost capacity in June 2012. The vehicles are air-conditioned and 2.5 metres longer than the existing ones

DLR opened a new control centre at Beckton, transferring primary operation of the railway from Poplar. Signalling software was also updated which further improved reliability

The Emirates Air Line opened in June 2012 providing an additional means of transport for the Capital. The cable car, which crosses the river between the Greenwich Peninsula and Victoria Docks, opened in time for the Olympic Games and has proved a popular attraction

London Overground completed the orbital route linking Clapham Junction to Willesden Junction and Dalston Junction in December 2012, with a significant increase in service levels and stimulating new economic activity along the route. Preparation began to upgrade infrastructure which will enable the introduction of five-car trains on London Overground routes



Surface Transport

- New single maintenance and construction contracts were introduced that will deliver better roads and save up to £450m
- Barclays Cycle Hire was extended to Tower Hamlets and parts of Hackney including Shoreditch, Canary Wharf, the Isle of Dogs, Wapping, Bow and up to the edges of the Queen Elizabeth Olympic Park. This resulted in a 50 per cent increase in cycle hire
- The second phase of TfL's no-idling campaign was launched, encouraging drivers to switch off their engines when stationary to reduce unnecessary emissions

Crossrail

- A total of 6.5 miles (of the 26 miles) of tunnels were completed for the new Crossrail system which will bring much needed capacity to London's rail network

Health, safety and environment management in TfL

HSE management

TfL's HSE objective is to achieve excellence in all aspects of our performance.

There are HSE management systems in place in all parts of our businesses. During 2012/13, a project began to align these into a single organisation-wide system, which we plan to complete by 2013/14. Work has already started on producing the documentation for Human Resources (HR), HSE, Information Governance, Information Management (IM) and Surface Transport. Other areas of our organisation are set to follow later this year and into 2014/15.

In London Underground instructions for about 4,000 maintenance tasks were developed and launched in a new, easier-to-understand format, which allows for better understanding and monitoring of maintenance activities. In addition, the process started to incorporate the former Tube Lines work instructions into the new format as part of the work of integrating London Underground and Tube Lines management systems.

Each business develops annual HSE plans and objectives to help the process of continually improving HSE performance and has put in place monitoring and reviewing measures to check HSE controls. Progress against these plans and objectives is reported quarterly to business panels and the Safety and Sustainability Panel (S&SP) that reports to the TfL Board. We have continued to have

high HSE performance throughout the year, against a background of increased passenger numbers, and demand for all our services remains strong.

HSE communication

As part of the 2012 Games, employees were briefed on HSE matters to emphasise the important role that a safe transport system would play.

Safety leadership refresher training courses for all of our senior managers took place during 2012/13. This emphasised the significant role that they play in ensuring effective health and safety performance across the organisation.

We believe it is important to communicate HSE issues to employees, suppliers and customers. A new customer safety awareness campaign began towards the end of the 2012/13 and will continue into 2013/14. For the first time it has common themes and images across all of our businesses, creating a single look and feel for these messages.

Working with suppliers

We are committed to working with suppliers to ensure that their products and services meet the environmental requirements of the Greater London Authority. We require suppliers to have a Health, Safety and Environment Management Systems (HSEMS) that is compliant with national or international standards.

New approaches to working with suppliers were rolled out during the year. London Underground and Surface Transport began using a supplier assessment tool which aims to further improve HSE performance at procurement and delivery stages. Positive feedback has been received from suppliers on the new approach. There are joint TfL/supplier forums that share good practice and work together to tackle areas of perceived weaknesses.

In 2012/13, we began to work with Crossrail to develop a significant improvement in cycling safety. We now require all our contractors enhance their training for commercial lorry and van drivers, and make changes to vehicle protection to improve safety for cyclists, including mounting side bars and Fresnel side window lenses, introducing on-board CCTV cameras and improving signing. This approach, centred round the Fleet Operator Registration Scheme (FORS), has been taken on by Government, which is now looking to develop legislation to make it mandatory across the country.

Monitoring and reporting of performance

All our businesses set HSE targets on key performance indicators (KPIs) from previous years. KPIs are developed progressively and are subject to controlled change over time to ensure that they reflect a continually improving understanding of risks. This enables improved trend analysis and focuses management on putting in place any necessary remedial actions.

Our HSE performance data is made up of a mixture of lagging indicators, (incidents and events that have happened), and leading indicators, (actions and completed procedures that are undertaken to improve the control of events into the future). These indicators are collated and validated at business level and the tracking of these indicators is used to direct additional actions and improvements. By concentrating on preventing more minor events the more significant ones can be avoided. HSE performance is reported at business unit level and reported each quarter to the appropriate boards (Rail & Underground Board and Surface Transport Board).

Businesses present information on HSE performance to the TfL Safety and Sustainability Panel (S&SP) on a quarterly basis. The S&SP reports to the TfL Board after each meeting. Much of the information provided to the panel consists of lagging performance data covering employee and customer injury. However it has sought to achieve greater information on the leading indicator data and a new section in this report provides more detail on how these operate.

This process of planning, implementing, monitoring and reviewing risks is a key driver behind our continual improvement of HSE performance.

Occupational health and wellbeing

Our focus on prevention through engaging with employees on health issues helps improve general wellbeing and reduces work-related ill health and days lost to sickness. Health promoting activities in 2012/13 included:

- Holding 48 health fairs for employees at different sites across TfL, covering day and night workers, operations and maintenance staff, and across our head offices to encourage staff to be more aware of their health
- A workshop for Human Resources (HR) specialists on supporting employees through organisational change was developed and delivered to all relevant HR employees

- Two Condition Management Programmes were run for employees identified as having recurrent and significant absence owing to musculoskeletal disorders
- Health tips of the month have been publishing on the intranet which continues to be a useful tool to promote health campaigns

TfL uses sickness absence data to identify health risks and implement further health initiatives. Annual sickness absence across TfL decreased from 9.5 days per full-time equivalent (FTE) in 2011/12 to 8.6 days in 2012/13. Reduced sickness absence was noted in London Underground and Surface Transport and a minor increase in sickness noted in the

Corporate Directorates compared to 2011/12. The increase in sickness absence noted in London Rail was in part owing to improved recording of absence.

The three most frequently reported categories of sickness absence across TfL in 2012/13 were musculo-skeletal disorders, mental illness, colds and influenza.

Other health improvement activities include:

- We have been awarded the London Healthy Workplace Charter at the highest level of 'excellence'. This award recognises the significant work Occupational Health, in partnership with teams

across our business, does to improve employees' health and wellbeing

- The development of a five-year strategy plan on weight loss/tackling obesity, reactive and preventative, to help employees lose weight and maintain a healthy weight. This includes the introduction of food labelling in our canteens and production of a 12-week weight loss programme to support employees.
- Production of educational material for shift workers to help employees understand how shift work may influence their health and wellbeing. Information has also been published on

Figure 1: Average sickness absence per FTE by TfL business (2008/09 – 2012/13)

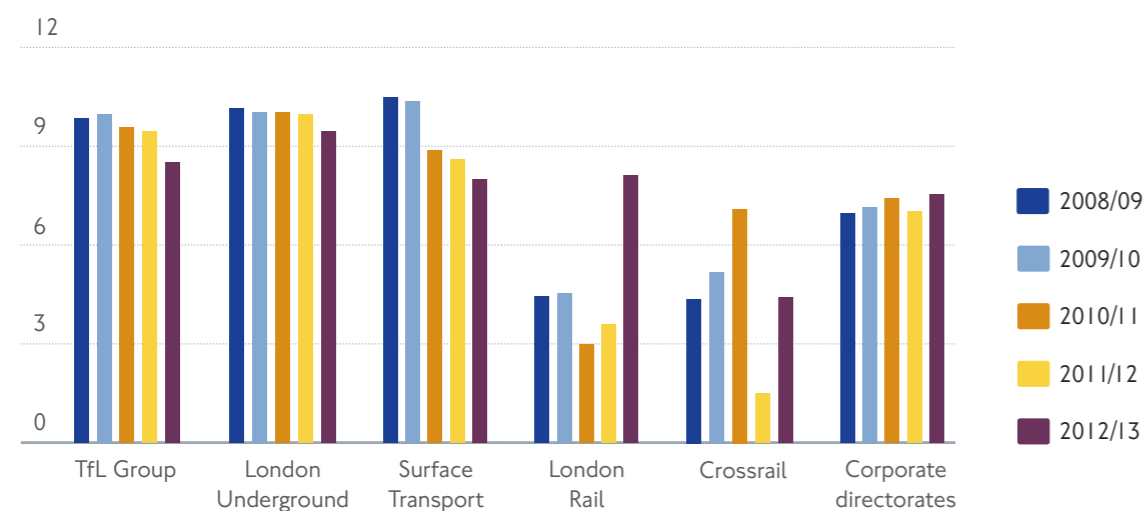
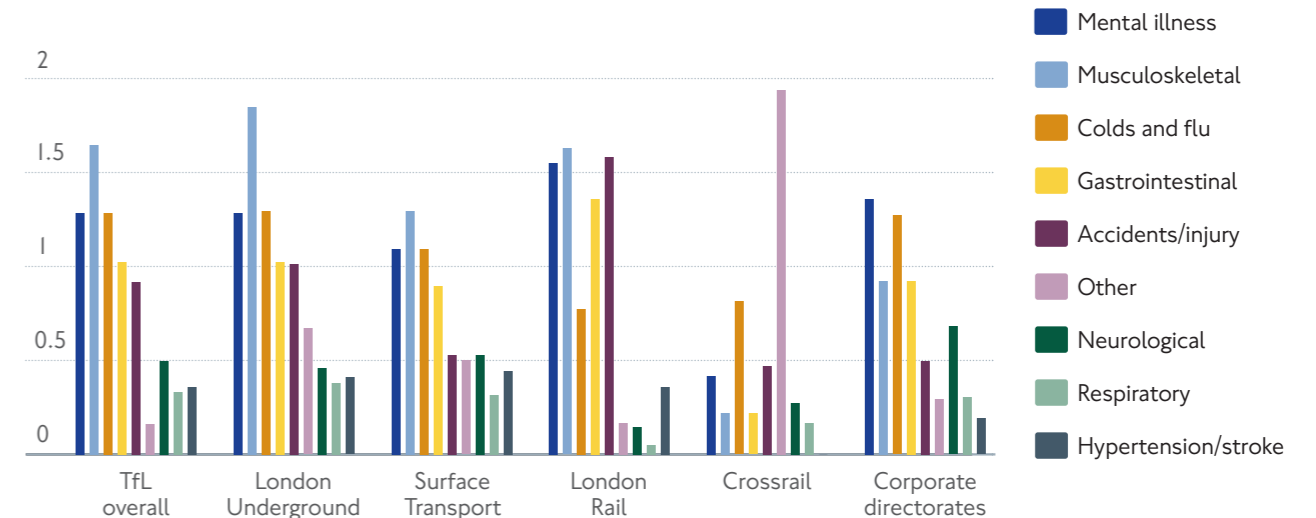


Figure 2: Average days lost due to sickness absence per employee, by category and business area (2012/13)



Safety

the TfL intranet which provides health advice for people who work shifts

- Launch of a 'Good day at Work' campaign for our employees – a free website tool with information and advice to help its members to take more control of their own working lives – as well as sharing examples from other organisations. This tool includes downloadable guides on the latest wellbeing and engagement issues, discussion forums and case studies
- A Stop Smoking support campaign in Surface Transport, with support from NHS specialists. The initiative provided support, counselling services and free aids to help employees to quit smoking

We continue to work towards world-class HSE performance, ensuring the safety of customers, employees and suppliers. This section of the report sets out details on customer, employee and contractor safety.

We do not include public road traffic accidents (RTAs) in the data set out in this section of the report. However, we remain responsible for collating information and reporting on RTAs and instigating, where appropriate, action to improve road safety. Performance on the TLRN in Greater London is reported in the road safety section of this report.

Customer safety

We consider customer safety to be of paramount importance and continually seek to improve its operations to reduce accidents and injuries. The definition of customers also covers members of the public using our business premises, including people using rights of way, tenants in our properties and off-duty employees.

Accidental fatalities are those arising from incidents while using our services, or where they occur on our premises. They exclude suicides, trespasses, crime-related incidents and medical fatalities. There was one customer accidental fatality in TfL in 2012/13. In December 2012, a customer was fatally injured when he was struck by a train at Finchley Road station.

Table 1: Five-year trend for customer accidental fatalities across the TfL Group (customer-facing businesses)

	2008/09	2009/10	2010/11	2011/12	2012/13
London Underground	1	1	0	3	1
Surface Transport	2	4	0	5	0
London Rail	0	0	0	0	0
TfL Group	3	5	0	8	1

Customer major injuries

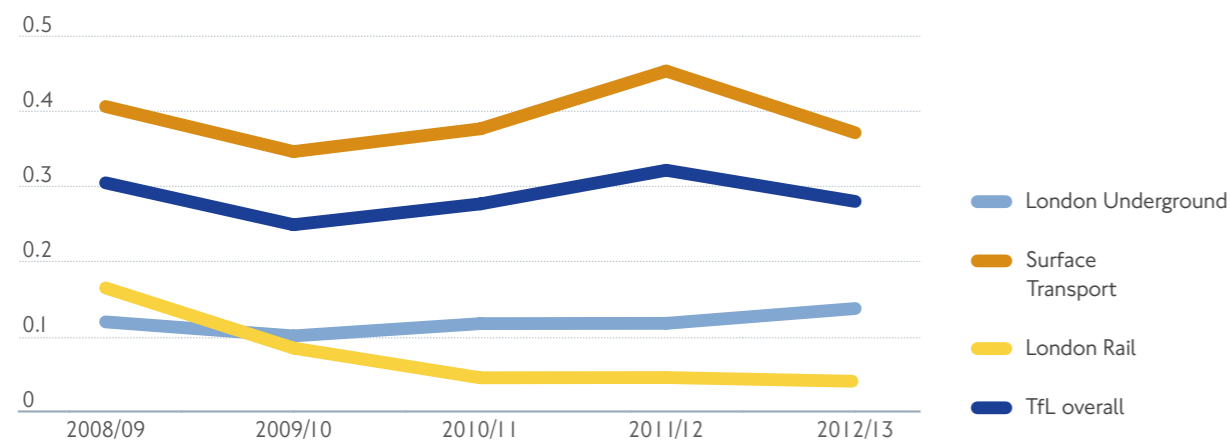
A customer injury is defined as ‘major’ in line with the definitions set out in the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR). However, when customers are taken to hospital, it is not always possible to obtain firm medical evidence of the injury, and we use the on-site diagnosis from the medical teams in attendance, which will give only what they suspect. The actual injury may not always be as significant as suspected. We continue to work to improve tracking of such cases.

Major injuries in Surface Transport reduced from 1,064 in 2011/12 to 862 in 2012/13, a 20 per cent reduction.

London Underground’s total customer major injuries increased from 137 in 2011/12 to 156 in 2012/3, an increase of 14 per cent. In London Rail, the number of customer major injuries decreased from 11 in 2011/12 to 10 in 2012/13.

The most common causes for major injuries across different TfL services is related to slips trips and falls, and these types of injuries have become a particular focus in our improvement planning and customer awareness campaigns into 2013/14. During the year, customer numbers continued to rise compared to previous years. In Figure 3, the major injuries have been normalised per million customer journeys.

Figure 3: Customer major injury rate (per million customer journeys)



Employee safety

We evaluate risks and put control measures in place to ensure that employees work in a safe environment. We set out the ways people should work, ensure that there are competence frameworks in place and maintain compliance checks of the key risk controls.

Employee fatalities

There were no employee fatalities during 2012/13. This is the eighth consecutive year that no work-related employee fatalities have occurred.

Employee major injuries

Employee major injuries are defined by the RIDDOR and must be reported to the Health and Safety Executive or the Office of Rail Regulation. They include limb fractures, injuries leading to unconsciousness, or admission to hospital for more than 24 hours. The criteria for reporting changed in 2012/13 and accidents now have to lead to seven days off work before they are reportable.

In 2012/13, there were 14 employee major injuries, two fewer injuries compared to 2011/12. In London Underground, there were 10 employee major injuries, a reduction from the 12 reported in 2011/12. Surface Transport had four employee major injuries, the same number reported in 2011/12. There were no employee major injuries in London Rail, Crossrail or the Corporate Directorates during the year.

The details set out in Figure 4 show that for 2012/13 across TfL, the employee major injury rate was 0.71 major injuries per 1,000 employees, compared to 0.77 major injuries per 1,000 employees in 2011/12.

Employee assaults

We take threats of work place violence to employees and our suppliers very seriously. We believe tackling the issue is crucial to maintaining good morale, which in turn helps achieve reliable, consistent and high-quality services.

Our definition of employee assaults includes ‘any incident where, in circumstances related to their work, a member of staff is physically assaulted, threatened or abused, thereby affecting their health, safety or welfare’, which we report as physical and non-physical assault.

Trends and multiple employee assaults are analysed and appropriate controls are put in place. Necessary measures are included in safety improvement programmes across TfL.

There was a six per cent decline in assaults on London Underground employees from 2,449 in 2011/12 to 2,260 in 2012/13. In London Rail, five assaults were reported in 2012/13 following two years where no employees were attacked. In Surface Transport, assaults fell from 153 in 2011/12 to 96 in 2012/13, the lowest in seven years.

Figure 4: Employee major injury rate (per 1,000 employees)

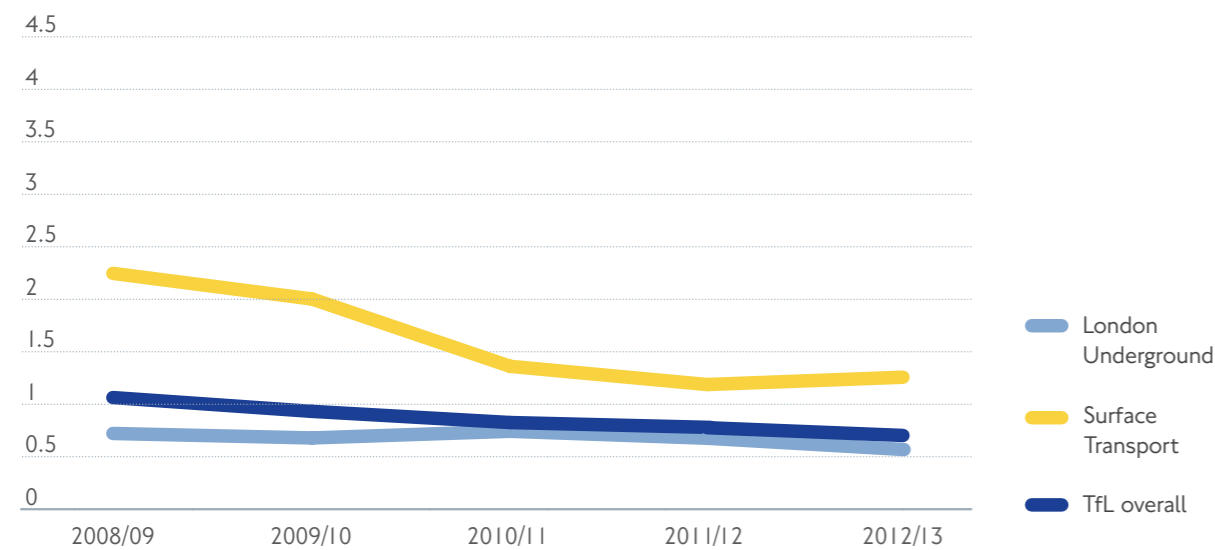
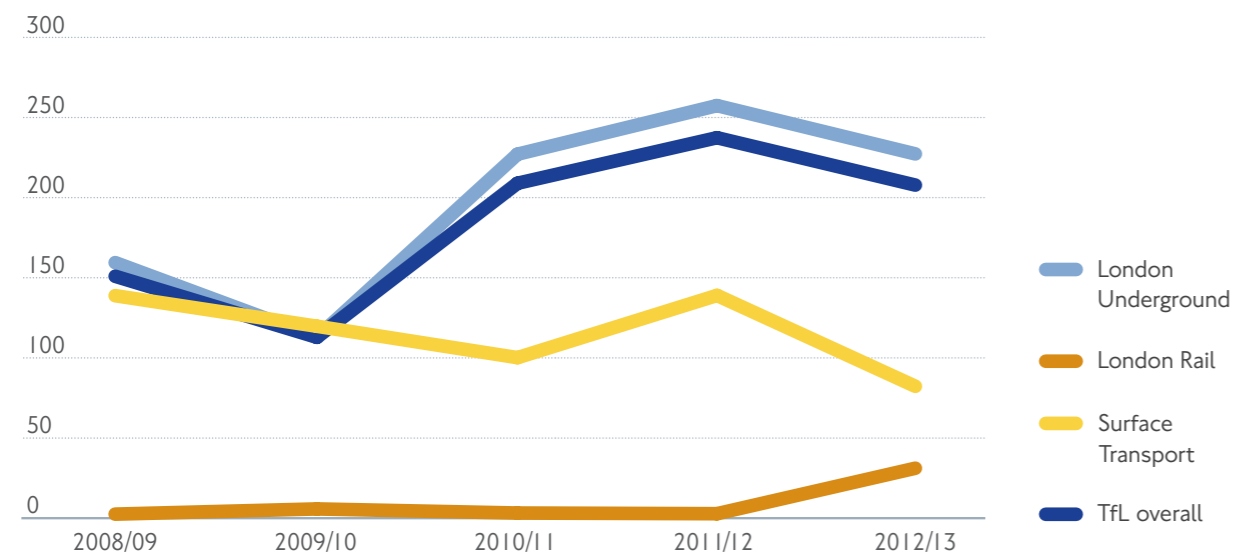


Figure 5: Employee assault rate (per 1,000 employees)



In London Rail and Surface Transport, which are areas of the business where the main service is delivered by private sector suppliers, the greater number of assaults occurred to our supplier workforce. The majority were connected to revenue protection and in particular Revenue Protection Inspectors (RPIs) checking fares.

There was a marked reduction in assaults in Surface Transport. In part this resulted from targeted work by the Workplace Violence Unit (WVU) and targeted personal safety courses. However during the 2012 Games, Community Safety, Enforcement and Policing Directorate in Surface Transport (CSEP) ceased ticketing enforcement activities, which had a significant effect as historically July and August are the months when Surface Transport records most assaults, (assaults on RPIs fell from 108 in 2011/12 to 60 in 2012/13).

Supplier safety

The supplier incident data in this section has not been normalised. The number of staff working for suppliers tends to fluctuate on large projects, which makes actual data difficult to compare.

Supplier fatalities

There were no supplier fatalities in TfL in 2012/13.

Supplier major injuries

The total of major injuries across our suppliers as a whole has not changed significantly in the past five years. However, there has been more change within the different areas over the five years.

Table 2: Supplier major injuries over the past five years

	2008/09	2009/10	2010/11	2011/12	2012/13
London Underground	16	14	5	8	11
Surface Transport	105	87	116	107	75
London Rail	4	0	4	5	2
Crossrail	1	2	0	3	17
Corporate Directorates	0	1	0	0	0
TfL Group	124	102	125	123	105

The number of supplier RIDDOR major injuries on London Underground increased to 11 in 2012/13 compared to eight in 2011/12, which appears to be related to higher numbers of projects now reaching their construction phase.

Surface Transport's supplier major injuries decreased from 107 in 2011/12 to 75 in 2012/13 of which 85 per cent involved bus drivers. Most of these were connected with road traffic collisions.

In London Rail, two supplier major injuries were reported in 2012/13, compared to five in 2011/12. In Crossrail, the number of contractor major injuries rose from three last year to 17 in 2012/13 as the project progressed from the design phase to construction work. There were no contractor major injuries for work carried out for the TfL Corporate Directorates.

Supplier assaults

As with TfL employees, the majority of supplier assaults were connected to revenue protection, in particular on RPIs who were checking bus fares. The vast majority of supplier assaults were non-physical (essentially verbal). TfL's bus operation suppliers have programmes to train their staff in conflict avoidance, and all take a robust approach in supporting staff and pursuing those who assault staff. Effective pursuit of offenders is one of the benefits resulting from the considerable investment in CCTV across the network. Visible policing has continued across the network and officers are active in engaging with frontline employees and suppliers.

Assaults on London Underground's contractors decreased from 27 in 2011/12 to 24 in 2012/13.

In Surface Transport, there was a welcome reduction in the level of bus driver assaults (physical and non-physical) from 1,702 to 1,598. This was equivalent to 66 assaults per 1,000 bus drivers.

In London Rail, supplier assaults reduced from 411 in 2011/12 to 347 in 2012/13. The majority were non-physical assaults. Crossrail and Corporate Directorates had no supplier assaults in 2012/13.

Workplace Violence Units operate in London Underground and Surface Transport. The working partnership between TfL, its suppliers, the British Transport Police (BTP) and Metropolitan Police Service (MPS) is focused on targeting known hotspots and supporting investigations and court proceedings where possible.

Process and precursors

Effective safety management does not just look at negative outcomes. It tracks other factors which can lead to significant events, which we call 'top events'. Potential top events, such as derailment, collision or station fires, are identified and the risks which have the potential to cause fatality to customers and other members of the public are quantified. These top events are rare. In the rail businesses, our mathematical risk models are based on well understood past experience. The precursors are made up of activities such as track inspections, station reviews and events such as lift entrapments or broken rails.

These precursors are tracked through regular performance review processes. The impact of the risks associated with the potential results, is known as the 'safety risk profile' of the organisation. This is usually expressed in 'predicted fatalities' per year.

In the past few months, the Government, the Office of Rail Regulation and a number of rail businesses have been talking to TfL to better understand the way its safety risk models work, as they are recognised internationally as being an effective approach to understanding risk. These organisations are keen to learn how we have built and developed the models and how compliance is monitored. At present, the models are most developed in London Underground and London Rail, but Surface Transport, is developing appropriate models for its businesses.

London Underground and the three business units in London Rail (Docklands Light Railway, London Tramlink and London Overground) all have safety risk models (major accident risk models). While these models quantify similar risks, the models for different parts of the business are structured differently from each other.

They are reviewed regularly to ensure that risks are understood. This, together with information from existing models, ensures we can prioritise implementation of appropriate risk controls and identify safety improvement opportunities.

Table 3: Supplier assaults over the past five years

	2008/09	2009/10	2010/11	2011/12	2012/13
London Underground	22	29	23	27	24
Surface Transport	888	618	1,288	1,702	1,598
London Rail	217	188	339	411	347
Crossrail	0	0	0	0	0
Corporate Directorates	0	0	0	0	0
TfL Group	1,127	835	1,650	2,140	1,969

Road safety

The updates also allow London Underground, Docklands Light Railway, London Tramlink and London Overground to quantify improvements in safety, delivered as part of the TfL Investment Programmes. The review of the London Underground safety risk profile, following the Jubilee line signalling upgrade and the introduction of the new Victoria line trains, showed that the major improvements projects improved London Underground's safety profile, specifically for potentially hazardous events, such as a collision between trains and on-train incidents.

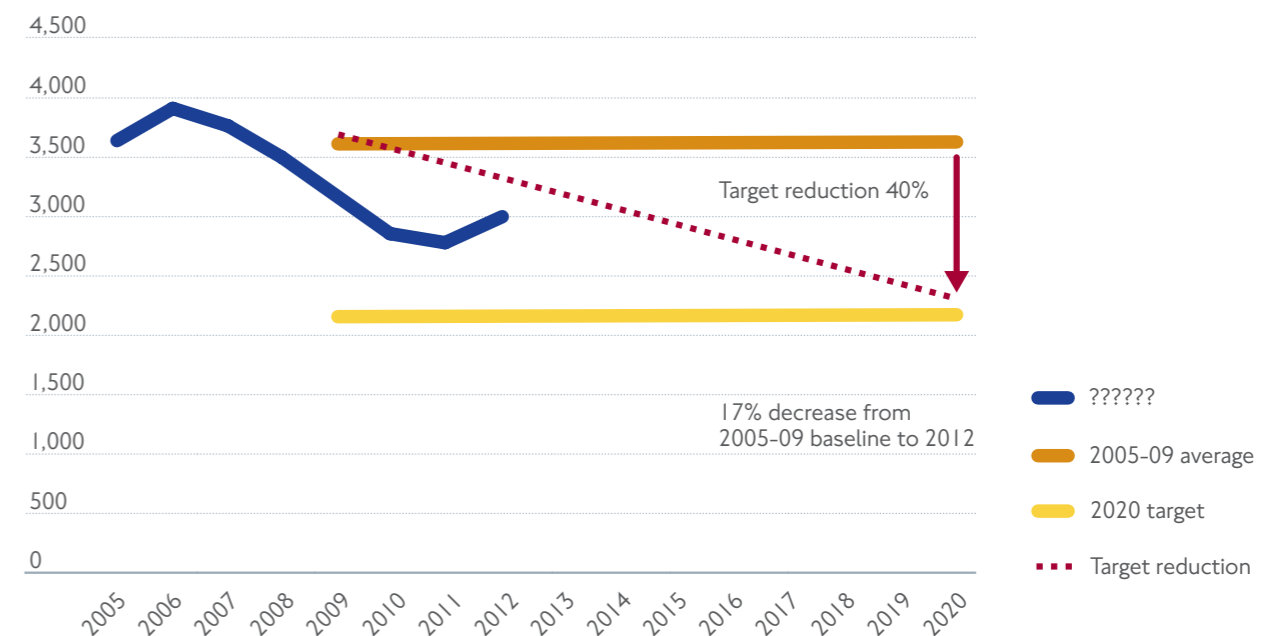
The risk profile also identifies opportunities for improving resilience. The Docklands Light Railway Operational Risk Register identified a gap in service resilience. The new Beckton Control Centre was built to manage this risk and ensure that the Docklands Light Railway could be operated from Beckton or, in an emergency, from Poplar. This improved flexibility and significantly improved the Docklands Light Railway's risk profile.

We are continuing to improve these models to ensure they accurately reflect the safety risk profile on the railway and we can address the most significant risks. TfL has a long-term plan to further improve the existing and future safety risk models for London Underground, London Rail and Surface Transport.

This section provides a summary of personal injury road traffic collisions and casualties in Greater London in 2012 compared to 2011 and the average for years 2005-09. This is the baseline against which TfL measures progress towards the target of a 40 per cent reduction in killed and seriously injured (KSIs) casualties by 2020. This is set out in 'Safe Streets for London – London's Road Safety Action Plan to 2020', which can be found online at tfl.gov.uk/roadsafety under publications.

Safe Streets for London 2020, which was published in June 2013, sets out our ambition to work towards roads free from death and serious injury. The plan has a particular focus on reducing the number of vulnerable road user casualties, which accounted for 80 per cent of KSIs in 2012. It describes 56 actions within four themes: safe roads, safe vehicles, safe people and delivering in partnership.

Figure 6: Trend in Greater London KSI casualties between 2005 and 2012 and to target



Data in this report present personal injury road traffic collisions occurring on the public highway, and reported to the police in accordance with the national reporting system. It should be noted that large percentage changes in small numbers may not necessarily be statistically significant.

In Greater London, a total of 24,059 road traffic collisions involving personal injury were reported to the Metropolitan and City Police during 2012. This was a two per cent reduction in collisions compared with 2011. These collisions resulted in 28,780 casualties. Of these casualties, 134 people were fatally injured, while 2,884 were seriously injured and 25,762 were slightly injured.

Casualty trends in Greater London

There was a 16 per cent decrease in fatalities in 2012 compared to 2011 (159 to 134), the second lowest level since recent records began (1986). KSI casualties increased by eight per cent in 2012 (2,805 in 2011 to 3,018) compared to the previous year. Slight injuries fell by three per cent (26,452 to 25,762) and overall casualties in 2012 fell by two per cent, compared to 2011.

While there was an increase in KSI casualties in 2012 compared to 2011, all KSI casualties were down by 17 per cent in Greater London and by seven per cent on the TLRN when compared against the 2005-09 base line. Figure 6 (p21) illustrates KSI casualty reduction in London between 2005 and 2012 and progress towards London’s road safety target.

In 2012, pedestrians accounted for 51 per cent of all fatalities, 37 per cent of all serious injuries and 16 per cent of slight injuries in London. Overall, pedestrian casualties decreased by three per cent in 2012 compared with 2011. This fall was statistically significant. Pedestrian fatalities decreased from 77 in 2011, to 69 in 2012 (a 10 per cent reduction compared to the previous year). This was the second lowest number on record. KSI pedestrian casualties, however, increased by 15 per cent. Slight injuries fell by seven per cent.

Pedal cyclists accounted for 10 per cent of all fatalities, 23 per cent of all serious injuries and 15 per cent of slight injuries in London during 2012. The total number of casualties increased by three per cent in 2012 compared to 2011. This increase was not statistically significant. Fatalities fell from 16 in 2011 to 14 (a 13 per cent reduction) in 2012. Pedal cycle KSI casualties increased by 18 per cent in 2012 compared to 2011, while slight injuries remained unchanged.

In 2012, riders and passengers of powered two-wheelers (P2W) accounted for 20 per cent of all fatalities, 21 per cent of all serious injuries and 16 per cent of slight injuries in London. P2W casualties decreased by one per cent in 2012 compared to 2011. This decrease was not statistically significant. Fatalities decreased from 30 in 2011 to 27 (a fall of 10 per cent) in 2012, to the second lowest number on record. P2W KSI casualties increased by five per cent in 2012 compared to 2011, while slight injuries fell by one per cent.

Figure 7 shows the trend in KSI casualties by vulnerable road user (pedestrian, pedal cyclists, P2W user) and child KSI casualties in the Capital between 2005 and 2012. Child KSI casualties form part of the total number of KSI casualties in London.

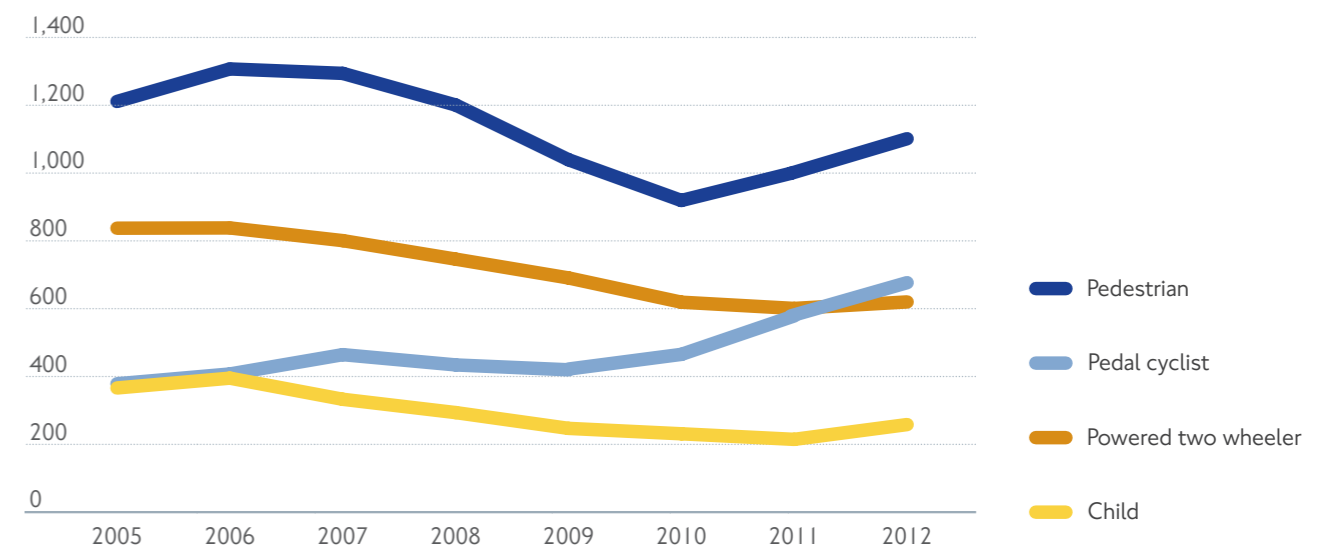
In 2012 compared to 2011, slight casualties fell by three per cent in Greater London and by two per cent on the TLRN compared to the previous year (Figure 8).

Further analysis of London’s collision and casualty data, including data extract files, can be found at tfl.gov.uk/roadsafety.

Safe Streets for London: London’s Road Safety Action Plan to 2020

We are working with key partners in the governance and delivery of road safety in the Capital. We set up a new Road Safety Steering Group (RSSG) which includes London’s road safety stakeholders, including non-governmental organisations, boroughs and the emergency services. Through this group, and through broader partnership working, we will have input into the development and delivery of road safety policies, and help oversee continuous improvements in road safety in the Capital.

Figure 7: Vulnerable road user and child KSI casualties in London (2005 to 2012)



We widely circulate best practice in road safety planning and delivery via an annual London road safety conference and regular sub-regional level road safety workshops. It will also improve the skills of the Capital's road safety practitioners by creating a continuous professional development programme, focused on key areas in the Safe Streets for London campaign.

Safety action plans are being developed for cyclists, pedestrians and motorcyclists, with their input, to ensure a strong focus on the safety of the most vulnerable road users. We will also monitor and report on the casualty reduction target and provide a comprehensive annual account of progress of casualty and collision reduction in the Capital.

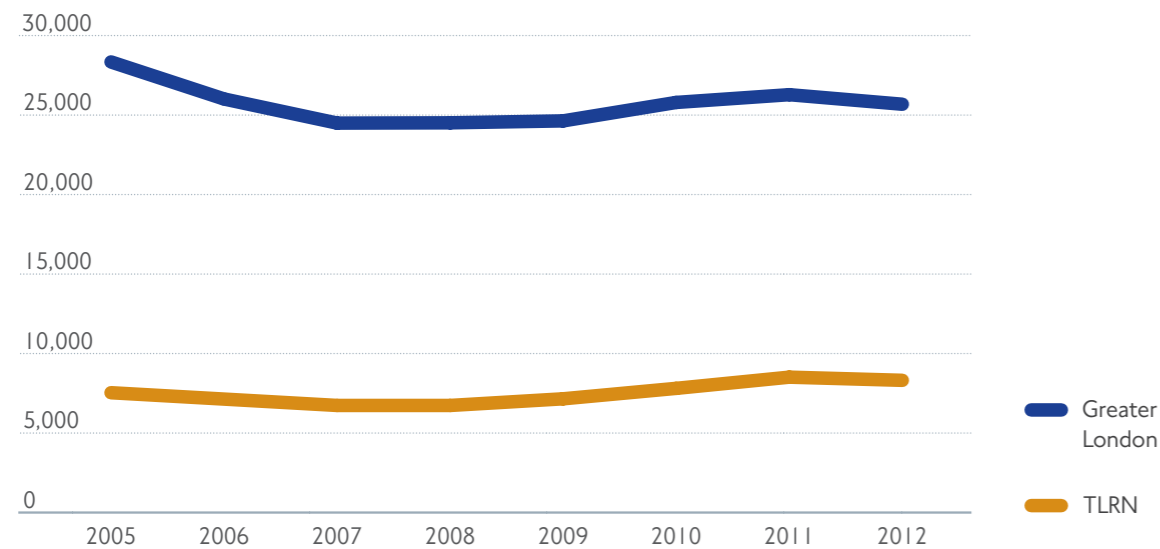
Biker safety

The Bikesafe-London scheme, aimed at reducing accidents involving motorcycles, celebrated its tenth anniversary in 2012/13 with more than 26,000 motorcyclists completing a rider skills day. The scheme is jointly run and funded by TfL and MPS.

Case study: Innovation and research

TfL commissions technical safety research, trials and advice from market experts. Examples include studies to review the construction logistics sector with respect to cycle safety and in-depth analysis to understand the causes of fatalities on the road network. A major cycle safety research project to trial new and innovative junction layouts and traffic technology will continue. This project is trialling a number of cycle safety innovations including 'Dutch style' roundabouts, low-level cycle signals and cycle early-starts at traffic signals. If successful, some could be introduced in London and potentially more widely across the UK, subject to Department for Transport (DfT) approval. The trials are being carried out for TfL by the Transport Research Laboratory in Wokingham.

Figure 8: Slight casualties in Greater London and on the TLRN (2005 to 2012)



Reducing carbon emissions

Our continuing multi-year investment programme in London's public transport system will result in an increase in capacity over the next decade. As service capacity increases, one of our major challenges is how to reduce its total carbon emissions. Progressively improving the efficiency of our operations is essential if carbon, and other greenhouse gas, emissions are to be minimised. Performance for normalised and total carbon emissions is set out below.

Carbon emissions have been recalculated for past years to account for material changes to the conversion factors provided by Defra for company reporting purposes. Targets have

also been re-calculated based on re-baselined 2005/06 data. Emissions are reported in tonnes of CO₂ equivalents (CO₂e). We have reported both the direct emissions from combustion of the fuel and the biogenic portion of this fuel, in line with Defra guidance.

Normalised CO₂ emissions

We have a target to reduce the normalised CO₂ emissions (measured in grams CO₂e per passenger km) from our main public transport services by 20 per cent in 2017/18 against a 2005/06 baseline. Normalised emissions are those associated with the main TfL public transport services – London Underground, London Buses, Docklands Light Railway,

London Overground and London Tramlink. At present, emissions from taxis and private hire vehicles (PHVs) cannot be normalised with enough accuracy to be included in the target.

In 2012/13, TfL's public transport services reported a fall in normalised emissions to 61 grams CO₂e per passenger km, just over 20 per cent below the baseline (77 grams CO₂e per passenger km) (Figure 9). As a result, we achieved the 2017/18 target for normalised CO₂e emissions reduction (61 grams CO₂e per passenger km).

The five per cent increase in passenger journeys on London Underground contributed to a reduction in normalised emissions from 64 grams CO₂e per passenger km in 2011/12 to 61 grams CO₂e per passenger km. In 2012/13, normalised CO₂e emissions associated with the London Bus Network were 75 grams per passenger km compared to 78 grams CO₂e per passenger km in 2011/12. This was achieved through the continued replacement of older buses with newer Euro V buses and the introduction of more hybrid buses.

In 2012/13, normalised CO₂e emissions associated with the Docklands Light Railway were the same as in 2011/12, 58 grams per passenger km. The significant increase in passenger numbers on London Overground, as a result of the extension to Clapham Junction and use during the Olympics, contributed in a fall in normalised emissions by more than 10 per cent to 38 grams CO₂e per passenger km.

From June 2012, London Tramlink passengers enjoyed a 50 per cent increase in services on the busiest part of the network, with a new service through Croydon's town centre and new trams operating between Elmers End and Therapia Lane. Normalised emissions fell to 31 grams CO₂e per passenger km compared to 39 grams CO₂e per passenger km 2011/12. This was partly owing to an increase in service and partly as a result of more accurate energy calculations.

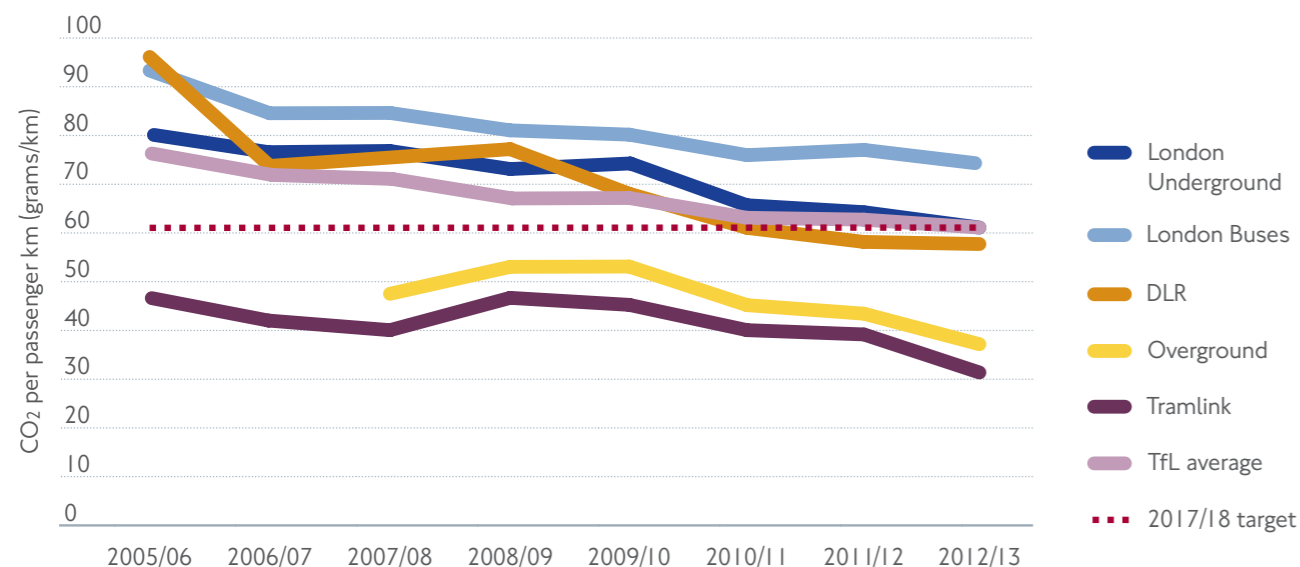
Absolute CO₂ emissions

Overall, absolute CO₂e emissions associated with all of our activities in 2012/13 were 2,126,228 tonnes, compared to 2,146,885 tonnes in 2011/12. Of these absolute emissions, 60,121 tonnes were from transmission and distribution losses from electricity purchased from the National Grid. This is being calculated separately in 2012/13 for the first time in line with changes to the conversion factors provided by Defra for company reporting purposes.

We have direct control over energy used by its main public transport services, the maintenance and operation of the TLRN, the energy consumption of traffic lights in London, construction works and head offices.

In 2012/13, we recorded 1,409,709 tonnes of CO₂e emissions from these sources (not including transmission and distribution losses). These emissions decreased very slightly on the previous year, even though we operated more public transport services and undertook

Figure 9: Carbon emissions by mode of transport (grams CO₂e per passenger km)



more construction works during the year. The London Bus Network, London Underground and London Rail account for nearly 90 per cent of all energy use, and carbon emissions, associated with our activities (excluding those associated with taxis and private hire).

The remaining emissions associated with our activities come from taxis and PHVs and in 2012/13 total CO₂e emissions from these sources were 656,398 tonnes.

Taxi and PHV emissions have been separated out from those associated with our other operations in Annex I as they are from vehicles owned and operated by third

parties. We exercise influence over taxi and PHV emissions through licensing arrangements (which state limits on Euro standards and vehicle age).

We delivered the Mayor's target to install 1,300 publicly accessible Electric Vehicle charge points across London in April 2013, making the Capital's Source London programme the largest charging scheme in Europe.

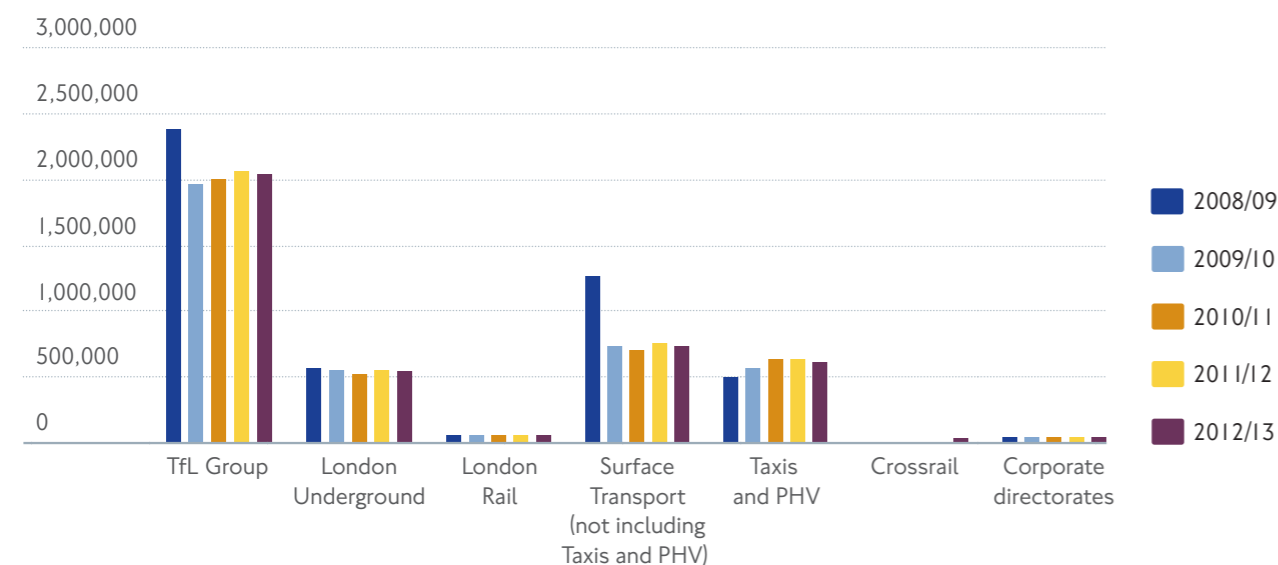
The London Underground figure has hardly changed in the past five years, however given the much greater power needs of the newer rolling stock, and the more intense service, this does represent a significant achievement.

Although only a small proportion of our overall CO₂e emissions, electricity use associated with Crossrail works increased significantly in 2012/13 as construction increased. In 2012/13, construction continued on stations and major tunnelling work increased with five tunnel boring machines in operation by the end of 2012/13 out of the eight machines that will be used during the lifecycle of the project. Crossrail's electricity consumption use therefore rose by more than five times compared to 2011/12. Around 75 per cent of Crossrail's electricity use was consumed by tunnelling operations with the remaining 25 per cent from the construction of its stations.

Total CO₂e emissions associated with TfL head offices increased by eight per cent in 2012/13 compared to 2011/12. This was due to an increase in gas use associated with the cold winter and more intensive use of head office buildings during the 2012 Games.

A number of our contracts include the sourcing of electricity from green tariffs or good quality Combined Heat and Power (CHP). Green tariffs and good quality CHP account for more than 65 per cent of Crossrail's total electricity use. Good quality CHP supplies more than 90 per cent of TfL's head office electricity.

Figure 10: Carbon emissions for TfL business (tonnes CO₂e) (2008/09 – 2012/13)



(Note: Emissions associated with Surface Transport have been categorised into emissions associated with public transport services and those associated with taxis and PHVs)

Case study: TfL's Carbon Reduction Commitment Energy Efficiency Scheme

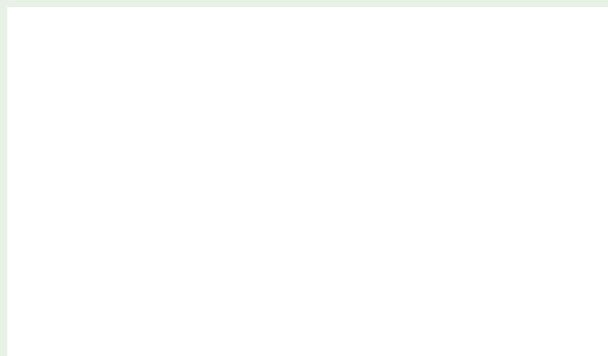
As part of our compliance requirements under the Carbon Reduction Commitment (CRC), we monitor and report to the Government on gas and electricity used for non-transport purposes and purchases allowances to account for the equivalent tonnes of CO₂. In 2012/13, our CRC CO₂ emissions were 174,704 tonnes, with an allowance cost of £2.1m. This was an increase from 149,194 tonnes in 2011/12 and was a result of increased operational scope, the colder winter and recent changes in the legislation requiring organisations to report 100 per cent of relevant energy use rather than 90 per cent in the previous year.



Improving air quality and noise

Case study: Reducing energy used to operate trains

New trains, signalling systems and power arrangements have been introduced on the Victoria line to help substantially increase train service capacity, (faster journey times and up to 33 trains per hour in peak hours). The new fleet uses regenerative braking which, when coupled with larger power traction sections, saves 34 per cent in traction energy usage. Additional modifications are being investigated to further optimise traction energy efficiency.



Air quality

We monitor the total amount of nitrogen oxides (NO_x) and particulate matter (PM₁₀) from our operations. These air pollutants arise largely from internal combustion engines in vehicles. Construction site dust and the wear of brake pads on vehicles also contribute to London's air quality, but as they are difficult to measure they are not reported in the scope of our KPIs.

We control the emissions associated with our main public transport services but from less control over the size of the taxi and PHV fleets. To reflect this, taxi and PHV NO_x and PM₁₀ emissions have been separated from those associated with our public transport services in Figures 11 and 12 (below).

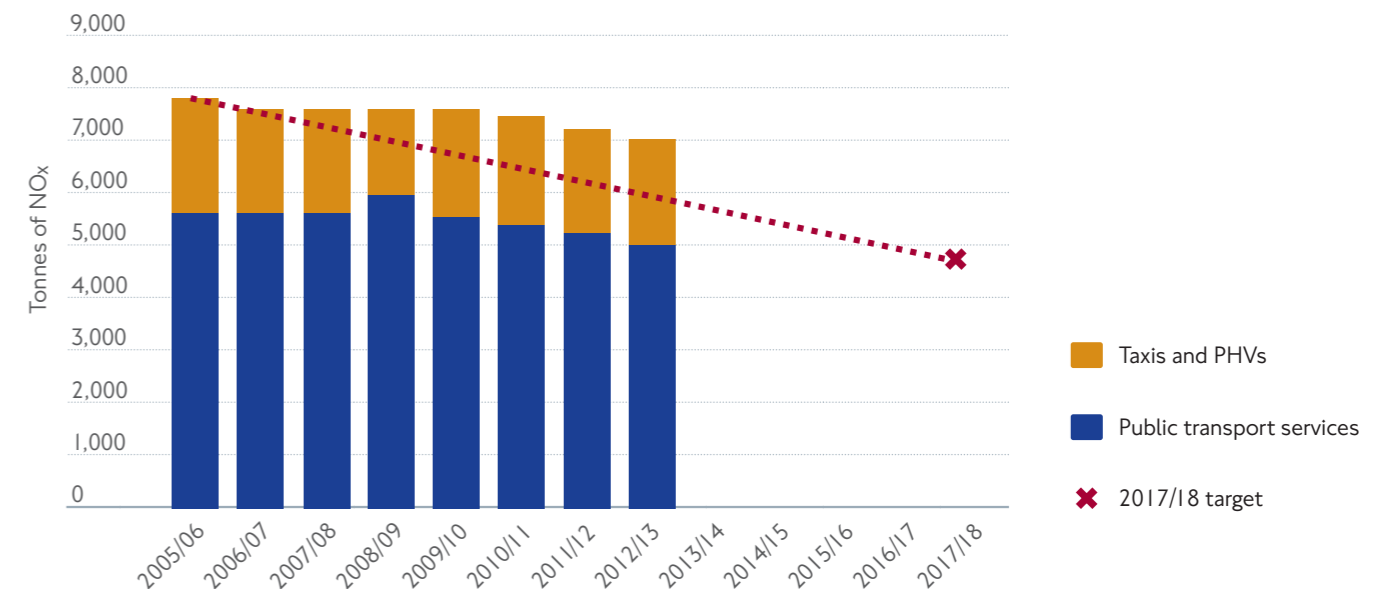
NO_x

We have set a target to reduce NO_x emissions by 40 per cent from our operations by 2017/18, against 2005/06 levels.

Emission factors for NO_x have been revised by Defra and NO_x emissions for taxis and private hire vehicles (PHV) have been re-baselined.

In 2012/13, we recorded generation of 7,081 tonnes of NO_x emissions from all our operations. Total NO_x emissions were 11 per cent lower than the 2005/06 baseline total, but they are still above the required trend line to achieve the 2017/18 target (Figure 11).

Figure 11: Total NO_x emissions from TfL operations (tonnes)



Buses accounted for 78 per cent of recorded TfL NO_x emissions. Total emissions from the bus fleet fell by one per cent despite bus kilometres increasing slightly in 2012/13 compared to 2011/12. It is expected that NO_x emissions will reduce by approximately 20 per cent over the next two years with the retrofitting of Selective Catalytic Reduction technology to 900 Euro III vehicles in the bus fleet and the programme of accelerated roll-out of Euro VI buses which have significantly lower emissions.

We are on track to introduce 1,700 hybrid buses into the London bus fleet by 2016; this includes 600 New Bus for London vehicles.

More than 420 hybrid buses were in service by March 2013. This investment will contribute to improve air quality in the Capital.

The remaining NO_x emissions are principally associated with the taxi and PHV fleet, with total emissions split evenly between the two sources. Together, they emitted 2,087 tonnes of NO_x in 2012/13, a slight increase on emissions in 2011/12 owing to the new COPERT emissions calculations.

PM₁₀

We have set a target to reduce total PM₁₀ emissions from our operations by 50 per cent by 2017/18, against 2005/06 levels.

The target applies to TfL public transport services and to the taxi and PHV fleet.

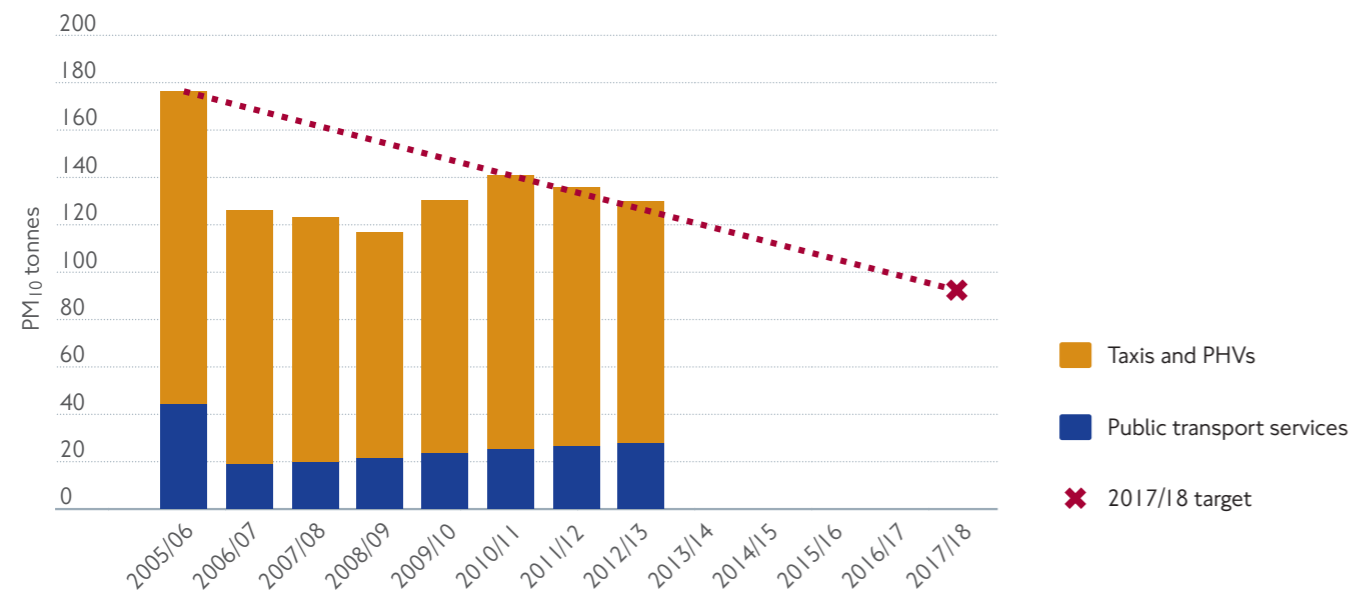
Over the reporting year, we recorded 130.8 tonnes of PM₁₀ emissions from all our operations. This is more than three per cent lower than the total PM₁₀ emissions in 2011/12 and 26 per cent lower than the 2005/06 baseline (Figure 12).

Taxis and PHVs accounted for 78 per cent of total TfL PM₁₀ emissions. Total emissions from these sources decreased by more than five per cent, down from 108.7 tonnes in 2011/12 to 102.5 tonnes in 2012/13.

Emissions of PM₁₀ from buses increased from 17.14 tonnes in 2011/12 to 18.39 tonnes in 2012/13. PM₁₀ emissions will begin to reduce again with the introduction of Euro VI buses from 2014, which will include diesel particulate filters (DPFs) as a standard fitting.

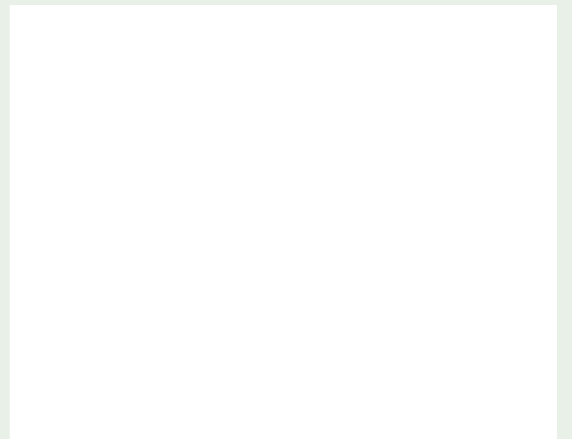
The remaining PM₁₀ emissions from our public transport services were mainly associated with river services, which includes the Woolwich Ferry and Thames Clippers, plus other scheduled boat services, which we do not operate.

Figure 12: PM₁₀ emissions from TfL operations (tonnes)



Case study: Diesel particulate filters

As part of the River Concordat, Diesel Particulate Filters (DPFs) have been installed on one of the Woolwich Ferry vessels to reduce particulate matter emissions by more than 90 per cent. Subject to the vessel's successful operation over six months, DPFs will be fitted to the other two vessels. The River Concordat is an agreement between the Port of London Authority (PLA), British Waterways, boat operators, pier owners, boroughs, Transport for London and the Greater London Authority to work together to improve passenger services on the River Thames.



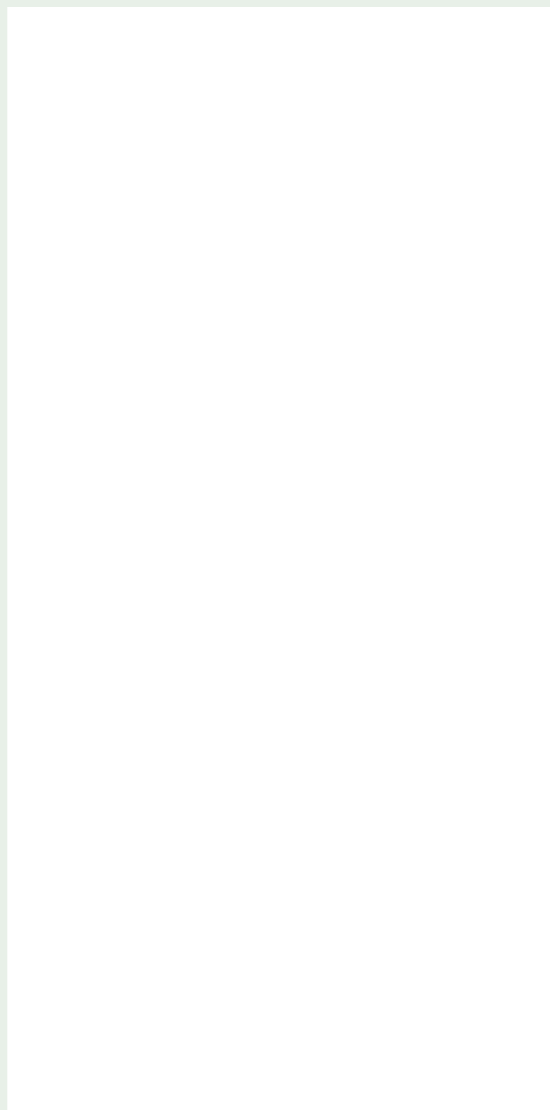
Case study: Crossrail reducing emissions from non-road mobile machinery

It is estimated that up to 15 per cent of small airborne particles in London's air are from construction machinery. Crossrail is leading the way on reducing emissions and helping London to address its air quality targets by using cleaner engines on Crossrail construction sites.

Crossrail has specified strict emissions standards for construction non-road mobile machinery such as excavators and dump trucks. There are two main ways of implementing the emission controls – either getting hold of newer equipment that meets European Tier III B emissions standards or by retrofitting older equipment with diesel particulate filters. A total of 56 per cent of the plant sampled by Crossrail during 2012/13 was compliant with the best practice emissions standards.

Consultation and trials undertaken during the year to determine whether emissions controls could be fitted to equipment showed that for 25 per cent of the plant it is not practical to fit emissions control at this time. This adds to the knowledge of the industry about emissions controls. This knowledge is being used by the GLA to address this issue more widely across London.

Crossrail is continuing to work with its contractors to deal with challenging equipment such as large crawler cranes.



Noise

We carried out significant construction works throughout 2012/13 as part of our investment programme, including Crossrail and major London Underground construction works in addition to regular maintenance. However, the number of noise complaints reported to us fell by seven per cent to 845 in 2012/13, compared to 907 in 2011/12.

The number of complaints received by Crossrail increased in 2012/13 in line with the increase in the scale and extent of construction work during the year. Crossrail continues to work with all its contractors to ensure that the best practicable means are being used to reduce the noise impacts of the construction works.

The number of noise complaints associated with asset noise, construction, contractor noise and PA announcements on the London Underground network fell significantly compared to that reported last year as a result of better planning and communication with London boroughs and residents.

The number of noise complaints associated with London Overground reduced significantly in 2012/13 owing to improved calibration of PA systems following station upgrades.

This year, we responded to a number of 'first priority locations' highlighted in the Defra's Noise Action Plans and identified any necessary mitigation actions (where necessary).

Quieter buses

We require all new buses be two decibels quieter than the legal limit. The number of buses that are two decibels quieter than the required legal limit increased from 54 per cent last year to 61 per cent as newer vehicles were introduced into the bus fleet. We aim to reduce noise on the TLRN by using quieter road surfaces and approximately 82 per cent of the TLRN is now covered with quieter surface materials.

Resource consumption and waste recycling

Our operations give rise to different types of waste including construction waste, litter left by passengers on public transport vehicles and waste from our offices. We have a duty to manage these wastes and use resources responsibly. We have taken great strides in this area in recent years, with more and more wastes being recycled and an increasing focus on reducing and reusing waste at source.

Commercial and Industrial waste

We set a target to recycle 70 per cent of our commercial and industrial (C&I) waste (station, depot and office waste).

In 2012/13, we collected 31,813 tonnes of waste at our stations, maintenance depots and buildings (Figure 13) and recycled 69 per cent of this waste. This was slightly less compared to 2011/12 (70 per cent recycling), but continues to demonstrate excellent recycling performance.

Litter left by London Underground's passengers and waste from stations and depots accounted for the majority of our C&I waste. Most of London Underground's station and depot waste goes to recycling centres in London which separate materials and sends them for recycling. London Underground

recycled more than 75 per cent of this waste in 2012/13. In addition, approximately 20 per cent of waste was sent for energy recovery.

More than 60 per cent of head office waste was recycled in 2012/13, and 94 per cent of all remaining waste sent for energy recovery.

Construction, demolition and excavation waste

We met our 2017/18 construction, demolition and excavation (CD&E) recycling target four years early by reusing or recycling 98 per cent of CD&E waste in 2012/13.

Over the past year, we have delivered significant works as part of our investment programme. These projects, along with ongoing maintenance, generated two million tonnes of CD&E waste. The amount generated of this type of waste fluctuates over time depending on the programme of works scheduled during the reporting year.

In 2012/13, the volume of CD&E waste generated from construction and maintenance activities increased by more than 40 per cent. This significant increase was predominantly owing to an increase in Crossrail works.

Figure 13: Commercial and Industrial Waste recycled (tonnes)

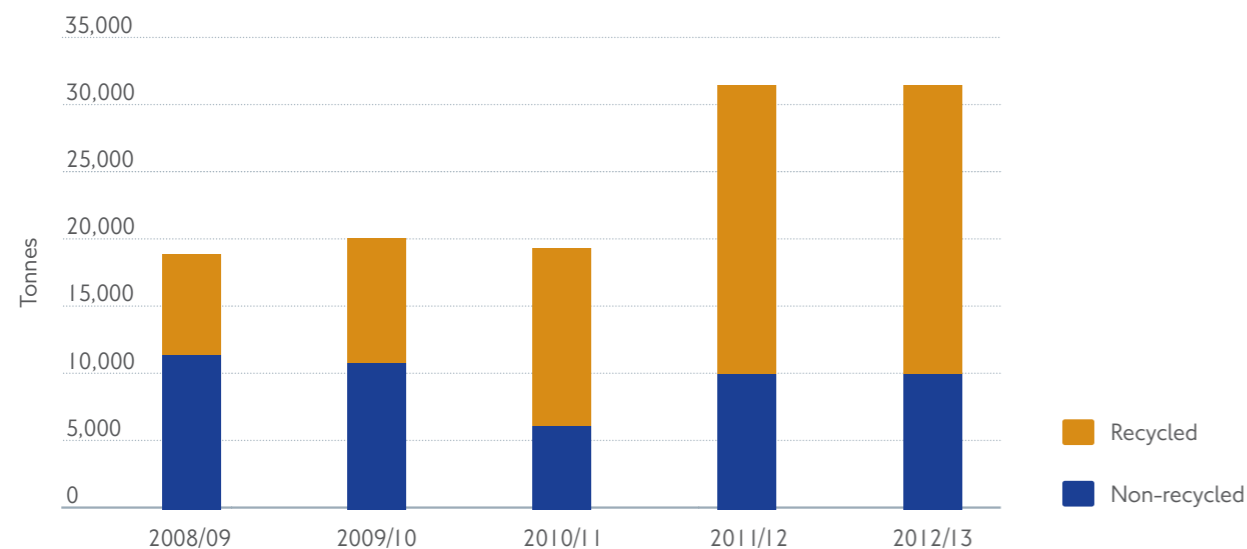
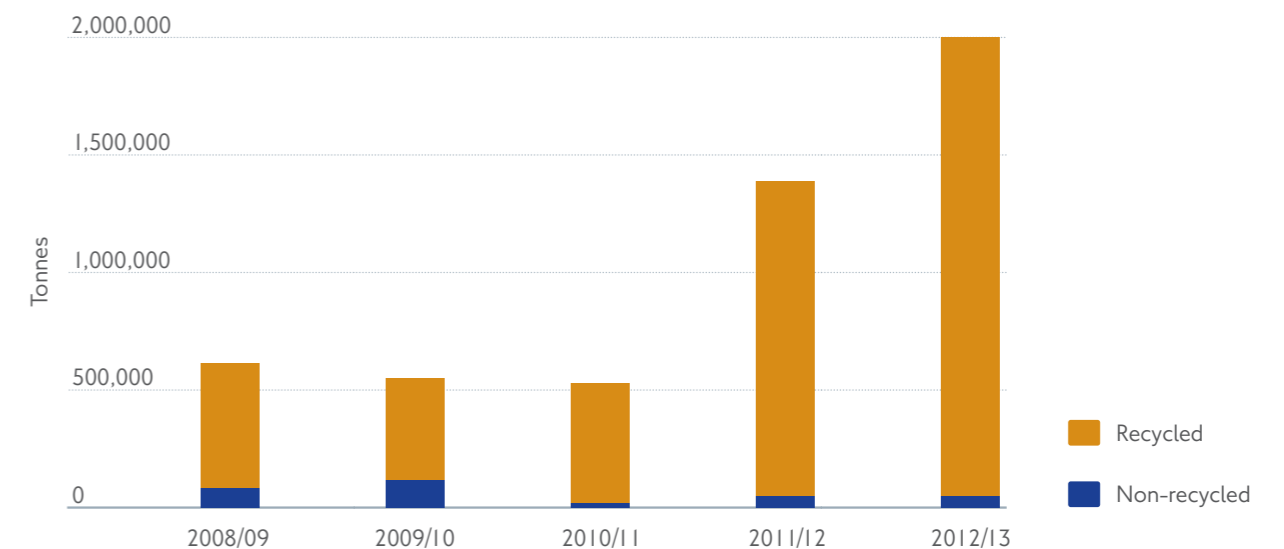


Figure 13: Commercial, demolition and excavation waste recycled (tonnes)



Annex I: Summary of TfL HSE key performance indicators

Crossrail tunnelling produced more than one million tonnes of excavated material in 2012/13, more than 99 per cent of which was beneficially reused. The majority of this material will be used in the creation of a new RSPB nature reserve at Wallasea Island.

The volume of waste generated from the maintenance of the TLRN decreased slightly in 2012/13 to 412,138 tonnes. More than 99 per cent of the waste was reused or recycled.

Water consumption

Water consumption is measured at TfL head office buildings. In 2012/13, water consumption increased by 16 per cent at like-for-like sites (not including new data now reported at landlord and operational sites). This increase was mainly owing to increased working hours both before and during the 2012 Games.

Water consumption at TfL head office buildings is monitored, with performance normalised by workstation at the 20 main sites. Performance for 2012/13 was 6.8m² per workstation, compared to the current Defra good practice figure of 6m² per FTE person.

Case study: Sustainability award for highways maintenance contract

Working with our partner EM Highways Services Ltd we received the highest national sustainability recognition rating under the civil engineering awards scheme, CEEQUAL, for highways project and contract work carried out in the southern area of the TLRN. We were also awarded the Outstanding Achievement Award in Contract Management.



**LONDON
HIGHWAYS
ALLIANCE**

Ian Nicholson from CEEQUAL said: 'The contract management team established an outstanding framework whereby the environmental impacts and opportunities for environmental enhancements were identified, assessed, managed and monitored. Partnership between client and contractor was a key driver to the contract management's success.'

The award sets a benchmark for embedding environment and wider sustainability into the new partnership London Highway Alliance contracts which started in April 2013.

Safety

London Underground			
Customer injuries			
Year	Fatal	Major	Customer journeys (millions)
2008/09	1	134	1,089
2009/10	1	111	1,064
2010/11	0	127	1,107
2011/12	3	137	1,170
2012/13	1	156	1,129
Employee on-duty injuries			
Injuries sustained as a result of physical assault are included			
Year	Fatal	Major	Employee numbers
2008/09	0	10	13,731
2009/10	0	13	18,886
2010/11	0	13	18,088
2011/12	0	12	17,258
2012/13	0	10	16,382
Contractor injuries			
Year	Fatal	Major	
2008/09	1	16	
2009/10	0	14	
2010/11	0	5	
2011/12	0	8	
2012/13	0	11	
Employee assaults*			
Year	Actual	Employee numbers*	
2008/09	1,909	11,870	
2009/10	1,917	17,882	
2010/11	2,324	10,239	
2011/12	2,449	9,615	
2012/13	2,260	10,035	
Contractor assaults			
Year	Actual		
2008/09	22		
2009/10	29		
2010/11	23		
2011/12	27		
2012/13	24		

*Customer-facing employees

Surface Transport			
Customer injuries			
Year	Fatal	Major	Customer journeys (millions)
2008/09	2	908	2,217
2009/10	4	790	2,294
2010/11	0	861	2,283
2011/12	5	1,064	2,350
2012/13	0	862	2,335
Employee on-duty injuries			
Year	Fatal	Major	Employee numbers
2008/09	0	10	4,482
2009/10	0	7	3,545
2010/11	0	4	3,008
2011/12	0	4	3,345
2012/13	0	4	3,168
Contractor injuries			
Year	Fatal	Major	
2008/09	1	105	
2009/10	0	87	
2010/11	0	116	
2011/12	1	107	
2012/13	0	75	
Employee assaults*			
Year	Actual	Employee numbers*	
2008/09	245	1,756	
2009/10	145	1,299	
2010/11	129	1,266	
2011/12	153	1,093	
2012/13	96	1,066	
Contractor assaults			
Year	Actual		
2008/09	888		
2009/10	618		
2010/11	1,288		
2011/12	1,702		
2012/13	1,598		

*Customer facing employees

London Rail			
Customer injuries			
Year	Fatal	Major	Customer journeys (millions)
2008/09	0	20	119
2009/10	0	11	130
2010/11	0	8	167.3
2011/12	0	11	214.1
2012/13	0	10	254.7
Employee on-duty injuries			
Year	Fatal	Major	Employee numbers
2008/09	0	0	232
2009/10	0	1	235
2010/11	0	0	216
2011/12	0	0	159
2012/13	0	2	160
Contractor injuries			
Year	Fatal	Major	
2008/09	1	4	
2009/10	0	0	
2010/11	0	4	
2011/12	0	5	
2012/13	0	2	
Employee assaults			
Year	Actual	Employee numbers	
2008/09	0	232	
2009/10	1	235	
2010/11	0	216	
2011/12	0	159	
2012/13	5	160	
Contractor assaults			
Year	Actual		
2008/09	217		
2009/10	188		
2010/11	339		
2011/12	411		
2012/13	347		

Crossrail			
Employee injuries			
Year	Fatal	Major	Employee numbers
2008/09	0	0	294
2009/10	0	1	326
2010/11	0	0	290
2011/12	0	0	371
2012/13	0	0	433
Contractor injuries			
Year	Fatal	Major	
2008/09	0	1	
2009/10	0	2	
2010/11	0	1	
2011/12	0	4	
2012/13	0	17	
Corporate Directorates			
Employee injuries			
Year	Fatal	Major	Employee numbers
2008/09	0	0	2,177
2009/10	0	2	2,417
2010/11	0	0	2,461
2011/12	0	0	2,574
2012/13	0	0	2,701
Contractor injuries			
Year	Fatal	Major	
2008/09	0	0	
2009/10	0	1	
2010/11	0	0	
2011/12	0	0	
2012/13	0	0	

Health

Average sickness absence per FTE by TfL business (2008/09 – 2012/13)						
Year	TfL Group	London Underground	Surface Transport	London Rail	Crossrail	Corporate Directorates
2008/09	9.9	10.2	10.5	4.5	4.6	7.0
2009/10	10.1	10.2	10.4	4.7	5.4	7.3
2010/11	9.7	10.2	8.9	3.2	7.3	7.6
2011/12	9.5	10.1	8.6	3.9	1.6	7.1
2012/13	8.6	9.5	7.9	8.2	4.6	7.8

Average days lost due to sickness absence by category and business area in 2012/13									
	Mental illness	Musculo-skeletal	Colds and flu	Gastrointestinal	Accidents /injury	Other	Neurological	Respiratory	Hypertension, stroke
TfL Group	1.30	1.66	1.30	1.05	0.93	0.16	0.49	0.33	0.38
London Underground	1.32	1.84	1.35	1.09	1.07	0.69	0.46	0.35	0.39
Surface Transport	1.14	1.35	1.15	0.88	0.54	0.51	0.54	0.27	0.43
London Rail	1.57	1.67	0.76	1.39	1.60	0.16	0.15	0.06	0.35
Crossrail	0.40	0.22	0.83	0.23	0.47	1.93	0.30	0.18	0.00
Corporate Directorates	1.37	0.94	1.27	0.95	0.49	0.32	0.68	0.34	0.22

Road safety

Monitoring casualties in London – all roads.

Casualties in 2012 compared with the 2005-09 average and 2011.

Casualty severity	User group	Casualty numbers			Percentage change in 2012 over	
		2005-2009 average	2011	2012	2011	2005-2009 average
Fatal	Pedestrians	96.0	77	69	-10%	-28%*
	Pedal cyclists	16.6	16	14	-13%	-16%
	Powered two-wheeler	43.4	30	27	-10%	-38%*
	Car occupants	49.4	32	19	-41%*	-62%*
	Bus or coach occupants	2.4	1	2	100%	-17%
	Other vehicle occupants	3.2	3	3	0%	-6%
	Total	211.0	159	134	-16%	-36%*
	Children (under 16yrs)	11.6	7	5	-29%	-57%*
Fatal and serious	Pedestrians	1,216.4	980	1,123	15%*	-8%*
	Pedal cyclists	420.6	571	671	18%*	60%*
	Powered two-wheeler	791.2	599	629	5%	-21%*
	Car occupants	949.0	499	448	-10%	-53%*
	Bus or coach occupants	139.6	86	94	9%	-33%*
	Other vehicle occupants	109.8	70	53	-24%	-52%*
	Total	3,626.6	2,805	3,018	8%*	-17%*
	Children (under 16yrs)	330.2	230	270	17%*	-18%*
Slight	Pedestrians	4,214.0	4,466	4,143	-7%*	-2%
	Pedal cyclists	2,718.2	3,926	3,942	0%	45%*
	Powered two-wheeler	3,806.4	4,077	4,022	-1%	6%*
	Car occupants	12,426.8	11,293	11,217	-1%	-10%*
	Bus or coach occupants	1,429.8	1,384	1,232	-11%*	-14%*
	Other vehicle occupants	1,004.8	1,306	1,206	-8%*	20%*
	Total	25,600.0	26,452	25,762	-3%*	1%
	Children (under 16yrs)	1,889.0	1,951	1,689	-13%	-11%
All severities	Pedestrians	5,430.4	5,446	5,266	-3%*	-3%
	Pedal cyclists	3,138.8	4,497	4,613	3%	47%*
	Powered two-wheeler	4,597.6	4,676	4,651	-1%	1%
	Car occupants	13,375.8	11,792	11,665	-1%	-13%*
	Bus or coach occupants	1,569.4	1,470	1,326	-10%*	-16%*
	Other vehicle occupants	1,114.6	1,376	1,259	-9%*	13%*
	Total	29,226.6	29,257	28,780	-2%*	-2%*
	Children (under 16yrs)	2,219.2	2,181	1,959	-10%*	-12%*

NB. The grey shaded area shows the London casualty reduction target.

* Statistically significant changes at the 95 per cent confidence level. Significance testing helps to identify where change may be associated with randomness and where it may not be. Given a set of two different numbers, the difference between these numbers is statistically significant where we are 95 per cent confident that this is not owing to randomness. Changes in the number of casualties over time are modelled following the Poisson distribution.

Environment

Environment performance					
	2008/09	2009/10	2010/11	2011/12	2012/13
Total CO₂e emissions					
CO ₂ e emissions (tonnes) – TfL public transport services	1,383,100	1,381,122	1,305,985	1,414,288	1,409,709
CO ₂ e emissions (tonnes) – taxis and private hire	508,573	599,709	641,427	676,973	656,398
CO ₂ e emissions (tonnes) – transport and distribution losses (all)	54,321	55,029	55,217	55,624	60,121
Total CO₂e emissions	1,945,994	2,035,861	2,002,629	2,146,885	2,126,228
CO₂e emissions from TfL's main public transport modes (grams per passenger km)					
TfL's public transport operations (average)	68	68	63	63	61
London Underground	73	74	66	64	61
London Buses	81	80	77	78	75
DLR	78	69	62	58	58
London Tramlink	47	45	40	39	31
London Overground	52	52	45	44	38
Energy equivalent head office buildings (kgCO ₂ e/m ²)	127	117	114	108	122
Air emissions					
Total NO _x emissions (tonnes)	7,641	7,624	7,535	7,172	7,081
Total PM ₁₀ emissions (tonnes)	117.44	132.53	142.21	135.79	130.83
Transport-related noise and vibration					
Number of noise complaints received	411	643	951	907	845
Percentage of TLRN with lower noise surface material	70%	74%	74%	74%	82%
Percentage of buses in fleet at least 2 dB(A) quieter than the required legal limit	14%	28%	37%	54%	61%

Environment performance					
	2008/09	2009/10	2010/11	2011/12	2012/13
Waste management and resource use					
Commercial and industrial waste (tonnes)	18,873	20,217	19,322	31,661	31,813
Percentage of Commercial and industrial waste recycled	38%	46%	67%	69%	69%
Construction, demolition and excavation waste (tonnes)	628,662	569,695	537,288	1,407,365	2,004,299
Proportion of construction, demolition and excavation waste recycled	87%	82%	96%	98%	98%
Water consumed per occupant in head office buildings (m ³ per workstation)	6.50	6.15	5.70	6.90	6.8

Data accuracy

HSE data for previous years has been reviewed and updated where appropriate. This has been due to new information (e.g. injuries which had been recorded as minor being recorded as major where appropriate) or due to changes in external guidelines, e.g. Defra guidelines on reporting carbon emissions.

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