



Date: 21 March 2017

Item: Health, Safety and Environmental Performance – Quarter Three 2016/17

This paper will be considered in public

1 Summary

1.1 The TfL Health, Safety and Environment (HSE) Performance report describes the HSE performance across all of the TfL businesses and Crossrail for quarter three 2016/17 (18 September – 10 December 2016 inclusive).

2 Recommendation

2.1 **The Panel is asked to note the report.**

3 Background Information

- 3.1 There were 27 customer fatalities on the TfL public transport network in the quarter. This includes seven customer fatalities as a result of the tragic tram derailment near Sandilands Junction, Croydon on 9 November 2016. A further 20 fatalities are attributed to; suspected suicide (11), confirmed suicide (1), pre-existing medical conditions (6), an act of crime on a bus (1) and a pedestrian involved in a collision with a bus (1). There were no employee or contractor fatalities in the quarter.
- 3.2 The London Tram derailment has previously been reported to the Safety, Sustainability and Human Resources Panel and a separate update will be given at this meeting. We continue to provide support to those involved and to work with the British Transport Police (BTP) and the Rail Accident investigation Branch (RAIB) as their investigations continue. There have been no other significant incidents within the quarter.
- 3.3 Slips, trips and falls continue to be the main cause of customer injury across the network, with incidents occurring on station escalators, stairs, at the platform train interface (PTI), and on buses. Programmes to mitigate against customer injury remain on target to deliver planned improvements.
- 3.4 The number of employee statutory reportable injuries continues to reduce. Slips, trips and falls resulting in musculoskeletal injury remain the main cause of injury. We continue to reinforce safe behaviours through on site briefings, revised risk assessments and lessons learned from investigation processes.
- 3.5 The overall figure for incidents of work related violence continues to improve, however, work related violence and trauma from witnessing incidents continue to be the main causes of Lost Time Injuries (LTIs) across the business.

- 3.6 Provisional road safety killed or seriously injured (KSI) data for quarter two shows an overall reduction for all KSI of four per cent (from 546 to 526), and a six per cent reduction for vulnerable road user groups (from 436 to 409). However, heavy good vehicle (HGV) related KSI increased by 50 per cent (from 16 to 24), and KSI whilst using taxi, private hire vehicles, coach and bus increased by 18 per cent (from 22 to 26).
- 3.7 Average days absence per employee across TfL for quarter three is 2.83 days. Musculoskeletal injury and mental health continue to be the top causes of absence. Occupational Health have delivered a series of proactive health and wellbeing improvements throughout the quarter that aim to prevent absence and ensure employees return to work as soon as possible where injury has occurred.
- 3.8 Gas and electricity consumption at head office buildings for quarter three has increased by 27 per cent reflecting the change in seasonality from quarter two. The 'Power down' initiative has been rolled out to encourage employees to make changes to their daily routine and ensure electrical equipment is turned off at the end of the day.
- 3.9 Waste management performance results include 99.5 per cent of commercial and industrial waste diverted from landfill and 95 per cent of construction, demolition and excavation waste diverted from landfill.
- 3.10 The Crossrail RIDDOR accident frequency rate (AFR) was 0.11 at the end of the quarter, a decrease on the end of year (2015/16) rate of 0.12. There were six RIDDOR incidents in the quarter; one dangerous occurrence involving a telehandler that toppled onto its side, and five injuries. Injuries were caused by slips, trips, and falls and collision with a vehicle. All injuries resulted in musculoskeletal soft tissue injury or fractures. Three injuries met the criteria for submission of a statutory report due to the severity of the injury, and the remaining due to the injured person taking more than seven days absence.

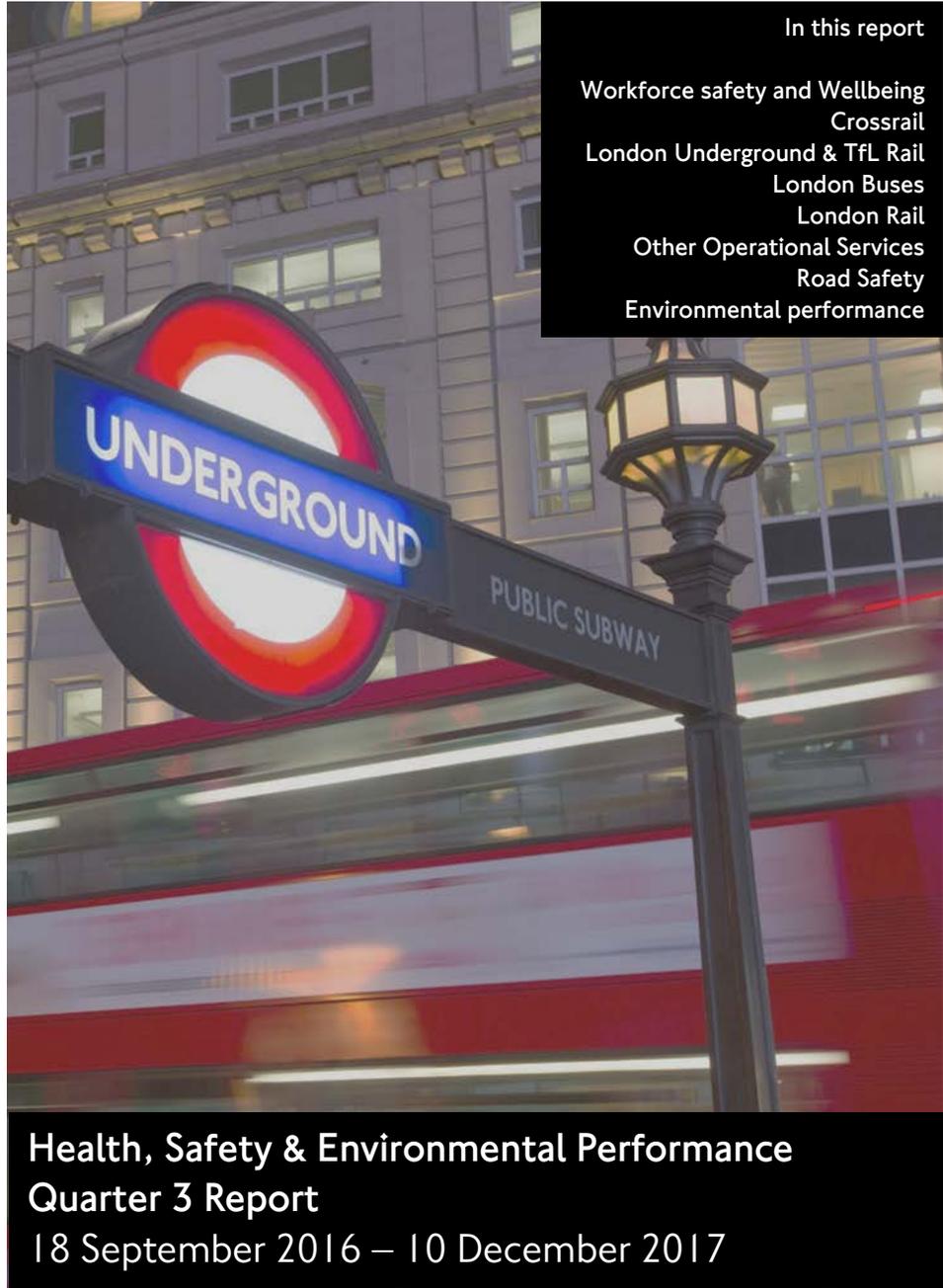
List of appendices to this report:

Appendix 1: Health, Safety and Environmental Performance – Quarter Three 2016

List of Background Papers:

None

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Health, Safety & Environmental Performance Quarter 3 Report 18 September 2016 – 10 December 2017

Performance Summary

This quarterly health, safety and environment (HSE) report provides an overview of the HSE performance for London Underground & TfL Rail, Surface Transport (including London Rail), and Crossrail services for quarter three 2016/17.

There were 27 customer fatalities on the TfL public transport network in the quarter. This includes seven customer fatalities as a result of the tragic tram derailment near Sandilands Junction, Croydon on 9 November 2016. A further 20 fatalities are attributed to; suspected suicide (11), confirmed suicide (1), pre-existing medical conditions (6), an act of crime on a bus (1) and a pedestrian involved in a collision with a bus (1). There were no employee or contractor fatalities in the quarter.

The London Tram derailment has previously been reported to the Safety, Sustainability, and Human Resources Panel. We continue to provide support to those involved and to work with the British Transport Police (BTP) and the Rail Accident Investigation Branch (RAIB) as their investigations continue. There have been no other significant incidents within the quarter.

Slips, trips and falls continue to be the main cause of customer injury across the network, with incidents occurring on station escalators, stairs, at the platform train interface (PTI), and on buses. Programmes to mitigate against customer injury remain on target to deliver planned improvements.

Appendix 1

The number of employee statutory reportable injuries continues to reduce. Slips, trips and falls resulting in musculoskeletal injury remain the main cause of injury. We continue to reinforce safe behaviours through on site briefings, revised risk assessments and lessons learned from investigation processes.

The overall figure for incidents of work related violence continues to improve, however, work related violence and trauma from witnessing incidents continue to be the main causes of Lost Time Injuries (LTIs) across the business.

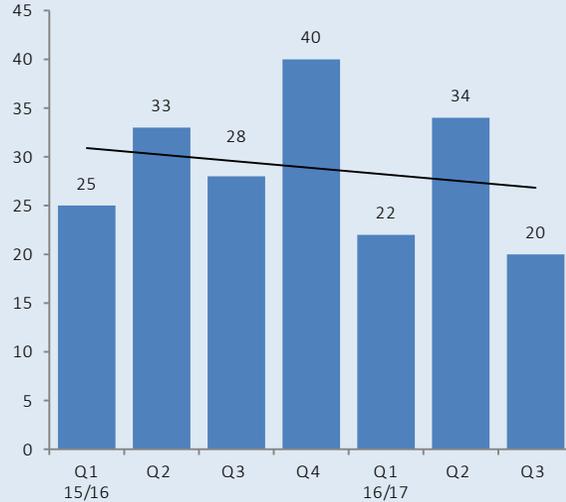
Provisional road safety killed or seriously injured (KSI) data for quarter two shows an overall reduction for all KSI of four per cent (from 546 to 526), and a six per cent reduction for vulnerable road user groups (from 436 to 409). However, heavy goods vehicle (HGV) related KSI increased by 50 per cent (from 16 to 24), and KSI whilst using taxi, private hire vehicles, coach and bus increased by 18 per cent (from 22 to 26).

TfL now operate under a single HSE policy that incorporates London Underground and Surface Transport for the first time. Having one single policy reinforces our collaborative approach to HSE management and supports TfL's commitment to make sure our vision for a safe and healthy environment is achieved.

TfL workforce* safety and wellbeing

Workforce statutory reportable injuries

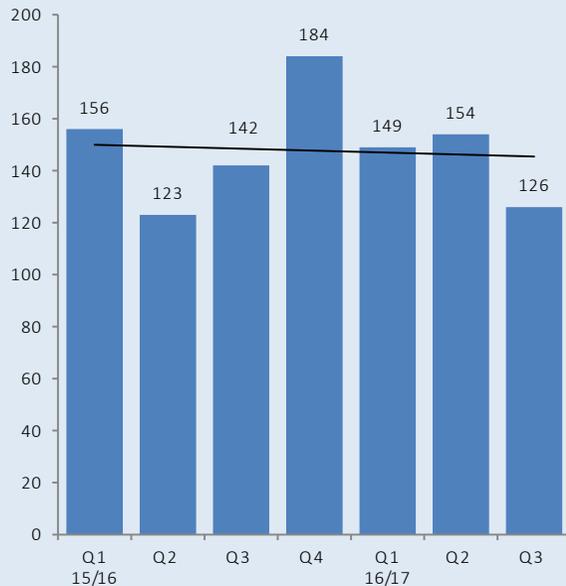
There were no workforce or supplier fatalities in the quarter or year to date. The main causes of reportable injuries are slips, trips and falls resulting in musculoskeletal injury. Of the 20 injuries in quarter three, four met the criteria for submission of a statutory report due to the severity of the injury, and the remaining due to the injured person taking more than seven days absence.



Workforce lost time injuries (LTI)

For London Underground, 106 LTI caused by: trauma (40 per cent), workplace violence (28 per cent), and slips trips, falls (10 per cent).

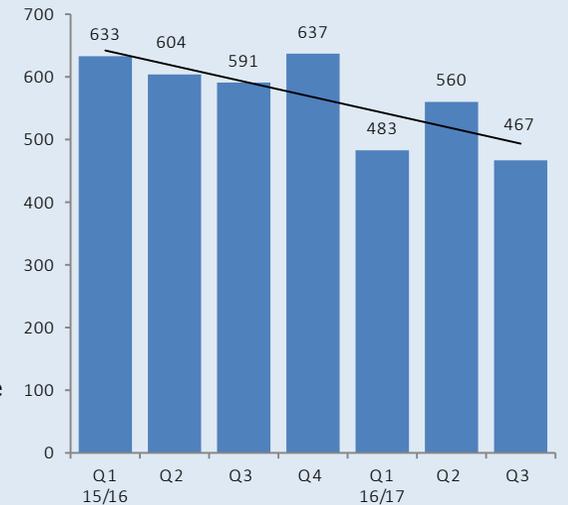
For Surface Transport, 45 per cent of the 20 LTIs in the quarter resulted from workplace violence with stress as the predominant outcome. Revenue Protection Inspectors were the most exposed group accounting for 65 per cent of Surface Transport LTIs.



Work related violence

In London Underground, the customer facing operational workforce are most affected by work related violence. The 404 incidents involving LU workforce are broken down into verbal assaults (50 per cent), physical assault (22 per cent), and threats (28 per cent).

Sixty three incidents occurred within Surface Transport. Revenue protection accounted for 83 per cent of these incidents.



*does not include supplier / concessionaire data or performance data from Crossrail.

TfL workforce safety and wellbeing improvement programmes

TfL LTI incident mitigations

Current LTI mitigations in place include;

- Best practice sharing within Surface Transport and London Underground continues through employee injury working groups.
- Partnership working with the British Transport Police and Metropolitan Police Service focusing on targeting hotspots.
- A refreshed conflict management training package is now in place for front line employees. The primary focus includes conflict avoidance, de-escalation and reporting of incidents.
- HSE coaching workshops and employee training events have been delivered in quarter three. This cascade communication tool will be used to coach operational personnel and result in local HSE improvement plans.

Workplace Support Team

The Workplace Support Team (WST) exist to assist the Metropolitan Police Services (MPS) officers to detect and prosecute people who attack frontline staff. The team assist in critical aspects including:

- DNA elimination of samples from victims of a spitting assault.
- Assisting the MPS with obtaining further information needed in criminal damage cases, allowing them the opportunity to claim compensation at court from the assailant for any damages.
- Provision of CCTV in a timely manner.

In Surface Transport, the Workplace Support Team more than doubled the number of workforce engagement events which resulted in the team assisting 288 cases. Seventy three per cent of these related to bus drivers and 16 per cent involved Revenue Protection Inspectors – two of the most vulnerable groups that suffer from attacks.

London Underground workforce safety

Under the Safe Working Environment Steering Group the current projects aim to achieve a 10 percent reduction in incidents by 2018 on the 2015/16 performance. Key deliverables within quarter three included;

- Objects falling from height: Amended management standards and instructional training regarding ceiling and wall tiles have been rolled out.
- Manual handling: Working alongside an external provider, Pristine Condition, a tailored manual handling training course is now being delivered to the maintenance and projects workforce. The training focuses on practical techniques, relevant to our working environment, that reduces the risk of exposure to manual handling injuries.
- Lifting operations: Following a rise in the number of planned lifting incidents, a new process for documenting planned lifts has been rolled out. The new process has been developed through engagement with the workforce and continues to be supported with ongoing briefings and mentoring.

- Track access:

Following a serious injury to a worker in 2016, a code of practice setting clearer rules for working within a possession have been rolled out across LU. This has been formalised through LU rule book revisions and supported by new workforce training.

Other Operational Services Safety improvements

Dial-a-ride (DaR) have provided enhanced toolbox talks and training with regard to general manual handling, and handling and securing of wheelchairs. Alongside this, capability testing on all new recruits with regard to handling, loading and securing wheelchairs is currently being undertaken. These interventions are expected to provide greater information and protection for existing and new employees, with the additional benefit of providing greater safety for wheelchair based customers.

TfL workforce safety and wellbeing

Drug and alcohol testing

The total number of safety critical employees for the 2016/17 financial year in LU Operations is 14,077. A minimum five per cent target of 710 are due for unannounced testing. Five hundred and fifty one safety critical employees have been tested to date. LU Capital Programmes Directorate (CPD) have a total of 274 safety critical employees with a minimum five per cent target of 14 due for unannounced testing. Five safety critical employees have been tested to date. The total number of safety critical employees tested in quarter three: Unannounced (214), For Cause (6), Monitoring (13) and Post incident (9). There were two positive tests in quarter three, both drugs related.

In Surface Transport at the end of quarter three 1,114 operational employees were within scope for drug and alcohol testing. The total number tested was; Unannounced (20), For Cause (4) and Monitoring (7). There were zero (0) positive results for quarter three.

Appropriate disciplinary action up to and including dismissal is taken against anyone who is found to be in breach of the drugs and alcohol policy.

Sickness Absence

TfL headcount full time equivalent (FTE) (not including agency / contractors) for quarter three is 24,080. Average days absence per employee across TfL for quarter three is 2.83 days. Musculoskeletal injury and mental health continue to be the top causes of absence. Further reasons for absence are shown in the table opposite.

The Chartered Institute of Personnel and Development (CIPD) report a national annual average of 6.3 sick days per employee for the 2016 year.

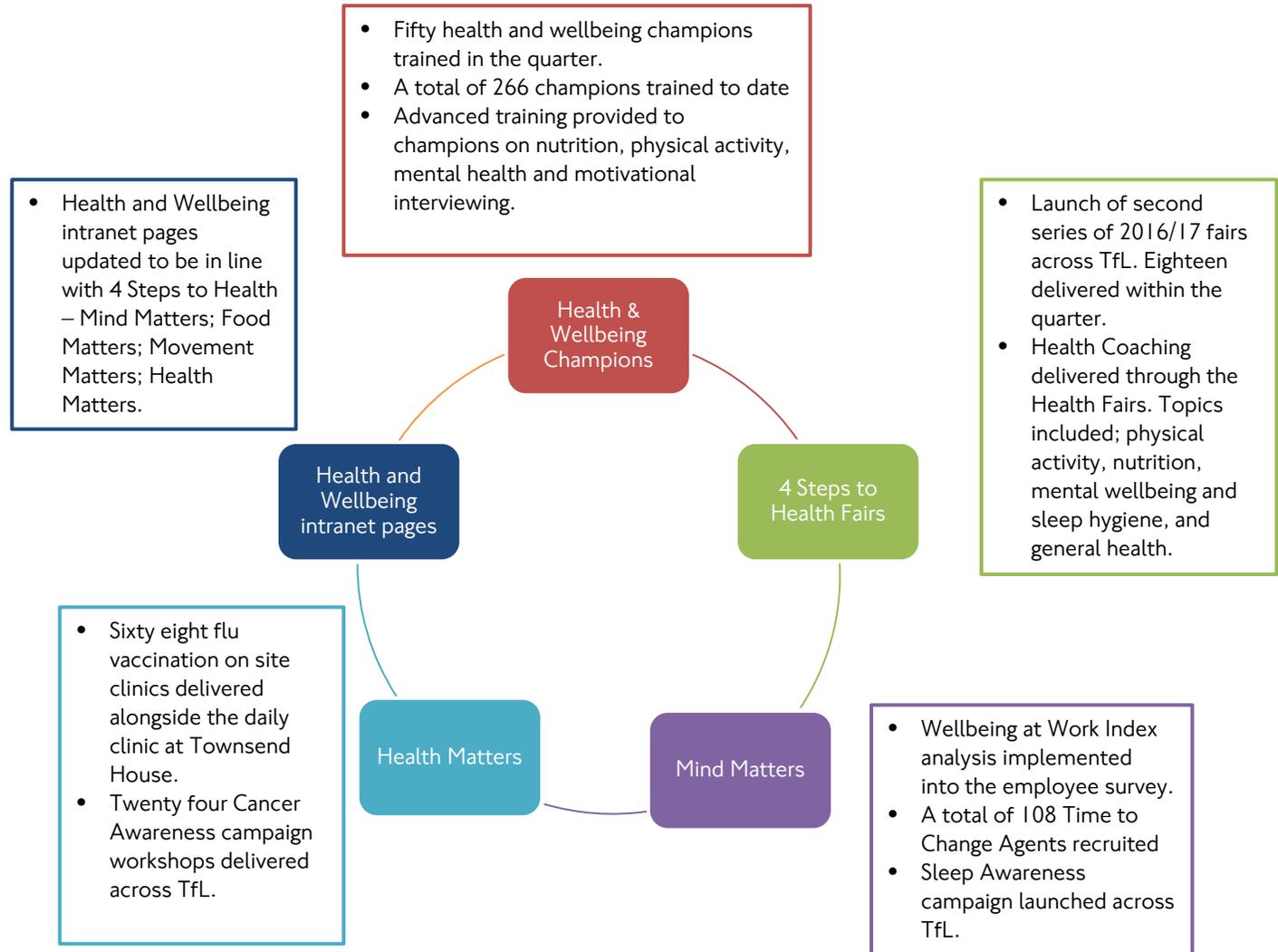
Reason for absence	No employees absent	Working days lost	% of working days lost	Days lost per employee
Mental Health	734	14,164.5	20.8	0.59
Musculo Skeletal	1,049	13,269.9	19.5	0.55
Coughs and Colds	2,033	8,411.1	12.4	0.35
Gastrointestinal	1,463	6,683.7	9.8	0.28
Accidents/Assaults	450	6,289.2	9.2	0.26
Other	500	4,751.3	7.0	0.20
Neurological Inc Eye and Ear	601	3,889.0	5.7	0.16
Heart Diseases Including Blood Pressure	138	2,469.3	3.6	0.10
Respiratory	304	2,087.0	3.1	0.09
Cancers/Carcinoma/Tumour/Neoplasms	58	1,883.0	2.8	0.08
Genitourinary/Renal	153	1,577.9	2.3	0.07
Infections	250	1,413.6	2.1	0.06
Pregnancy/Childbirth	75	1,048.2	1.5	0.04
Endocrine and Metabolic Disorders Inc Diabetes	17	160.5	0.2	0.01
TOTAL	7,825	68,098		

TfL Occupational health and wellbeing improvement programme

TfL Occupational Health have completed the quarter three activities of the health and wellbeing improvement programme for 2016/17. Activities completed are shown in the diagram opposite.

Wellbeing at Work Index

Wellbeing is linked to engagement, so this year TfL introduced a Wellbeing at Work Index to the employee engagement survey (Viewpoint), which means we can check if any areas of the business are at risk of work related stress. The six factors that can affect employees' wellbeing at work are: Control, Support, Role, Demands, Relationships and Change. These areas, if not managed well, are linked with stress and could lead to poor health and wellbeing, lower productivity and increased sickness absence. The Wellbeing at Work Toolkit contains resources, training and support. Managers may find it helpful when identifying areas that may need improvement.



TfL health, safety and environment significant incidents

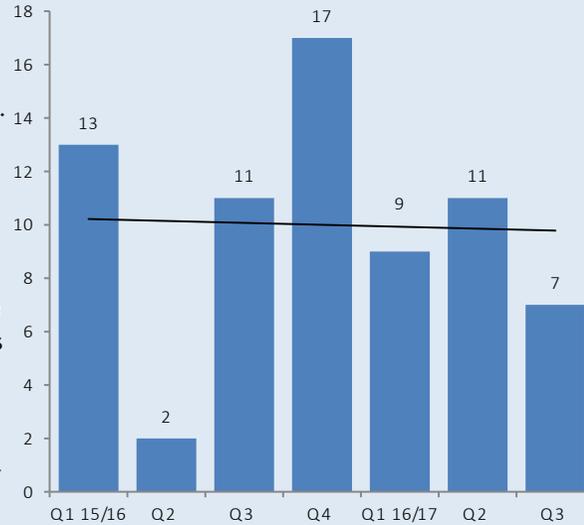
Description	Outcome
At 06:07 on 9 November 2016, a tram derailed near the Sandilands junction in Croydon.	<p>Tram 2551 was travelling from New Addington to Sandilands. As the tram exited the tunnel section, it began to follow the turn of the track but as it did so it derailed and subsequently turned onto its side. The derailment resulted in seven people losing their lives and 51 injured people requiring hospital treatment.</p> <p>Following the completion of a rigorous safety assessment and taking the advice of an independent panel of tram experts, the tram service resumed across the whole network on 18 November. Prior to services restarting, and in accordance with advice in the Rail Accident Investigation Branch's (RAIB) interim report into the derailment additional speed restrictions and associated signage were implemented near Sandilands and at three other locations on the network. All tram drivers were fully briefed prior to resumption of service and additional staff from TfL and FirstGroup have been available across the network to provide support and information for customers. Information has been displayed across the tram network for passengers including details of our website and contact number should anyone have any concerns about safety on the system. Across all TfL services, we have reviewed the process of when safety issues are raised and how we assure ourselves they are dealt with quickly and thoroughly. We continue to provide support to those involved and to work with the British Transport Police (BTP) and the Rail Accident investigation Branch (RAIB) as their investigations continue.</p>
In September 2014, an employee fell from a scaffold tower at South Kentish Town.	<p>The Office of Rail and Road prosecuted London Underground for an offence under the Health and Safety at Work Act 1974 concerning an accident in September 2014 when an employee fell from a scaffold tower erected to enable the cleaning of a disused lift shaft at South Kentish Town disused station. London Underground pleaded guilty and on 2 December 2016 was fined £500,000 and ordered to pay £50,000 costs. This was clearly a serious incident and we acted quickly to investigate the causes and take action to ensure that it does not happen again.</p>

Supplier workforce safety

Supplier* RIDDOR reportable incidents

There were no fatal incidents within the quarter or year to date.

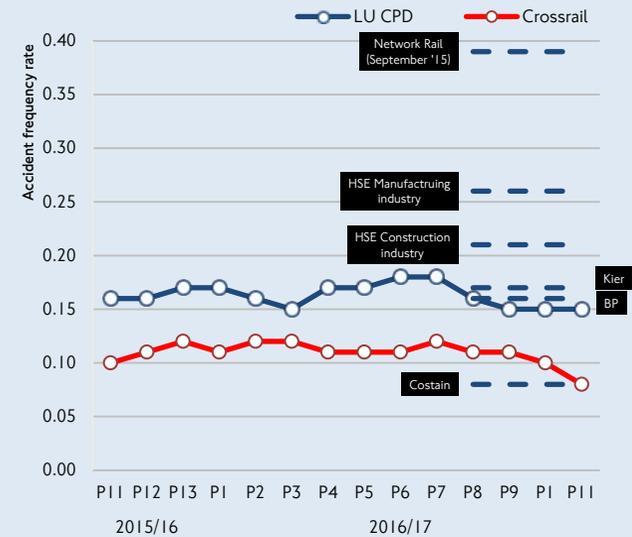
In London Underground Capital Programmes Directorate (LU CPD), over seven day injury continues to form a significant proportion of RIDDOR reportable incidents. Within LU CPD there is active engagement with the supply chain. At a strategic level this is achieved through partnership working with supplier senior leadership teams, via the Zero Harm Forum, to garner practical solutions to shared issues. At a tactical level, Site Persons in Charge forums implement outputs of the Zero Harm Forum. For managing over seven day injuries, active engagement between responsible managers and injured persons has been promoted, ensuring recovery is fully supported facilitating improved return to work rates.



Performance benchmarking

The Crossrail RIDDOR accident frequency rate (AFR) was 0.11 at the end of the quarter, a decrease on the end of year (2015/16) rate of 0.12.

The LU CPD RIDDOR accident frequency rate was 0.15 at the end of the quarter, a decrease on the year (2015/16) rate of 0.17.

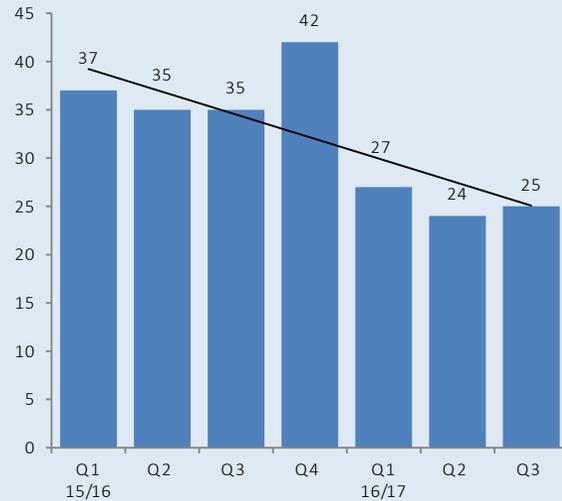


*Includes suppliers for London Underground and TfL Rail and the London Rail modes.

Supplier workforce safety continued

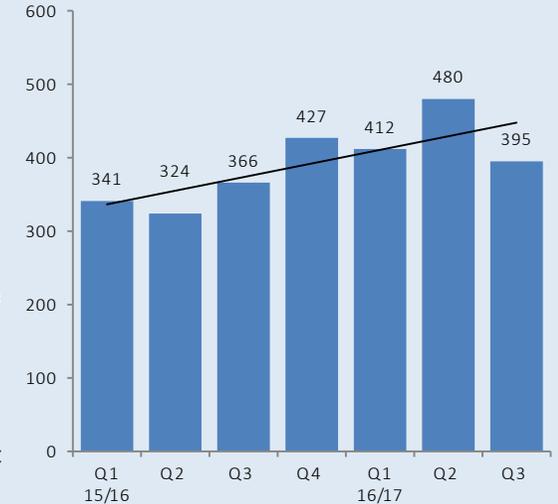
Supplier* major injuries

Injuries to workers that result from road traffic collisions are not a statutory reportable incident under the RIDDOR** (2013) regulations. Therefore, in surface transport bus operations, major injuries to suppliers are included in this report as an addition to the supplier RIDDOR reportable incidents. During the quarter, major injuries to Surface Transport suppliers were caused by collisions (40 per cent), assaults (20 per cent) and slips, trips, falls (12 per cent). In quarter three, performance management meetings were established with TfL contractors to promote safety priorities.



Supplier's employees effected by work related violence

During the quarter, 33 per cent of incidents were physical with 26 of the attacks leading to injuries to bus drivers. Eighty seven incidents involving bus drivers were reported to Police for follow up investigation. The Workplace Support Team (WST) was actively involved in 210 of these cases which includes providing support to the drivers affected. Ninety six per cent of incidents affected bus drivers. The WST engaged in proactive interventions at bus garages to benefit this group.



*Includes Buses and Other Operational Services

**Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013

Safety Performance: Crossrail

Safety improvements delivered

Stepping Up Week was held in October - "Target Zero – The Human Factor". The 2016 Have Your Say survey, which focused on both Occupational Health and Wellbeing and Diversity and Inclusion, was completed during the quarter. Directors were allocated to individual sites and undertook health and safety focused activities. Inspirational speaker, Louise Taggart, who lost her brother due to an electrical incident at work, delivered her story to over 800 workers during the week.

The Project Safety and Health Leadership Team (SHELT) has developed its structure to add site visits to the monthly meetings as the programme moves into fit out activities, and is now involving the Tier 2 and Tier 3 contractors in these meetings. This is highlighting new perspectives on health and safety issues from these contractors for the leadership team to consider.

During the quarter the assurance team undertook 11 health and safety audits, issuing 8 Corrective Action Reports (CARs). They also undertook 5 occupational health audits which raised 4 CARs.

The assurance framework has been changed to provide a focused review of the systems and procedures of the Tier 1 Contractors and their supply chain, concentrating on the interfaces between stations and system wide packages. The approach is also actively highlighting positive performances that can be shared.

Improvement actions planned for quarter four

The dates, theme and detailed plans for the Spring Stepping Up Week will be agreed in quarter four.

A tool kit to assist with the management of fatigue has been developed, and this will be rolled out in quarter four. The tool kit is based on the joint research that LU and Crossrail have undertaken and on best practice from other transport sectors.

The next phase of the Crossrail Resilience exercise planning, will take place to test and develop our business continuity plans.

The HSPI revision for the 2017/18 year will be developed and agreed to allow measurement to commence in period one of the new financial year.

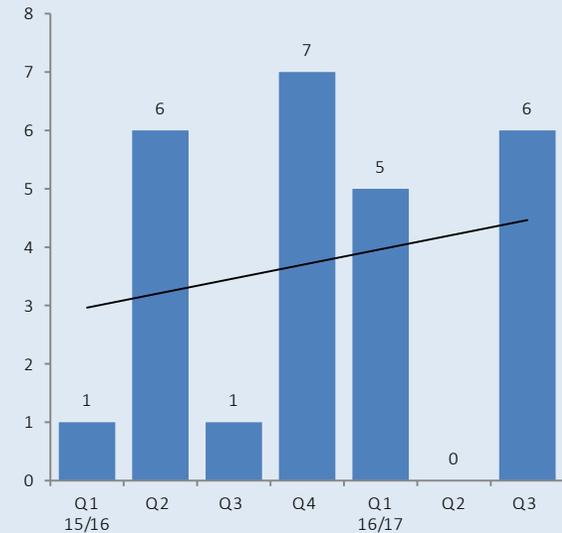
A programme for sharing health and safety matters between Crossrail and TfL on will be developed and rolled out.

Crossrail RIDDOR reportable incidents

There were six RIDDOR incidents in the quarter; one dangerous occurrence involving a telehandler that toppled onto its side, and five injuries. Injuries were caused by slips, trips, and falls and collision with a vehicle. All injuries resulted in musculoskeletal soft tissue injury or fractures. Three injuries met the criteria for submission of a statutory report due to the severity of the injury, and the remaining due to the injured person taking more than seven days absence.

In quarter three, 79 per cent of contracts achieved a Health and Safety Performance Index (HSPI) score of 2.20. The target is 85 per cent of contracts to score above 2.20.

The Lost Time Case (LTC) AFR was 0.27 at the end of the quarter three, a 3.8 per cent increase on the end of year (2015/2016) rate of 0.26. The target is a 10 per cent reduction in the LTC AFR, to 0.23.



Health Performance: Crossrail

Achievements

Crossrail obtained the London Healthy Workplace Charter at Achievement level and have been advised by the judging panel to submit their accreditation for the Excellence level early in 2017, due to the high level of support and information we provide our workforce about health, safety and wellbeing at work.

The Occupational Health & Wellbeing Maturity Matrix aims to assess sites/contracts on their maturity. Crossrail has 12 contracts out of 15 scoring a 2 (on a scale of 0 – 3). This improvement demonstrates the effectiveness of the tool for helping to drive improvement in health and wellbeing management.

Sickness absence

Average sickness absence per employee is 0.59 days at the end of quarter three. Mental health is the main cause of absence, further causes can be seen in the table opposite. It should be noted that support for improving mental health is a key part of the current Crossrail Occupational Health improvement programme.

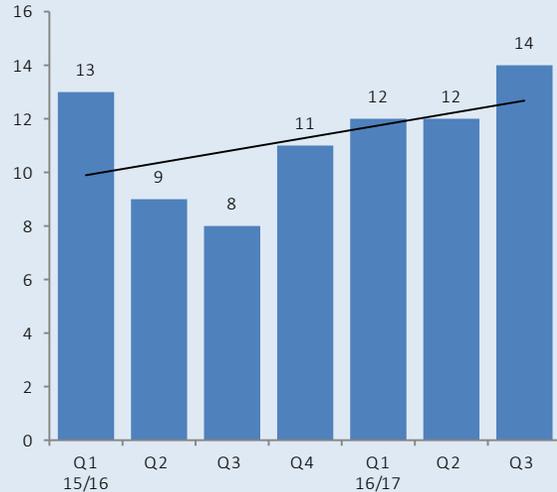
Reason	Days lost in quarter	Days lost as % of total sickness days	Days lost as % of average workforce
Cancers	31	3.0%	1.8%
Coughs and colds	140	13.7%	8.1%
Gastrointestinal	111.5	10.9%	6.4%
Genitourinary/Renal	66	6.4%	3.8%
Heart diseases	7	0.7%	0.4%
Infections	53	5.2%	3.0%
Mental health	277	27.0%	15.9%
Musculo skeletal	45	4.4%	2.6%
Neurological	47.5	4.6%	2.7%
Operation	172.5	16.8%	9.9%
Other	2	0.2%	0.1%
Pregnancy related	48	4.7%	2.8%
Respiratory	24	2.3%	1.4%
Grand Total	1024.5	100.0%	58.9%

Performance/period	Period 7	Period 8	Period 9	Total Q3
Number of employees (FTE)	587.16	579.25	572.05	1738.46
Sickness days	322	324	378.5	1024.5
Average sickness days lost per employee	0.55	0.56	0.66	0.59

Customer safety: London Underground and TfL Rail

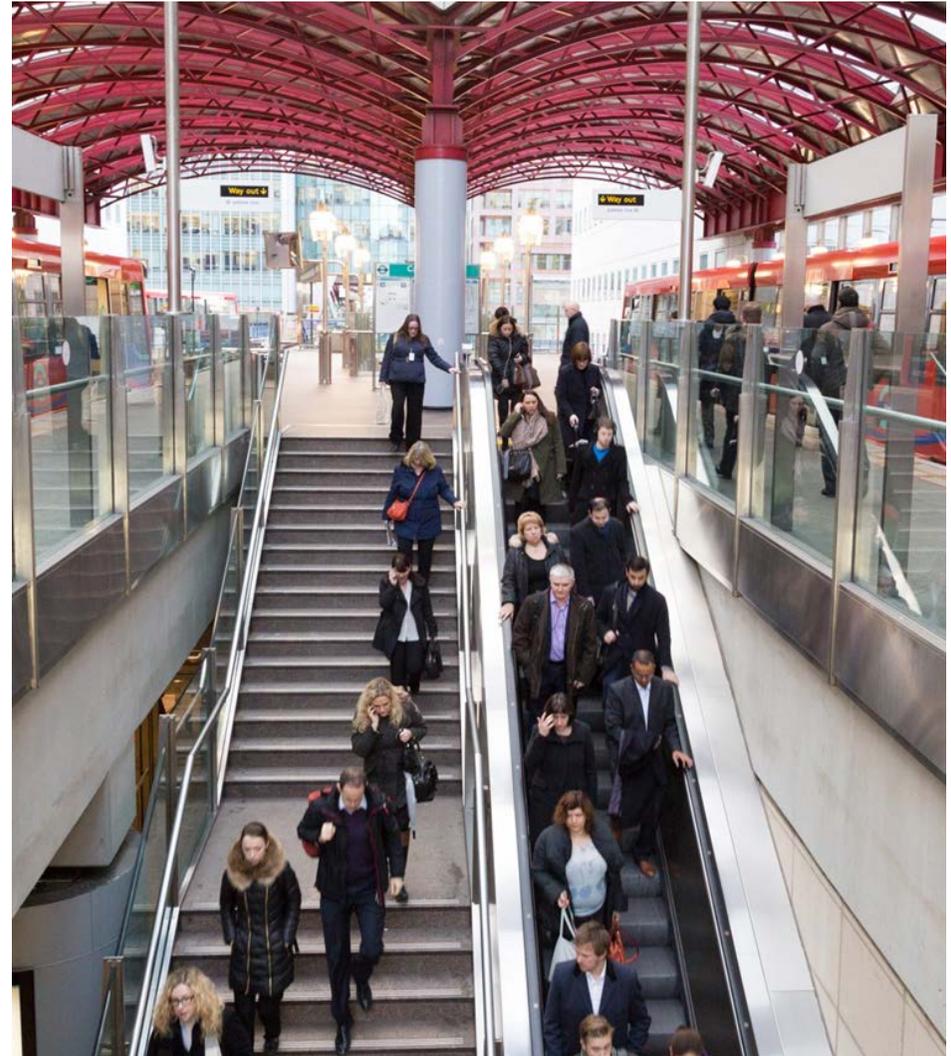
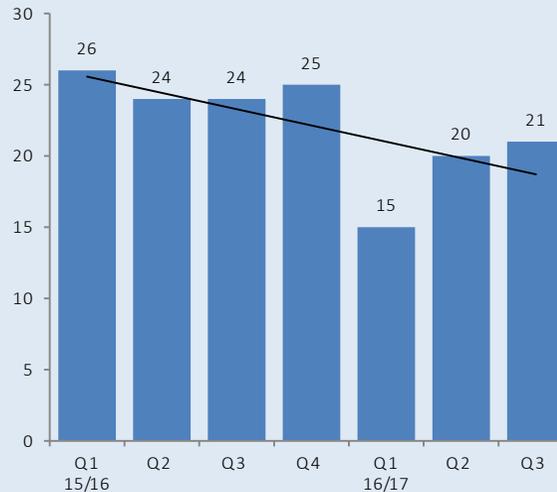
Customer fatalities

Fatalities; 12 suicides and two medical related fatalities on the London Underground and TfL Rail network. Pre existing cardiac conditions caused both medical fatalities.



Customer RIDDOR reportable injuries

Slip, trips, falls incidents remain our main cause of customer reportable incidents all of which resulted in fractures, soft tissue injuries and superficial wounds. All customers were taken to hospital for further treatment. Incidents continue to occur at the following locations; on escalators (40 per cent), on stairs (20 per cent), and the platform train interface (15 per cent).



Customer safety improvement programmes: London Underground and TfL Rail

London Underground customer safety improvements

Under the Customer Safety Steering Group the current projects aim to achieve a 10 percent reduction in incidents at key locations by 2018 on the 2015/16 performance. Key deliverables within quarter three include;

- Platform Train Interface (PTI): The Getting Active About PTI Safety project activity in quarter three includes; relocating one person operation cameras to enable a better view of the platform train interface, relocation of electronic information displays and platform seating away from the larger platform gaps, painting platform end barriers, reviews of station lighting and under platform lighting feasibility surveys.

The project is on schedule to complete the CCTV review of all deep tube priority platforms by the end of quarter four 2016/17. The four lines modernisation (4LM) mitigation work to reduce gaps on priority sub surface line platforms will be completed by the end of February 2016/17.

- Communication campaigns: A new campaign to influence customer behaviours is planned for launch in quarter four 2016/17. Messages will include; Mind The Gap, Stand Clear of The Closing Doors, Safety on Stairs and Escalators, and an Anti-terrorism message. The existing campaign continues to run in the interim.
- Managing security risks: British Transport Police (BTP) armed officers have been using LU trains to move between patrols. The armed officers have engaged with the public during their journeys and they have not had any negative comments from passengers. The early indications from BTP is that using LU trains has increased their visibility and improved the reassurance levels for customers.
- Managing customers under the influence of alcohol: Campaigns were delivered over the Christmas and New Year period. Staff are supported through training and ongoing guidance.

- Managing vulnerable persons: We have rolled out safe-guarding mitigations across our organisation to raise awareness and support staff dealing with vulnerable people. In London Underground, this was incorporated into training for all station staff. This important issue is also being progressed by those who operate services on behalf of TfL. This training gives staff confidence to respond appropriately to distressed people on the network and prevent suicide.
- Escalator safety: Funding was approved for the delivery of a suite of escalator safety initiatives; passenger positional blue foot prints, step riser messages, red lexan combs, messages embedded in handrails, hologram messages and lift floor vinyls. Some initiatives are not suitable for some sites due to the design of the escalator or heritage issues. Mitigations will be implemented at the ten highest priority escalators by the end of quarter four 2016/17.

TfL Rail customer safety improvements

The concession holder for TfL Rail services, Mass Transit Rail Corporation (MTR), held Ambassador Roadshows at a number of locations throughout the quarter. The roadshows facilitated engagement with the local communities on platform safety, events leading to slips, trips and falls and provided advance information about forthcoming upgrade works. MTR also hosted a Suicide Prevention working group in partnership with the local NHS health Authorities, British Transport Police and the Samaritans.

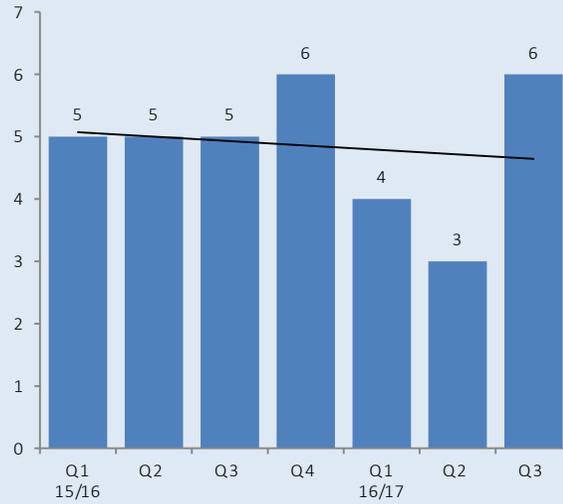
In addition to the working group, MTR staff have the ability to instantly share concerns about the mental health and behaviour of members of the public on or about the network by using the Yammer application.

MTR Ambassadors have also taken the opportunity to engage on safety related issues with local children by hosting Activity Days and attending Parents Evenings in local schools and colleges.

Customer safety: London Buses

Customer fatalities

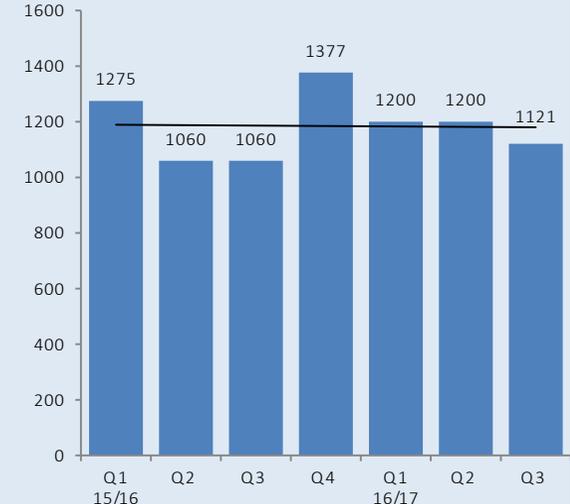
Six customer fatalities occurred on the London buses network bringing the total for the year so far to 13. The incidents in quarter three involved a pedestrian killed in a collision with a bus, a deceased baby discovered whilst in the care of her mother who has been charged with murder, three medical related events and a male who was discovered slumped in a bus station toilet but failed to regain consciousness. There was evidence of drug use.



Customer falls on buses

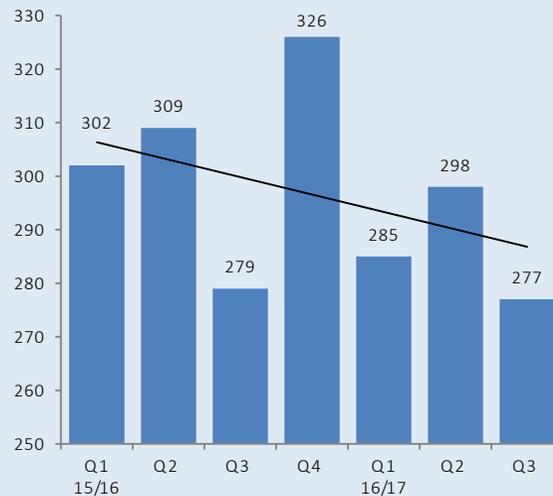
Although falls during the quarter under review is up five per cent up on incidents in 2015/16, there has been an improving trend with a rate decline from 2.3 falls per million passenger journeys at the start of the financial year to 1.8 falls on most recent data.

Of the 1,121 falls in quarter three, 12 involved wheelchair users, resulting in eight injuries and 83 involved children in pushchairs, with 29 injured.



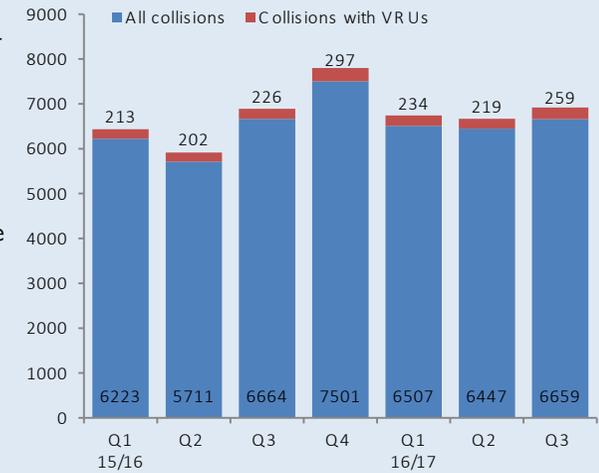
Customer incidents resulting in being taken to hospital

In quarter three, 277 bus customers were taken to hospital for treatment or as a precaution. This is a marginal improvement on same quarter last year. Fall related incidents accounted for 74 per cent of injuries. To supplement current bus driver related controls, the planning process for next year's behaviour change campaign is using the results of a statistical analysis into factors causing falls on buses.



Bus collisions

Bus collisions increased three per cent in quarter three compared with quarter two, but were in line with quarter three of 2015/16. Those involving vulnerable road users increased from 219 to 259. One pedestrian was killed in these incidents, with a total of four this year compared with seven over the same period last year.



Customer safety improvement programmes: London Buses

Bus Safety Programme

TfL continues work on the development of the Bus Safety Standard for new vehicles through the Bus Safety Programme.

The programme has funding of £4.65 million for the roll out of Intelligent Speed Assistance and development of the Bus Safety Standard which will specify the technologies and vehicle design modifications required on new vehicles from 2018 to cut casualty rates. This investment, will be used to investigate, assess and validate the most promising technologies. Tactical interventions to achieve near term safety improvements are being explored collectively with bus companies and also individually through performance meetings.

In quarter three, TfL held a workshop consisting of safety professionals and bus manufacturers to discuss the countermeasures arising from the initial findings of a bus fatal file research undertaken by Transport Research Laboratory (TRL). The research is on course for completion in quarter four.

TfL commenced a new bi-annual safety performance meeting with bus companies to review progress towards the delivery of the bus safety programme whilst also sharing best practice and exploring ways to address potential challenges. The meetings are also being used to ensure strategic alignment with the Bus Safety Programme.

TfL supported the Greater London Authority (GLA) Transport Committee investigation into the major issues facing bus passengers and other roads users a year after the launch of the Bus Safety Programme. The committee is seeking the views of guest speakers including victims' support consultant, Sarah Hope, Managing Director of Abellio, the Confidential Incident Reporting and Analysis System (CIRAS) Intelligence Manager and Regional Coordinator Officer for Unite. TfL's representation includes the Director of Strategy and Contracted Services and the Bus Collision Reduction Programme Manager.

Bus driver accessibility training

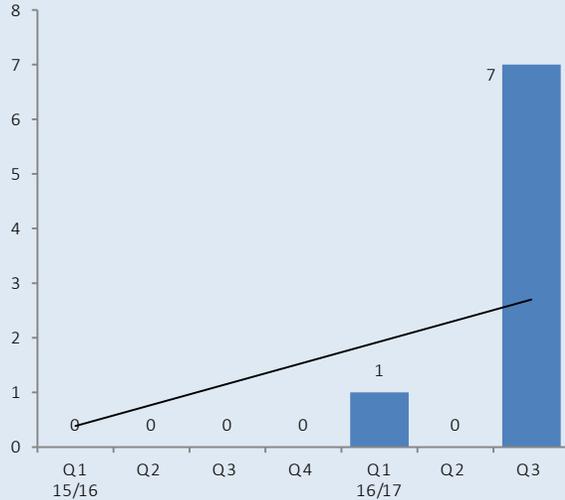
In October, the Buses Customer Experience team held an event with stakeholders to demonstrate how TfL bus driver training helps to improve access for those with accessibility needs. This includes a City & Guilds qualification for new drivers and a training programme called 'Hello London'. This two-day programme is being delivered to all 25,000 bus drivers. At the TfL accessibility event, actors from 'Hello London' presented stakeholders with a scene that forms part of the training, focused on the conflict between wheelchair and buggy users. Attendees then took part in a question and answer session and had the opportunity to feed back on the training. There was representation from a number of accessibility groups including: London TravelWatch, Transport for All, the Independent Disability Advisory Group, RNIB, Age UK London, National Autistic Society and Suzy Lamplugh Trust.

Customer safety: London Rail

Docklands Light Railway (DLR), London Trams (LT), Emirates Airline (EAL) and London Overground (LO)

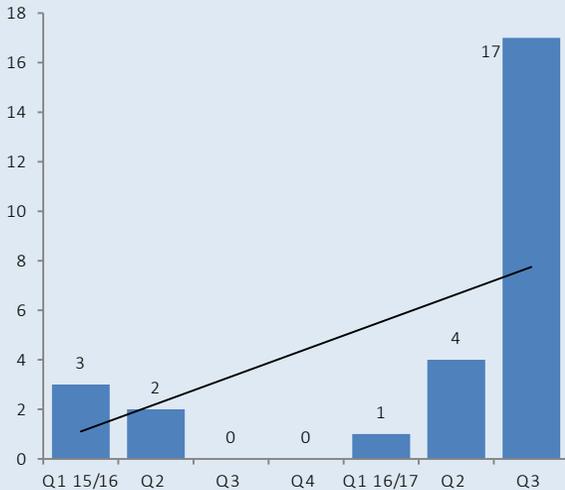
Customer fatalities

On 09 November, a westbound tram travelling to Wimbledon from New Addington derailed and overturned on a curve as it approached Sandilands Junction. Seven passengers were fatally injured in the accident. There were no other customer fatalities during the quarter.



Customer RIDDOR reportable injuries

As a result of the Croydon tram derailment, fifty one people were taken to hospital, with sixteen of them suffering injuries meeting criteria for reporting under RIDDOR. Additionally, there was one customer RIDDOR reportable injury on London Overground.



Safety improvements: London Rail

Docklands Light Railway (DLR), London Trams (LT), Emirates Airline (EAL) and London Overground (LO)

Docklands Light Railway (DLR)

New procedures have been approved for reporting of incidents across the DLR stakeholder organisations, and the management of actions arising from incident investigations and safety-related audits.

The annual audit of the DLR stakeholders Safety Management System (SMS) is being delivered during the quarter, with results expected in quarter four.

Following two minor procedural irregularities involving Persons in Charge of Worksites (PICOW), we are reviewing the way PICOW competence is managed. This has involved a review of the tasks PICOWs carry out and an update to the PICOW training course.

The HSE Supplier Assessment tool is being trialled on the Custom House station upgrade project.

The DLR Safety Authorisation Certificate application has been submitted to the Office of Rail and Road (ORR).

London Overground (LO)

On 13 November, Arriva Rail London (ARL) took over the operation of the concession from London Overground Rail Operations Limited (LOROL).

Arriva Rail London (ARL) have implemented Samaritans training to frontline staff to support them to recognise and respond appropriately to protect vulnerable persons. There were 50 successful interventions recorded by ARL (and previously LOROL) staff during 2016.

London Overground have rolled out the HSE Supplier Assessment tool – designed to provide a consistent basis for the assessment of HSE performance for all TfL Suppliers.

Despite continued low numbers of customer accidents and staff assaults, ARL are reintroducing a safety stations working group to focus attention on locations which have highest numbers of injury events to establish local mitigating actions.

A number of operational safety targets were not met in the 2016/17 year: signals passed at danger (SPAD), train protection warning system activations (TPWS), irregular door operations, and pantograph incidents. These precursor events are the focus of ARL's operational safety improvements for the 2017/18 year.

Emirates Airlines (EAL)

Following an incident of a cabin leaving the terminal with its doors unlatched in quarter two a technical solution has been developed to improve cabin door locking. This has been a collaborative effort between TfL, the operator Mace Macro and Doppelmayr. A secondary door position monitoring circuit was designed and the modification is currently undergoing operational trials at the EAL. Early indications are that the project will be successful and the small number of snagging items are expected to be rectified in quarter four.

London Trams (LT)

New infrastructure protection training has been rolled out to LT. It utilises 3D technology supplied by the National Skills Training Academy for Rail (NSARE) by creating a virtual reality 3D environment in the classroom.

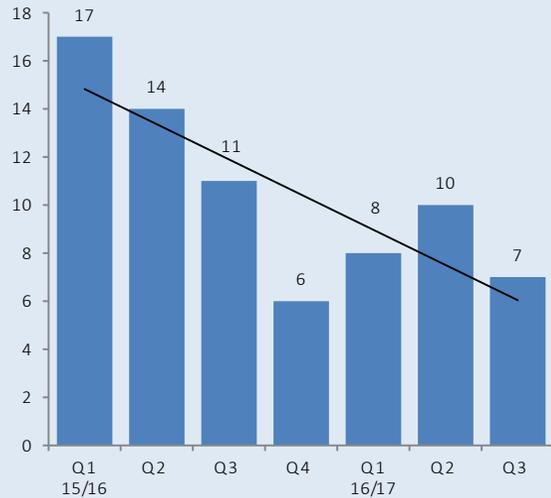
Following an increase in wrong side door openings in quarter one, the Tram Operator have had a human factors investigation completed to identify additional mitigations. The results are expected in the next quarter. In the interim, LT will be introducing new automated announcements to advise customers which side the doors will open. This is in addition to modifications of the position of door opening buttons that have already been undertaken.

Customer safety: other operational services

Dial-a-Ride (DaR), London River Services (LRS), Taxi and Private Hire (TPH), Victoria Coach Station (VCS), and Santander Cycles

Customer incidents resulting in customers being taken to hospital

There have been no fatalities in the quarter or year to date. Five cycle hire users and two DaR customers received major injuries in the quarter. On two occasions, the injuries were as a result of falls while using the bikes and three users were involved in road traffic collisions. The two DaR customers needed hospital treatment after falling whilst being assisted to board the bus.



Taxi and Private Hire (TPH) Roadworthiness and compliance checks at roadside

Performance in the quarter exceeds the baseline of 80 per cent compliance for both taxis and private hire vehicles inspected.



Santander Cycles performance

As part of TfL's commitment to improving cycle infrastructure, we have introduced 188 new solar-powered bollards at all carriageway docking stations in Westminster. The new bollards are easier to install, are materially cheaper and improved safety for customers and other road users.

Blaze Laserlights

A third of TfL's Santander Cycles have now been fitted with Blaze Laserlights to make riders more visible on the roads. Over the next nine months the lights will be fitted to the rest of the fleet of 11,500 bicycles. Blaze Laserlights project the symbol of a bicycle onto the ground six metres in front of the cyclist, making them more visible to those around them. The light alerts drivers and pedestrians to the approach of a bike and helps them to be seen when they might otherwise be invisible, such as in a vehicle's blind spot. The intelligent Laserlights will only come on only when it is dark to save energy.

Picture opposite: Blaze Laserlights in action.

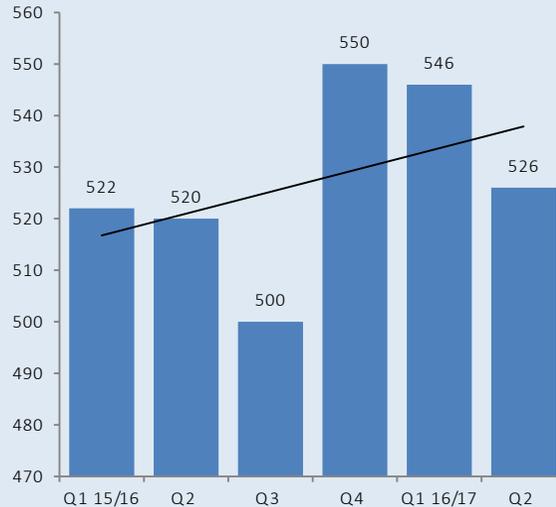


Road safety

All road safety data is provided one quarter in arrears and are provisional statistics due to our arrangement with the third party data supplier.

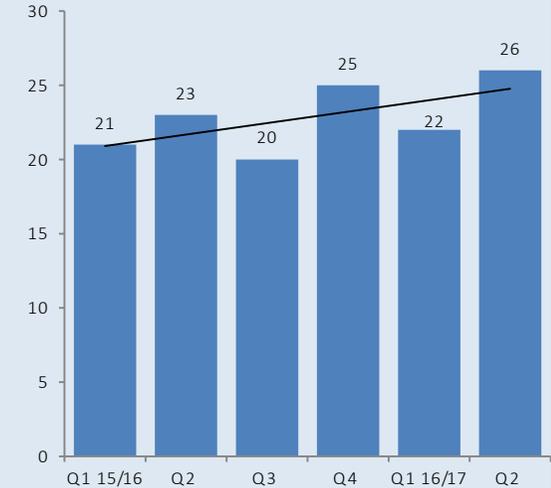
All killed or seriously injured (KSI) on London's Roads

Provisional figures show KSIs fell by four per cent in quarter two, 2016 compared with the previous quarter. The performance was however marginally worse than quarter two of 2015.



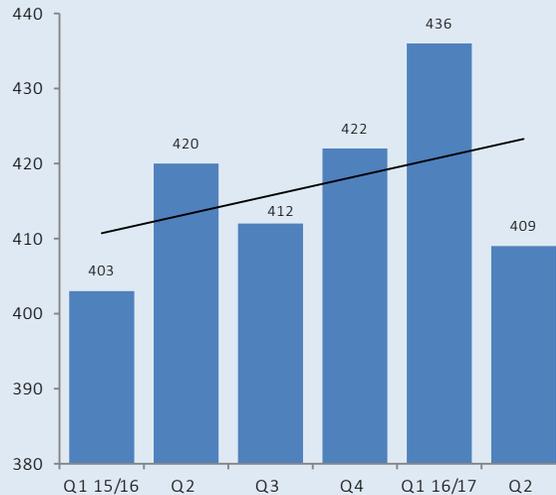
KSI whilst using Taxi, Private Hire Vehicle (PHV), Coach and Bus

Provisional figures show KSIs involving occupants of buses, coaches, taxis and private hire vehicles rose to 26 (18 per cent) in quarter two, 2016 compared with the previous quarter when it stood at 22. The performance was also worse than the quarter two of 2015.



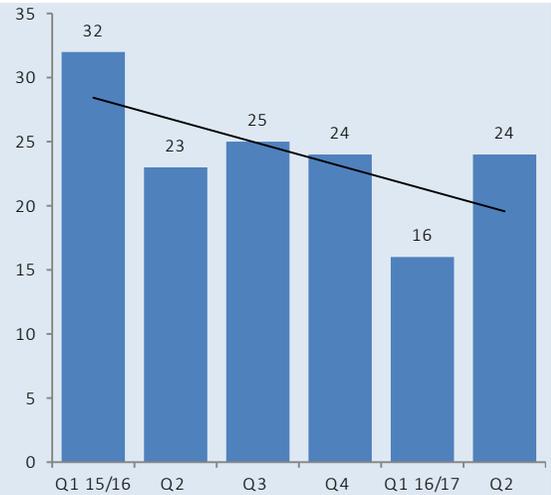
Vulnerable road user (VRU) KSIs on London's Roads

Provisional figures show VRU KSIs fell by 6 per cent in quarter two, 2016 compared with the previous quarter. The performance was also better than quarter two of 2015.



KSI by HGV

Provisional figures show KSIs arising from collisions with HGVs rose to 24 (50 per cent increase) in quarter two 2016, compared with the previous quarter when it stood at 16. However, this is broadly inline with the figure achieved in the three quarters prior to that.



Safety improvements: Road Safety

Improving Vulnerable Road User Safety

TfL has been recognised internationally for its work to improve the safety of cyclists, pedestrians and motorcyclists in London. In December, Prince Michael of Kent awarded TfL the International Road Safety Award for its ground-breaking work and promising results for reducing death and serious injury.

Analysis of police collision and travel demand data led TfL to put in place a range of initiatives which contributed to a three per cent drop in the number of people killed and seriously injured on London's streets (2,092) in 2015, its lowest ever level.

The projects considered included; the launch of the Safer Lorry Scheme, the installation of special sensors at pedestrian crossings which adjust crossing times when large groups of people are detected, as well as the trialling of 20mph limits and average speed cameras on key routes.

TfL is now looking to go further and is working to deliver The Mayor's plans to remove the most dangerous HGVs from the London roads by 2020 through the Direct Vision Standard. This is the first scheme of its kind in the world, directly addressing the issue of driver blind-spots.

Other measures include expanding the use of 20mph limits, introducing motorcycle and pedal cycle skills courses as well as developing a world leading bus safety standard which includes the latest safety technologies to help avoid and reduce the impact of collisions involving buses.

Camden 20mph trial

TfL started the trial on Camden Street in November. It involves innovative 'textured imprint' surfacing at crossings and speed humps, which create a subtle rumble effect to help drivers reduce speeds while also increasing skid resistance. The trial will run for 18 Months. Textured surfacing will also be installed at road entrances in the form of 20mph roundels set into the carriageway. This feature has been nominated for the Highways Magazine Road Marking Project of the Year award.

Direct Vision Standard

TfL research shows that low direct vision (how much Heavy Goods Vehicle (HGV) drivers can see from their cab without a mirror or camera) is a major contributor to pedestrian and cyclist fatalities. The more a driver can see, the lower the risk of a collision.

To reduce the number of HGVs in London with low direct vision, the Mayor launched the world's first Direct Vision Standard on 30 September. This uses a simple 'star rating' (from zero where the driver's vision is very limited and the cab is high up, to five stars where the cab is lower and there is good all round vision) to define how much HGV drivers can see directly from their cab. We will be using the standard to increase the number of HGVs on London's roads with improved direct vision.

This will contribute to our target of a 50 per cent reduction in the number of people killed or seriously injured by 2020. Through the work that TfL has delivered in partnership with industry there are now 40 high vision HGVs, exceeding the 2016/17 target of 25 high vision HGVs.

Work Related Road Risk (WRRR)

At the H&S Steering Group meeting in quarter three, the group committed to the step-change required to reach maximum levels of compliance in the shortest possible time. Tougher sanctions were agreed for non compliance and turning non compliant vehicles away from our sites.

Road Safety Week

The TfL-funded MPS Roads and Transport Policing Command (RTPC) supported this year's BRAKE Road Safety Week from November. The focus was on the six elements of the BRAKE pledge – slow, sober, secure, silent, sharp and sustainable.

The RTPC held an Exchanging Places event that gave cyclists and pedestrians the opportunity to sit in the cab of a large vehicle to better understand what a driver can and can't see. The event also included Community Roadwatch operations, which allowed members of the public to get involved in enforcing speed limits in their local area. In addition, there was enhanced on-street speed enforcement and large-scale, high visibility Safeway operations at junctions. Other activities targeted seatbelt use, using mobile phones at the wheel and driving under the influence of drink and drugs.

Safety improvements: Road Safety

Investing in boroughs to make streets greener, healthier and safer

The Mayor has announced £220m funding for boroughs to deliver transport, town centre and public space improvements to improve the lives of Londoners. Each of London's 33 boroughs benefits from the funding, with more than £1bn to be invested across TfL's Business Plan to 2021/22.

The funding will be used by boroughs across the Capital for a wide range of projects to reduce dangers on the roads, transform local areas, and encourage cycling and walking.

TfL will invest £148m in Local Implementation Plans that support the Mayor's Transport Strategy, as well as a further £70m for other schemes, including funding for strategic walking and cycling programmes such as Quietways, Mini-Hollands and Liveable Neighbourhoods.

This will be key to delivering the Mayor's Healthy Streets vision of a city that is more pleasant to live and move around in.

Road Safety Schemes

Works on the A3 Battersea Rise (Clapham Common to Northcote Road) saw cyclists and Powered Two-Wheeler (P2W) safety improvements implemented at the TLRN priority collision site. The changes included "keep clear" markings and widening of existing cycle lane to reduce potential collisions. Studies have shown that "keep clear" markings promote better driver behaviour, allowing drivers to leave visible gap in the road

The northbound bus lane on A3 Clapham Road was extended to improve bus journeys whilst also providing safety improvement for cyclists and motorcyclists through enhanced marking (such as "keep clear") for improved visibility. Accident statistics will be monitored on the location over the next three years.

The A100 Tower Bridge Road junction with Elizabeth Street was upgraded to better accommodate cyclists and pedestrians. The changes included new signalised crossings with pedestrian countdown facilities, two stage right turn cycle signals and the widening of the central reservation.

Safety benefits will be monitored through review of accident statistics and surveys of desire line to ensure the new facilities are being used.

The A20 Lee Green junction improvement saw staggered pedestrian crossing installed on the busy corridor. The change will improve pedestrian safety, reduce collisions and improve the safety of right turning vehicles (including HGVs). Safety benefits will be monitored through "before" and "after" accident data review.

A402 Marble Arch/Great Cumberland Place saw the completion of pedestrian and cyclist safety improvements. The changes included a signalised pedestrian crossing, replacing a two-stage crossing with a refuge island which was often over capacity. Third party funding was secured in the completion of the improvement which will benefit cyclists and the vast number of visitors to the West End.

Safety improvements: Road Safety

Sustainable Travel: Active, Responsible, Safe (STARS)

In November, TfL gave top awards to 34 London schools for championing active and safe travel on the journey to school, as part of its STARS schools programme. The schools received awards for being the highest performing of more than 1,500 participating London schools, in reducing car use, increasing walking and cycling and using public transport.

The scheme helps primary and secondary school children adopt safe and sustainable ways of travelling, such as cycling, walking and public transport. Now in its tenth year, accreditation to STARS has grown from 180 schools in 2006 to 1,557 in 2016. Schools are judged on their success in changing travel behaviour with each school awarded a Bronze, Silver or Gold accreditation.

Safer Travel at Night (STaN)

TfL's annual STaN campaign took place in quarter three. The purpose of STaN is to remind the public of the dangers of unbooked minicabs and providing advice on how to safely get a taxi (black cab) or booked minicab home, during the Christmas and New Year period. Working alongside the Metropolitan Police Service (MPS) and City of London Police (CoLP), TfL's enforcement team (which will quadruple to more than 300 officers by next Summer) stepped up their activity to crack down on unbooked minicabs and other illegal activity by targeting priority locations across London.

Safer Streetworks

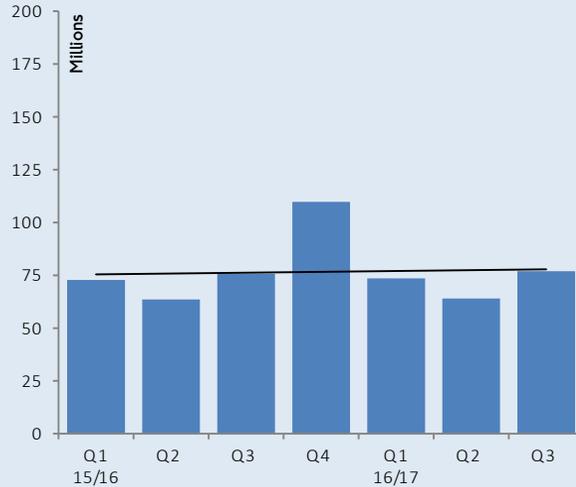
In the quarter, TfL Streetworks Inspections led to British Telecom (BT) being ordered to pay more than £10,000 for two serious safety breaches that put public safety at significant risk. The locations had poor signing, lighting and pedestrian guarding as well as incorrect traffic control. The table opposite sets out the number of times TfL has successfully prosecuted utility companies since 2010.

Company	Number of successful prosecutions	Percentage of total
BT Openreach	40	36%
Thames Water	13	12%
Infocus	11	10%
Virgin Media	10	9%
Fulcrum	9	8%
UK Power Networks/London Power Networks	9	8%
Vodafone	7	6%
National Grid Gas	5	4%
Cable & Wireless	3	3%
Abovenet	2	2%
McNicholas (on behalf of Virgin Media)	1	1%
O2	1	1%
Total	111	100%

TfL Environmental Performance

Energy consumption

Energy consumption for quarter three has increased by 27 per cent reflecting the change in seasonality from quarter two. The measure reports gas and electricity usage, measured in kilowatt hours, within TfL managed sites. A head office buildings energy use improvement programme, 'Power down', has been rolled out. Further detail can be found on page 22.



Waste management

Waste management is reported quarterly in arrears due to the availability of data from our third party waste contractors.

Quarter two result; 99.5 per cent of commercial and industrial (C&I) waste has been diverted from landfill. 95 per cent of construction, demolition and excavation (CDE) waste has been diverted from landfill.



Breaches of consented discharge

For London Underground, testing reveals a number of sites are showing multiple consecutive breaches of their discharge consent. Any sites with repeat breaches will be required to tanker effluent offsite. This is an undesirable but necessary measure to protect the environment and prevent legal action.

There are no reported breaches of consented discharge on the Surface Transport network.

Site	Q3
Upminster Depot	✓x
Neasden Depot	x
Ealing Common Depot	t
Hammersmith Depot	t
Lillie Bridge	✓✓
Northumberland Park Depot	✓✓
Ruislip Depot	t
Hainault Depot	t
Stonebridge Park Depot	x
Waterloo Depot	✓✓
Stratford Depot	✓✓
Cockfosters Depot	✓✓
Action Works	✓x

t	Tested
✓✓	Tested and passed
x	in breach
✓x	breached, but tankered

Night tube noise complaints

Where TfL have received complaints about noise, we are providing customers with a named contact via a dedicated telephone number, with ready access to the experts working to tackle the root cause.

The installation of shock absorbent track fixings on Night Tube routes has had a positive effect. TfL have seen significant noise reduction in Pimlico, Notting Hill, Baker Street, Wanstead and Bethnal Green. For some, this means that the problem has gone away completely.

TfL are using the same fixings between Vauxhall and Stockwell and there are plans to introduce them between Oxford Circus and Warren Street and in the Earl's Court area.

TfL have given residents a clear timescale for this work and are keeping them regularly updated on progress. While these results are very encouraging, this technology is suitable only for more modern track. At Woodford, for example, alternative measures are planned. TfL are prioritising trials of a rail damping system before the end of the year. This will stop noise caused by rail vibrations.

TfL Environmental Performance

Low emission bus zone and environmental improvements

Around half of the 51 buses required to make routes 507 and 521 fully electric have been delivered to the Go Ahead Group. The remaining all-electric buses are expected to be supplied by the end of quarter four 2016/17. The phased delivery of the BYD-made vehicles marks a significant step forward in the Mayor's comprehensive plan to transform London's bus fleet to ensure it is among the greatest in the world.

The plan includes all 300 single-deck buses that travel through central London being zero emission for the Ultra Low Emission Zone (ULEZ) launch in 2020.

The trial of three range-extended hybrid buses, which can operate for up to 80 per cent of the time in all-electric mode, continues on route 69. They are supported by rapid ground-based induction charging at Walthamstow and Canning Town bus stations, as well as overnight charging.

The proportion of the bus fleet served by low-carbon emission and quieter diesel electric vehicles is now approaching 23 per cent. There are currently 2,100 hybrids in the fleet. This will grow to at least 3,000 as part of ULEZ requirements for cleaner double-deck buses by 2020. In addition, we now have 1,600 of the latest ultra low emission Euro VI engine vehicles, most of which are hybrids.

On 30 November, the Mayor unveiled the world's first double-decker hydrogen bus. The new hydrogen double-decker, launched at the International Zero-Emission Bus Conference and Summit at City Hall, is at the forefront of green technology and is due to be trialed on our roads next year, where it will undergo durability and range testing. It forms part of the Mayor's plan to transform our bus fleet by phasing out the oldest diesel buses and making the entire fleet ultra-low or zero emission.

The Mayor also announced that no more pure diesel double-deck buses will be added to the Capital's fleet from 2018 and that all new single-decks for central London will be zero-emission.

Crossrail environmental achievements

Crossrail diverted 96 per cent of generated construction, demolition and excavation waste from landfill in quarter three.

Progress continues to be made towards disseminating learning legacy including two new documents published on the website (on the Green Line Recognition Scheme and environmental supplier performance), a webinar on noise and the temporary construction railway and presentations at the Rail Sustainability Summit and the Construction Climate Challenge Seminar.

Two contractors were successful at the Sustainability Awards for Civil Engineering Projects (CEEQUAL) outstanding achievement awards. The 'Thames Tunnel' contract was awarded a winner in the water resources management category and the 'Tunnels Drive X' contract was awarded a highly commended in the management of effects on neighbours category.

Energy saving in Head office buildings

In TfL head office buildings, 55 per cent of energy consumption is during out-of-office hours. The source of this energy is from electrical equipment that is left on from 18:00 to 07:00 on week days and at the weekend. The 'Power down' initiative encourages employees to make changes to their daily routine to ensure electrical equipment is turned off at the end of the day.