

Safety, Health and Environment Quarterly report

Quarter 1 2022/23

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Introduction and Executive Summary

This report summarises our performance in Quarter 1 of 2022/23 and identifies strategic trends covering 1 April to 25 June 2022, unless specified.

The report sets out ways in which we have continued to keep our customers and workforce safe as, after the lifting of all restrictions we have transitioned to living with coronavirus. In January 2022, the Government removed the mandate to wear a face covering in public spaces, meaning that they were no longer enforceable on our services. This quarter we changed our customer and staff messaging to encourage people to take appropriate action to keep themselves safe, including using hand sanitiser and wearing a face covering if this helps them to travel and work with confidence. In parallel, we have continued to make progress towards our longer-term safety, health and environmental objectives.

During Quarter 1, we saw customer numbers decrease slightly, ending the quarter at 0.72 billion customer journeys, representing an 0.08 billion decrease from the end of Quarter 4 2021/22. However, it is worth remembering that Quarter 4 is a four-period quarter – rather than three – covering 12 December 2021 to 31 March 2022, so these numbers should be treated with caution. We still have some way to go before reaching the pre-pandemic customer journey figures of 1.08 billion (Quarter 4 2019/20). This means many of our key safety, staff and environmental performance indicators remain at different levels than they might have been previously.

We have progressed with the implementation of measures to improve our short- and long-term safety, health and environmental performance. We have continued to perform well on most of our safety metrics. In Quarter 1, we met our targets for injuries to people in road traffic collisions and injuries to people on or in collision with a bus. The data behind these scores is explained in the roads safety section of this report. Conversely, we did not meet our targets for customer injuries and workforce injuries and the reasons behind this are discussed in the public transport safety section of this report.

COVID-19 remained the top cause of short-term staff absence but significantly decreased as a proportion of staff absence from 59 per cent in Quarter 4 to 30 per cent in Quarter 1. Mental health and musculoskeletal-related health remained the top two causes of long-term absence, which is in line with the national average. Following the Government's decision to phase out free lateral flow tests, we have continued to make free lateral flow tests available to our staff.

On 4 April 2022, we responded to the Department for Environment, Food & Rural Affairs consultation on Biodiversity Net Gain regulations and implementation. On 26 May 2022, our Head of Corporate Environment attended the London Assembly Environment Committee to discuss London's wild spaces. On 24 June 2022, we

responded to the London Rewilding Taskforce's Call for Evidence, to feed into a Local Nature Recovery Strategy for London.

In Quarter 1, the Government confirmed continued short-term rollovers in funding support whilst discussions continue about a longer-term arrangement. Government funding is critical to guarantee the operation and maintenance of essential and safe transport services in London, allowing us to continue our full and vital contribution to the Mayor's economic recovery programme for London as well as national priorities on decarbonisation, air quality and making transport better for users.

About this report

This report explores and highlights the performance, trends and measures we are implementing to improve safety, health and environment performance.

Throughout this report, our 'customers' refers to direct users of our services, and our 'workforce' includes our directly employed staff as well as people working in our supply chain. For both groups, we use data collected directly from our operational businesses. Some assault data comes from both our own internal reporting systems and the police.

When referring to people killed or seriously injured, the following causes of injury are excluded: an injury which results from an incident arising from a pre-existing medical condition; intentional self-harm resulting in a physical injury or death; criminal activities perpetrated by customers or members of the public on other customers or members of the public.

Unless otherwise stated, 'streets' refers to all of London's roads, including those managed by London's boroughs which make up the majority (95 per cent) of London's roads. Where we report safety data for streets, we use data collected by the Metropolitan Police Service (MPS) and the City of London Police (CoLP), in line with Government requirements. All road safety data is provisional and subject to review and assurance, with the final data published annually in line with Department for Transport (DfT) requirements.

Reporting period

Most data covers the quarter from 1 April to 25 June 2022, except for some work-related violence and aggression data which is reported six months in arrears. Some data is provisional and is subject to change.

Mayor's Transport Strategy and Scorecard

Our role is to enable London to move safely and sustainably, in line with the goals of the Mayor's Transport Strategy (MTS). This includes increasing the attractiveness of public transport and making cycling and walking safer, easier and more convenient. We work with many partners, including London borough councils, businesses, the police, local communities and consumer organisations to achieve the MTS objectives.

Scorecard

Figure 1: Quarter 1 2022/23 Scorecard

Measure	Unit	Q1 Target	Q1 Actual
People killed or seriously injured in road traffic collisions per million journey stages	Killed or seriously injured per million journey stages	0.33	0.27
People killed or seriously injured in road traffic collisions in or by a London bus (per million surface journey stages)	Killed or seriously injured per million journey stages	0.020	0.019
Customer all injuries per million passenger journeys	All injuries per million journeys	2.58	2.73
Workforce all injuries	Number of workforce injuries	325	335

The table sets out the relevant scorecard metrics and accompanying targets and actual performance. Below are brief explanations of the performance of each measure. More detailed explanations, with accompanying graphs are set out in the relevant sections of this report.

Road safety measure

As part of our continuing trajectory towards Vision Zero; eliminating death and serious injury on the roads by 2041, our aim in Quarter 1 2022/23 was to reduce the number to fewer than 0.33 people killed or seriously injured on the roads per million journeys. For Quarter 1, there were 0.27 people killed or seriously injured on the roads per million journeys.

Bus safety measure

Our ambition is for no one to be killed in, or by, a London bus by 2030. In Quarter 1, our aim was to have no greater than 0.020 deaths or serious injuries per million journey stages. During Quarter 1 there were 0.019 deaths or serious injuries per million surface journey stages.

Public transport safety measure

Working towards our Vision Zero ambition to eliminate deaths and injuries to customers travelling on our public transport network by 2041, our aim in Quarter 1 2022/23 was to have fewer than 2.58 injuries to our customers per million journeys. This target represents a five per cent performance improvement compared to last financial year.

During Quarter 1 there was a rate of 2.73 injuries per million journeys, unfortunately missing this target. Periods 1 and 2 (1 April to 28 May 2022) were within target, however we saw a spike in our customer injury rate during Period 3 (29 May to 25 June 2022). Across the quarter, our customer injury rate is lower than in Quarter 1 of the previous financial year, 2021/22. This is discussed in more detail in the public transport safety performance section later on in this report.

Workforce safety measure

Working towards our Vision Zero ambition to eliminate deaths and injuries to our workforce, in Quarter 1 our aim was to have fewer than 325 workforce injuries. During Quarter 1 there were 335 injuries sustained by our workforce. This total reflects a return to pre-pandemic levels of some workforce injury causes, such as assaults.

This is a reminder we must strive for continuous improvement towards Zero Harm when it comes to the safety of our workforce.

Safety

This section summarises our safety performance across London's roads, public transport, capital delivery activities and work-related violence. It provides an overview of key trends for the year and the areas we are targeting for improvement.

Violence Against Women and Girls

We continue to make good progress with our programme of activities to end violence against women and girls, while also looking at what more we can do. On 15 June 2022, the Mayor published his strategy for tackling violence against women and girls. We are proud to have been involved in its development and will work with the Mayor's Office for Policing and Crime and other partners to deliver on it. Additionally, on 4 July 2022, the British Transport Police (BTP) released the first edition of their new mobile reporting app, 'Railway Guardian', making it easier for customers to report crime and access support. It also provides customers with information on what to do if they see sexual harassment on trains or at stations. We have collaborated with them on the design and continue to work closely on integrating this platform into other apps and tools.

The delivery of our 'zero tolerance to sexual harassment' training to frontline customer-facing transport staff continues. Our 500 enforcement officers have been trained, and training programmes have launched for staff that work in our bus and Tube stations. This training is supported by a comprehensive internal communications plan to raise awareness and provide guidance to staff. Sexual harassment will also be covered in the new diversity and inclusion training being rolled out to all of our bus drivers starting later this year.

We continue to run our communications campaign across our networks that reinforces our zero tolerance of sexual harassment. The primary aim of the campaign is to send a strong message to offenders that sexual harassment behaviours are wrong, harmful and not tolerated on our network. We want to encourage those who experience any form of sexual harassment on our rail network to report it and to reassure that those reports will be believed and handled sensitively, and to that end, we have seen an increase of 74 per cent in the reporting of sexual harassment behaviours. There were 1,363 reports of sexual harassment made between October 2021, when the campaign launched, and the end of April 2022. This is up from 575 reported offences in the same period the year before.

Government launches the Road Safety Investigation Branch

In June 2022 the Government announced that it will recruit a specialised team of inspectors to join the country's first ever Road Safety Investigation Branch (RSIB). They will be charged with the responsibility of looking at how and why collisions happen and to provide insight into how new technologies such as self-driving and electric vehicles can be rolled out on our roads.

The branch will investigate themes in the causes of collisions, as well as specific incidents of concern, to learn valuable road safety lessons. It will make independent safety recommendations to organisations, such as government and police forces, to better shape the future of road safety policy and provide better, greener and safer journeys.

The specialised unit will also provide vital insight into safety trends related to new and evolving technologies, which could include self-driving vehicles, e-scooters and electric vehicles, to ensure the country maintains some of the highest road safety standards in the world and exciting new technology is deployed safely.

The Government has not yet announced a timeline for the launch of the RSIB, but we will provide notable updates in future quarterly reports.

Road safety performance

In Quarter 1, we continued to see a trend towards pre-pandemic levels of road use, with journeys reaching the highest levels since the pandemic. This is the second successive quarter which has seen journeys on the roads return to pre-pandemic levels, with more walking, cycling, and motorised journeys compared to the same quarter in 2020/21 and 2021/22. Customer journeys on buses are at the highest levels since the pandemic began but remain approximately 22 per cent lower than pre-pandemic levels.

Fewer people were killed or seriously injured in this quarter (899) compared to last quarter (1050), with a corresponding drop in the risk rate of death or serious injury. The exception is that slightly more people were killed or seriously injured while cycling this quarter (272 people compared to 222 last quarter).

Quarterly performance

Figure 2: Number of people killed on London's roads

Transport Mode	Q1 2019/20	Q1 2020/21	Q1 2021/22	Q1 2022/23
Pedestrian	18	3	8	5
Pedal cycle	0	2	1	3
Powered two wheeler	8	9	4	4
Car	1	2	0	3
Bus or coach	1	0	0	0
Taxi	0	0	0	0
Private hire	0	0	0	0
Goods vehicle	0	0	0	0
Other vehicle	0	0	1	0
Total	28	16	14	15

**Quarter 1 2022/23 figures are provisional and subject to change.*

Due to the large changes in the number of people using the road network over the last few years of the pandemic, it is useful to compare Quarter 1 2022/23 to Quarter 1 in 2019/20. A total of 15 people were killed on London's roads in Quarter 1 2022/23, which is broadly similar to the same quarter in 2020/21 and 2021/22. However, the number of people killed in this quarter is significantly less than pre-pandemic (Quarter 1 2019/20).

Notably, the number of people walking who were killed in Quarter 1 2022/23 was less than a third of the 2019/20 pre-pandemic figure, and approximately half for powered two wheelers. This is in contrast with Quarter 4 2021/22, which appeared to suggest a return to pre-pandemic casualty trends. Taken together, this suggests that travel patterns may remain unsettled in the wake of the pandemic, and we will closely scrutinise this data as emerging trends become clearer.

Figure 3: Number of people seriously injured on London's roads

Transport Mode	Q1 2019/20	Q1 2020/21	Q1 2021/22	Q1 2022/23
Pedestrian	267	90	207	231
Pedal cycle	192	169	299	269
Powered two wheeler	227	139	248	210
Car	109	87	100	108
Bus or coach	20	6	24	33
Taxi	7	1	0	3
Private hire	3	1	4	4
Goods vehicle	12	6	9	7
Other vehicle	2	12	38	18
Total	839	511	929	883

**Quarter 1 2022/23 figures are provisional and subject to change.*

The number of people seriously injured has slightly decreased by five per cent compared to the same period last year (883 serious injuries compared to 929 in Quarter 1 2021/22) but is a little higher than the equivalent period in 2019/20 (pre-pandemic). Against this trend, serious pedal cycle injuries remained higher in Quarter 1 2022/23 than the pre-pandemic figure although they fell slightly compared to the same quarter last year (299 and 269 serious injuries respectively). This may be due to changes in where and when people are cycling since the pandemic, and we are working to better understand how shifting travel patterns are shaping this trend.

The number of people seriously injured on or by a bus or coach also increased in Quarter 1 2022/23 compared to the same quarter last year and pre-pandemic. The road traffic collision data collected by the police (STATS19) indicates that more bus occupants were injured, and a greater number of people outside the bus were injured in collisions with buses, than during the same quarter last year and the equivalent quarter pre-pandemic. Work is underway to understand and mitigate this trend, but initial analysis suggests more customers are suffering falls on the bus, and more people walking were involved in collisions with buses.

People killed or seriously injured on London's roads (by mode travelled)

A bar chart showing the absolute number of people killed or seriously injured on London's roads in 2020/21 and 2021/22 and Quarter 1 2022/23, by mode travelled. There was a significant decrease in these numbers in Quarter 4 of 2020/21 in line with the third national lockdown. During 2021/22 these numbers have increased, in some quarters to a higher figure than the previous year. In Quarter 1 the numbers have slightly decreased. Consistently across both financial years shown, pedestrians, people cycling and using powered two wheelers represent the most people killed or seriously injured.

In Quarter 1 2022/23, 899 people were killed or seriously injured on London's roads. People walking, cycling and motorcycling continued to account for 81 per cent of those killed or seriously injured. Since the pandemic, and a return of motorised traffic, the longer-term trend appears to be roughly 300 people killed or seriously injured each period, which is similar to the 2017-19 average, albeit with changes in the composition of who is being injured as mentioned previously. This highlights the challenges London faces in making continual progress towards its Vision Zero goal.

Scorecard measure: People killed or seriously injured in road traffic collisions (per million journeys)

Line graph showing the rate of people killed or seriously injured in road traffic collisions from period 3 2021/22 to Quarter 1 2022/23, per million journeys. This rate has fluctuated slightly but has generally been on a steady decline throughout the whole of the time period shown in the line graph. However, in period 13 of 2021/22 the rate increased slightly for periodic all surface journeys. In Quarter 1 of 2022/23 0.27 people were killed or seriously injured on the roads per million journeys. The total periodic number of people killed or seriously injured decreased slightly in Quarter 1 of 2022/23.

Working towards our Vision Zero ambition to eliminate death and serious injury on the roads by 2041, our scorecard aim for the quarter was for fewer than 0.33 deaths or serious injuries per million journeys. During Quarter 1, there was 0.27 people killed or seriously injured on the roads per million journeys.

Scorecard measure: Rates of fatal or serious injury experienced by people in collision with buses

Line graph showing the rates of fatal or serious injury experienced by people in collision with buses, from period 3 2021/22 to Quarter 1 2022/23. There is a much closer correlation between the risk of being killed or seriously injured by a bus and the total periodic number of people killed or seriously injured in collision with a London bus. Both of these have fluctuated throughout the year, and Quarter 1 2022/23 ended with a significant increase in the numbers for the buses killed or seriously injured.

Our ambition is that no one is killed or seriously injured on, or by, a London bus by 2030. The risk of a bus being involved in a collision that kills or seriously injures either a bus passenger or someone else on the roads remains extremely low.

In Quarter 1, our aim was to have no greater than 0.020 deaths or serious injuries per million journey stages. Our aim for bus safety is more stretching than the general road safety aim, to reflect our ability to directly influence bus services. In Quarter 1 there were 0.019 deaths or serious injuries per million surface journey stages. Whilst we have met our target this quarter, we are noticing an increase this calendar year in the number of deaths or serious injuries on or by a bus as pandemic recovery continues. We are monitoring this trend and conducting further analysis into whether any specific trends or causes are driving this recent increase.

Road safety updates

Vision Zero action plan progress report

The [Vision Zero action plan progress report](#), published in November 2021, reiterates our focus on actions that contribute to creating a Safe System:

- Safe speeds: lowering speeds to reduce the severity of collisions.
- Safe streets: redesigning streets to reduce conflict between road users – which is integral to our Healthy Streets approach.
- Safe vehicles: allowing only the safest vehicles to use our roads.
- Safe behaviours: engaging and educating people about travelling safely and enforcing road rules.
- Post-collision learning and justice: learning from collisions and better supporting the people who have been involved.

Vision Zero Summit

On 5 July 2022, we hosted the Vision Zero Summit. We brought together TfL colleagues as well as representatives from London Councils, academia, the Greater London Authority (GLA), emergency services, victims of road trauma, road safety charities and organisations.

A moving highlight of the day was hearing from Yair Shahar, a road crash victim whose life had been irrevocably changed on the day that he was knocked off his bicycle by a car driver. He spoke about the far-reaching impact this had on his family's lives, and how he has channelled his experience into campaigning for safer streets. His call to action touched attendees in a way that no one else could, and his story has featured on our staff intranet so that people who weren't present at the event can learn about his experience.

TfL's Chief Safety, Health and Environment Officer, Lilli Matson, opened proceedings and Commissioner, Andy Byford and the Deputy Mayor for Transport, Seb Dance both spoke at the event. Walking and Cycling Commissioner, Will Norman chaired the panel discussion at the end of the session and Chief Operating Officer, Andy Lord, provided closing remarks.

Safe Speeds

Lowering Speed Limits Programme

Lowering the speed of vehicles in London is key to reducing both the likelihood of a collision occurring and the severity of the outcome. This programme is vital to the Mayor's Vision Zero ambition to eradicate fatal and serious injury collisions from London's roads by 2041.

The second phase of the programme is underway, and - as detailed in the Vision Zero action plan progress report - seeks to reduce speeds by 10mph on a further 140km of our roads.

Raised pedestrian crossings will soon be introduced in eight locations to further reduce danger to people walking and increase compliance with the new speed limit, as well as introducing accessibility benefits for mobility impaired customers.

Detailed design work is complete on proposals for a 30mph speed limit in Gants Hill town centre and is in progress for the introduction of a 40mph speed limit on the A4 Bath Road, and 20mph in Putney town centre. Concept design work is complete to introduce a new 20mph speed limit on a further 31km of our roads which - subject to funding - we plan to deliver by the end of 2022. This will see a consistent 20mph speed limit across most roads in Camden, Islington, Hackney, Tower Hamlets and Haringey.

Concept design work has also started to lower the posted speed limit on a further 73km of our roads, which includes the third wave of delivery under Phase Two of the programme.

Safe Streets

Safer Junctions

In April 2017, the Safer Junctions programme highlighted 73 of the most dangerous junctions on our road network. These junctions are defined as those with the highest vulnerable road user collision rates. Work to 43 of these junctions has now been completed.

Design work continues on the remaining 30 junctions, including detailed design of York Road roundabout and Holloway Road/Drayton Park, which are respectively delivering motorcycle and pedestrian safety measures. Detailed design work has started on a new 20mph speed limit through the junction of A205 Upper Richmond Road with Putney Hill/Putney High Street, the first phase of a three-stage approach to improve road danger at this location.

In November 2021, a new pedestrian crossing was introduced over Battersea Bridge, where a person walking was tragically killed at the beginning of 2021. The second phase of this project is planned for public engagement at a future date to be confirmed.

Subject to funding, we propose to engage on 10 further Safer Junctions by 2024.

Safe Vehicles

Direct Vision Standard

TfL's world-first Direct Vision Standard (DVS), which reduces lethal blind spots on lorries is already helping to save lives and prevent life-changing injuries. The scheme requires owners of heavy goods vehicles (HGVs) weighing more than 12 tonnes to apply for a free permit that assigns vehicles a star rating based on how much the driver can see directly through their cab windows to be able to drive safely in London.

Since its introduction, more than 177,067 HGVs have had safe systems fitted, improving the direct vision of the driver from the cab. 277,478 permits have been issued and 90,220 penalty charge notices were issued up to the end of Quarter 1 2022/23.

Collision severity involving HGVs has been falling, indicating that interventions undertaken by both TfL and the freight industry in recent years are already making a positive impact. The overall number of serious injuries involving HGVs has fallen from a total of 48 in 2017 to 17 in 2021. The first year of enforcement of the DVS and the HGV safety permit scheme has also seen a reduction in fatal collisions where vision is cited as a contributing factor. In 2021, there were a total of 11 fatal collisions involving HGVs and people walking or cycling. Of these, six fatal collisions occurred where vision was cited as a contributing factor. This compared to eight in 2020 and nine in 2019 where vision was cited as a contributing factor. Four of the six fatal collisions in 2021 involved zero-star rated vehicles, further demonstrating the enhanced value of direct vision over other safe system equipment. TfL has published the DVS One Year On report which can be accessed [here](#).

Electric Scooters

The e-scooter rental trial¹ has expanded significantly since its launch on 7 June 2021. By 3 July 2022, over 1,280,000 hire trips had been taken, averaging a distance of 2.6km per trip. Operators have reported that there have been no fatalities and 20 serious injuries based on the STATS19 injury classification definition in the same time period. Thousands of users have also benefitted from the operators' discount schemes, which make the rental vehicles more affordable for people on low incomes and with disabilities.

TfL and London Councils have extended the capital's trial of rental e-scooters from 6 June until 20 November 2022, which will allow the trial to build on its successes and

¹ <https://tfl.gov.uk/modes/driving/electric-scooter-rental-trial>

continue to explore how e-scooters could play a role in a sustainable transport network.

London's trial has expanded significantly since its launch, with 10 boroughs, more than 500 designated parking locations and 4,100 e-scooter vehicles now involved. Updated DfT guidance allows existing trials in the UK to be extended until November 2022, enabling local authorities to continue to test the vehicles in a safe and legal way.

Bus Safety Standard

We continue to roll out the Bus Safety Standard (BSS) to new vehicles joining the fleet. The number of new buses meeting the BSS specification continues to climb with approximately 800 buses now in the fleet. The safety measures include Intelligent Speed Assistance (ISA) technology which limits buses speed to the posted speed limit.

Including buses retrofitted with ISA, approximately 25 per cent of London's bus fleet now has ISA. Other measures in the BSS include an Acoustic Vehicle Alerting System (AVAS) for quiet-running buses, circa 650 new buses now fitted with AVAS, and circa 700 buses fitted with Camera Monitoring Systems which aims to reduce blind spots.

We are now focusing on supporting delivery of the safety measures required in 2024 and looking at what new safety requirements we will add into the BSS beyond 2024.

Pedal Confusion

Pedal confusion has been defined as the manoeuvre where a driver confuses the acceleration pedal with the brake pedal, resulting in either sudden unintended acceleration or harsh braking.

We commissioned the engineering company AECOM to produce a report on pedal confusion. The research project draft report went through final review stages and has now been published. Once we have the full report and action plan will be finalised and implemented accordingly.

Safe Behaviours

Enforcement

The Metropolitan Police Service (MPS) undertakes significant and wide-ranging activity to reduce road danger and prevent harm to all road users. This includes prevention and intelligence gathering activities, problem-solving to tackle the root causes of problems, community engagement and education initiatives and actively monitoring and targeting high risk vehicles and drivers.

Enforcement of road traffic offences volume 2018-2022

Bar chart showing the volume of the enforcement of traffic offences from 2018 to 2022. The volume has generally increased significantly over the five years shown in the graph. The majority of this enforcement activity is NIPs (Notices of Intended Prosecution). Traffic Offence Reports make up the next most significant share of enforcement activity.

The MPS dealt with 128,498 road traffic offences through enforcement action in Quarter 1 2022/23 (April – May 2022). This was 45 per cent higher than April – May 2021 (an additional 40,092 offences).

Enforcement action includes Traffic Offence Reports which are issued by police at the roadside, arrests or Notices of Intended Prosecution for offences enforced through safety cameras or evidence provided members of the public (for example, through headcam or dashcam footage).

The MPS prioritises its enforcement on the offences that cause the greatest risk and harm on London's roads. This includes speeding, mobile phone offences, driving under the influence of drugs and alcohol, red light offences, careless or dangerous driving, driving without a licence or in an uninsured vehicle or driving while disqualified. During Quarter 1 2022/23 (April – May 2022), 93 per cent of all road traffic enforcement action taken by the MPS was for priority offences, five per cent higher than 88 per cent during April – May 2021. Speed enforcement accounted for 85 per cent of all traffic enforcement, reflecting the risk and harm this causes.

Speeding offences volume 2018-2022

Bar chart showing the volume of speeding offences from 2018 to 2022. The volume has increased substantially over the five-year period shown in the chart. The overwhelming majority of the enforcement of speeding offences comes from speed cameras.

In line with our commitments in the Vision Zero action plan progress report, we have been working with the MPS to increase the level of police enforcement to tackle speeding and the harm it causes. This has included a programme of activity to increase the effectiveness of the safety camera operation, working towards having the capacity to enforce up to one million speeding offences by 2024/25.

In Quarter 1 (April – May 2022), the MPS enforced 109,307 speeding offences. This was 65 per cent higher than April – May 2021 (an additional 43,087 offences). This is due to the planned uplift in safety camera enforcement, as part of the shared collaborative programme between the MPS and TfL, to improve the MPS's capability to enforce greater volumes of offences captured by safety cameras. This is not an indication that speeding is worsening but moreover that the MPS's capacity to issue more penalties has improved.

The above traffic enforcement results are provisional and are subject to change as more offences are processed.

In Quarter 4 2021/22, we introduced the new mobile safety camera capability (five lasercam devices) that are operated by Roads Policing Police Community Support

Officers. This capability complements police roadside enforcement activity and the fixed safety camera network, and it will enable us to deal with more offences. The MPS has enforced 13,984 speeding offences through mobile safety cameras since they were introduced at the end of January 2022.

New Enforcement Powers to be used to Improve Cycle Safety

In June 2022, we announced we will begin issuing fines to vehicles that drive within, or cross, the white lines of cycle lanes that are marked by a solid white line and cycle tracks on TfL's Road Network (TLRN). Reducing non-compliance will help improve safety and the confidence of people cycling as part of TfL's Cycling Action Plan and help us work towards our Vision Zero goal of eliminating death and serious injury on the road network by 2041.

The Government has introduced new powers allowing us and London borough councils to fine motorists who infringe on cycle lanes and cycle tracks in the same way that they currently do for bus lanes and yellow box junctions. These powers were introduced in May 2022, at the same time as wider national changes giving local authorities in England outside of London the powers to enforce moving traffic contraventions such as illegal U-turns and stopping in a yellow box junction. Initially, we will use existing CCTV cameras to enforce contraventions in cycle lanes and cycle tracks at key locations across London's road network.

Road danger remains a barrier to people walking and cycling, with more than half of Londoners choosing not to cycle because of safety concerns. The new enforcement powers will help protect designated space for people cycling and make the capital's roads more attractive for Londoners to cycle on, helping to build on the huge increases in cycling seen in the capital since the start of the pandemic.

Powered two-wheeler (P2W) Training Courses

Demand and attendance on our motorcycle safety training courses remains strong. Year-to-date (January to July 2022), 228 riders have completed one-to-one Motorcycle Skills and 148 riders have completed Beyond CBT, the training course aimed specifically at those who ride for work. Since the inception of TfL's P2W courses, 4,300 individuals have been trained across the two courses.

The MPS has delivered 111 CourierSafe workshops to 93 riders year-to-date (January to July 2022). CourierSafe is a one-day workshop specifically designed for gig economy riders to boost biking ability and improve safety on the road while working.

Information on all of TfL's motorcycle training courses can be found [here](#).

Marketing Behaviour Change Campaign - Speed

The Mayor of London's Vision Zero objective is to eliminate all deaths and serious injuries from road collisions from London's roads by 2041. We must inspire a change to the way people feel about road danger in London, influence specific behaviours such as speeding. Towards this aim, in spring 2023 we will launch a revised behaviour change campaign tackling speed, targeting drivers. We are currently working with our creative and media agencies to develop a new strategy and will update stakeholders for input soon.

Public transport safety performance

This section does not include injuries sustained by our construction and projects workforce, which are covered in the Capital safety performance section.

Quarterly performance

Customers killed or seriously injured per week in Quarter 1 (by mode)

Bar chart showing the absolute number of customers killed or seriously injured in Quarter 4 week 1 to week 12, by mode of public transport. The majority of serious injuries occur on the transport modes of Buses, Cycle Hire, London Overground, London Underground and Elizabeth line (formerly known as TfL Rail).

One customer was tragically killed on our public transport network during Quarter 1. Sadly, 43 customers were also seriously injured.

We have seen customers being seriously injured on a greater variety of modes this quarter compared to Quarter 1 2021/22. This includes two customers seriously injured whilst using Cycle Hire, two customers seriously injured when travelling on London Overground (LO), and one customer seriously injured when travelling on the Elizabeth line. This is in addition to a customer death and serious injuries on LU (55 per cent) and serious injuries on buses (34 per cent).

On LU, there were eight falls on escalators and eight falls on stairs, resulting in serious customer injuries and one fatality in which the customer fell down a set of stairs at Walthamstow Central London Underground station, resulting in a fatal head injury.

Five of the eight falls on escalators and five of the eight falls on stairs involved intoxication as a possible contributory factor. Other factors include carrying luggage, wet weather and the customer losing balance whilst using a walking aid. Other notable serious injuries sustained on LU included an accidental fall onto the track, and a customer's head being crushed as they urinated between two train carriages of a Piccadilly line train which was in motion at the time.

On buses, customers sustained serious injuries in a number of scenarios. The most common factor continued to be other road users' behaviour, requiring the bus driver to take avoiding action which led to serious injuries being sustained by bus passengers. Although this remains a common injury scenario, as discussed in more detail below, it is encouraging to note the downward trend in this type of incident. Two bus customers were also seriously injured whilst using the stairs: one whilst descending and another as the bus moved off. Other circumstances this quarter included a fall from a seat; a fall on the same level as the bus approached the bus stop; and a road traffic collision between a customer and a car after the customer had alighted the bus and attempted to cross the road.

On LO, there were two incidents: one in which a visually impaired customer fell from the train onto the platform, and another where a customer fell on the platform.

On Cycle Hire, one customer was seriously injured in a collision with a car, and in a separate incident a Cycle Hire bike collapsed when the front wheel detached, causing the customer to sustain a serious injury. Serco's usual process was followed whereby the bike was collected and underwent a full service and engineer's check, before being tested again and then released back into hire.

As the central section of the Elizabeth line has recently opened, we are still in the process of establishing a streamlined approach of how data on customer injuries will be collected, due to the stations being operated by various partners such as LU, MTR and Network Rail. Accordingly, information about serious injuries sustained on the Elizabeth line is limited. However, we do know one serious injury occurred at Paddington as a result of a slip, trip or fall, and that the customer was taken to hospital as a result of their injuries.

We continue to strive to improve the safety of our public transport network. We are embarking on a new strategic approach to working in a risk-based way: building a broader understanding of our safety performance; diagnosing and prioritising our top safety concerns; and enabling transport modes and teams to take local action on these concerns. In taking this approach, we have initially prioritised common customer safety concerns including slips, trips and falls; passenger/transport interfaces; and road risk. First and foremost, we will focus on improving what is within our control. However, we acknowledge that customer incidents will always be influenced by human behaviour. Our Customer Experience teams across TfL continue to work hard to identify effective strategies to positively impact customer behaviour on our network.

Customers killed or seriously injured per period this year (total)

Bar chart showing the total number of customers killed or seriously injured per period this year. Periods 6 and 9 of 2021/22 were when the greatest numbers of customers were killed or seriously injured on our public transport network. However, the numbers significantly dropped in Quarter 4 of 2021/22 and Quarter 1 of 2022/23. When looking at the overall picture of the data it should be noted that Quarter 4 is a four-period quarter (compared to the usual three).

Overall, more customers were killed or seriously injured this quarter than in Quarter 1 of 2021/22.

To put this into context, compared to Quarter 1 of 2021/22, the number of passengers travelling on our public transport network this quarter has increased by 47 per cent. In the same quarter last financial year, many pandemic measures either remained in place or eased during the quarter. This included the opening of non-essential retail and outdoor venues (12 April 2021) the rule of six and opening of indoor venues (17 May 2021); and the lifting of restrictions on funerals and weddings (19 July 2021). The final closed sectors of the economy, including nightclubs, remained shut for the entirety of Quarter 1 2021/22. These measures influenced the number of people we saw travelling on our network, their reasons for travel, and the contribution of different travel behaviours, for example travelling with luggage or whilst in an intoxicated state.

Comparing the same quarters, although passenger numbers have increased by nearly half, the number of customers killed or seriously injured has increased by 13 per cent. This does mean more customers have unfortunately encountered significant harm this financial year, but it is encouraging that the number of customers killed or seriously injured has not increased to the same proportional extent as customer numbers.

Scorecard measure: Customer all injuries rate (per million passenger journeys)

Bar chart showing the rate of all customer injuries, per million passenger journeys in 2021/22. The rate has fluctuated throughout 2021/22, and at its lowest point has hovered around 2.5. In period 12 the rate even dipped below 2.5, and ended Quarter 4 and so the financial year, at just above 2.5. In Quarter 1 of 2022/23 it was just above 2.5 in period 1 and 2 then peaked to around 2.73 in period 3.

The number of customer injuries per million passenger journeys this quarter is 2.73. Unfortunately, the Quarter 1 customer injury rate is above our target across 2022/23 of 2.58 injuries per million passenger journeys. This target customer injury rate represents a five per cent reduction in our customer injury rate performance last financial year. This rate of improvement, if sustained year-on-year, is equivalent to the elimination of all customer injuries by 2041. While we are not yet meeting our

scorecard target, our customer injury rate this quarter is lower than our customer injury rate in Quarter 1 2021/22, suggesting we are progressing in the right direction.

One positive change is a reduction in the rate of injuries mentioning that customers were not holding on to handrails and poles in our stations and on our vehicles. This has decreased by 33 per cent on buses and 25 per cent on LU compared to Quarter 1 2021/22. We observed over the pandemic that customers were not holding on to handrails and poles, due to a fear of catching coronavirus. It is encouraging to see that as the pandemic eases, the number of injuries sustained per million passenger journeys where a customer was not holding on is decreasing.

The risk of customers slipping, tripping, or falling whilst travelling on our network has been a key part of our risk profile for as long as we have been transporting customers. This injury type remains a priority. Encouragingly, this quarter there has been a reduction in the number of customer injuries per million passenger journeys resulting from slips, trips, or falls compared to Quarter 1 2021/22. The rate of customer injuries mentioning a slip, trip, or fall has reduced by 19 per cent on LU and eight per cent on buses.

Often slips, trips and falls occur on specific station or vehicle infrastructure such as stairs and escalators. We are currently seeing different trends in relation to risk on stairs and escalators. On stairs, there is an encouraging trend in reduced risk. Stair-related customer injury risk this quarter is 27 per cent lower on LU and 39 per cent lower on buses when compared to Quarter 1 2021/22. However, on the LU network, we have seen a 12 per cent increase in the rate of customer injuries involving escalators when comparing the same quarters. This may be linked to customers increasingly being laden with luggage as international travel increases. The rate of customer injuries mentioning the customer being encumbered or carrying luggage increased by 53 per cent between this quarter and Quarter 1 2021/22. By contrast, the risk of injuries mentioning intoxication, another common contributor to falls on escalators, has decreased by 17 per cent. This is particularly encouraging given that the hospitality industry has been continuously open this quarter, compared to when restrictions remained in place for some sectors of the hospitality industry, such as nightclubs, in the same quarter last year.

On buses, we are seeing encouraging downward trends in the rate of customer injuries mentioning a collision or sudden braking. The rate of bus customer injuries mentioning a collision has reduced by over 30 per cent compared to Quarter 1 2021/22. Meanwhile, the rate of bus customers injuries mentioning sudden braking events has reduced by 27 per cent.

Workforce killed or seriously injured per week in Quarter 1 (by mode)

Bar chart showing the numbers of our public transport workforce killed or seriously injured per week in Quarter 1, and the mode where the incident occurred. The serious injuries took place on the London Underground and buses network.

This section does not include injuries to our construction and projects workforce, which are covered in the Capital safety section below.

No one was killed whilst working on our public transport network in Quarter 1. Unfortunately, two members of our workforce were seriously injured, one on buses and one on LU. This compares to five serious injuries sustained by people working on our public transport network during Quarter 1 2021/22.

Scorecard measure: Workforce injuries

Bar chart showing the number of workforce injuries from period 4 of 2021/22 to period 3 of 2022/23. This number has fluctuated throughout the financial year, a trend which continued in Quarter 1 of 2022/23. In period 1 and 2 of Quarter 1 we saw more than 85 injuries, this decreased to below 75 in period 3.

In Quarter 1, 263 members of our public transport workforce were injured (not including colleagues involved in construction and projects). Everyone who works for us should go home safe and healthy every day. Our Vision Zero ambition is to significantly reduce all injuries sustained by our workforce by 2030 and eliminate death and serious injury by 2041.

When we include our Capital-related workforce injuries, we have not met our target scorecard performance this quarter. Our target across this financial year is to reduce workforce injuries by five per cent compared to the previous financial year, 2021/22.

By mode, there have been a greater number of workforce injuries on LO, Dial-a-Ride and the Elizabeth line (formerly TfL Rail) than in Quarter 1 2021/22. Notably fewer people working on or for London buses have been injured this quarter in comparison to Quarter 1 2021/22.

Overall, workforce injuries remain below pre-pandemic levels. However, certain injury causes or types have returned to pre-pandemic levels. For example, assaults appear

to have recovered to pre-pandemic levels for LU, however the introduction of body-worn cameras may be encouraging an increase in reporting rates. Sudden braking, whilst contributing to far fewer workforce injuries per quarter than other causes, also shows signs of a return to pre-pandemic levels. Conversely, workforce injuries relating to slips, trips, or falls; trapped hands; or as a result of distraction remain below pre-pandemic levels.

Long term trend

Customer and workforce injury numbers per period since 2017-18 (total)

A line graph showing the numbers of customer and workforce injuries per period. The numbers were relatively stable from 2017/18 to 2019/20. When the pandemic set in and customer numbers dropped vastly, this translated into a much lower number of customer injuries. As customers have returned to our public transport network in 2021/22, customer injuries have increased but remain below pre-pandemic levels. This number decreased in Quarter 4, possibly when customers' travel decisions were influenced by the prevalence of the Omicron variant of COVID-19. Historically, workforce injuries have been in much lower numbers than those of our customers. However, these also reduced dramatically when the pandemic set in, and although they have increased gradually over the course of 2021/22, they remain well below pre-pandemic levels. In Quarter 1 2022/23 the trend shows that the numbers are increasing but the figures are still below the pre-pandemic totals.

As the pandemic eases and our passenger numbers grow, we are witnessing increases in both customer and workforce injuries. In the final period of this quarter (29 May to 25 June 2022), the number of customer injuries had increased to a level equivalent to some of the lower periodic customer injury totals pre-pandemic. This is despite passenger numbers not having fully recovered.

Customer injury rates per period since 2017/18 to 2021/22 (total)

Line graph showing the rate of customer injuries since 2017/18 to Quarter 1 2022/23. The rate was on a gradual decline from 2017/18 until the pandemic, when the rate increased up to almost 3.5 in the first half of 2020/21. After a drop at the end of 2020/21, the rate increased up to almost 3.5 in the first half of 2021/22 after which it was on a steady decline and began to peak in Quarter 1 of 2022/23.

Despite this recent increase in periodic customer injury totals, over the past nine months we have seen an encouraging trend in lower customer injury rates. These rates have more closely resembled pre-pandemic levels than the heightened customer injury rates experienced during much of the pandemic. However, as noted in the final period of Quarter 1, there has been a spike in this trend. We will continue to monitor this to better understand if it is a sustained trend or part of an expected fluctuation in our customer injury rate.

Public transport safety updates

Elizabeth line opening

On Tuesday 24 May 2022, the Elizabeth line opened with services between Paddington and Abbey Wood. The new railway is the most significant addition to the capital's transport network for a generation.

The Elizabeth line has been designed to keep our customers safe and to make our network more accessible. Platform edge doors have been installed at eight new stations to reduce the risk of a customer falling onto the track. Step-free access is available from street to train across all Elizabeth line stations between Paddington and Woolwich to assist customers who are older, disabled, travelling with children, or encumbered (for example with luggage/other large items) to travel safely by avoiding escalators and stairs.

At all other stations on the Elizabeth line, staff will deploy a manual boarding ramp between the platform and train.

Existing stations have been refurbished, with improvements to safety and security including brighter and more spacious ticket halls and waiting areas, and platform enhancements such as CCTV and help points.

Barking Riverside London Overground station opens

On 18 July 2022, Barking Riverside station opened to customers ahead of schedule, and helping to transform journeys to this rapidly developing area of east London. Around 3,000 homes have been built or are under construction, and this new railway will unlock more than 7,000 further homes as well as leisure facilities, schools and riverside walks. Barking Riverside station forms part of the extended Gospel Oak to Barking route, complementing the existing bus network and providing a new direct transport option. Journey times to Barking have been dramatically cut by more than two thirds to around seven minutes, while the city is now accessible in just 22 minutes.

Sustainable travel is a key part of the plans for the Barking Riverside development. Public transport, walking and cycling feature heavily in plans supported by local bus services, easily connected with the new railway station, and a network of footpaths and cycleways. Cycle parking for 180 cycles is provided at a dedicated new facility as part of the new station making it easier for people to start or end their journeys by cycle. Accessibility is another core focus of this extension, as the station is fully step-free. This brings the total number of step-free stations across the London Overground network to 60, helping to make London a more accessible city for all and supporting independent travel.

Re-opening of the Bank branch of the Northern line

On 16 May 2022, the Bank branch of the Northern line reopened between Kennington and Moorgate after a 17-week closure, with all planned work for this stage of the programme successfully delivered on time. This has enabled us to bring the first stage of the station upgrade into customer use. It includes a new southbound running tunnel and platform, along with a new spacious central concourse. The focus now turns to introducing new interchanges between the Northern, Central and Docklands Light Railway platforms, along with the new station entrance at Cannon Street. When

completed, this will increase station capacity by 40 per cent and significantly improve interchange and evacuation times.

Suicide Prevention Programme

Year-on-year data comparison tells us that since 2018, our Suicide Prevention Programme has helped reduce the number of suicides by 36 per cent across the LU network.

We have trained 91 per cent of LU station staff in suicide prevention so far and we are now training all new starters as part of their induction. The training is open to all TfL staff, and we have recently opened the course to some of our stakeholders, including the British Transport Police and the London Fire Brigade (LFB). In Quarter 1, we made 147 life-saving interventions, bringing the total over the last few years up to 2,365.

We have recently expanded the Safeguarding Award and LifeSaver Award schemes to all staff within TfL Customer Operations. The Safeguarding award recognises those who go above and beyond to ensure effective safeguarding across our transport network and display excellent practice and behaviours in helping safeguard vulnerable customers travelling on our services. The LifeSaver award is given to staff who make a suicide intervention based on best practice criteria. There are slightly different criteria for LU staff from other operational colleagues, as in LU there is an existing mode of logging suicide interventions, using an electronic incident reporting form.

In Quarter 1 we trained a further 14 Safeguarding Officers. The total number of accredited Level 3 LU Safeguarding Officers is now 53.

We are working towards accreditation in the DfT's Safeguarding on Rail Scheme and hope to gain full accreditation by September 2022.

Rail and Sponsored Services Safety in the Spotlight sessions

As part of Rail and Sponsored Services' (R&SS) Vision and Values Programme, we hosted a series of events for 'Safety in the Spotlight'. The purpose of the spotlight period was to raise awareness of the importance of safety, health and environment (SHE) within R&SS.

It was a fantastic way to bring wider SHE messages to R&SS colleagues, with insight sessions held on topics such as SHE Improvement Plans, our Public Transport Scorecard, our SHE Insights Framework, and a workshop to discuss our safety concerns.

We also shared key work happening within buses to mitigate slips, trips and falls, a session on the role of the SHE Business Partner within R&SS; and a session with the Head of SHE Business Partnering (Surface) on our SHE priorities as well as looking at the SHE Culture Programme.

The sessions were well received and have helped increase the understanding and support of SHE initiatives within R&SS. It was also a great example of collaboration between two teams in SHE: the R&SS SHE team and the SHE Insights and Direction team.

Capital safety performance

Capital works cover a broad range of activities across the Major Projects, Project and Programme Delivery and LU Capital Delivery. Some are essential asset renewals and maintenance to keep our frontline service operating efficiently. Other activities represent new and significant investments to improve existing infrastructure. Within the Capital area, teams comprise employees from both TfL and supplier organisations. Likewise, work sites may be managed by TfL or by suppliers acting as our Principal Contractor. We do not distinguish between TfL or supplier hours worked or incidents within this section of the report.

During Quarter 1, the Capital area workforce completed 2.1 million hours worked, a decrease of 0.6 million on the previous quarter, which comprised of one additional period. Compared with Quarter 1 of 2021/22, there has been a 30 per cent reduction in the number of hours worked, predominantly as a result of some of our major projects, such as the Northern Line Extension, Bank Station Capacity Upgrade and Barking Riverside Extension, reaching or nearing their conclusion.

Quarterly performance

To enable accurate analysis of data, some of our key measurables are quoted as a frequency rate per 100,000 hours worked. Frequency rates are calculated using a moving annual average based on performance over the previous 13 periods.

In addition to reporting on performance across the three Capital teams individually, we now also report on our overall Capital performance. The composition of the Capital area and the data we report on within this section will continue to evolve in line with changes to TfL's organisational structure.

RIDDOR accident frequency rate (per 100,000 hours worked)

Line graph showing the RIDDOR accident frequency rate per 100,000 hours worked. RIDDOR stands for Reporting of Injuries, Diseases and Dangerous Occurrences Regulations. These are separated into the following three categories: London Underground (LU), Major Projects (MP), and Project and Programme Delivery (PPD). The RIDDOR accident frequency rate in LU was steadily increasing for the majority of 2021/22, until a decline in period 8, a downward trajectory that generally continued until the end of the financial year and into Quarter 1 of 2022/23. MP and PPD's RIDDOR accident frequency rates have been closely aligned for most of the year, generally hovering around 0.1 but PPD dropped to zero in Quarter 1 period 3.

In Quarter 1, there were no incidents reported under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) in our Capital teams, a significant improvement on the previous quarter. As a result, the accident frequency rates decreased across all of our Capital teams, with the overall Capital rate ending the quarter in line with our 2022/23 annual target of 0.10. The Project and Programme Delivery team have now maintained zero RIDDOR incidents reported on their projects for a year.

Lost time injury frequency rate (per 100,000 hours worked)

Line graph showing the lost time injury (LTI) frequency rate in 2021/22 and Quarter 1 of 2022/23, per 100,000 hours worked. These are separated into the following three categories: London Underground (LU), Major Projects (MP), and Project and Programme Delivery (PPD). In PPD the LTI frequency rate was around and just above 0.45 at the end of Quarter 1 and for the whole of Quarter 2, after which it steadily declined to end 2021/22 at around 0.3. LU and MP's LTI frequency rates were not closely aligned for most of the year, but LU's rate dropped to below that of MP in period 9. Both areas ended 2021/22 with their LTI rates at around 0.25 (LU) and below 0.2 (MP). In Quarter 1 of 2022/23 PPDs rate dropped to zero, whilst LU and MP hovered around 0.2.

Lost time injuries (LTIs) are injuries which cause an employee to be absent for one or more shifts. There were three LTIs reported in our Capital teams during Quarter 1, a decrease of four compared with Quarter 4 2021/22. Consequently, the lost time injury frequency rate for the Capital area, and all teams within it, ended the quarter below the target of 0.25. The Project and Programme Delivery rate dropped to zero having now experienced a year without an LTI report. This, along with a quarterly fall in the rate of RIDDORs and LTIs across the Capital teams, demonstrates positive progress, although this is down from a relative peak of injuries witnessed in the first half of 2021/22.

All three LTIs reported during Quarter 1 were minor injuries, with two classified as slips and trips and the other classified as a misuse of hand tools. Human behaviour factors were identified as a theme in two of the incidents, but a more significant root cause identified across all three LTIs related to issues with task planning. As a result, changes have been made at site level, operatives have been re-briefed and learnings shared across the Capital teams.

Two of the LTIs occurred at the Bank Station Capacity Upgrade project, where an intense period of construction work took place with the Bank branch closure of the Northern line in order to open the new platform and concourse. The closure started in January 2022 and concluded in May 2022. Despite the minor injuries reported this quarter, no major injuries or incidents occurred during the closure, which is a real testament to the teamwork of everyone who worked on the project.

Long-term injury trend

Total Capital workforce injuries (six-period average since 2017/18)

Line graph showing the total capital workforce injuries from 2017/18 to 2021/22, a six-period rolling average. These are separated into the following three categories: London Underground (LU), Major Projects (MP), and Project and Programme Delivery (PPD). Although historically MP's six-period average was much higher than LU and PPD, it ended 2021/22 with an average that was just below LU's, at around four. LU's average decreased dramatically with the arrival of the pandemic, and although it increased slightly in Quarter 4 2020/21, it resumed a downward trajectory and remains well below pre-pandemic levels. PPD's six-period average has remained lower than two from 2017/18 to 2021/22.

There were 20 injuries reported in the Capital area during Quarter 1, which is a decrease of 13 on the previous quarter. The number of injuries continues to fall year-on-year and remains well below pre-pandemic levels. This remains the case when hours worked are considered, which have seen a lesser decline over the same period, suggesting a continued reduction in the risk of injury. Slips, trips and falls, and manual handling remain the most common immediate causes. Due to changes in the structure of our Capital teams, the numbers featured in this section of the report may be prone to some fluctuation during the coming quarters.

SHE Performance in Capital Projects

Quarter 1 can be characterised as one of good performance. There have been no major injuries, or serious environmental impacts. However, when analysing the details, we can identify a variety of incidents which had the potential for something worse, or to provide us with a warning that failure to improve will lead to a more undesirable outcome.

A brief selection of such incidents (in no order of significance):

Old Street Roundabout

A member of our workforce avoided injury when drilling into a live 415V cable with a handheld drill. The Principal Contractor has investigated, and the findings will be a useful reminder to many of the hazards of not following all procedures to the letter.

As a proactive Client, we will be dedicating one of our quarterly Chief Capital Officer safety, health and environment Keeping in Touch events (KIT) to discussing the identification and management of buried services with our supply chains.

Docklands Light Railway Rolling Stock Replacement Project

A three-metre-deep excavation was dug on site without adequate support. There was a real risk of collapse, and a danger to anyone who may have entered the excavation. This was backfilled for support, and an investigation carried out. TfL is working with the Principal Contractor to ensure that temporary works are properly designed and executed.

Temporary works have been identified as a causal factor in a number of our recent near misses and incidents. Consequently, those visiting our sites have been asked to check compliance with temporary works arrangements and our first KIT event this year will focus on Temporary Works lessons learned and good practice to follow.

Threat of Assault

A member of the public flagged down one of our engineers in his van. The man pulled out a knife and tried to open a door, whilst another person tried to open the rear doors. Fortunately, our engineer kept the doors of the vehicle locked and managed to drive away safely without being harmed. The engineer was provided with appropriate support, and we issued company-wide internal communications highlighting the Urban Safety training available on TfL's internal learning platform, ezone.

Four Lines Modernisation

This quarter saw Signalling Migration Area 5 (SMA5) go live on the 27 March 2022. SMA5 is the section of signalling between Sloane Square, Paddington, Fulham Broadway and Barons Court. This will improve journey time by around five per cent on average on the Circle and District lines between Monument, Fulham Broadway, Barons Court and Paddington in September 2022. The completion of SMA5 represented a major achievement for the programme as it involved upgrading the highly complex junction at Earl's Court and completed the implementation of Communication Based Train Control (CBTC) across the entire Circle line.

It is normal practice for the introduction of new software to include Operational Restrictions (OR) to address issues where the software is not performing exactly as required. The introduction of SMA05 included a high number of ORs which was brought to the attention of the Office of Rail and Road (ORR), who are giving consideration to the issue of a formal Improvement Notice. A number of meetings have been held with the ORR to demonstrate the safety improvements that the CBTC introduction has over the legacy signalling. We are also undertaking an independent review of the SMA05 introduction to identify lessons that can be learned, and a post revenue software uplift is planned to reduce the number of ORs.

Focus on improvement

In many areas during Quarter 1, there was also a significant amount of proactive work done to further improve how we deliver on our projects.

The Piccadilly Line Upgrade continues to lead on carbon baselining and will shortly be extending its innovation to a new Signal Equipment Room being designed and built at the Tunnelling and Underground Construction Academy.

The London Overground Barking Riverside Extension opened to customers on 18 July 2022, which was ahead of schedule.

The Neasden Depot team have continued to go beyond their official scope, by doing what they have done before at other depots – building a wellbeing garden area near their site office – which will be available to all of the workforce in the longer-term.

The outdoor wellbeing garden area at Neasden which has a seating area that has umbrellas for people to use on hot days. It is well landscaped with some grass and plants.

Within Capital, we held our first quarterly safety, health and environment (SHE) and Construction governance meeting in Quarter 1. Bringing together Directors and Leadership from Capital, Construction and SHE, these strategic sessions consider and

propose activity to improve our SHE performance, the wellbeing of our staff and our environmental impacts in the medium- to long-term. In the Quarter 1 session we focused on our SHE performance last year and lessons for the year ahead, our strategies for workplace violence and aggression and health risk management, carbon management, our SHE improvement plan for 2022/23 and supplier engagement.

SHE in Capital

SHE Capital Delivery & Maintenance Strategy

Quarter 1 saw the one-year anniversary of the publication of the SHE Capital Delivery & Maintenance (SHE CD&M) Strategy. The main highlights from year one included the development of a standardised framework for SHE improvement across the Capital teams (see below), the improvement of our SHE performance reporting, and commencement of a review of the SHE requirements within our procurement and supplier management processes.

In year two, we will continue to focus on establishing greater consistency in the way we conduct improvement activities, ensuring that learning and expertise can be shared across the Capital teams. This will be guided by the six core themes of the strategy, whose programmes have been updated to reflect progress during the first year, new insight and changes to our strategic priorities. In turn, these will continue to be informed by engagement and benchmarking with other large industry clients.

SHE Improvement Framework for Capital

Throughout Quarter 1, the former “Capital Delivery” areas of the business have been undergoing change to become part of TfL Capital, under the Chief Capital Officer. For the SHE team in support of Capital, the change is quite minimal, as the SHE team had already supported the constituent parts of the Major Projects Directorate (MPD), Surface Projects, and Capital within LU.

The projects have not changed, the people are largely the same, but the new structure will provide a better opportunity to share learning and experience. Built on the SHE CD&M Strategy, the new SHE Improvement Framework for the Capital area aims to bring the expertise together in a different way. The new area is bigger and more diverse, so a single Improvement Framework has been introduced, which then enables local project/programme team plans where the framework can be fine-tuned to local needs and priorities.

The framework has four areas of priority:

1. People

We recognise that achieving and sustaining long-term improvement requires a shift in the way that our people think, feel and act in relation to SHE. This part

of the strategy is purposefully designed to enable and complement the delivery of TfL's SHE Culture Programme.

2. Assurance

Those with responsibility for delivery of Capital and its projects have to have certainty on how we are able to manage our risks. This must be done within the recognised legal framework of the "principles of prevention", be risk-based and suitable. Bureaucracy is not required, but a streamlined approach where people recognise what needs to be done is paramount.

3. Environment

We need to be treating the management of environmental risks in as critical a way as we manage health and safety risks. There is further progress required before managing our environmental impacts becomes truly "business as usual". Carbon baselining and reduction is a key part of this, but not to the exclusion of all else.

4. Learning & Innovation

Perhaps the greatest potential offered by the Capital area is the opportunity it presents for shared learning, collaboration and innovation. Not only do we have a more diverse and experienced team internally within TfL, but we have brought together a more diverse and experienced group of suppliers too.

The framework will provide a structure for strategic improvements, and initiatives carried out at a local level.

Major Projects Carbon Baseline

In June 2022, we completed the Major Projects Carbon Baseline Report. This is the first time the whole life carbon baseline for all 10 current Major Projects have been modelled in detail, including the scope and carbon hot spots for each.

As it stands, the carbon baseline contains approximately 2.3 million tonnes of CO₂ equivalent and Major Projects will be aiming to reduce its whole life carbon impacts in the coming years, by management of carbon through the design process and in collaboration with our supply chain. We are now working to expand the carbon baseline across our capital investment portfolio.

Work-related violence and aggression

Work-related violence and aggression (WVA) towards our people and those of our operators and contractors is unacceptable. Concerted action is underway to tackle it.

Triggers of WVA incidents

Fare evasion continues to be the most common trigger for WVA. During Quarter 1 2022/23, 390 WVA incidents were triggered by fare evasion on the London Underground (LU) network, and 338 across the Other Rail modes (buses, roads, London Overground (LO), Docklands Light Railway (DLR), Elizabeth line (formerly known as TfL Rail), and London Trams). This amounts to 39 per cent of all WVA incidents. The proportion of incidents triggered by fare evasion increased by six per cent on the LU network compared with the previous quarter. The proportion remained at a similar level on Other Rail modes.

The percentage of incidents on the LU network that involved a repeat offender rose by two per cent to 20 per cent, equal to one in five offenders. There is a strong link between repeat offending, fare evasion and WVA on LU.

The percentage share of WVA incidents on Other Rail modes allegedly involving a young person (with the appearance of under 20 years) rose by three per cent to eight per cent of all incidents. There remains a strong link between fare evading, youth offending and WVA on the LU network. On Other Rail modes, only 36 per cent of youth WVA is triggered by fare evasion.

The number of WVA incidents motivated by hate has remained static, with 93 reported across Other Rail modes and 73 reported across the LU network. This represents 7 per cent of all incidents.

The number of WVA incidents that involved a customer attempting to bring an e-scooter on to the LU network during Quarter 1 2022/23 fell from 50 incidents in Quarter 4 2021/22 to 28 incidents. This suggests that customers attempting to bring an e-scooter on to the LU network has become less problematic for staff.

Volume of incidents in Quarter 1

Due to the different time frames for the last two quarters, Quarter 1 2022/23 (12 weeks) and Quarter 4 2021/22 (16 weeks), we are not making data volume comparisons between these two quarters. The information below compares Quarter 1 2022/23 to Quarter 1 2021/22 but this has its own limitations due to the impact of lockdown restrictions and lower passenger numbers on incident levels last year.

During Quarter 1 2022/23, there were 2,305 incidents of WVA reported across all modes. This is an additional 362 incidents compared to the number recorded during Quarter 1 in 2021/22.

In Quarter 1 2022/23, there were 997 incidents of WVA reported by staff working on LU. This is 119 more than in Quarter 1 2021/22.

In Quarter 1 2022/23, there were 1,308 incidents of WVA reported across Other Rail modes. This is 123 more than were recorded during Quarter 1 2021/22.

Police recorded work-related violence with injury offence from 2020 to 2022

Bar chart showing the police recorded work-related violence with injury offences, from 2020 to 2022. These are divided into three categories: London Underground (LU), Buses and Other Rail which includes the Docklands Light Railway, London Overground, the Elizabeth line and Trams. These numbers have fluctuated considerably during the period of time shown. Peaks were seen in July 2020 and July 2021. Consistently throughout, the bulk of offences take place on the bus network.

We know from feedback from our workforce and trade unions that WVA is underreported, particularly verbal abuse. Changes in the reporting of incidents, compounded by the impact of the pandemic on overall crime levels, make it difficult to draw clear conclusions about trends in offending. Our assumption is violent offences that result in injury (actual bodily harm or grievous bodily harm) are more likely to be reported given that staff members may require support, treatment or time off. Police data for violence with injury offences is a more reliable data source for monitoring trends. Work is ongoing to improve staff confidence to report and make it easier for them to do so.

The level of bus-related violence with injury offences in Quarter 1 2022/23 (41 offences) was at a similar level to Quarter 1 2021/22 (42 offences). Police data for LU and Other Rail modes (LO, DLR, Elizabeth line – formerly TfL Rail - and London Trams) shows there were 22 violence with injury offences in Quarter 1 2022/23, compared with seven for Quarter 1 2021/22. The lower offence numbers on the rail network in 2021 reflect the lower levels of passenger journeys at this time.

Solved rate for WVA offences investigated by the police from January 2020 to December 2021

Line graph showing the solved rate for work-related violence and aggression offences by the police from January 2020 to December 2021. These are divided into two categories: assaults and public order offences. The solved rate for assaults has fluctuated a lot during the period of time shown, but at its highest was 35 per cent in December 2020. This dropped to a low of 16 per cent in June 2021 and only recovered to 24 per cent in September 2021. The solved rate for public order offences has generally hovered around the mid-teens but was at a high of 27 per cent in February 2021. Unfortunately, this dipped to 4 per cent in July 2021 and by September 2021 had only increased to 12 per cent then dropped again to 3 per cent by December 2021.

We are working closely with the police to improve the solved rate of offences. This includes prioritising the investigation of WVA incidents, providing access to body-worn video cameras, and continuing to support police investigations by providing Oyster card and CCTV information and victim and witness statements.

The solved rate is the percentage of offences investigated by the police that have resulted in action against the suspect, for example being charged with the offence, summonsed to attend court, or a restorative justice outcome. Figures are reported six months in arrears to allow time for the police investigation and for cases to progress through the criminal justice process. This section compares figures for the 12-month periods January to December 2021 (current) with January to December 2020 (previous).

During the current period the combined solved rate was 18 per cent for violence and public order recorded offences against our workforce – slightly lower than the previous 12-month period (21 per cent).

The solved rate varies by mode during the current period, with a solved rate of 19 per cent for bus-related offences, 19 per cent for LU, and 10 per cent for all other rail modes combined. Across all modes, the solved rates increase in line with the severity of the incident. The solved rate is higher for violent offences (with or without injury)

compared to public order (for example verbal abuse or threatening behaviour), as the police will allocate more resources to identifying and apprehending offenders for the former, with, for example, media appeals for information for violent incidents. The solved rate in the current 12-month period for violence (with/without injury) offences was 22 per cent, compared with 14 per cent for public order offences.

Percentage of Staff Willing to Support from January 2020 to December 2021 (all violence and public order offences)

Line graph showing the percentage of staff willing to support police investigations into all violence and public order offences, from July 2019 to September 2021. This percentage has generally remained around the late 60s and has been as high as 80 per cent as recently as May 2021. However, after that point the percentage dropped to 62 per cent in July 2021 and only recovered up to 67 per cent in September 2021.

A key factor in being able to bring offenders to justice is staff support for and consent to partake in the criminal justice process. As part of our strategy, we are working closely with the police to address staff concerns and improve the support we collectively provide throughout the process.

During the current period, the percentage of staff willing to support a police investigation was 68 per cent for violence and public order recorded offences against staff, down from 74 per cent compared to the previous 12-month period. Due to changing customer numbers, bus drivers make up a greater proportion of staff victims and they are less likely to support police investigations, particularly public order offences. We are working with the police and bus operating companies to address this.

Progress against the 2021/22 annual action plan

This report now includes updates against actions within the WVA annual action plan. Wherever staff are on our network, we are committed to their safety and preventing violence and aggression, tackling its causes, and providing support to those who experience it.

To deliver our WVA Strategy, we have committed to doubling the size of our WVA team. This will provide dedicated resource and a clearer focus on victim support, investigation services to support the Police, and preventative work. We have consulted with our people and our trade unions on our proposals for the new team and have confirmed the structure and closed consultation. We will now begin recruitment and the transition, with the aim to have the new WVA team in place by December 2022.

We continue to work with British Transport Police (BTP) colleagues on Operation Steed and other targeted operations to improve staff safety. Operation Steed is an ongoing operation which aims to increase both staff and public confidence, improve feelings of safety, and bring offenders to justice. Deployments have continued at West Ham, Plaistow, Upton Park and East Ham, with arrests made for a variety of offences and a number of safeguarding interventions made to protect young people. Camden Town has been targeted recently as part of Operation Steed. Police officers have focused on high visibility patrols but have also used plain clothes officers to target offenders.

Running staff engagement sessions is an important element of our work and provides us with an opportunity to pass on key messages about TfL's zero-tolerance approach to WVA, the importance of using spit kits, body-worn video and reporting. These engagement sessions take place across TfL and with our bus operating companies. Recent visits to bus garages include Enfield Bus Garage, Uno Buses – Barnet, Edmonton Bus Station, Canada Water, Dartford Bus Garage and Thornton Heath Bus Garage.

We have produced guidance videos on fare evasion on buses and what to do after a spitting incident - which includes detailed instructions on how to collect a DNA sample using a spit kit, and how to report the incident. The WVA spitting video is due to launch soon and will be disseminated to bus drivers and used in our engagement sessions with them.

Care immediately following a WVA incident is critical to our employees' recovery, participation in criminal proceedings and engagement with TfL as an employer. We have updated our Stations Incidents Duty of Care training aimed at operational staff and managers in LU. This will ensure that frontline LU managers are aware of how to

provide proper duty of care following a WVA incident, including correct reporting procedures and how to ensure staff get the support they need.

We are working with the BTP and our Rail & Sponsored Services (R&SS) team to increase the number of investigators in the BTP staff assaults team. This team is currently dedicated to investigating work-related violence against staff working on LU but is being expanded to cover all TfL rail modes to improve the consistency in police investigation and victim support.

The Transport Support and Enforcement (TSE) Officer role was created from a commitment in our WVA strategy, and our officers play a key part in tackling violence and aggression against our people through tackling the triggers of WVA. The team currently comprises 105 highly skilled officers with plans to recruit an additional 70 officers this year. These officers provide a visible and reassuring presence across our network, supporting all our frontline staff, dealing with antisocial behaviour on the network, and enforcing TfL byelaws to address some of the main causes of WVA.

TSEs have undertaken over 2,000 station/network visits in Quarter 1. The majority of engagements saw compliance achieved by offering advice and guidance to non-compliant individuals. However, 317 individuals were directed to leave the network, 276 were refused entry and 30 individuals physically removed from our service for antisocial behaviour. Officers reported 24 individuals for prosecution and five arrests were made as a direct consequence of the team's work.

Examples of Successful Prosecutions in Quarter 1

Liverpool Street LU Station

In October 2021, a group pushed through the ticket barrier with a hire bike. They were challenged by staff but ignored them. One man abandoned the bike on the platform but as the train doors were closing spat at a member of staff. A swab was taken on scene using a spit retrieval kit and a DNA match was made. In May 2022, the suspect was sentenced to 60 hours of unpaid work and ordered to pay compensation to the victim of £100 and a victim surcharge of £95.

Moorgate LU Station

In August 2021, a woman climbed down onto the tracks at Moorgate and onto the opposite platform. As she made another attempt to access the tracks, staff blocked her path, but she pushed them away, pulling staff members towards the tracks, holding their arms whilst being verbally abusive and then spat into the face of one of the arresting police officers. She was charged with assault, racially aggravated Public Order and trespass. On 6 May 2022, she was sentenced to two weeks imprisonment.

suspended for 12 months, 180 hours of unpaid work and ordered to pay a total of £508 in fines and victim compensation.

East Acton LU Station

In April 2022, a member of the public accessed a closed station and when confronted was verbally abusive. He lashed out at a member of staff, smacking his arm and flicking a cigarette at the staff member's face. In May 2022, the suspect pleaded guilty to assault and trespass and was ordered to participate in a Rehabilitation Programme and 50 hours of unpaid work.

Route 86

In May 2022, a bus driver of route 86 was racially abused. The customer was intoxicated and made racially abusive comments to the bus driver throughout his journey. The bus driver used his code red button to alert TfL staff who called the police. On 9 May 2022, at East London Magistrates Court the suspect was found guilty of racially aggravated public order and imprisoned for four months.

Route 29

In March 2022, a bus driver of route 29 was abused by a customer that boarded the bus and went on to punch the assault screen several times. The police arrested the man at the scene. On 31 May 2022, the suspect appeared at North London Magistrates Court and was ordered to pay a victim surcharge of £34, a fine of £80 and was given a one-day detention at the courthouse for being disorderly.

Route 191

In February 2022, a bus driver of route 191 was spat at by the driver of another vehicle. The bus driver used his spit kit to collect a sample, which enabled police to identify the man and arrest him. On 19 May 2022, the suspect appeared at North London Magistrates Court where he was ordered to pay fines and costs totalling £885.

Significant incidents

This section outlines significant incidents that have occurred during Quarter 1 and since the last report. It also provides an update to significant incidents of note.

Significant London Underground incidents

There were no Rail Accident Investigation Branch (RAIB) reports pertaining to London Underground (LU) published in Quarter 1.

Incorrect Profiling of S8 Stock Wheels – 8 April 2022

During routine maintenance, we identified an issue with the profile of wheels on the LU Metropolitan line trains. The issue had the potential to cause track points to become fatigued which could, under certain circumstances, potentially lead to a more serious safety incident.

The affected trains (approximately 50 per cent of the fleet) were taken out of service for the issue to be rectified and a special timetable was implemented on the Metropolitan line. All trains have now been checked and the profile of the wheels restored to the correct standard. This incident is subject to an internal formal investigation.

Contractor hit by a train – 15 April 2022

A contractor who was assisting with the protection of other staff carrying out routine track patrol duties near Chalfont & Latimer station on the Metropolitan line, was struck by a Metropolitan line train. They were taken to hospital by ambulance and released later that day.

The incident is subject to formal investigations by both the RAIB and the Office of Rail and Road (ORR). We have also commissioned our own internal formal investigation. When these investigations have concluded, we will share the findings both internally and in this report.

Power failure and trackside fire at Barking – 29 and 30 May 2022

A significant failure of power at Barking sidings resulted in a trackside fire which severely damaged other critical power, signalling and communications services occupying the same cable route management systems and significantly disrupted the District line service. We have commissioned a formal investigation to determine the root cause(s) and other causal factors leading to the incident and to identify any measures necessary to minimise the risk of recurrence.

Customer fatalities on our network

On 7 April 2022, a customer fell down the stairs at station entrance into Walthamstow station ticket hall. She sustained a serious head injury, and we were subsequently informed that the customer had sadly died as a result of her injuries. On 8 April 2022, a customer lost their balance, fell against the side of a moving train and then fell into the gap between the train and the platform. It appears that the customer lost their balance as a result of a medical episode, and tragically, they died as a result of their injuries. On 15 June 2022, a customer fell from the platform at Chalk Farm station and onto the track. It appears that the man fell as a result of a medical episode and died as a result of his injuries.

The ORR has been informed about all incidents and further information provided as required.

Significant incidents on the Surface transport network

London Overground Collision with Buffer Stop – 12 October 2021

On 12 October 2021, a London Overground train, operated by Arriva Rail London, hit the buffer stops at Enfield Town at slow speed, causing damage to the infrastructure and the first carriage of the train to partially derail.

The driver of the train had a positive drugs test post incident and was suspended by Arriva Rail London. He has been charged with endangering the safety of passengers on the train. He appeared at Highbury Corner magistrates court early in July 2022. The pre-trial hearing took place at Inner London Crown Court in August 2022, where the driver pled not guilty. The case will proceed to trial. Further details will be provided in this report as the case develops.

The RAIB released their draft report to TfL on 3 August 2022 for comment. We are still awaiting final publication.

Sandilands Tram Derailment - 9 November 2016

Our thoughts remain with those who lost their lives, their family and friends, and all the other people affected by this incident, and we continue to offer support to those people directly affected as well as the wider community.

We have worked closely with the RAIB and the ORR since November 2016 to introduce a new safety regime and implement all the recommendations from the organisations across the tram network. This has made the network safer for everyone, and we continue to work tirelessly to ensure that such a tragedy could never occur again. We agreed to all of the RAIB's safety recommendations and accepted liability to ensure civil claims could proceed as soon as possible. We have also worked to address the issues raised by the Coroner in her Prevention of Future Deaths report following the Inquests.

We have delivered robust and lasting safety improvements since 2016 and we continue to review our operations and work with the wider tram industry to ensure that we have the safest possible network.

Following the conclusion of the Inquests, the ORR issued criminal proceedings against TfL, Tram Operations Limited (TOL) and the driver of the tram for breaches under the Health and Safety at Work etc, Act 1974 (the 1974 Act). TfL and TOL have both been charged with an offence under section 3 of the 1974 Act which requires employers to ensure that their employees and third parties are not exposed to risks to their health

and safety. The driver is charged with an offence under section 7 of the 1974 Act which requires employees while at work to take reasonable care for their own health and safety, as well as the health and safety of others who may be affected by their acts or omissions at work.

After careful consideration, at the first procedural hearing that took place at Croydon Magistrates' Court on 10 June 2022, TfL indicated a guilty plea to the charge. TOL also pleaded guilty at the same hearing. The driver indicated a not guilty plea. All three cases were transferred to Croydon Crown Court. On 8 July 2022, a procedural hearing took place in Croydon Crown Court concerning the driver. TfL and TOL attended and the Court confirmed that they would not be needed until after the conclusion of the driver's trial. The Court granted the driver's application to transfer the case to a different court in London in the interests of justice. The trial is estimated to last around 4-5 weeks and will be listed from the first available date from February 2023 at the Central Criminal Court (also known as the Old Bailey).

Potters Bar Garage Bus Fires – 22 May 2022

On 22 May, a bus fire occurred at Potters Bar Bus Garage, which started with an electric bus, in which a further five buses caught fire. As a precaution, the manufacturer of the electric buses, Switch Mobility, asked all operators to temporarily withdraw its double-deck electric buses from service while investigations were carried out into the root cause of the incident.

Investigations have been concluded by an independent bus fire specialist and short- and medium-term recommendations to prevent a recurrence are currently being addressed and tracked. All Switch Mobility buses have re-entered service, with immediate interventions to ensure operatives identify the correct system to put coolant into.

London Overground – Three Trap and Drag Events, June 23 – June 29 2022

In June 2022, on three separate occasions London Overground (LO) reported trap and drag events. The details are:

- **23 June at Seven Sisters station:** Three customers ran up off the station escalators area onto the LO northbound platform as the train doors had just closed. One of them put their hand in as the doors were almost closed. The driver stopped the train, and the customer withdrew their hand seemingly without any difficulty.
- **27 June at Wembley Central station:** On the southbound platform, a customer put their walking stick in the closing doors of a train. The customer let go of the stick and the train moved a short distance before the driver observed the stick

in the CCTV, and stopped the train, which then allowed the customer to get off the train.

- **29 June at Crouch Hill station:** It appears an umbrella got caught in the train door as it closed.

All three incidents have been notified to the RAIB and are now part of a panel review undertaken by Arriva Rail London with LO representation.

TfL Formal Investigation Report (FIR) 02-2022: Tower Millennium Pier, Detached Bollard hit vessel – 12 June 2021

The final FIR has now been published on this incident in which a mooring line for a vessel was secured onto a bollard on the pier. No one was injured during the incident.

A corroded bollard broke away during mooring procedures. The investigation found issues around maintenance, inspections, lines of responsibility, operating procedures and transfer of assets to the asset management system. The FIR has made ten recommendations which are being implemented.

TfL FIR 03-2022: Wandle Park - Tram Door Near Miss – 13 September 2021

The final FIR has now been published on this incident in which a tram stopped in advance of Wandle Park tram stop, awaiting a proceed signal. Whilst the tram was stationary, an Emergency Door Release was operated by a member of the public travelling on the tram. The passenger disembarked the tram at a non-platform location.

The FIR made eight recommendations. The recommendations have been allocated to the appropriate personnel and actions are currently being addressed to close out these recommendations.

Engagement with regulators

This section looks at how we have engaged with our regulators on safety issues over the past quarter.

Engagement with the Environment Agency

We report our progress on removal of polychlorinated biphenyls (PCBs) to the Environment Agency. PCBs are substances that are toxic to humans and animals. They were banned from sale in the UK in the 1980s, but LU has equipment which contains components such as old electrical capacitors that predates this ban and therefore sometimes contain PCBs. There is also legislation in England and Wales as well as an international agreement which aims to ban PCBs entirely. Progress on our

programmes for identification, replacement and removal of components that may contain PCBs continued in Quarter 1.

Engagement with London Fire Brigade

We meet the London Fire Brigade (LFB) every quarter to share the progress of our Fire Safety Programme and to discuss any significant fire incidents in the previous months. As well as a joined-up response to incidents on our network, the LFB carry out a number of detailed inspection visits to review our approach to fire safety. These collaborative discussions have allowed us to share the detail of our fire risk assessment programme and training with the LFB, as well as sharing detail on how we manage and maintain our fire assets with LFB inspectors. It has also allowed us to identify areas where we can work together more closely to ensure we manage the risk of fire on our network.

Engagement with the Office of Rail and Road

We continue to work closely with the ORR to ensure we manage health and safety effectively across our network. We have regular discussions around our ongoing response to the coronavirus pandemic, as well as constructive, open and honest discussions about any incidents on our network and our plans for improving how we manage health and safety. We continue to work together closely to identify opportunities for improvement.

Health

COVID-19

Since the start of the coronavirus pandemic, our focus has been to protect the safety and health of our customers and workforce. This remains our focus as we emerge out of the pandemic and transition to living with COVID-19.

Deaths in service

Our sincere condolences remain with the families and loved ones of the 105 members of our workforce who have sadly passed away from COVID-19 since the start of the pandemic. Everyone at TfL pays tribute to the vital role they played in our fight against the pandemic.

Our Employee Assistance Programme continues to be available to all employees and their dependants, and provides support, guidance, and information on a range of topics, including bereavement. The safety of all our staff and customers continues to

be our top priority, and we are absolutely committed to doing everything in our power to keep everyone safe on our network.

We are continuing to make free lateral flow tests available, even after the Government phased out the free tests from 1 April 2022. We have clearly communicated this to our workforce through articles on the staff intranet and posters displayed in workplaces.

Face coverings on public transport

The Government announced that it would no longer be compulsory for people to wear a mask on public transport and in shops from 27 January 2022. From 24 February 2022, we removed the requirement set out in our Conditions of Carriage for customers to wear face coverings.

From 13 June 2022 we changed our customer and staff messaging to encourage people to take appropriate action to keep themselves safe, including using hand sanitiser and wearing a face covering if this helps them to travel with confidence.

We continue to encourage our workforce to wear face coverings when in enclosed spaces. We are continuing to provide free Type IIR masks for those working in our operational areas.

Reusable masks for our staff

In Quarter 4 2021/22, we made TfL-branded reusable face masks, complete with our iconic rondel logo, available to all of our staff. These could be acquired by team managers or team administrators who were able to order up to two face coverings per team member. This quarter, the first batch of 20,000 masks was distributed to those who had ordered them. We are currently awaiting delivery of our second batch.

COVID-19 testing schemes

We have set up locations at our head office buildings where staff can collect one lateral flow test kit box each per week, or order for their team via an online form available on the intranet. We have given out over 12,000 test kit boxes since we started this transition on 1 April 2022 and continue to use staff intranet articles and posters in the workplace to publicise the availability of the free lateral flow test kits.

Monthly air and surface sampling for coronavirus by Imperial College London on the bus and Tube network which started in September 2020 has now ceased, as the managing of the pandemic moves into its next phase. We continue to investigate potential areas for future COVID-19-related research and investigation on the network.

Sickness absence data

When looking at our sickness absence data, short-term absence is any absence of less than 28 days and long-term absence is of 28 days or more duration.

By looking at the underlying causes of absence in detail, we gain meaningful insight into where we can best target preventative measures. Around 60 per cent of absences at any time are caused by long-term sickness.

Top causes of long- and short-term absence in Quarter 1 2022/23

Tornado graph showing the top causes of long- and short-term absence in Quarter 1 of 2022/23. These are broken down into the following categories: mental health, musculoskeletal, COVID-19, accidents/assaults, other, neurological, gastrointestinal, heart diseases and cancers/carcinogens. For long-term absences the following causes represent the majority: mental health at 28 per cent, musculoskeletal at 21 per cent, COVID-19 at 9 per cent and accidents/assaults at 12 per cent. For short-term absences, most categories are in single figures with the notable exception of COVID-19 which represents 30 per cent.

In Quarter 1 of 2022/23, COVID-19 remained the top cause of short-term absence but has significantly decreased from 59 per cent in the previous quarter, returning to 30 per cent as last seen in Quarter 3 2021/22. All other absence types are holding fairly stable and the main spike in absence levels occurred at the start of the quarter in period 10 (12 December 2021 – 8 January 2022), which is when we normally see an increase in short-term absences.

In Quarter 1 of 2022/23, mental health remained the top cause of long-term absence, accounting for 28 per cent of all long-term absences. Musculoskeletal-related absence was again the second highest cause at 21 per cent. These two categories have reduced by two per cent and one per cent since the end of Quarter 4. They remain the top two causes typically accounting for the majority of long-term sickness absence in the UK. Our Occupational Health team has several initiatives aimed at prevention of ill health but also to support those who become unwell, to return to work earlier. Some

of the events we hosted this quarter included several sessions on Breathing and Meditation as well as Diabetes Week 13-19 June 2022.

Health updates

Health Surveillance

Since being issued with a contravention notice and two improvement notices by the Health and Safety Executive (HSE) in March 2022, TfL have made significant progress in highlighting areas of possible risk to health and implementing health surveillance programmes for these areas. Over 340 members of staff have been trained to deliver skin checks to their teams, so that any cases of possible skin disease can be identified and referred to Occupational Health (OH) for further assessment. A total of 182 skin referrals have been received by OH and action taken where appropriate.

Blood samples have been taken from staff who have been identified as at risk of exposure to lead and will continue to be monitored as required.

Respiratory surveillance has also commenced for staff identified as at risk of exposure to respiratory sensitisers.

A quick and easy decision support tool has been implemented to assist managers in deciding whether health surveillance is required for their teams for both skin and respiratory; this will be expanded to include all other types of health surveillance in the near future.

All health surveillance forms are now available online which makes it quick and easy for managers to complete the required information and send to TfL's Occupational Health team via one simple route.

As a result of the improvements we have made in this area, the HSE notices have been closed out. Work continues to ensure that we meet our legal requirements in implementing health surveillance across the whole of TfL for all other types of hazards and risks.

Well@TfL

Well@TfL Mobile Health Unit

The Well@TfL health bus arrived late May 2022 and will be delivering onsite mobile health checks, health surveillance and periodic medicals. The mobile health bus will provide a convenient and cost-effective way for employees to receive onsite support on their health and wellbeing, as well as to attend medicals. Since launching the Well@TfL project in August 2021, over 1,000 employees have received a mobile health check. The Commissioner visited the Well@TfL Health Bus at the end of June

2022, discussing the benefits with the team of early identification of health risks and receiving onsite wellbeing support.

Phase Two of Well@TfL Acton pilot project

The Acton pilot project aimed to help our colleagues to learn more about their health and how they can improve it. The project started with wellbeing checks, including measurements like cholesterol, blood glucose and blood pressure. Participants were then invited for a three-month follow-up call and six-month follow-up appointment. The six-month follow-up health checks outlined a significant benefit to employee wellbeing. The comparison between first and last health check physical results indicated:

- A reduction in mean waist circumference,
- A reduction in the mean diastolic and systolic blood pressure recordings,
- A reduction in mean relative risk (the risk of a cardiovascular event) and an increase in individuals who had the recommended relative risk of 1.0 or below,
- 100 per cent of employees that attended three-month follow-up calls said they had made changes to improve their health and wellbeing.

RESET Health

TfL joined forces with RESET Health in December 2021 to support our employees in taking control of their health. Specifically, the programme aims to reverse the conditions of those living with diabetes or prediabetes, as well as those who are obese or overweight.

The table below presents the outcomes of members at the key 12-week milestone:

Indicators	Week 12 Average (Reduction)	Percentage
Weight (Kg)	5.6 kg	-5.5 per cent
BMI (kg/m ²)	1.7kg/m ²	-5.1 per cent
Waist Circumference (cm)	6.5cm	-6.0 per cent
Systolic Blood Pressure	1mmHg	-0.3 per cent
HbA1c	3.7 mmol/mol	- 8.1 per cent

Headline Outcomes: (data from 29 employees who onboarded the programme more than 12 weeks ago)

- Of the 29 members who have reached the 12-week mark, over 60 per cent lost more than five per cent of their body weight and of these, six members lost more than 10 per cent of their body weight.
- There has been a 19 per cent reduction in the proportion of members who are living with obesity compared with when they first joined the programme.
- Four members who were living with prediabetes when joining the programme reversed their condition after 12 weeks.

Environment

Air Quality

TfL launches a public consultation on further ULEZ expansion

In May 2022, TfL launched a consultation on plans to further expand the Ultra Low Emission Zone (ULEZ), to cover almost the whole of the capital from 29 August 2023.

The Mayor considered a range of options when deciding the next steps to take in dealing with the 'triple emergency' facing the capital. In the short-term, expanding the ULEZ London-wide will have the biggest effect on air pollution emissions relative to the cost to Londoners as a whole, as well as helping to tackle the climate emergency and traffic congestion.

The current £12.50 daily charge level for cars, vans and motorbikes that do not meet the standards would be retained. This would be supported by a revision of the Mayor's Transport Strategy (MTS), which is also part of this consultation. The consultation also asked Londoners to help shape the future of road user charging in the capital. This could include scrapping existing charges, such as the Congestion Charge, and replacing them with a single road user charging scheme that uses more sophisticated technology to make it as simple and fair as possible for Londoners.

Climate Emergency

Launch of Power Purchase Agreement tender

We marked London Climate Action Week (25 June to 3 July 2022) by launching the tender for our first Power Purchase Agreement (PPA), which aims to purchase more than 10 per cent of our required electricity from renewable energy sources and new build assets.

As one of the largest consumers of electricity in the UK, we will be playing a major part in meeting the Mayor of London's ambition for the capital to become a net zero-carbon city by 2030. The Mayor, through the London Environment Strategy, has also set us the goal of achieving a zero-carbon railway by 2030.

Renewable PPAs are long-term contracts with renewable generators for purchase of their electricity. These contracts can reduce our exposure to changes in the wholesale energy market, providing cost certainty and long-term cost savings, while also helping meet climate change targets through developing new renewable energy generation projects.

The launch of the tender on 27 June 2022 forms part of our long-term strategy to ensure that all the electricity we use is generated by 100 per cent renewable sources. By using a phased approach, we can also benefit through being able to learn and adapt as the renewable market evolves.

This tender will guarantee that the energy supplied is from renewable energy sources, comprising wind or solar power, rather than a mix of power generators that emit carbon into the atmosphere. By confirming the demand for renewable energy, the power purchase agreement will also lead to the creation of new build assets across the UK, such as solar or wind generation, by enabling the selected supplier to confidently invest in the delivery of new renewable energy projects.

Energy consumption and carbon emissions from our operations

Electricity consumption – provisional – Quarter 1 2022/23 (Gigawatt hours)

Bar chart showing provisional electricity consumption, in giga watt hours. This is separated into the following seven categories: London Underground traction, London Tramlink traction, London Overground traction, Elizabeth line (formerly TfL Rail) traction, Docklands Light Railway traction, Head office buildings and other operational electricity use. Across all categories, the electricity consumption remains at similar levels. London Underground traction takes the lion's share of electricity consumption, and this is what pushes up the total electricity consumption.

Electricity consumption was three per cent higher in Quarter 1 than in the equivalent period in 2021/22. This has largely been driven by increased reporting of energy consumption on London Overground, resulting from changes by Network Rail to estimates for traction energy consumption. This is under review. While May 2022 saw the introduction of Elizabeth line services through the central section of the line, trial operations in the months running up to the opening meant that there has been no significant new increase in electricity consumption on the line.

CO₂ emissions (excluding buses) Quarter 1 2022/23 (tonnes CO₂ equivalent)

Bar chart showing carbon dioxide emissions, not including buses, throughout 2021/22 and Quarter 1 of 2022/23. This is split into the following four categories: rail traction energy, head office buildings, other operational energy consumption and support fleet. Rail traction energy is accountable for the majority of carbon dioxide emissions, with other operational energy consumption coming a distant second. Head office buildings and support fleet both account for a small amount of carbon dioxide emissions.

Greenhouse gas emissions from operations, excluding buses, track closely to electricity consumption. Emissions decreased by approximately five per cent in Quarter 1 compared to the equivalent period of last year, in part due to a reduction in emissions intensity of grid electricity.

Sustainability training, engagement and embedding

Sustainability Staff Network

Our Sustainability Staff Network Group continues to go from strength to strength, with over 400 active members and growing. It celebrated its second anniversary on the 16 June 2022. The consensus of the group is that we need to continue to share, learn and support each other, and encourage colleagues to be brave in creating space for conversations about the sometimes-difficult sustainability challenges we face.

In April 2022, Arcadis ran a free three-part bite-sized Zero-Carbon Academy, which was open to anyone at TfL. The sessions were run by Arcadis's UK Climate Change & Sustainability Director, Ben Harris. Session one presented an overview of where we are today internationally and nationally in tackling climate change, session two looked at operational carbon and session three looked at infrastructure carbon. The training talked about general principles as well as providing examples and describing TfL's strategy and actions in these areas. The sessions were recorded and are now available on the TfL staff intranet as a freely available internal resource. They acted

as a precursor to the more formal and detailed Carbon Literacy Training Programme described below.

Other events run by the TfL Sustainability Network have included presentations and discussions led by TfL experts on London's 2030 Electric Vehicle Infrastructure Strategy, ULEZ, how to be a 'Sustainability Champion', Circular Economy and Responsible Procurement. We also hosted external speakers, including from Regen, who are not-for-profit energy experts and have been working with [National Grid ESO](#) to examine the question of decarbonising UK's electricity grid by 2035.

For London Climate Action week (25 June to 3 July 2022), the Sustainability Network held daily events including presentations and discussions on:

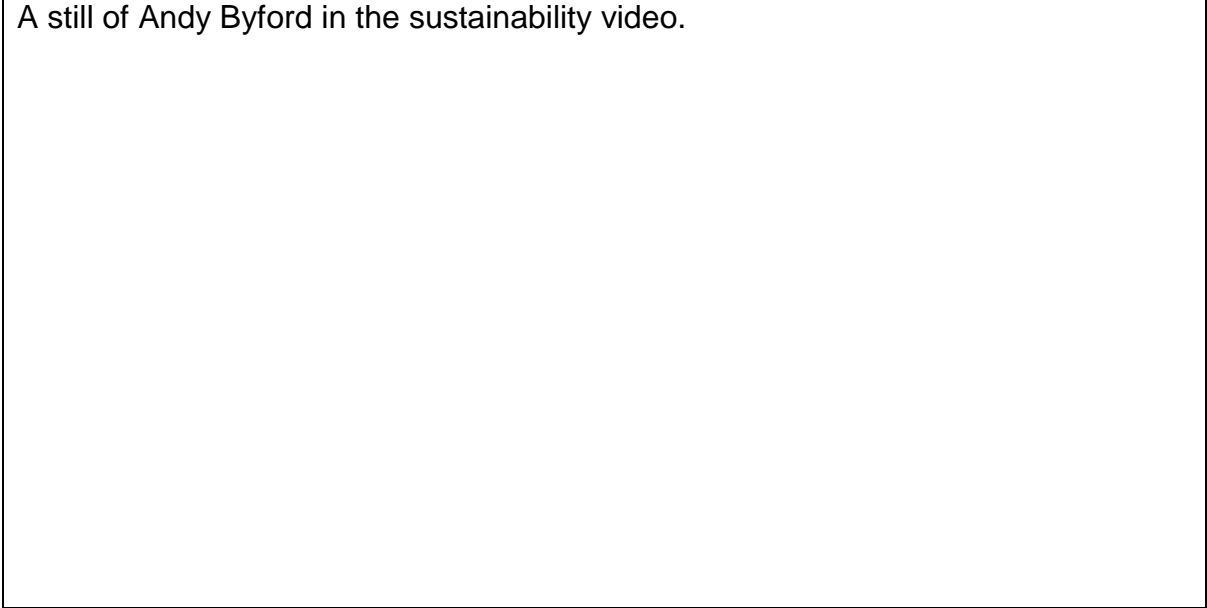
- decarbonising the TfL Pension Fund, led by the TfL Pension Chief Investment Officer,
- cutting carbon from our buildings,
- our strategy to use Power Purchasing Agreement to reach 100 per cent renewable rail operations by 2030.

We were also joined by '[The JUMP](#)', who shared their 'Joyous, People-Led Movement', which is about coming together to make practical changes, support and inspire each other, celebrate success and drive a change in society's mindsets and cultures with a '6 Shifts approach'.

Sustainability video

At the start of London Climate Action week, we launched a 10-minute video on TfL's approach to sustainability. The video was shared internally and across TfL social media (LinkedIn and YouTube). The video describes our sustainability approach set out in TfL's first ever Sustainability Report published last September. It brings to life what we do across all three pillars (social, environment and economy) of sustainability. The video is available on the [sustainability page](#) of the TfL website.

A still of Andy Byford in the sustainability video.



We are planning more video content to engage customers, stakeholders and potential job applicants on our sustainability agenda. As part of this we will be working with the TfL Youth Panel to generate engaging ideas and involve them in the development of video content. We are keen to promote TfL as a purpose-driven organisation that puts sustainability at the core of everything it does.

Green skills talent pipeline

We know that the green skills sector is rapidly growing and in the future all jobs will have an element of 'green' as we move toward sustainability. TfL needs to ensure it is getting the message out there that we are leading the way on many areas in relation to sustainability, and as well as being a great place to work with lots of opportunities for development, it also has huge scope and ability to deliver for the environment. To help with developing a talent pipeline of potential job applicants, we are in the process of building a micro-site to promote the potential for people joining TfL to work on many aspects of sustainability and to encourage potential future applicants to register their interest so we can proactively contact them as suitable roles are advertised.

We are in the process of retendering for suppliers across all our apprenticeships and we have included a requirement that they all include sustainability as part of the skills, knowledge and experience they provide. In addition, we included some sustainability and corporate social responsibility specific apprenticeships within the tender scope, such as ST0934 Corporate Responsibility and Sustainability Practitioner (Level 4) which will have the broadest appeal across TfL.

Taskforce on Climate-related Financial Disclosures and Climate Budgeting

We have strengthened this year's TfL Annual report with the inclusion of sustainability, to align with our new purpose to 'move London forward, safely, inclusively and sustainably' and our vision to be the 'strong green heartbeat for London', building on our TfL Sustainability Report published last September. We have already voluntarily begun reporting in line with the Taskforce on Climate-related Financial Disclosures (TCFD) this year, ahead of being legally required to from next year. The TfL Annual report also includes our first disclosures of physical and transition risks under TCFD requirements. In line with TCFD, TfL is in the process of creating a new Enterprise Risk on 'Climate Change, including Adaptation'.

The Mayor has set an ambitious target of making London net zero carbon by 2030. A key enabler of this ambition is the integration of a 'London Climate Budget' within the Greater London Authority (GLA) Group's annual consolidated budget process and documents. To inform this work the GLA is working with C40 Cities, which the Mayor has chaired since December 2021, in order to learn from cities like Oslo that have had a climate budget in place for several years. London is a C40 climate budget 'Pilot City', with the GLA Budget Guidance issued in July 2022 including a requirement for Climate Budgeting for the first time.

A climate budget is a governance system that mainstreams climate considerations into decision making via the budget allocation process and highlights a city's short-term actions (typically annually) to deliver the long-term climate targets (in line with the city's climate action plan or Net Zero Pathway).

As part of the financial budget process, climate measures are proposed, adopted, implemented, monitored and reported in line with the budget cycle. The climate budget should clearly state targets, actions and to the extent possible the estimated emissions reduction effects over time, costs and financing, as well as any relevant co-benefits.

London's first climate budget for the financial year 2023/24 will focus on scope one and two carbon emissions for the GLA Group, and therefore TfL. Ultimately, the ambition of the London Climate Budget is to cover all actions reducing Greenhouse Gas emissions in London (both within its boundaries and from the goods and services it consumes). London's Climate Budget will also be expanded in future years to include actions to mitigate the impact of climate change, to ensure functional bodies manage climate risks and implement measures to adapt.

London Climate Action Week 25 June to 3 July 2022

As well as internal events hosted by the TfL's Sustainability Network, releasing our Sustainability Video and the Mayor announcing the opening of TfL's Purchase Power Agreement tender, we also took part in several external activities during London Climate Action week. These included the Climate Innovation Forum, Climate

Investment Coalition, Surface Water Flooding Conference and the Business Climate Forum.

TfL Youth Panel Investigation

During the summer we supported the TfL Youth Panel to undertake an investigation into issues of diversity, inclusion and equality and how it interacts with environmental sustainability. The intention is to complete evidence gathering, hearings and research over the summer and present initial findings to the TfL Executive Committee in the autumn. Following this, a report will be finalised and published.

The objectives of the investigation are:

1. Development opportunity for the TfL Youth Panel and TfL staff.
2. Collation and synthesis of the latest evidence and research in relation to the investigation topic, which can then be used for communication, engagement and upskilling across TfL.
3. Identification of specific issues in relation to TfL activities, purpose and objectives.
4. Identification of specific policy recommendations for TfL.
5. Promotion of TfL as a forward thinking and attractive purpose-driven organisation.

Carbon Literacy Training Programme

We gained accreditation for our one-day carbon literacy training course from the Carbon Literacy Project in June 2022 and have trainers from across the business delivering one to two courses per week as part of a pilot phase.

Planning is underway for the next stage of the rollout, where we will increase the number of trainers and make courses more widely available. As well as embedding carbon reduction as a core part of TfL culture, this course will help to achieve cost savings due to an increased awareness of energy and resource consumption.

Buildings Decarbonisation

If we are to achieve our Corporate Environment Plan ambition to reach net zero carbon across our operations and Head Office estate by 2030, we need to decarbonise our built environment. TfL has a large and complex property estate with over 6,000 assets registered as buildings in our Asset Management systems. This includes a range of archetypes such as our head offices, stations, depots and garages, which are all integral to keeping London moving. Over the past nine months we have conducted a baseline assessment of the carbon emissions associated with our buildings and undertaken initial analysis for how we can simultaneously reduce carbon and operational cost. Our understanding will continue to be refined, but we estimate that

approximately 11-12 per cent of TfL's operational carbon emissions (approximately 105 kilotonnes of CO₂) are attributable to the activities that we undertake in our buildings.

Alongside this work we have developed a Buildings Decarbonisation plan, which includes recommendations and key action areas requiring further development. One of these actions is to conduct site specific feasibility to improve our understanding of how to decarbonise high priority sites, particularly at complex locations such as depots. In this regard, we have successfully secured grant funding through the Low Carbon Skills Fund (LCSF) to conduct feasibility work and generate Heat Decarbonisation Plans at eight of our operational buildings, with a further two LCSF applications awaiting a decision for our Commercial Development estate. This feasibility work will complete by March 2023 and will start to build a pipeline of projects that we will continue to develop.

Asset Climate Risk Assessment and Adaptation Reporting Power submission

In April 2022 we published our final submission under the third round of the Adaptation Reporting Power. The report sets out TfL's governance process, strategy for adapting to climate change, main climate risks now and in the future and proposed adaptation measures.

The climate risk assessment conducted for this report demonstrates that all of our assets, operations and services, staff and customers carry some degree of weather and future climate-related risk. The assessment identified 333 climate risks using the Met Office's latest climate projections and best professional judgement from a wide range of colleagues across the business.

We are now using the report and risk assessment to identify and prioritise actions for our forthcoming Adaptation Plan. This includes actions on governance, processes and decision-making, data and evidence, TfL's adaptive capacity, and collaboration and interdependencies. This is due to be published later in 2022.

We are also using the climate risk assessment to inform the development of our research programme, as well as in internal and external collaborative work, including with the Rail and Safety Standards Board's Climate Change Adaptation Working Group, Transport Adaptation Steering Group, and Infrastructure Operators Adaptation Forum.

Pan-London surface water flooding

The Transition Group, responsible for helping to transform the way that London plans for and responds to surface water flooding, held a stakeholder workshop in June 2022, ahead of the one-year anniversary of the July 2021 flood events. The workshop introduced the work done by the Task & Finish Group and the purpose of the Transition

Group. As well as the intention to establish a new, pan-London Strategic Forum for coordinated management of surface water flood risk, and the development of a pan-London surface water flood risk management strategy. It also began the process of creating a vision and scope for the strategy. Representatives from 27 boroughs attended, together with representatives from Thames Water, TfL, the Environment Agency, the GLA and other key stakeholders.

In July 2022, the London Councils Transport & Environment Committee discussed and approved a Transition Group paper on the governance of the Strategic Forum, including membership and roles and responsibilities. TfL will be represented by our Chief Safety, Health & Environment Officer. A detailed Terms of Reference will be produced as part of a funding bid to the Thames Regional Flood and Coastal Committee to support an independent Chair, secretariat and strategy officer.

July Heatwave

In July, the UK experienced a heatwave that was severe enough to warrant the Met Office issuing a Red Extreme Heat Warning for the first time. The 18 and 19 July 2022 were record-breaking days for both minimum and maximum temperatures. TfL staff, contractors and customers responded to the challenges of the event with great professionalism and resilience and TfL is incredibly proud and grateful for all they did to keep everyone safe.

Our operational response worked effectively, and there was extensive adverse weather planning and intensive and agile management of our response and coordination with other agencies prior, during and following the extreme weather. We experienced both planned and unplanned impacts on our operations and construction activities.

Planned measures (some of which were at short notice) included standing up a major incident command structure, implementing adverse weather plans (which include preparing for potential flash flooding that might follow the heatwave due to potential for thunderstorms). We also implemented speed restrictions, service suspensions (Cable Car due to cabin temperature, multiple line suspensions), traffic diversions, early closure of construction sites and reduced staff availability.

Our staff and customer communications were advising people:

- Not to travel unless necessary,
- That there would be widespread speed restrictions,
- To stay well hydrated by drinking plenty of water,
- To stay cool by adjusting their clothing to prevent overheating, where safe and practical to do so,

- To look out for those who may struggle to keep themselves cool and hydrated including young children and babies, older people, those with underlying conditions and those who live alone are particularly at risk,
- To try to stay in the shade and keep out of the sun between 11.00 and 15.00 when UV rays are strongest
- To always wear sun cream,
- To always travel with a bottle of water.

Tube travel reduced by 24 per cent on 18 July in comparison to the previous week, and by 34 per cent on 19 July. Bus travel reduced by 13 per cent on 18 July in comparison to the previous week, and by 19 per cent on 19 July.

There were also knock-on impacts on TfL services and operations due to issues for national rail services in the Southeast as a result of the heatwave. These included widespread impacts on London commuter services and National Rail services in London, including into Wednesday 20 July, resulting in reduced ridership and staff availability.

Unplanned incidents included asset failures (trains, ferries, signals, points, pumps, air conditioning, Electric Vehicle chargers and track circuit failures, fallen trees, track buckling, sagging overhead cables etc), police assisted customer evacuations of stuck trains, multiple fires (small and large, one of which – a trackside fire between Upney to Becontree 500 metres past footbridge - was declared as a CAT1 incident). There were also several cases of staff and customers becoming unwell due to heat.

We are working to understand and learn from these incidents so we can continue to improve and build insights and action into our forthcoming pan-TfL Adaptation Plan.

Green Infrastructure

Development of full Natural Capital Account

Natural capital accounting is the process of considering the value of the environment in business decision making and reporting.

This is the first time that we have assessed our whole estate and carried out a monetary valuation of our natural capital. The main objective was to develop a better understanding of how a natural capital approach can support TfL's strategies and operations. The Natural Capital Protocol was followed throughout, a four-stage assessment that provides a robust, credible and replicable assessment that is also in line with British Standards.

Our natural capital assets support significant value to Londoners and global society. They provide numerous, important benefits ranging from air quality, carbon sequestration, biodiversity, visual screening, shading and cooling to mental health and education that have been included in the assessment.

Due to the complex nature of our organisation, we have identified several data gaps that we intend to fill to improve future natural capital accounts and are working to embed the natural capital approach into business activities, including project delivery, asset strategy, and maintenance.

TfL is one of the first Transport and Infrastructure organisations to look at natural capital in this depth. This provides us with a great opportunity to show leadership and to share learning with other organisations in the sector.

The natural capital account will help inform the development of a pan-TfL Green Infrastructure and Biodiversity Plan.

Wildflower verges

Following the successful trial of six wildflower verge sites from 2019, we are currently identifying additional sites that will be suitable from a safety and visual amenity perspective. We are currently managing 108,000 square metres of roadside verge – 6.5 per cent of the road network – for biodiversity.

Verges have considerable potential for boosting biodiversity and can be cost-effective due to their management requirements, including reduced cutting frequency (allows wildflowers to grow and set seed) and collecting the clippings (reduces nutrient levels, allowing wildflowers to compete & reduces growth levels).

TfL's six pilot sites have been selected based on: vegetation suitability, proximity to residential areas and maintainability & safety considerations. We are continuing to assess the potential for further sites.