

Appendix 1

Safety, Health and Environment Quarterly report

Quarter 4 2021/22

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Introduction and Executive Summary

This report summarises our performance in the last Quarter and identifies strategic trends covering the period from 12 December 2021 to 31 March 2022, unless specified. Quarter 4 is the only quarter of the financial year which is composed of four periods - rather than three – which should be taken into consideration when analysing data and performance trends.

The report sets out ways in which we have continued to keep our customers and workforce safe during the coronavirus pandemic. The Government imposed Plan B COVID-19 restrictions from 13 December 2021 to 19 January 2022, during which time we maintained measures to control the risk of infection to customers and staff. In parallel, we have continued to make progress towards our longer-term safety, health and environmental objectives.

During Quarter 4, we saw customer numbers increase, ending the quarter at 0.8 billion customer journeys, representing a 0.12 billion increase from the end of Quarter 3. However, as stated above, Quarter 4 is a four-period quarter – rather than three – so these numbers should be treated with caution. Looking ahead to Quarter 1 2022/23, we will be closely monitoring how our customer numbers are impacted by the repopulation of office and leisure spaces, as well as the rise in COVID-19 cases in London and the South East. Our customer numbers still have some way to go until reaching the pre-pandemic level 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. Unfortunately, in Quarter 4 we did not meet our targets for customer injury rate or for injuries to people on or in collision with a bus.

COVID-19 remained the top cause of short-term absence, significantly increasing from 30 per cent in Quarter 3, to 59 per cent in Quarter 4. 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 remove Plan B COVID-19 restrictions from 19 January 2022, we have been able to gradually return to the office. We have continued to make lateral flow tests available to our staff to use measures such as handwashing and mask-wearing to control infection risk.

As part of the Plan B COVID-19 restrictions ending in England, the Government announced that from 27 January 2022, it would no longer be a legal requirement for people to wear a face covering on public transport or in shops.

Significantly in Quarter 4, the Government confirmed an extension of its funding support for TfL through to 24 June 2022 pending agreement of a more reliable medium-term funding arrangement. This funding guarantees the operation and maintenance of essential and safe transport services in London, allowing us to continue our full and vital contribution

to the Government's economic recovery programme as well as its 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 12 December 2021 to 31 March 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 4 2021/22 Scorecard

Measure	Unit	Q4 Target	Q4 Actual
People killed or seriously injured in road traffic collisions per million journey stages	Killed or seriously injured per million journey stages	0.45	0.31
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	0.025
Customer all injuries per million passenger journeys	All injuries per million journeys	2.52	2.55
Workforce all injuries	Number of workforce injuries	500	405

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, our aim in 2021/22 was to reduce the number to fewer than 0.45 people killed or seriously injured on the roads per million journeys. Our Quarter 4 result was 0.31 people killed or seriously injured on the roads per million journeys.

Bus safety measure

Our ambition is that no one is killed or seriously injured on, or by, a bus. In Quarter 4, our aim was to have no greater than 0.020 deaths or serious injuries per million journey stages. In Quarter 4 there were 0.025 deaths or serious injuries per million surface journey stages unfortunately missing this target. The top three causes of customer injury on buses are: falling while using the stairs or on the lower deck, falls whilst boarding or alighting the bus and because of sudden braking or manoeuvres.

Public transport customer safety measure

Working towards our Vision Zero ambition to eliminate deaths and injuries to customers travelling on our public transport network, our aim in 2021/22 was to have fewer than 2.52 injuries to our customers per million journeys. In Quarter 4, the result was 2.55, unfortunately missing this target. This represents an improvement on performance in Quarters 1 to 3 this financial year, with reductions in risk across all common customer injury causes. During Q4, we continued to see more customers returning to our public transport network, although numbers were suppressed over the early part of the Quarter once Plan B restrictions were implemented by the Government on 13 December 2021.

Across our public transport network we are pleased to report that no customers were killed, however unfortunately, 54 customers were seriously injured in Q4, which is two more than in Q3. Since the pandemic began, the number of customers killed or seriously injured has increased as customers returned to our network. As Q4 is the longest quarter - consisting of four periods rather than three - an increase of two serious injuries from Q3, and no customer deaths during Q4 may suggest a return to patterns of customer incidents observed pre-pandemic.

The number of customers injured per million passenger journeys was 2.55, which is above our target at 2.52 per million journeys but is the lowest customer injury rate of any quarter in 2021/22. The risk of customers being injured as a result of not holding onto the handrail has decreased by a third of London Underground. This is a positive indication that pandemic-influenced concerns about holding on may have waned in the final quarter of the year. We continue to use various media channels such customer-facing marketing campaigns and customer announcements on our network to encourage people to travel safely. Compared to Q4 2019/20 (preceding the pandemic) there were 21 per cent fewer customer injuries during Q4 2021/22.

Workforce safety measure

Working towards our Vision Zero ambition to eliminate deaths and injuries to our workforce, in Quarter 4 our aim was to have fewer than 500 workforce injuries. In Quarter 4 there were 405 injuries sustained by our workforce. This is a positive result, but 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.

Road safety performance

In Quarter 4 we have seen a return to pre-pandemic levels of road journeys, with more than double the number of journeys made compared to last year. This is the first quarter which has seen travel patterns and casualties on the roads return to pre-pandemic levels, with the addition of more motorcycle, bicycle and illegal e-scooter journeys.

Deaths and serious injuries for those people walking and riding a motorcycle this quarter have notably increased. This increase appears to be an early indication of the end of suppressed walking that we saw when COVID-19 restrictions and the guidance to work from home where possible were in place as well as an increase in online shopping and food delivery services.

Although bus travel is still one of the safest ways to travel in London, the risk rate has risen to 0.025, which is marginally above the scorecard target of 0.020, with this quarter seeing an increase in serious injuries to customers on or in collision with buses and coaches, which has gone up from 17 in Quarter 3 2021/22 to 40 in Quarter 4 2021/22.

Quarterly performance

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

Transport Mode	Q4 2019/20	Q4 2020/21	Q4 2021/22*
Pedestrian	15	7	16
Pedal cycle	1	5	1
Powered two wheeler	8	2	8
Car	7	3	9
Bus or coach	0	0	0
Taxi	0	0	0
Private hire	0	0	0
Goods vehicle	0	0	0
Other vehicle	0	0	1
Total	31	17	35

*Quarter 4 2021/22 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, it is useful to compare Quarter 4 2021/22 to Quarter 4 in 2019/20 – although note

that the final weeks of that period may have been affected by behavioural changes as the pandemic developed prior to legal lockdown from 23 March. A total of 35 people were killed on London's roads in Quarter 4 2021/22, which is more than double the 17 people killed during the same period in 2020/21. The number of people killed in this quarter is similar to those who were killed in Quarter 4 2019/20 before the pandemic hit the UK, suggesting we have returned to 'normal' conditions.

We have also seen a return to pre-pandemic trends of who is being killed. In total, 16 people walking died in Quarter 4 2021/22 compared to seven in Quarter 4, 2020/21. One person was killed while riding an electric scooter, recorded under 'other vehicle'. Against this trend, one person was killed while cycling, in line with the 2019/20 figure compared to the five people who died in Quarter 4 2020/21.

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

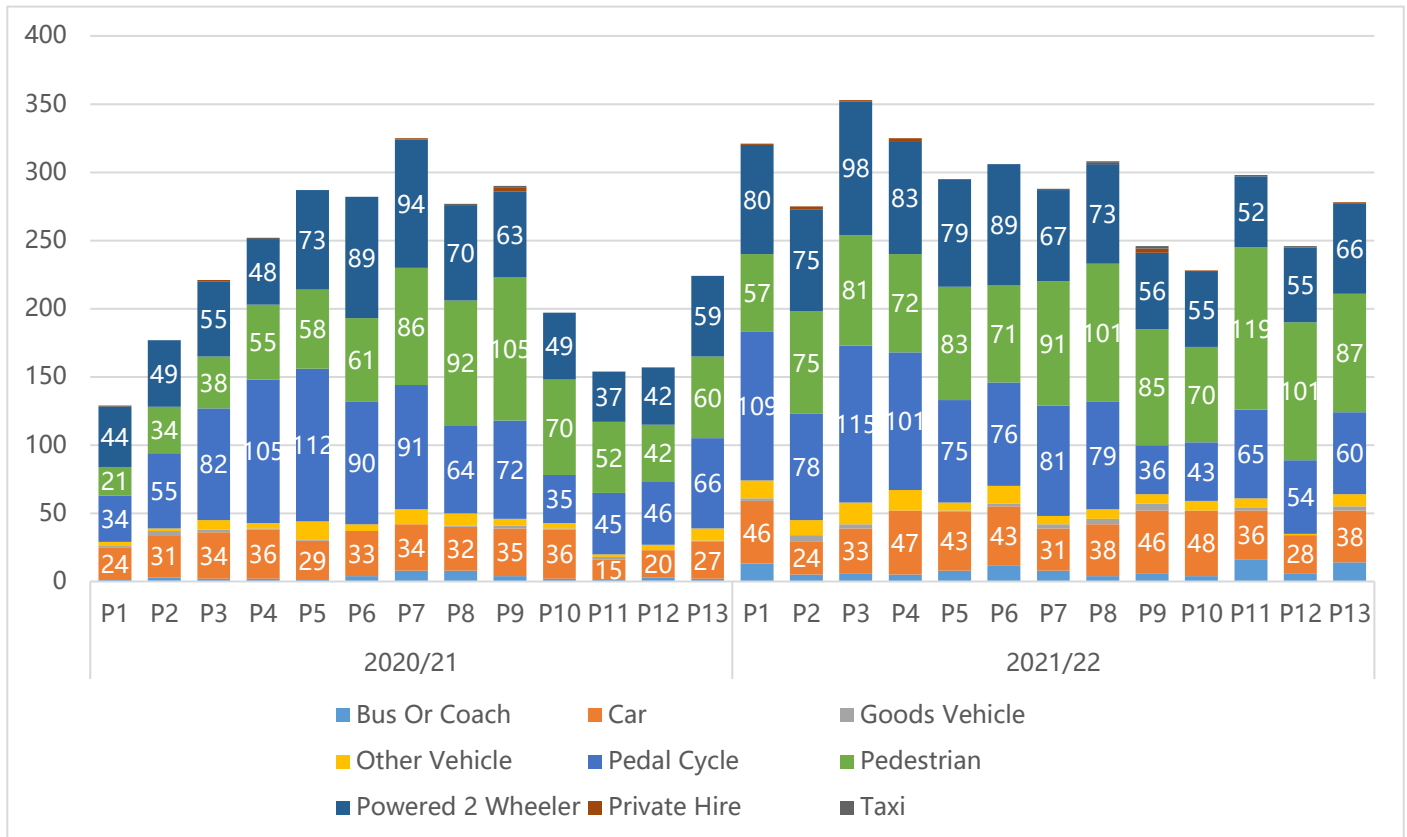
Transport Mode	Q4 2019/20	Q4 2020/21	Q4 2021/22*
Pedestrian	351	217	386
Pedal cycle	182	187	235
Powered two wheeler	188	185	221
Car	125	94	144
Bus or coach	16	8	42
Taxi	3	0	2
Private hire	8	0	2
Goods vehicle	6	4	3
Other vehicle	5	19	22
Total	884	714	1057

**Quarter 4 2021/22 figures are provisional and subject to change.*

The number of people seriously injured has increased by over 40 per cent compared to the same period last year (1,057 compared to 714 in Quarter 4 2020/21) and the equivalent period in 2019/20. This was driven by more serious injuries of people cycling, motorcycling, and riding a bus or coach in particular.

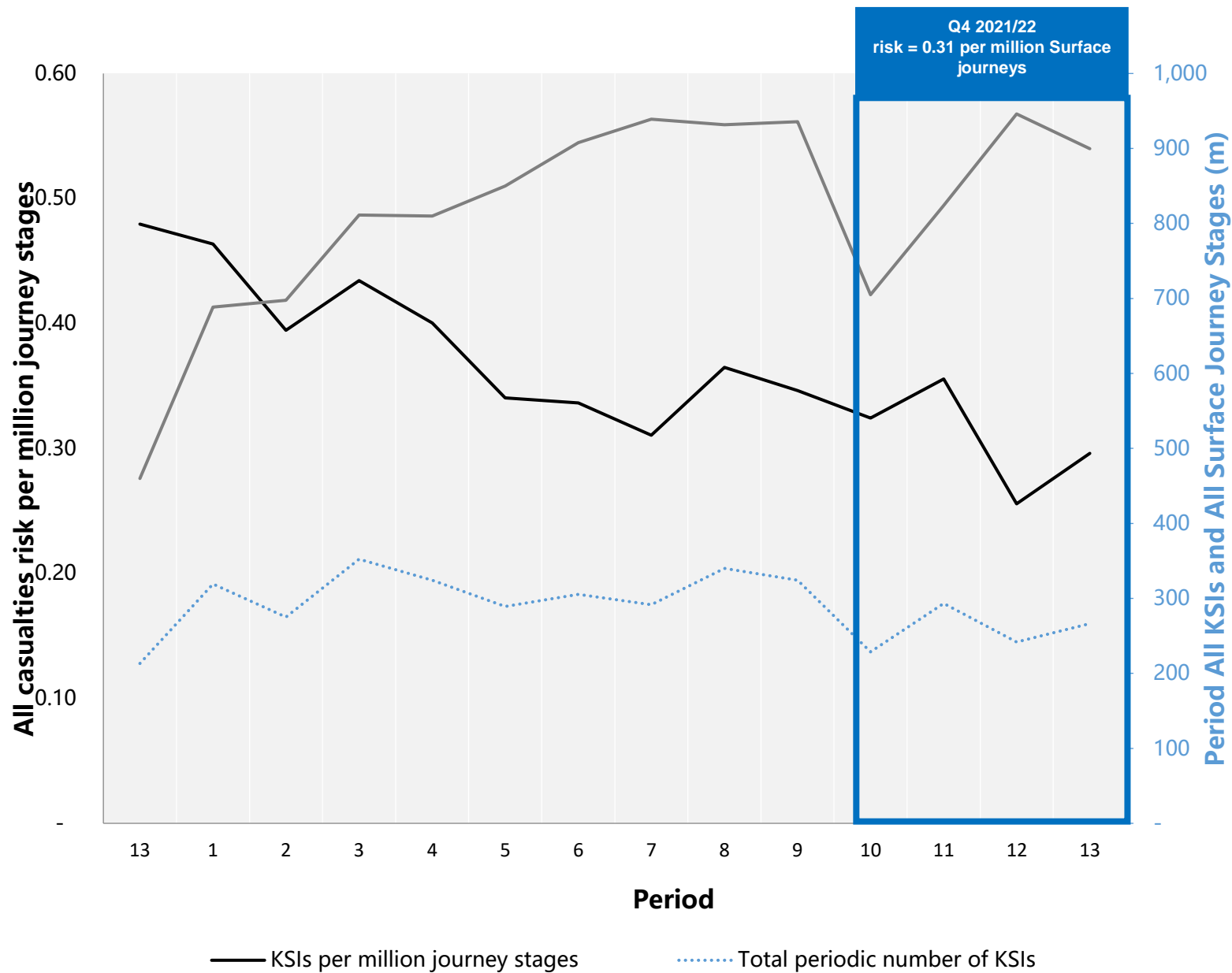
Pedal cycle and motorcycle serious injuries have increased in this quarter to 235 and 221 respectively.

People killed or seriously injured on London's roads in 2020/21 and 2021/22 (by mode travelled)



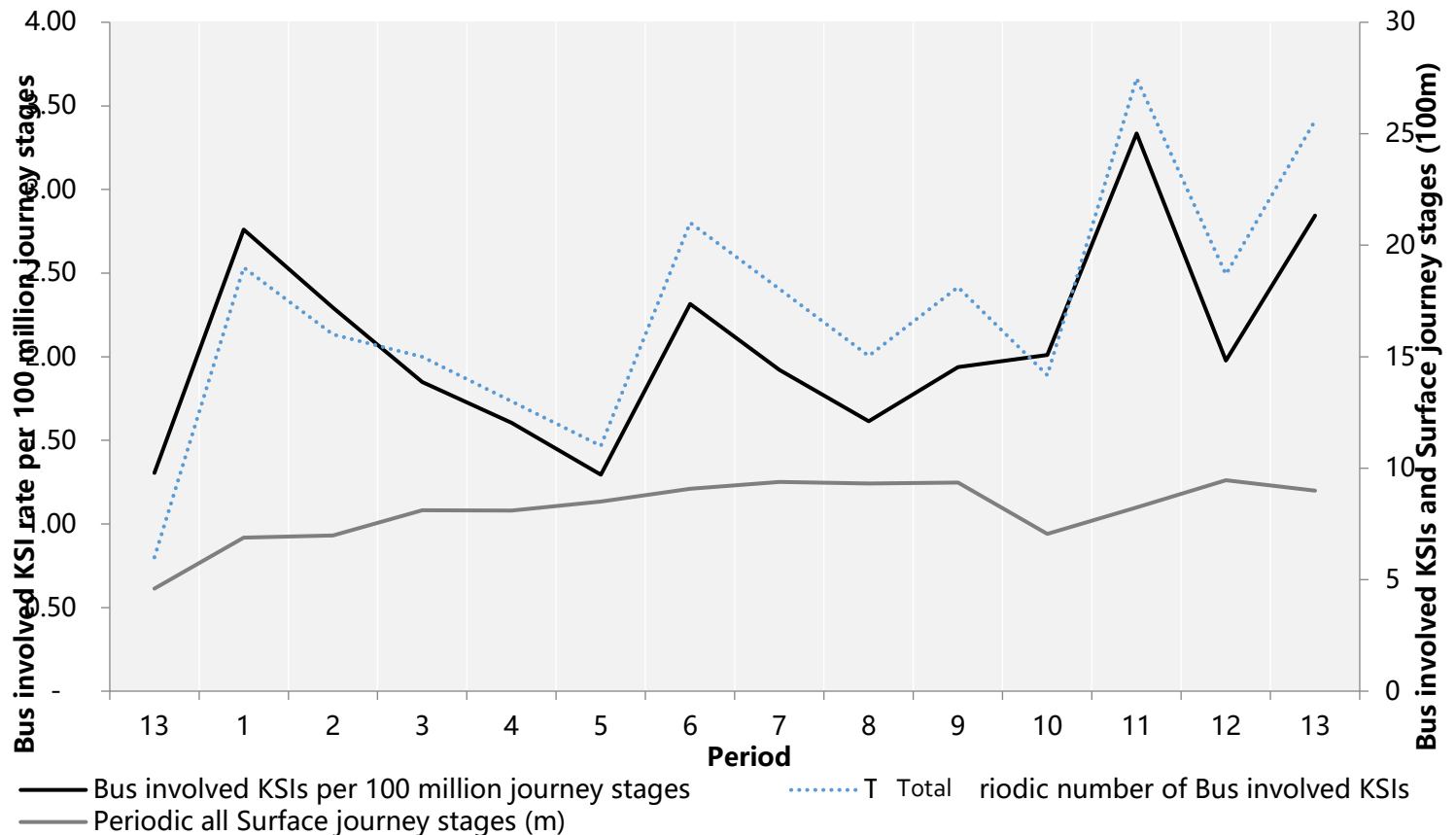
In Quarter 4 2021/22, 1,092 people were killed or seriously injured on London's roads. People walking, cycling and motorcycling accounted continued to account for ~80 per cent of those killed or seriously injured. Compared to Quarter 3, there was an increase of 26 per cent in the number of people killed or seriously injured on London's roads (833 to 1,057). It is worth noting that Quarter 4 includes four periods and not the standard three periods of the other quarters.

Scorecard measure: People killed or seriously injured in road traffic collisions from period 13 2020/21 to period 13 2021/22 (per million journeys)



Working towards our Vision Zero ambition to eliminate death and serious injury on the roads, our aim in 2021/22 is to reduce the number of people killed or seriously injured on the roads. Our scorecard aim for the Quarter was for fewer than 0.45 deaths or serious injuries per million journeys. Our Quarter 4 result was 0.31 people killed or seriously injured on the roads per million journeys, which exceeded our aim.

Scorecard measure: Rates of fatal or serious injury experienced by people in collision with buses from period 13 2020/21 to period 13 2021/22



Our ambition is that no one is killed or seriously injured on, or by, a bus. 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 4, 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 more directly influence bus services. In Quarter 4 there were 0.025 deaths or serious injuries per million surface journey stages, which means we unfortunately missed this target. This is above our central target and also just above our floor target of 0.024. We are monitoring this closely to understand the trend before forming a working hypothesis.

Road safety updates

Vision Zero action plan progress report publication

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.

Safe Speeds

Lowering Speed Limits Programme

In March 2022, we reduced the speed limit to 20mph on the A13 Commercial Road; A10/A503 corridors in Haringey; A107 corridor and A23 London Road. This means 108km of the Transport for London Road Network (TLRN) is subject to a 20mph speed limit

The City of Westminster also saw a reduction in speed limits on TfL roads, complementing their plans to reduce limits on borough streets, with the introduction of 20mph limits on 13km of roads, including Marylebone Road, Vauxhall Bridge Road and Edgware Road between the A40 and St John's Wood Road.

Additionally, the temporary 30mph speed limit on the A40 Westway has been made permanent. Subject to funding, we are planning to reduce the speed limit at Gants Hill town centre and A4180 Ruislip Road to 30mph as well as introducing a 20mph speed limit on A205 Upper Richmond Road in Wandsworth and on over 31km of TLRN in the boroughs of Camden, Islington, Hackney, Tower Hamlets and Haringey.

Safe Streets

Safer Junctions

Works to introduce a new pedestrian crossing over Battersea Bridge - where a person walking was tragically killed at the beginning of 2021 - were completed on 26 November 2021 at Chelsea Embankment/ Battersea Bridge, with a second phase to follow in summer 2022. Subject to funding, we propose to engage on 10 further Safer Junctions by 2024,

which will then progress to delivery, depending on the outcome of engagement with local stakeholders.

Safe Vehicles

Direct Vision Standard (DVS)

TfL's world-first Direct Vision Standard, which reduces lethal blind spots on lorries is already helping to save lives and prevent life-changing injuries.

Since its introduction, more than 112,259 HGVs have had safe systems fitted, improving the direct vision of the driver from the cab.

A total of 191,769 permits have been issued and 76,429 penalty charge notices (PCN) were issued up to the end of Quarter 4 2021/22.

Electric Scooters

The e-scooter rental trial¹ has expanded significantly over the nine months since its launch on 7 June 2021. Over this time period approximately 800,000 hire trips were taken, averaging a distance of 2.6km per trip. Operators have reported that there have been no fatalities and 15 serious injuries based on the STATS19 injury classification definitions.

Since the implementation of a ban on the carrying of e-scooters on TfL services from 13 December 2021, TfL enforcement officers have intervened with 602 customers across the network who attempted to bring an e-scooter onto our services or premises. Those customers were prevented from travelling with their e-scooter.

Nineteen customers have been reported for prosecution for a byelaw offence for failing to comply with an officer's instruction. We continue to monitor compliance levels closely.

Bus Safety Standard

We continue to roll out the Bus Safety Standard (BSS) to new vehicles joining the fleet. The number of buses meeting the BSS specification continues to climb with around 775 buses now in the fleet (fleet numbers on 1 April 2022). This number includes buses with the 2019 and 2021 BSS features respectively.

The safety measures include Intelligent Speed Assistance (ISA) technology which limits buses speed to the posted speed limit. Around one in five of our buses has this technology fitted, of which 775 new vehicles were fitted with ISA as part of the BSS and around 710

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

vehicles have been retrofitted. Other measures in the BSS include an Acoustic Vehicle Alerting System (AVAS) for quiet-running buses, with 634 new buses now fitted with AVAS, and 680 buses fitted with Camera Monitoring Systems (CMS) which aims to reduce blind spots.

AVAS Phase 2

Responsive AVAS is where the sound volume alters to predetermined volume settings depending on location-based ambient noise levels and time of day. The work to develop this has been successful and TfL are in the process of updating the Bus Vehicle Specification for AVAS which will require new buses to have responsive AVAS. TfL are also looking at how responsive AVAS could be rolled into the existing fleet, subject to available funding.

Bus driver training

Delivery of 'Destination Zero', the safety training programme for London bus drivers, commenced in May 2019. The training course uses innovative virtual reality technology, which is designed to make the course engaging and impactful. The training covers hazard perception, hazard prediction, judgment, and driver wellbeing.

Delivery of this training has been severely disrupted by COVID-19 with suspensions during all lockdowns and time taken to ensure COVID-safe delivery. This included the procurement of surgical-grade cleaning equipment for the virtual reality headsets. To date, over 11,000 drivers (around half) have completed the training course. Our aim is for all drivers to have been trained by the end of the year.

Managing Bus Driver Fatigue

Fatigue Risk Assessment Tool Request for Quotation project:

In July 2021, we commissioned the University of Surrey to carry out research to support TfL and bus operators in understanding the suitability, limitations and the potential for using existing fatigue and/or risk assessment scheduling and rostering tools. As part of Stage One of this work, an additional validation exercise was undertaken to validate existing tools that have been explored during this project against real world data from a trial of Fatigue Detection Technology. The phase one work and additional validation exercise is now complete, and the University of Surrey are currently writing the draft report for Stage One.

The findings from this work will inform the next steps, and we will provide further updates in future reports.

Fatigue and Health & Wellbeing Innovation Challenge 2021

The combined Fatigue, Health and Wellbeing Innovation Challenge was launched in late spring 2021 and has enabled us to trial a number of measures across nine London bus operators. This included three bids from partnerships between operators, that will help to reduce fatigue and improve health and wellbeing of bus drivers. Funding approval for the projects was in place in February 2022 and currently eight out of the ten successful bids have started. Early results and progress updates for the trials will be shared in the coming months.

Fatigue Detection Technology

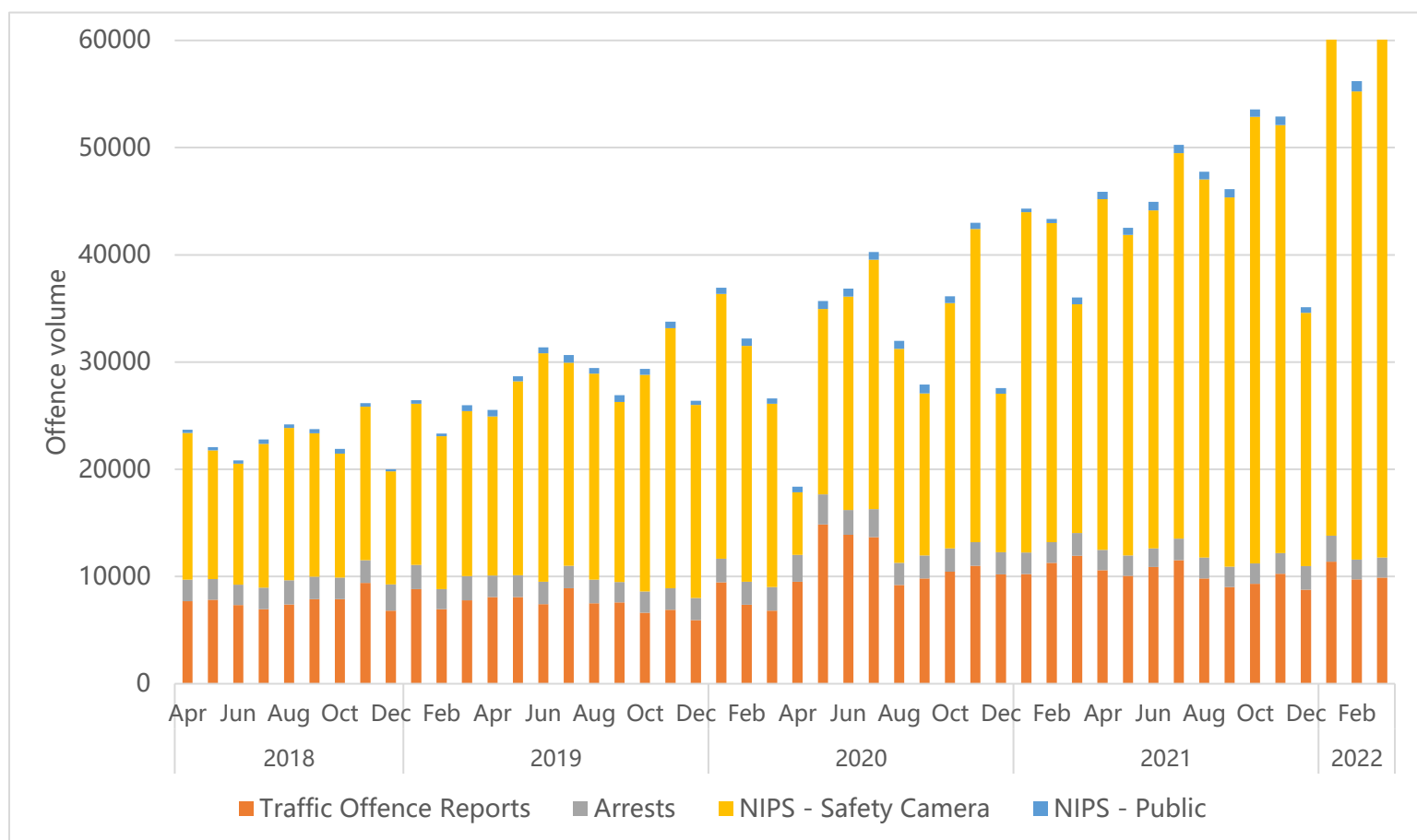
The Fatigue Detection Technology project aimed to carry out a pan-London, multi-operator trial of fatigue detection technology to around 450 buses. The principal aim was to better understand the benefits of fatigue detection technology on reducing fatigue amongst bus drivers, the associated benefits such as building a more open safety culture and to assess the feasibility and benefits of any future rollout. This project is currently on hold due to funding constraints.

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



*NIP = Notice of Intended Prosecution

The MPS dealt with 189,125 road traffic offences through enforcement action in Quarter 4 2021/22 (January – March 2022). This was 34 per cent higher than the previous quarter (an additional 47,530 offences) and 53 per cent higher (an additional 65,434 offences) than Quarter 4 in 2020/21.

During 2021/22, the MPS enforced 608,223 road traffic offences. This was 44 per cent higher than 2020/21, and an additional 186,741 offences were dealt with.

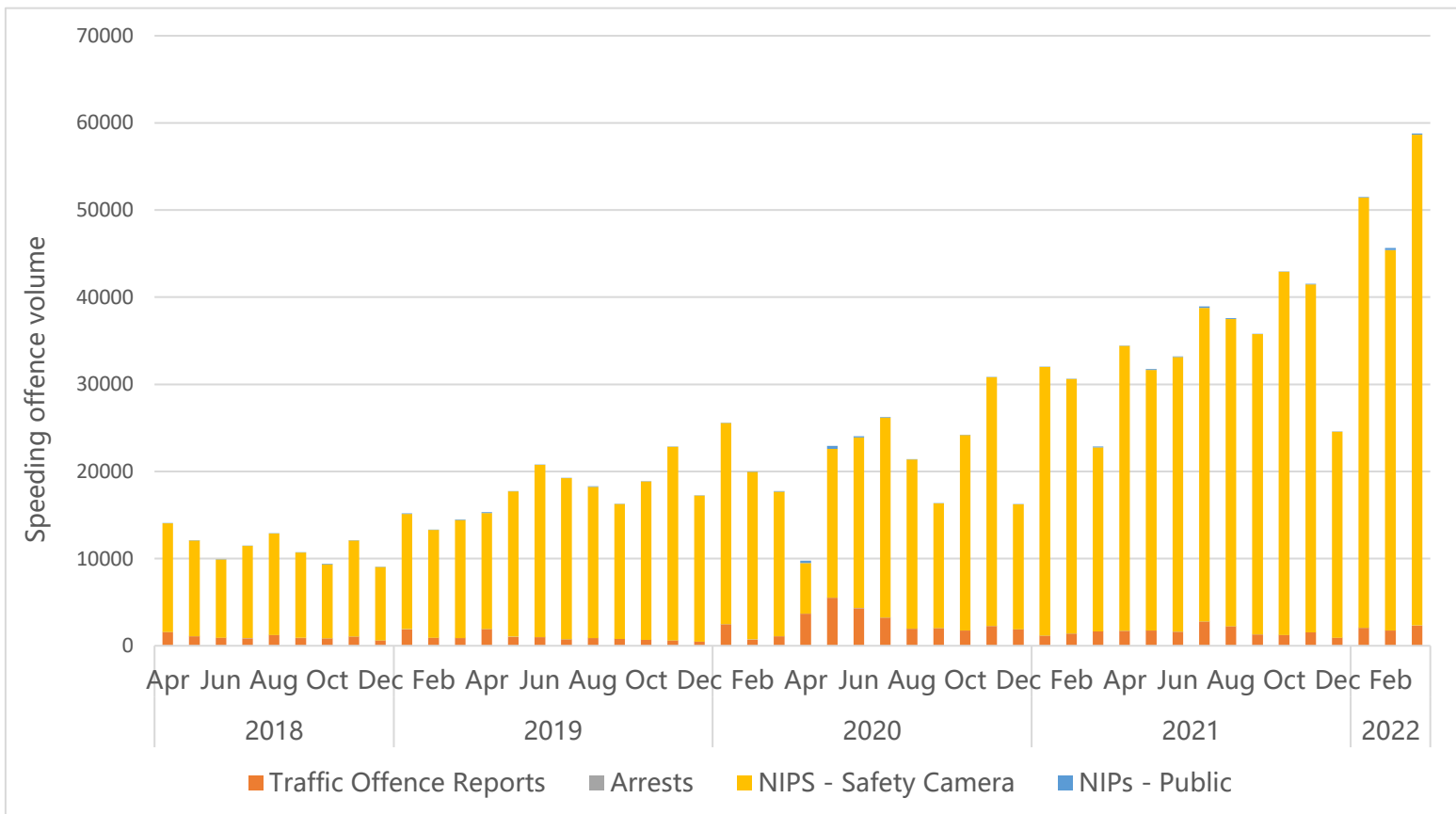
Enforcement action includes Traffic Offence Reports which are issued by police at the roadside, arrests or Notices of Intended Prosecution for offences enforced through safety cameras or evidence provided members of the public (e.g., through headcam or dashcam footage).

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 4, 95 per cent of all road traffic enforcement action taken by the MPS was for priority

offences. Speed enforcement accounted for 82 per cent of all traffic enforcement, reflecting the risk and harm this causes.

During 2021/22, the MPS enforced 544,022 priority road traffic offences. This accounted for 90 per cent of all police traffic enforcement. In 2021/22, the MPS dealt with an additional 190,758 priority offences compared with the year before (an increase of 54 per cent).

Speeding offences volume 2018-2022



**NIP = Notice of Intended Prosecution*

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 4, the MPS enforced 155,924 speeding offences. This was 43 per cent higher than the previous quarter (an additional 46,912 offences) and 82 per cent higher (an additional 70,419 offences) than in Quarter 4 in 2020/21.

The MPS enforced 476,685 speeding offences in 2021/22. This is an increase of 72 per cent on the previous year – an additional 199,105 offences enforced.

The above traffic enforcement results are provisional and are subject to change as more offences are processed. The final outcome for Q4 and 2021/22 as a whole will be higher than what is reported here.

In Quarter 4, 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. It will enable us to deal more effectively with emerging issues and being more responsive to local community concerns. In the first two full months of operation (February and March 2022), the MPS enforced 6,266 speeding offences.

Intelligent Speed Assistance systems fitted to TfL fleet

Over the past six months, we have been fitting new speed limiting technology – the ISA – to 360 of TfL's car and van fleet. A speed limiting device is a safety device that stops drivers from driving faster than the speed limit on the road. Although the devices help drivers to stay within the speed limits, the driver is still in full control of the vehicle (unlike cruise control), and drivers remain responsible for the speed they drive and to drive within the law. The ISAs use a GPS-linked system to detect speed limits and alerts the driver when they are going too fast. Once the driver is alerted, the system intervenes by reducing the power of the accelerator. Work continues to look at ways to improve how we manage our fleet and work towards our Vision Zero commitment.

Cycle Training for Adults and Children

Face-to-face cycle training continued to be delivered across London boroughs in Quarter 4. The 2022/23 budget is £660,000, of which £20,000 was equally distributed to borough councils for use. For the financial year 2021/22 a total of 23,265 children have been trained to Bikeability Level 2, and 11,370 adults have been trained.

Powered two-wheeler Training Courses

Demand and attendance on both of TfL's motorcycle safety training courses remains strong. For the financial year 2021/22, 822 riders had completed 1-2-1 Motorcycle Skills and 527 riders had completed Beyond CBT (Compulsory Basic Training), the training course aimed specifically at those who ride for work.

One of TfL's Driver and Vehicle Standards Agency-approved motorcycle training suppliers, Phoenix Motorcycle Training, has recently been contacted by the online grocery retailer Ocado, which is interested in additional training for their riders. Phoenix Motorcycle Training has also continued to work with the motorcycle food courier Getir in training their riders.

The MPS has delivered 109 BikeSafe workshops to 785 riders from for the financial year 2021/22. These workshops were delivered in three ways: traditional BikeSafe, courier-focused workshops and special workshops for the 999 family and the Military.

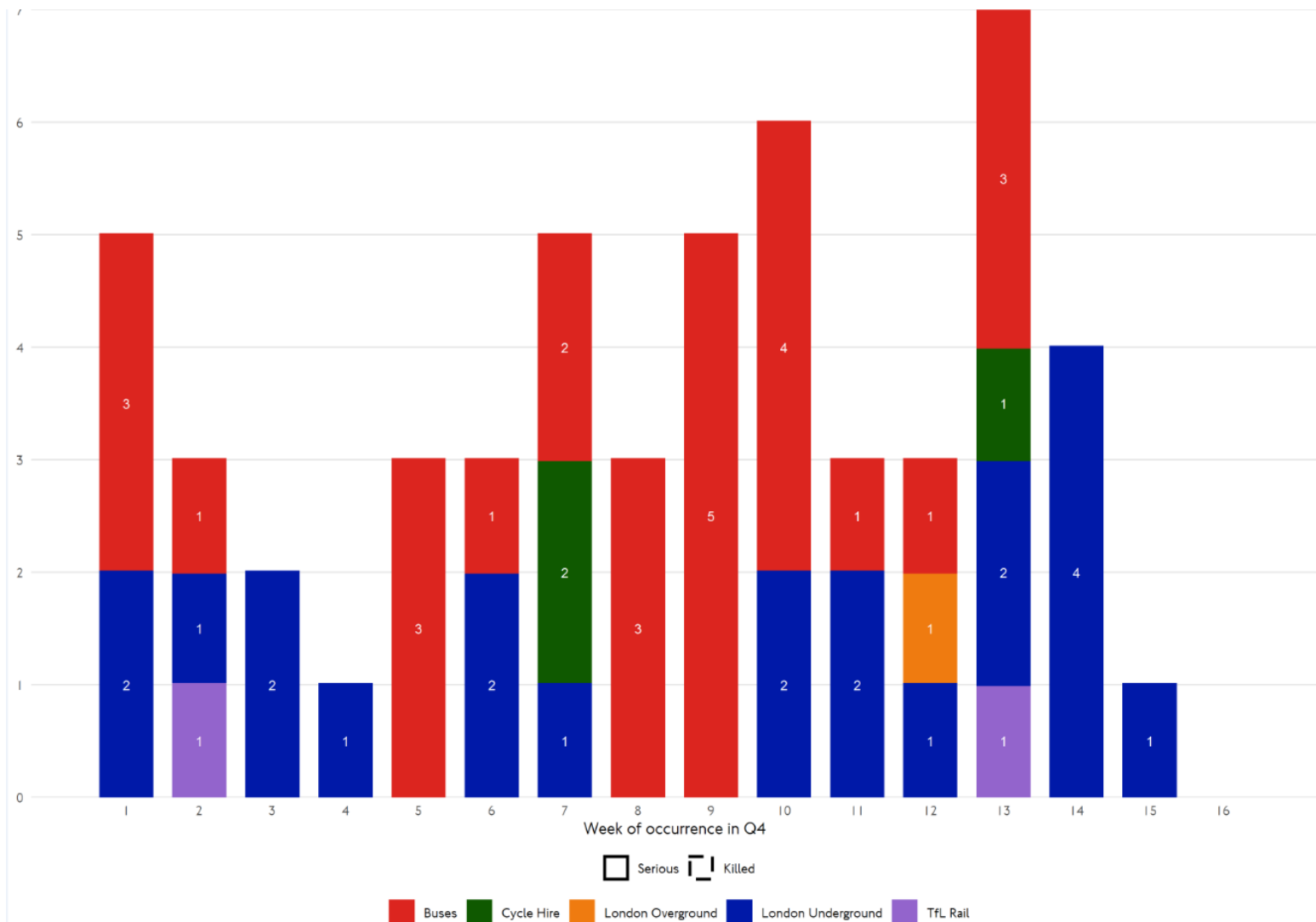
Information on all of TfL's motorcycle training courses can be found [here](#).

Public transport safety performance

This section does not include injuries sustained by our Construction and Projects workforce

Quarterly performance

Customers killed or seriously injured per week in Quarter 4 (by mode)



No customers were killed on our public transport network during Quarter 4.

Unfortunately, 54 customers were seriously injured.

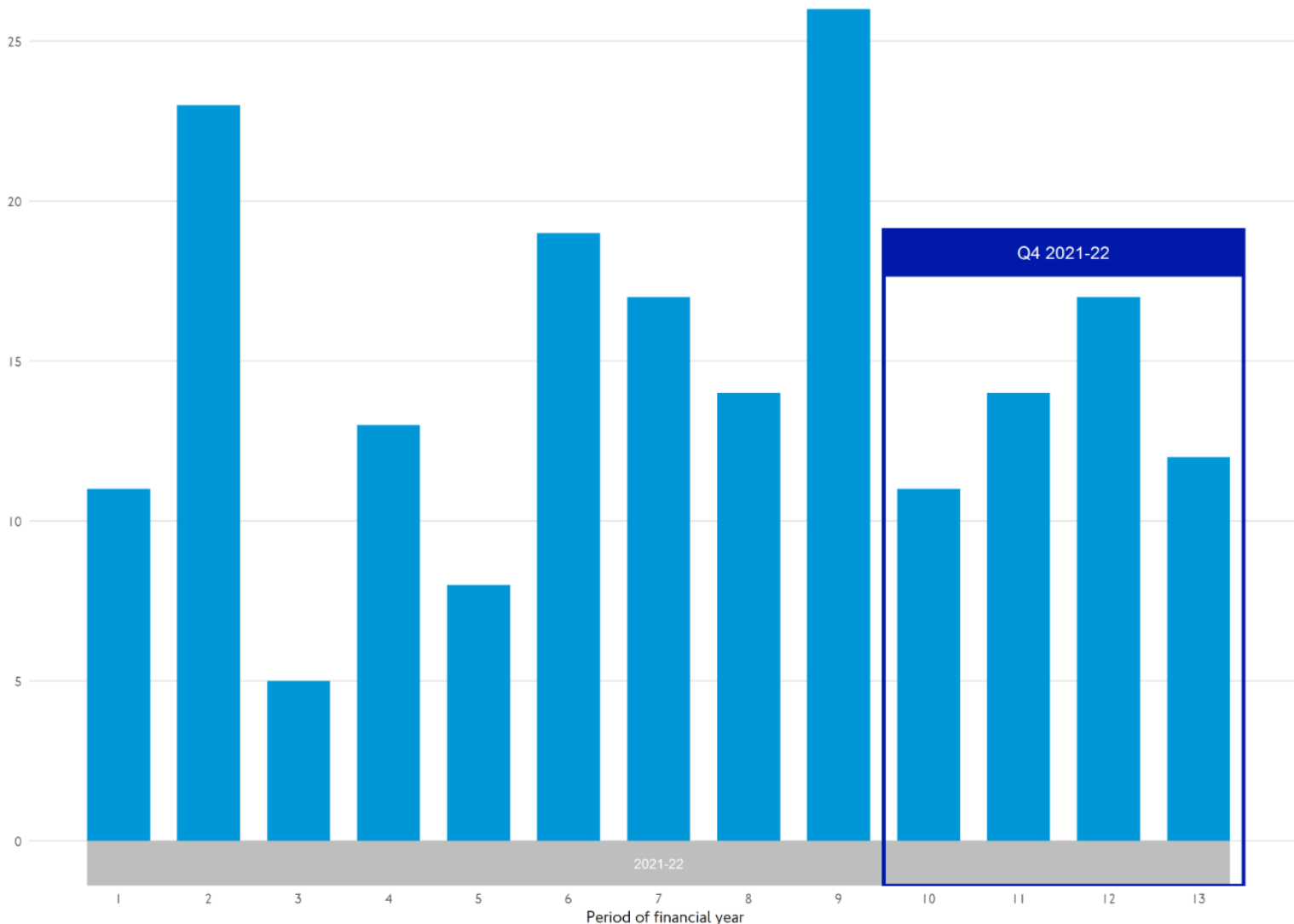
Overall, more customers were killed or seriously injured than Quarter 3; this includes two more serious injuries, but no deaths compared to one in Quarter 3. Since the pandemic began, the number of customers killed or seriously injured has increased as customers returned to our network. As Quarter 4 is a longer quarter than Quarters 1-3 (consisting of four periods rather than three), an increase of two serious injuries from Quarter 3, and no customer deaths during Quarter 4 may suggest a return to patterns of customer incidents observed pre-pandemic.

Quarter 4 also covers the Christmas and New Year period, and as such in the two-years pre-pandemic we saw rates of intoxication-related injury peak during Quarter 4. However, the

emergence of the Omicron Covid variant, changes in travel behaviour and Plan B restrictions put in place by the Government, may have reduced risk of serious injury on our network over this period with fewer customers travelling whilst intoxicated over the festive period, in comparison to the end of Quarter 3 where such restrictions were not in place.

Most serious injuries occurred on buses (50 per cent) and London Underground (LU) (39 per cent), as these modes carry the most passengers. However, there were also three customers seriously injured using our Cycle Hire service, two customers seriously injured on TfL Rail, and one customer seriously injured on London Overground.

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



On buses, 22 per cent of serious injuries involved customers falling while using the stairs, or on the lower deck, when the bus was in motion. Another 22 per cent of serious customer injuries were sustained whilst customers were attempting to board or alight the bus. This

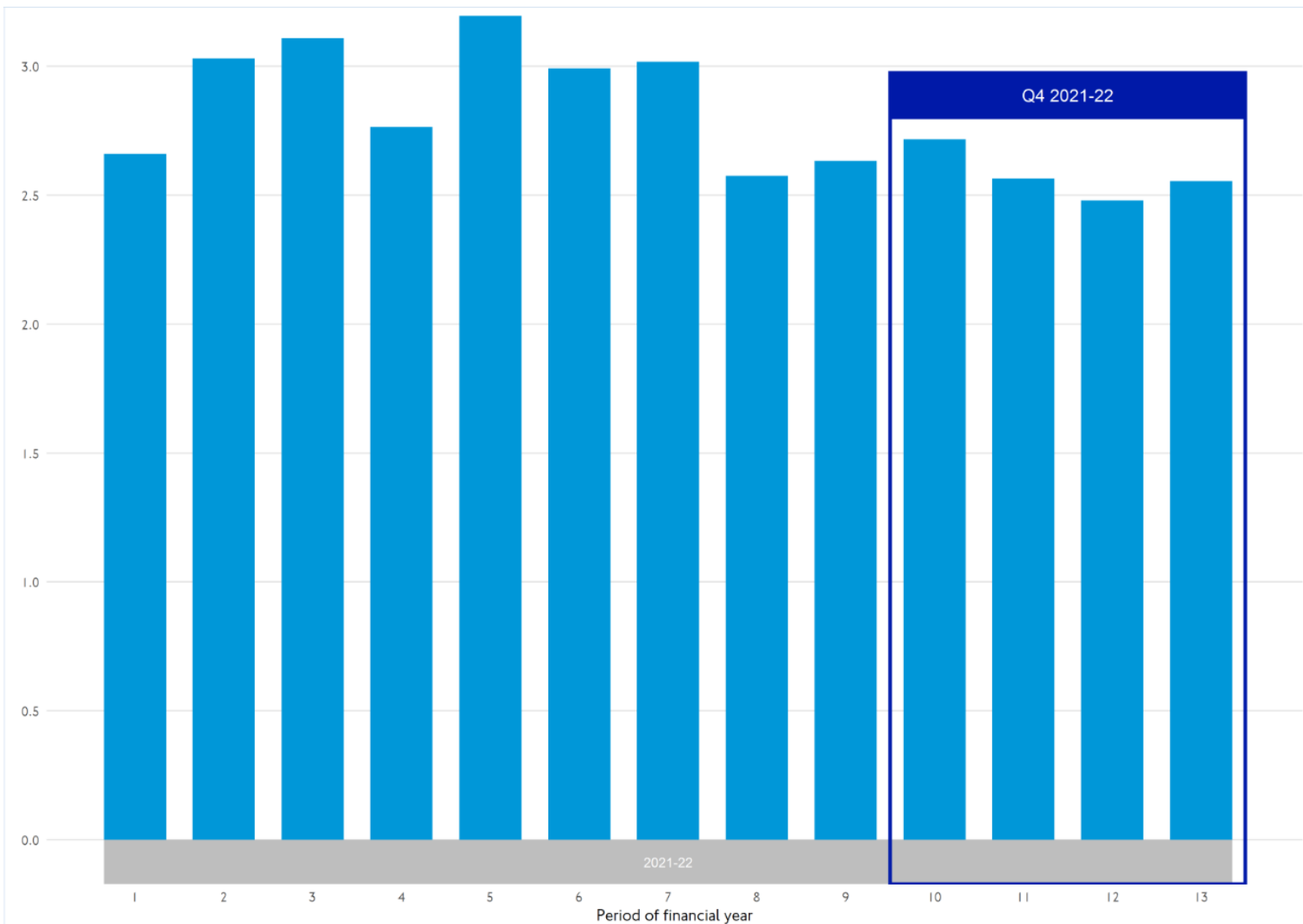
included an incident where the bus did not pull in fully, and one where when the bus doors were shut, and the customer was knocked over outside the bus. Sudden braking or manoeuvres caused 19 per cent of customer serious injuries. Two children were also injured in falls from buggies as a bus manoeuvred round a roundabout.

TfL commissioned TRL Limited to do a [Bus Braking Analysis](#) report, published in February 2022. Research tells us that heavy braking in normal service occurs substantially more frequently than had been previously understood and therefore the risk of injury per harsh braking event is lower than previously thought. We are working to understand harsh braking further, and subject to funding, whether more can be done to protect customers by preventing interactions between buses and other road users or protecting customers on the bus when bus drivers have to take evasive action to avoid collisions. The Bus Braking Analysis research is informing the specification of Advanced Emergency Braking (AEB), which is a requirement for new buses in 2024 as part of the Bus Safety Standard. AEB is forecast to provide strong safety benefits, particularly for pedestrians, and the research has shown that the potential risk per brake event to bus passengers is significantly lower than previously predicted.

Older people rely on our buses for travel, more than other age demographics, and can be particularly vulnerable to serious injury in the event of a fall. Our forthcoming Diversity and Inclusion bus driver training will cover the impact of slips, trips and falls on older and more vulnerable customers, and draw links to our previous Destination Zero safety training for bus drivers.

On LU, the most common causes of customer serious injuries were falls on escalators (48 per cent) and falls on stairs (24 per cent). There were fewer serious injuries sustained at the platform train interface this quarter. However, there were also serious injuries sustained by rarer causes such as a customer trespassing on the track, a customer colliding with the side of a train, and a child's foot becoming trapped in an escalator.

Scorecard measure: Customer all injuries rate 2021/22 (per million passenger journeys)

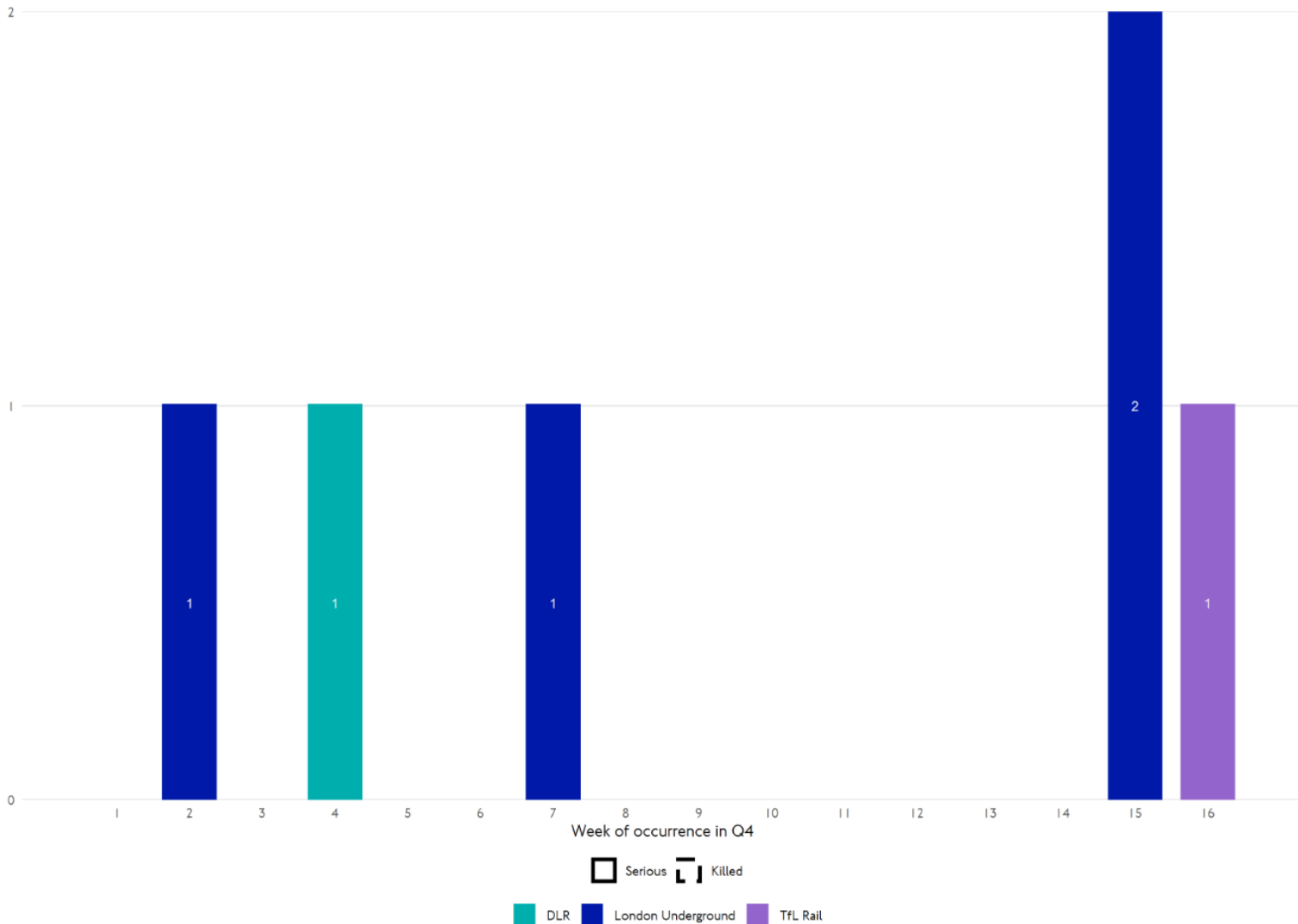


The number of customer injuries per million passenger journeys has decreased again this quarter, to 2.55. This is the lowest quarterly customer injury rate of this financial year. Unfortunately, the Quarter 4 customer injury rate remains slightly above our target across 2021/22 of 2.52 injuries per million passenger journeys.

This decrease in customer injury risk is reflected across our most common causes of injury. The risk of customers slipping, tripping or falling on LU and buses is the lowest it has been since Quarter 1 2020/21, covering the first few months of the pandemic. The risk of customers being injured when not holding on to a handrail has decreased by a third on LU since the beginning of 2021/22, suggesting that pandemic-related concerns around holding on to handrails and poles on public transport may be waning. The risk of injury whilst boarding and alighting LU trains was the lowest this quarter of any quarter of the last four financial years, and 12 per cent lower than Quarter 3. The risk of falls on bus stairs are the lowest they have been since the pandemic began and are 8 per cent lower than Quarter 3.

This decrease in customer injury risk during Quarter 4 is in the context of passenger numbers remaining largely consistent with the previous quarter. One exception to this was the fall in passengers over the Christmas period which coincided with the introduction of Plan B measures which encouraged people who could work from home.

Workforce killed or seriously injured per week in Quarter 4 (by mode)

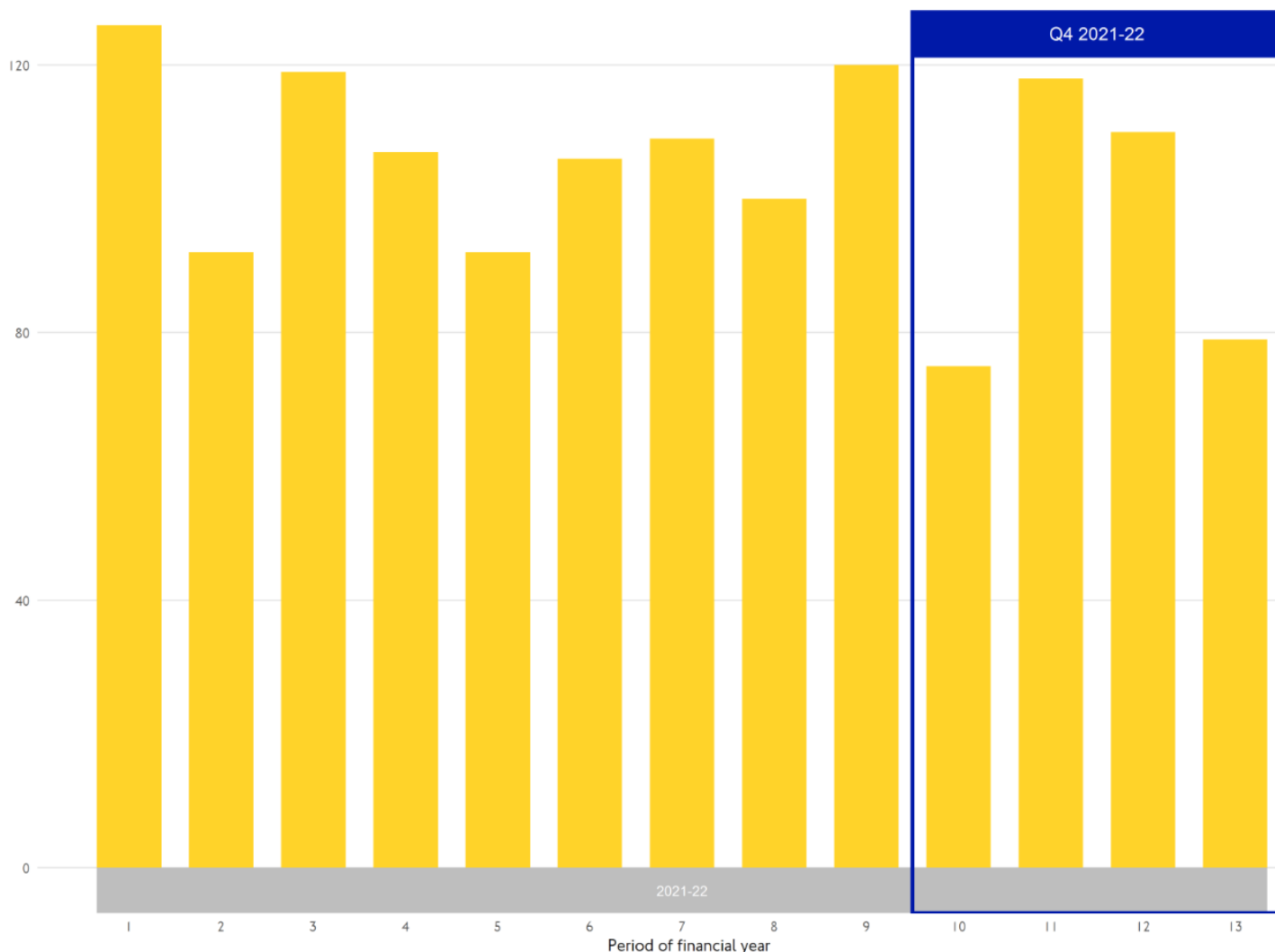


This section does not include injuries to our construction and projects workforce, which are covered in the Capital safety section below.

No one was killed whilst working on our public transport network in Quarter 4. Unfortunately, six members of our workforce were seriously injured. This compares to ten serious injuries sustained by our public transport workforce in the previous quarter. This quarter, workforce serious injuries included:

- Four slips, trips or falls – one at the platform train interface, one into a side pit at a depot, one trip over equipment as a train was being maintained, and one unknown.
- A customer assaulted staff in the ticket hall of a London Underground (LU) station.
- A ticket gate panel striking a LU staff member on the foot.

Scorecard measure: Workforce injuries 2021/22



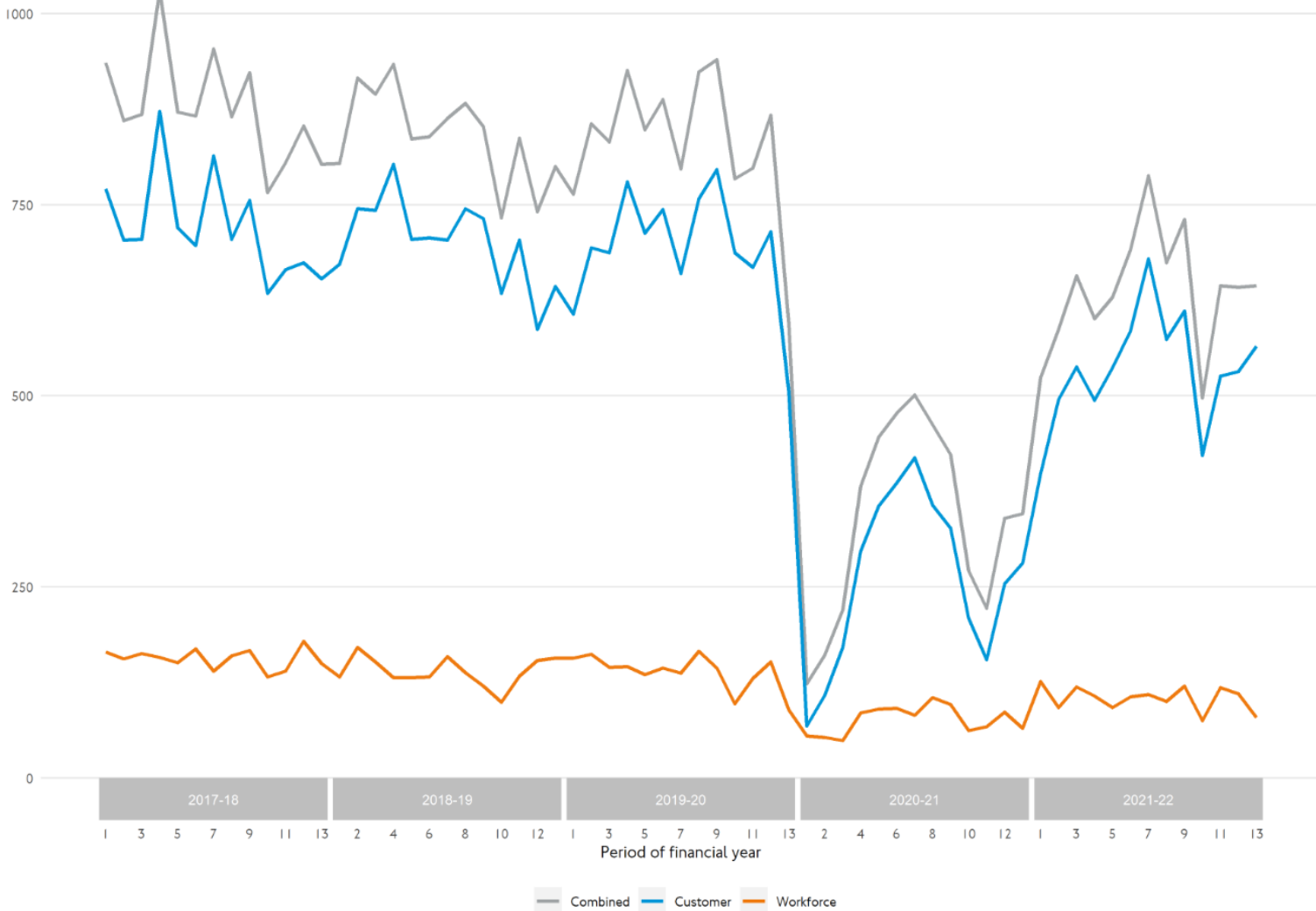
In Quarter 4, 405 members of our public transport workforce were injured. Everyone who works for us should go home safe and healthy every day. Our Vision Zero ambition is to significantly reduce all injuries sustained by our workforce by 2030 and eliminate death and serious injury by 2041. Although it is disappointing that 405 people who work for us on our public transport network were injured whilst doing their job this quarter, this represents significantly fewer injuries than our scorecard target of 500 injuries and is a step towards eliminating harm.

Total workforce injuries remain below pre-pandemic levels. Trends vary by injury type, for example, assaults remain below pre-pandemic levels but are continuing to trend upwards for LU. This may be linked to a return of customers post-pandemic, but also potentially reflects an improved culture of reporting aided by the introduction of body worn cameras. Other causes which remain more stable and below pre-pandemic levels include collisions

for our bus workforce, and trapped fingers and hands for our LU workforce. For both LU and buses, distraction continues to contribute to fewer injuries than pre-pandemic.

Long term trend

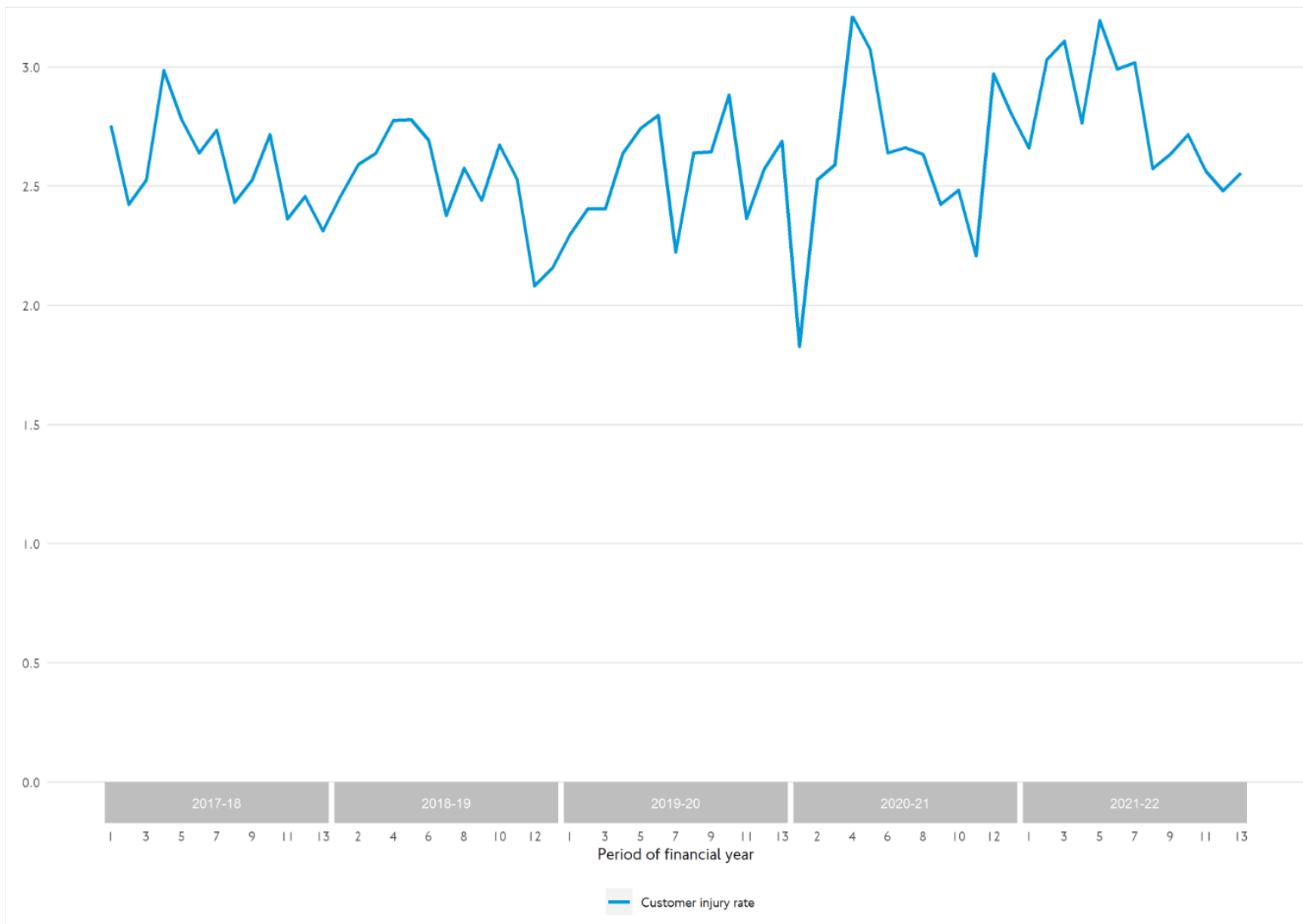
Customer and workforce injury numbers per period since 2017-18 (total)



Similar to passenger numbers, the number of injuries sustained by customers on our network remains below pre-pandemic levels.

The long-term trend in workforce injuries has been more stable, with injuries also remaining below pre-pandemic levels despite our workforce headcount remaining more static than passenger numbers. Whilst workforce injury numbers have increased gradually since the beginning of the pandemic, there has been little change during 2021/22 and the 13-period rolling average has remained relatively stable despite a return to business as usual for a large number of roles.

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



Since the start of the pandemic, and particularly in the first half of this financial year, the number of customers injured for every million passenger journeys has been higher than the pre-pandemic average between 2017/18 and 2019/20. In the most recent two quarters we have seen a fall in our customer injury rate, to around pre-pandemic levels. It is too early to understand if this decrease in risk will be sustained, but this is particularly positive given growth in passenger numbers steadied in Quarter 4 and so recent reduction in risk has been driven by fewer injuries, rather than more passengers travelling.

Public transport safety updates

Bus Action Plan

As mentioned in the Road Risk section of this report, the Bus Action Plan was published in March 2022. The action plan sets out a number of steps we will take to improve the safety of buses and work towards our Vision Zero ambition for no one to be killed in or by a London Bus by 2030.

Some of the actions that will improve the safety and wellbeing of our workforce and customers on the bus include:

- Promoting innovative bus driver fatigue, health and wellbeing initiatives through delivery of the Bus Safety Programme and leading the Health & Wellbeing Innovation Challenge jointly with bus operators. Fatigue detection technology will be rolled out to 500 buses by the end of 2022
- Building on the success of the Destination Zero training programme, to equip drivers with the skills to adapt to the changing streetscape and better support the needs of our vulnerable and diverse customers, and work to achieve Vision Zero
- Implementing a strategic data-led approach to reducing passenger injuries due to slips, trips and falls, involving the evaluation of a variety of technical, behavioural and procedural interventions

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 90 per cent of LU station staff in suicide prevention so far. In Quarter 4, we made 117 life-saving interventions, bringing the total over the last few years up to 1,950.

We have recently expanded the Safeguarding Award and LifeSaver Award schemes and publicised these to staff.

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 the best practice criteria. There are slightly different criteria for LU staff compared to other operational colleagues, as in LU there is an existing mode of logging suicide interventions, using an electronic incident reporting form (EIRF).

Capital safety performance

Capital works cover a broad range of activities across the Major Projects, Surface 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, worksites 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.

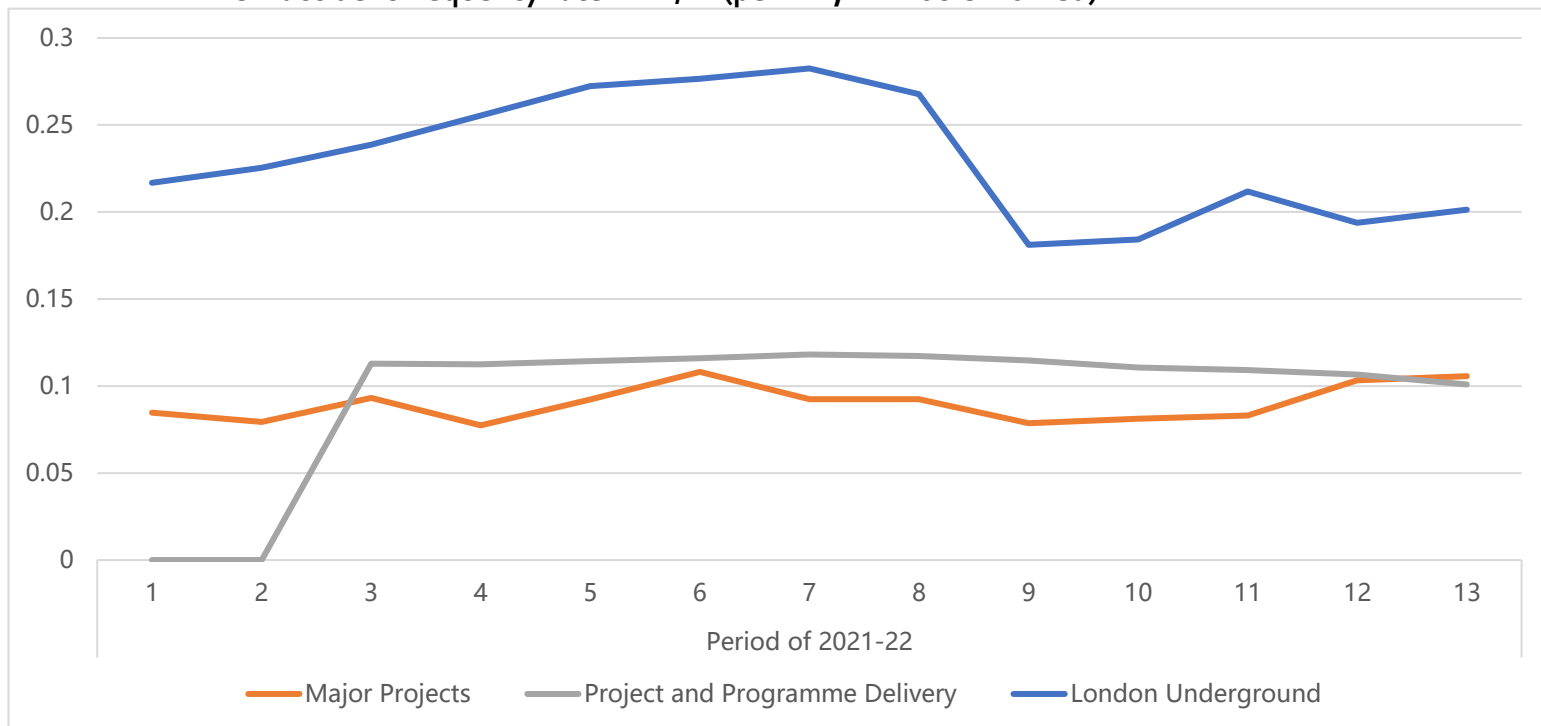
During Quarter 4, the Capital area workforce completed 2.7 million hours worked, an increase of 0.5 million on the previous quarter. In total, this means that 10.6 million hours of work were completed this year compared to 10.4 million in 2020/21. The sustained impact of the pandemic, along with the conclusion of several projects, has seen hours fall from 17.1 million in 2019/20 and 12 million in 2018/19.

Regardless of the Government's ending of Plan B measures in late January 2022, visits to site during Quarter 4 continued to be risk-based and focussed on the delivery of key Safety, Health and Environment (SHE) monitoring and assurance activities. As we steadily return to a greater level of normality, this approach can be relaxed for a return to normal. Where principal contractors have considered it necessary, they have been conducting enhanced COVID-19 checks on their sites in order to protect the health of workers and maintain progress on projects.

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.

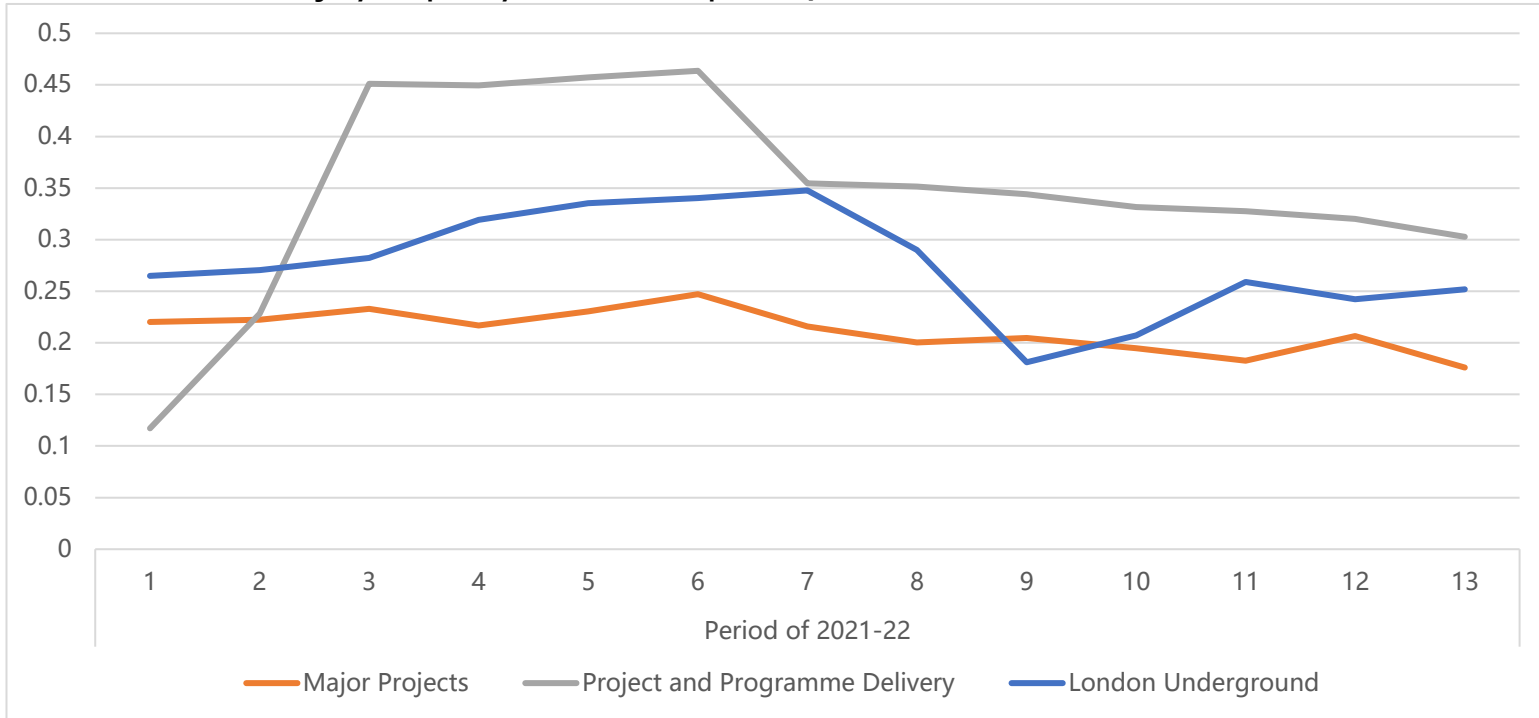
RIDDOR accident frequency rate 2021/22 (per 100,000 hours worked)



In Quarter 4, there were four incidents reported under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) in our Capital teams. This included two in the Major Projects (MP) area and two in LU Capital Delivery. Consequently, the accident frequency rates marginally increased in both areas, ending the Quarter at 0.11 and 0.20 respectively. In Project and Programme Delivery (PPD), the accident frequency rate fell to 0.10 due to no RIDDORs being reported during the quarter. As a result, MP narrowly missed the annual floor target (thresholds) of 0.10 and LU missed their target (thresholds) of 0.15, whilst PPD's threshold of 0.15 was achieved. Whilst annual thresholds were not met in two of our Capital teams, the accident frequency rate remained relatively stable on the previous year, with 15 RIDDORs in total reported compared with 14 in 2020/21. It remains essential that we closely analyse the root causes in order to identify safety improvements across our teams.

This year, the top immediate causes of RIDDORs in our Capital teams were manual handling and slips, trips and falls. The most common root causes identified related to poor quality risk assessment or task planning, deviation from safe systems of work and substandard change management. In the majority of cases, TfL acts as the Client under the Construction (Design and Management) Regulations 2015 (CDM), with a third party appointed as the Principal Contractor. As such, we continue to work closely with the supply chain to share learnings from these incidents, enabling them to address root causes at source, and make adjustments to our assurance and supplier management processes to drive improved performance.

Lost time injury frequency rate 2021/22 (per 100,000 hours worked)



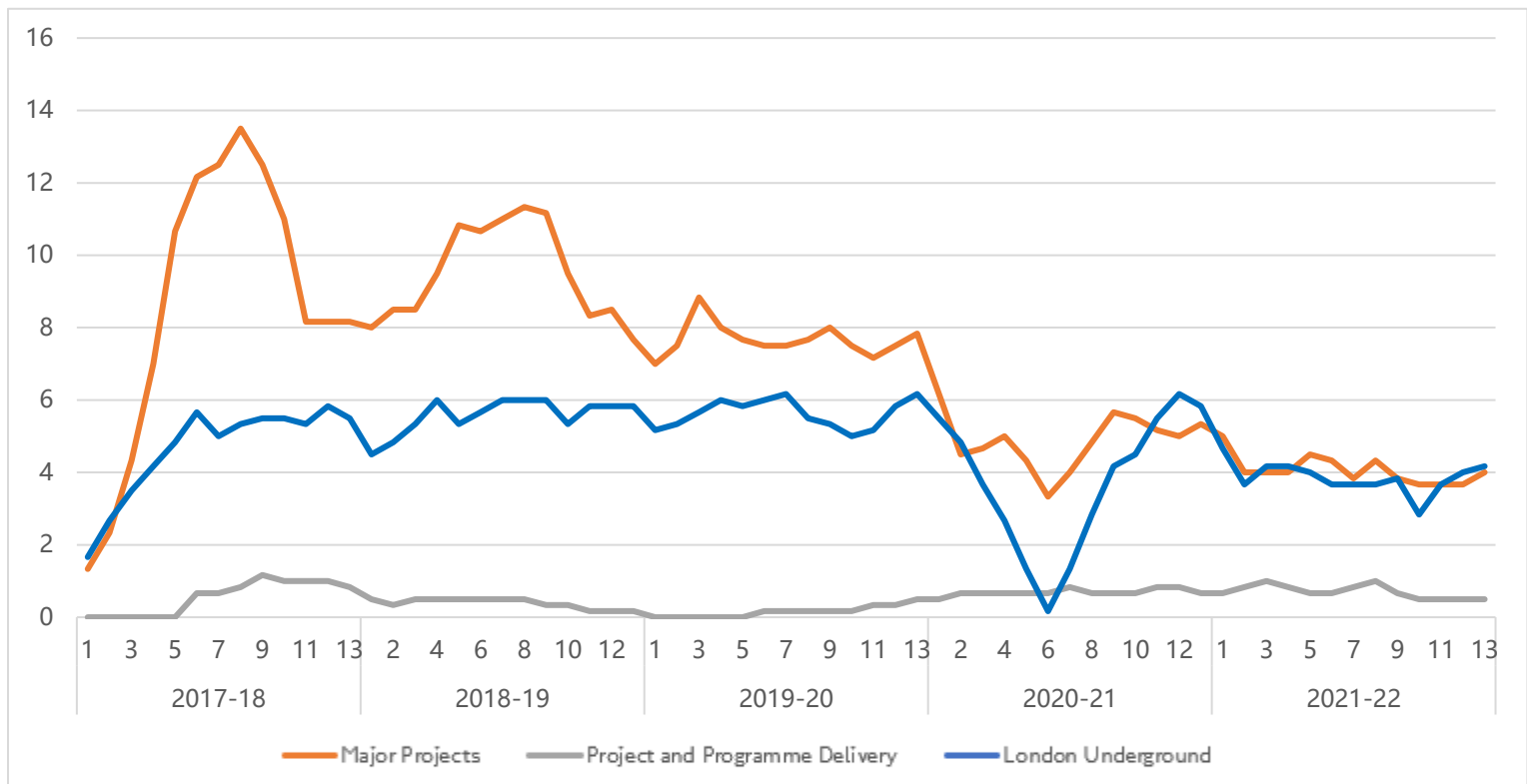
Lost time injuries (LTIs) are injuries which cause an employee to be absent for one or more shifts. There were seven LTIs reported in our Capital teams during Quarter 4, an increase of six on Quarter 3.

In total there were 24 LTIs in 2021/22, a decrease of two on 2020/21. Consequently, the rate for Major Projects finished the year at 0.18, below the floor target (threshold) of 0.20. However, the threshold of 0.20 was not achieved in Project and Programme Delivery and London Underground, with rates ending the year at 0.30 and 0.25 respectively. Whilst not all thresholds across Capital were met in 2021/22, there has been a significant long-term decline in the number of LTIs across our Capital teams, falling from 53 in 2018/19.

Immediate and root causes of LTIs during 2021/22 were generally consistent with RIDDOR analysis. Some incidents also illustrated the need to consider how changes could require a review of the safe system of work for tasks.

Long-term trend

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



There were 33 injuries reported in the Capital area during Quarter 4, which is an increase of 11 compared to Quarter 3. However, the number of injuries reported during 2021/22 was significantly below the thresholds set across our teams, and remains well below pre-pandemic levels, continuing the long-term downward trajectory seen since 2017/18. This remains the case when hours worked are considered, which have seen a lesser decline over the same period suggesting a continued reduction in injury risk.

In the coming quarters, the number of injuries reported within the Capital section of this report may be subject to change as TfL undergoes an organisational restructure. Whilst this will be noted, it will not affect our overall objective to reduce harm to all members of our workforce. The restructure of our Capital area provides a significant opportunity to work more closely together towards our objectives, sharing learnings and adopting a more consistent risk management approach to enable us to control our safety performance more effectively.

Capital Delivery SHE Improvement Initiatives

SHE Capital Delivery & Maintenance Strategy

To improve performance and achieve our long-term objectives, we are continuing to deliver the SHE Capital Delivery and Maintenance Strategy. In Quarter 4, we developed a central

improvement plan for the Capital area which will enable us to drive improvements across Capital, addressing key priorities and supporting the consistent delivery of the strategy. The improvement plan has been built based on the core deliverables identified in the strategy, which was published at the start of 2021/22 with the aim of establishing TfL as the UK's leading construction industry client. The deliverables within the plan – which include data standardisation, lessons learned process improvements and a review of behavioural initiatives – have been adjusted to account for progress against objectives, new insight and changes in strategic direction.

In Quarter 4, we started work on another of the key strategic deliverables for the new financial year: the review of how we manage safety, health and environment within our procurement and supplier management processes. This will enable us to target improvements in our suppliers' performance, reducing risks to TfL and identifying opportunities for process efficiencies. In Quarter 1 2022/23, we will begin updating the SHE specification for construction and developing associated guidance, tools and training material to support our teams.

Bank Station Capacity Upgrade

The most significant piece of capital work is taking place at Bank LU station, where the capacity of the station is being significantly enhanced to be able to cope with the large volumes of customers who use this important interchange. As part of the scheme the below ground concourse for the Northern Line is being significantly expanded, following a new tunnel and track alignment. Bringing all of this together required a planned total closure of the Bank branch of the Northern Line from 15 January to 15 May 2022.

There has been considerable detailed planning to allow multiple trades, suppliers and activities to work simultaneously, but importantly to do so safely and without risk to safety and health. The principal contractor, Dragados, has been coordinating these works, supported by a client project team from TfL. With a strict schedule to maintain there have been enhanced COVID-19 checks to protect the health of workers and maintain progress.

Capital Projects and Carbon

The annual TfL Pan-Capital Zero Harm Conference was held virtually on 8 February 2022. This was a key event to share ideas and learning between suppliers and TfL. This is reported more fully in the Environment section below.

In co-ordination with the Zero Harm Conference, in Quarter 4 the Major Projects Directorate's theme was 'Bringing Carbon to Life'. There were a range of materials and presentations made widely available to increase the awareness of what can be done to baseline, measure, and manage the carbon generated by our projects, so that this becomes 'business as usual'.

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 remained the biggest trigger for WVA during Quarter 4, resulting in 31 per cent of all WVA incidents on LU and 41 per cent on Surface transport modes. This is a slight increase of 3 per cent on the LU network and 2 per cent on the Surface network.

The proportion of WVA incidents triggered by customers behaving in an antisocial or disruptive manner remained stable at around 18 per cent on the LU Network. However, as a percentage of overall incidents, this remains comparatively high to previous Quarters. On Surface modes, incidents triggered in this way have increased from 32 per cent in Quarter 3 to 36 per cent in Quarter 4. In one quarter of these incidents, the perpetrator was believed to be intoxicated.

Reported WVA on the LU Network triggered by disputes rose from 12 per cent in Quarter 3 to 15 per cent in Quarter 4. The industrial action during March 2022 was a key contributor behind this rise, with 16 incidents related to strike action and 17 related to the following service disruption.

WVA on the LU Network where a youth was involved increased from 7 per cent in Quarter 3 to 10 per cent in Quarter 4. There are strong links with youths involved in WVA and fare evasion, as well as repeat offending.

Following the ban on e-scooters on TfL's public transport network due to fire risk at the end of Quarter 3, there has been a rise in the number of reported WVA incidents relating to the ban. This has gone up from 13 in Quarter 3 to 50 in Quarter 4 in line with the increase in education and enforcement activity. Recent data shows that the number of WVA incidents linked to the ban are falling. In period 10 there were 19 reported incidents which fell to nine in period 13.

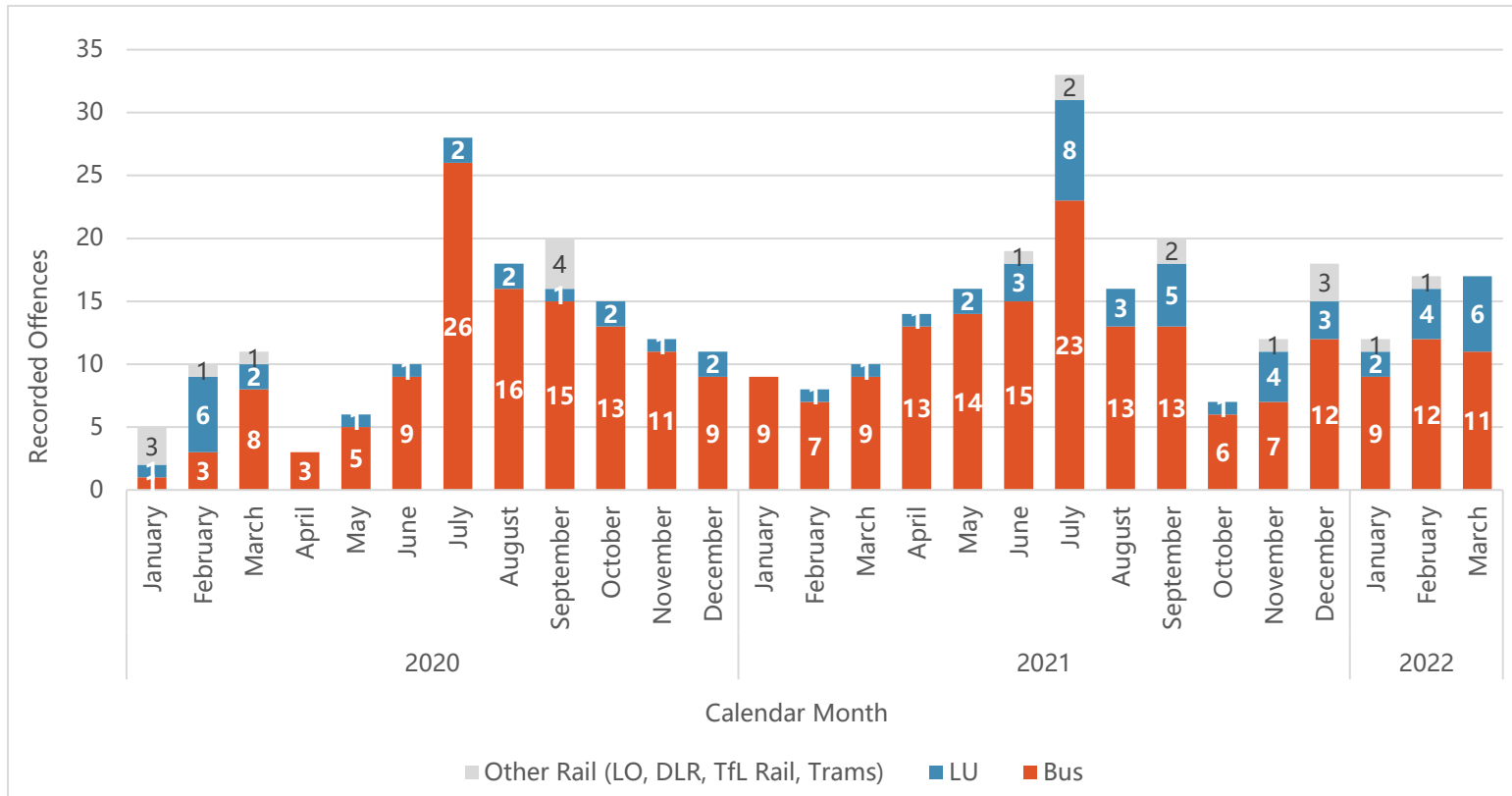
Levels of hate crime as a proportion of total WVA incidents remain similar to the previous quarter. Hate crime offences accounted for around 7 per cent of offences (96 reported incidents) on surface network. On the LU network, hate crime accounted for around 6 per cent of WVA incidents (75 reported incidents).

Volume of incidents in Quarter 4

In Quarter 4 2021/22, there were 1,182 incidents of WVA on the LU network. This is an additional 104 compared to the number recorded in Quarter 3. This increase can largely be attributed to the additional three and a half weeks there are in Quarter 4.

In Quarter 4 2021/22, there were 1,440 incidents of WVA on the Surface networks (including Buses, roads, London Overground (LO), Docklands Light Railway (DLR), TfL Rail and Trams). This is an additional 423 incidents from Quarter 3, which again can largely be attributed to the extra weeks included in Quarter 4.

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



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, makes 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.

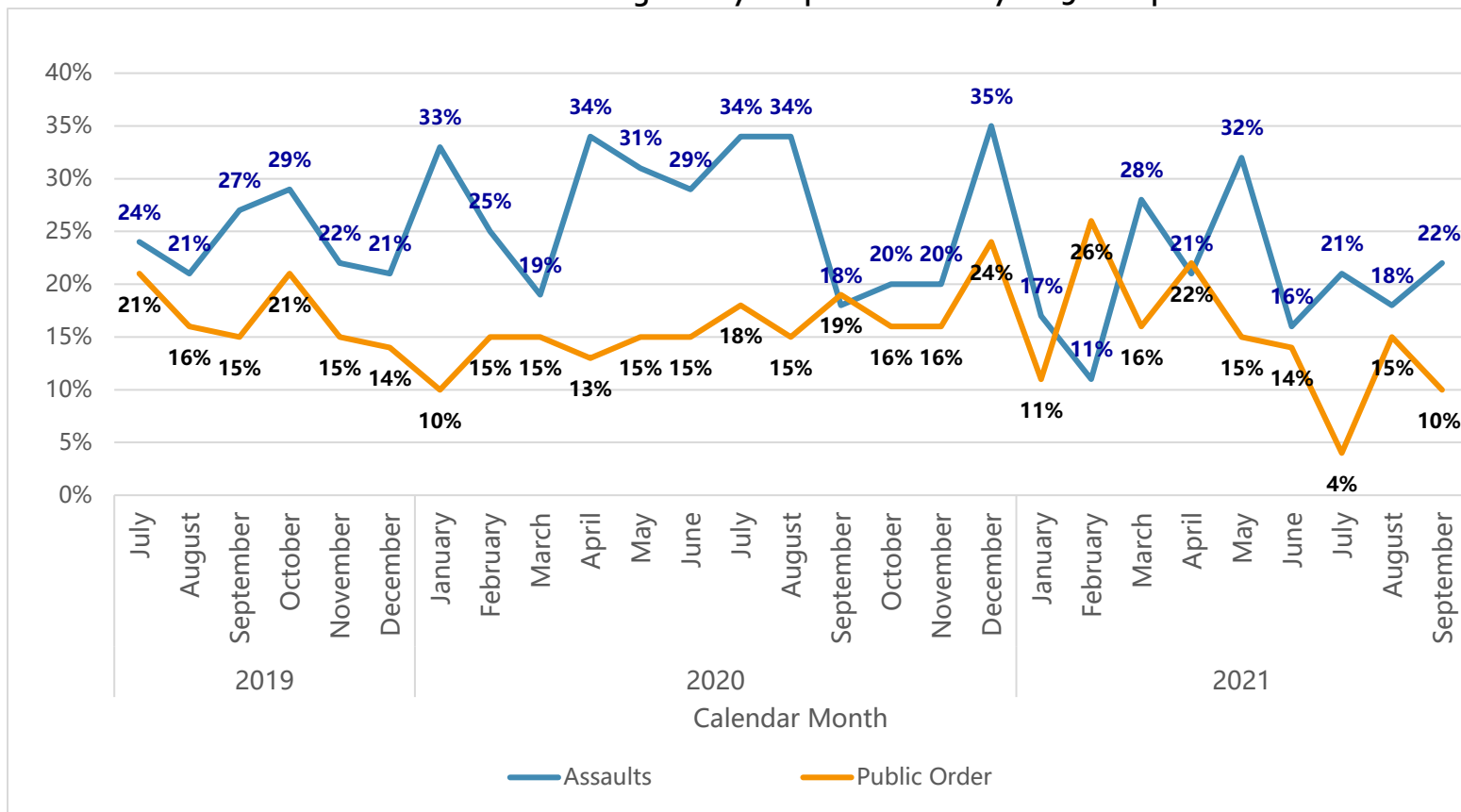
The level of bus-related violence with injury offences was 12 per cent higher when comparing 2021/22 (146 offences) with 2020/21 (132 offences). This is in part due to the police investigating some spitting offences as actual bodily harm (ABH) offences rather than common assault. This is positive, as ABH offences will be dealt with more seriously by the criminal justice system.

Where contributory factors are recorded, 44 per cent of bus-related physical assaults (including spitting) reported to the police are linked to road rage. Road rage volumes were

lower in 2020/21 due to COVID-19 restrictions and more people working from home and fewer road users (36 offences in 2020/21, 62 offences 2021/22).

Police data for LU and other rail modes (LO, DLR, TfL Rail and Trams) combined shows there were 53 violence with injury offences between in 2021/22, compared with just 18 for the same 12 months in 2020/21. The lower offence numbers on the rail network in 2020 reflect the lower levels of passenger journeys at this time.

Solved rate for WVA offences investigated by the police from July 2019 to September



2021

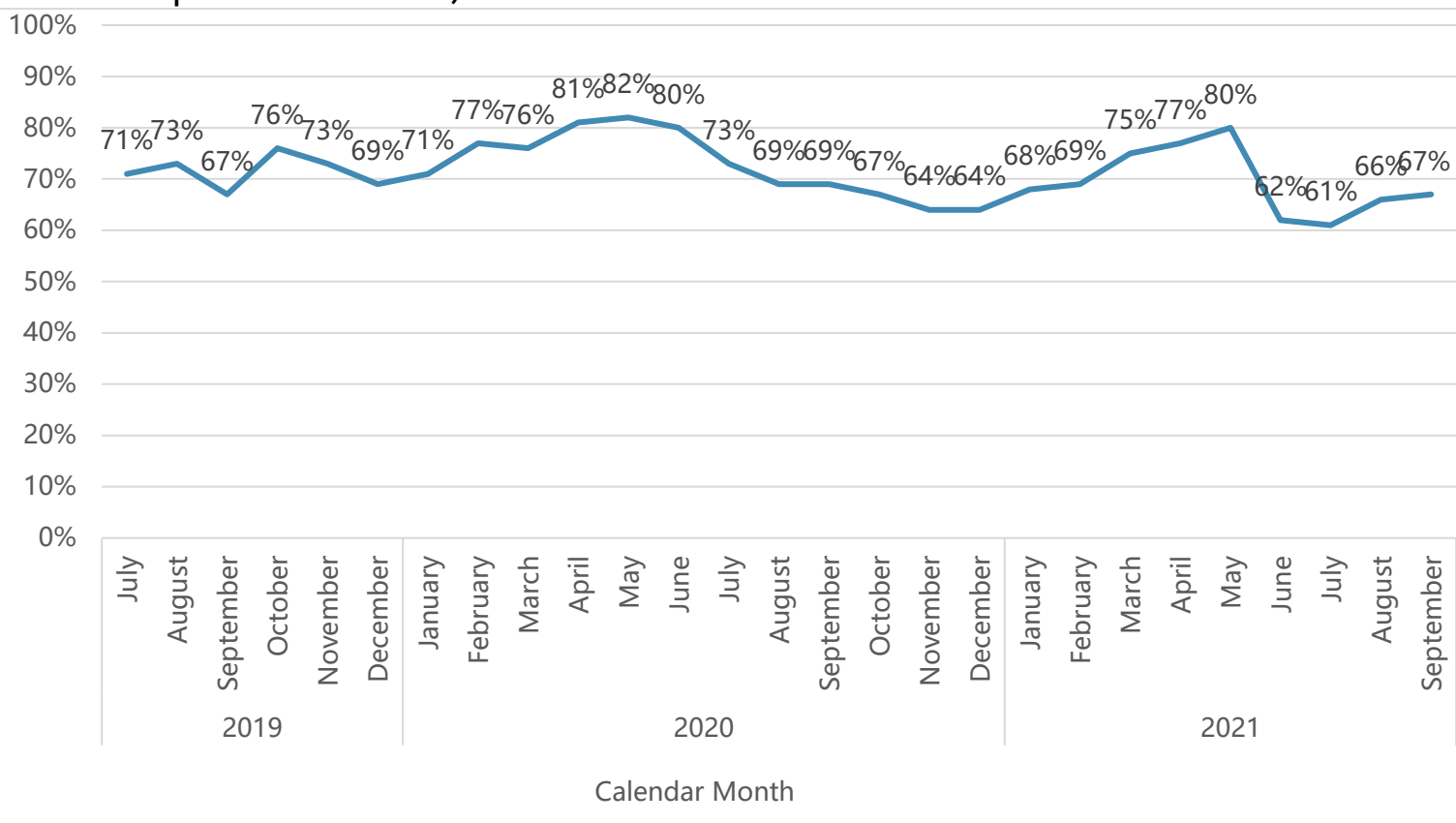
We are working closely with the police to improve the solved rate of offences. This includes prioritising the investigation of WVA incidents, providing access to body-worn video cameras and continuing to support police investigations by providing Oyster card and CCTV information and victim and witness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

The solved rate is the percentage of offences being investigated by the police that have resulted in action against the suspect e.g., 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 to conclude and for cases to progress through the criminal justice process. This section compares figures for the 12-month periods, October 2020 to September 2021 (current), with October 2019 to September 2020 (previous).

During the current period the combined solved rate was 19 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 varied by mode during the current period, with a solved rate of 18 per cent for bus-related offences, 21 per cent for LU, and 14 per cent for all other rail modes combined. Across all modes, the solved rates increase in line with severity of incident. The solved rate is higher for violent offences (with or without injury) compared to public order (e.g., verbal abuse or threatening behaviour) as the police will allocate more resource to identifying and apprehending offenders for the former e.g., 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 15 per cent for public order offences respectively.

Percentage of Staff Willing to Support from July 2019 to September 2021 (all violence and public order offences)



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 that we collectively provide to them throughout the process.

Figures are reported six months in arrears to allow time for the police investigation to conclude and for cases to progress through the criminal justice process. This section compares figures for the 12-month periods, October 2020 to September 2021 (current), with October 2019 to September 2020 (previous).

During the current period, the percentage of staff willing to support a police investigation was 69 per cent for violence and public order recorded offences against staff, down from 75 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 operators to address this.

Progress against the 2021/22 annual action plan

The Safety, Sustainability & HR Panel (SSHRP) reports now include updates against actions within the WVA annual action plan. The plan was approved by the Panel on 30 June 2021.

Wherever staff are on our network, we are committed to their safety and preventing violence and aggression, tackling the causes and providing support to those who experience it.

Our Transport Support and Enforcement (TSE) Operational Officers provide direct support to customers and our staff working on the frontline. All TSEs are trained and equipped to deal with the triggers of WVA through engagement, enforcement and problem-solving activity. They work closely with transport police partners and are deployed to locations with higher levels of reported WVA or where there are emerging issues with customer behaviour. By the end of 2021/22 we had recruited 90 TSEs and our ambition is to increase this to 135 by the end of 2022/23.

We have joined forces with Arriva Rail London, providing a team of TSEs to help support LO colleagues. This dedicated team of 15 TSEs will work alongside existing station teams across all parts of the LO network – providing protection, support and a high visibility presence to deal with the triggers of WVA. Their deployments and tactics will be intelligence led.

Fare evasion remains the biggest trigger for WVA and as part of our strategy we are recruiting 60 new Revenue Control Officers (RCOs) to help tackle fare evasion on the LU network. Twenty-seven RCOs are now fully trained and working on our network and we are currently recruiting the additional 33 with an aim to start their training in June 2022.

Ensuring our staff have up to date safety equipment is an essential part of our strategy to prevent WVA and bring offenders to justice. Following the successful roll out of body worn video (BWV) cameras to our frontline customer facing colleagues working in LU and bus stations and our enforcement teams we have reviewed the operational requirements of

other teams across TfL. We are planning to roll out additional BWV cameras and emergency communication devices which can be accessed by staff in other public-facing roles or when undertaking specific activities.

Examples of Successful Prosecutions in Quarter 4

TSEs at Vauxhall LU station

In June 2021, two of our TSEs asked a customer to fold up his e-scooter while travelling on the escalator at Vauxhall LU station. He became verbally abusive and aggressive and shouting racist and homophobic abuse towards the officers. Evidence of the language used was captured on body worn video and the suspect was arrested by police at the scene. In February 2022, he pleaded guilty to two charges of verbal abuse and was sentenced to eight weeks in prison (suspended for 18 months).

North Greenwich LU station

In November 2020, a customer forced her way through the gates and when approached was abusive and spat at two members of staff. A sample of the spit was collected in a spit kit which was analysed and enabled the suspect to be identified. Two charges of common assault were issued, but the suspect failed to attend multiple court dates. In December 2021 the suspect was sentenced to four months in a young offenders' institution for each of the two assaults.

Arnos Grove LU station

In September 2021 a customer who had missed the last train was helped by members of staff to find a bus. The suspect turned on one colleague and hit him in the throat. Stopped and arrested by officers at the scene he was charged with common assault. Having first entered a plea of 'not guilty' in January 2022, he changed his plea to 'guilty' in February 2022 and was fined £180.

Seven Sisters LU station

In December 2021, two members of staff were assisting a distressed woman when approached by another customer. The woman did not know the man, so he was asked to leave. He became abusive and threatening and pushed both members of staff in the chest a number of times. Two charges of common assault were filed, and he was found guilty of both offences following a trial in March 2022. He was fined a total of £500.

Route 34

In November 2021 a driver of the route 34 was spat at by a man who went on to punch the assault screen, as well as threaten the driver. This was after the driver had asked him to leave because he had urinated on the bus. In December 2021 the suspect was found guilty,

given a community order, and required to pay £100 compensation, to attend an alcohol treatment programme and complete a rehabilitation order.

Route 464

In December 2021 a customer threatened to kill a bus driver on the route 464 after a fare dispute. In January 2022, the suspect was found guilty, ordered to pay compensation and costs totalling £185, complete an unpaid work requirement and a rehabilitation programme.

Route 51

In January 2022 a bus driver on the route 51 was spat at. The spit went through the holes in the assault screen and landed on the driver. The suspect was arrested and appeared in court in March 2022 where he was found guilty and ordered to pay fines and compensation totalling £200.

Significant incidents

This section outlines significant incidents that have occurred during Quarter 4 and since the last report. It also provides an update to significant incidents of note.

Storm Eunice

Extremely stormy weather dominated the weekend of 18-20 February 2022 with numerous trees coming down and other obstructions blown on to our infrastructure causing disruption to our services and damage to some assets.

Customers: The storm did not cause any significant injuries to our public transport customers. There was one incident at South Kensington station when a side panel from the station entrance canopy fell down and hit a person. Station staff talked to the person who they confirmed they felt no pain and had no visible injuries.

Workforce: There were two injuries to our workforce:

- One of our ABM cleaners was injured (a virtual fracture of the hand and damaged ligaments) at Camden Town, when he raised his hand to protect himself when a large piece of corrugated plastic roofing was blown towards him.
- A Train Operator who helped remove a tree from the track has since reported they have injured their back.

Rail Accident Investigation Branch (RAIB) report into Carmont - Published March 2022

The RAIB published their report into the passenger train derailment which happened at Carmont, Aberdeenshire in August 2020. They presented the report to a senior audience in

TfL prior to publishing. Reviews are taking place internally to establish any lessons that can be learned by TfL from this report.

Significant London Underground incidents

There were no RAIB reports pertaining to LU published in Quarter 4.

RAIB report: Fatal accident at Waterloo Underground station – published September 2021

On 26 May 2020, at Waterloo LU station, a passenger fell into the gap between the northbound Bakerloo line platform and the train from which he had just alighted.

The RAIB made three recommendations to LU. The first relates to the need to recognise and assess location-specific risks so they can be properly managed. The second recommends that LU review its quantified risk assessment. The third recommendation relates to the need for effective delivery of actions proposed by internal investigation recommendations.

We carried out an internal Formal Investigation into this accident which was published in January 2021. Many of the issues identified by the RAIB were addressed in the LU Formal Investigation Report (FIR) and in actions taken by LU after the accident. The Office of Rail and Road (ORR) monitors the completion of the RAIB recommendations by TfL.

We will continue to update the ORR regularly to ensure it is satisfied that we are addressing the recommendations in the RAIB report.

An inquest into this incident has been listed to take place before a jury between 19 and 28 September 2022. We are assisting the Coroner.

TfL FIR: Stamford Brook Engineering Train Signal Passed at Danger - 14-16 May 2021

The final FIR has now been published, relating to testing activities of a new signalling system for London Underground by the Four Lines Modernisation Programme. During the weekend of 14-16 May 2021, the track sections where testing was taking place were closed to customers and normal service in a 'possession'. As part of the possession, both engineering trains and passenger trains were run to test the new signalling system. An engineering train did not follow the planned procedures and passed red signals without the required authority, and with the legacy systems disabled to permit testing of the new system, this meant that the engineering train travelled without the required protection to avoid the risk of collision. Although there was no adverse outcome, the project team reported this incident to enable thorough investigation.

The investigation found that significant factors in this particular incident were the compressed timescales for the detailed planning, particularly where there were multiple

interfaces to coordinate. Complications caused by internal employee relations were also a contributory factor. The project team itself promptly undertook the necessary actions to address the issues, but time pressures in the preparation for testing and the introduction into revenue service have remained as challenges that still need to be resolved on the Four Lines Modernisation Programme.

Northern Line Extension TPAV System – 12 March 2022

An incident occurred on the 12/13 March 2022 when only one tunnel ventilation shaft on the Northern Line Extension (NLE) Tunnel Public Area Ventilation (TPAV) system was found to be available for use. The issue was not recognised until a day and half later.

The Minimum Operating Requirements for the NLE TPAV requires five of the six tunnel ventilation fan shafts to be operational. Whilst the TPAV fault process allows a risk assessment to be undertaken, on this occasion the shaft availability was so far below the minimum operating requirements, a decision was made to suspend the service. The service was suspended from 2300 on 13 March until 0830 on 14 March. A formal investigation into this incident has been commissioned.

Significant incidents on the Surface transport network

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 Rail Accident Investigation Branch and the Office of Rail and Road (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.

Since the conclusion of the Inquests, five of the families of those who lost their lives wrote to the Attorney General to request that she considers using powers under section 13 of the Coroner's Act 1988 to apply to the High Court for an order seeking fresh Inquests. The Senior Coroner provided submissions to the Attorney General. We do not have an update on the status of the request.

The ORR has completed its investigation into the derailment, and has 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 are both 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 against it. TOL also pleaded guilty at the same hearing. The driver indicated a not guilty plea. It was agreed by the Magistrates' Court that all three cases should be transferred to the Crown Court and a further procedural hearing concerning the driver will take place in due course. TfL and TOL will be sentenced after the conclusion of the driver's trial.

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.

London Overground Wood Street Station - 14 January 2022

The RAIB have produced a safety digest into an incident at Wood Street Station on Friday 14 January 2022 where a passenger was trapped in the doors and dragged along the platform. Thankfully, the passenger did not sustain any injuries and left the station after speaking to the train driver.

The passenger was attempting to reboard a train after the door closing sequence had begun. They placed their hand between the closing doors consequently trapping their hand as the doors closed. The train started to depart from the platform with the passenger's hand still trapped in the doors. The train stopped after it had travelled for around 20 metres along the platform, during which it reached a maximum speed of 7.6 mph (12 km/h). The train doors were then opened by the driver, freeing the passenger's hand.

The digest emphasized the importance of carrying out a thorough final safety check and not relying on the interlock system as proof that it is safe to move a train, as these systems are not always capable of detecting objects trapped in closed and locked doors.

Highams Park Bus collision with building - 25 January 2022

On Tuesday 25 January at around 08:20 a route 212 bus mounted the pavement and crashed into a parade of shops on The Broadway near Highams Park, Waltham Forest. This resulted in numerous casualties amongst the passengers on board who were mainly school children.

Due to the force of the impact with the building which happened when the bus was travelling at approximately 17 miles per hour, there were 20 reported injuries: three people including the driver and a child were sent to hospital; the remaining 17 did not require hospital treatment. All injuries were confirmed not to be life-threatening or life changing.

The bus came close to striking a pedestrian on a zebra crossing at the start of the incident.

The building was assessed by the local authority to be structurally safe, although it needs extensive repairs. The incident remains under investigation.

Croydon Tram and Car collision - 30 January 2022

On Sunday 30 January 2022, a car collided with a tram in Oaks Road at the junction with Coombe Road in Croydon, causing the tram to derail. CCTV from the tram shows the driver of the car had ignored a red traffic signal which was protecting the junction, as the tram crossed over the road after receiving a signal to do so. Following the incident, we were able to confirm that the traffic signals were in full working order at the time of the incident. Emergency services attended the incident and thankfully none of the passengers on board the tram required treatment by the London Ambulance Service.

We are working with all appropriate stakeholders such as through the local press to raise awareness, as seeing if there is anything that we can do to reduce instances of car drivers ignoring traffic signals which may result in collisions or near misses with trams. This includes the possibility of installing traffic cameras at high-risk locations to act as a deterrent to road users, or road-calming measures on the approach to the crossing. Since the incident the MPS have carried out covert red-light monitoring.

Bayswater Road Bus fire - 1 February 2022

On Tuesday 1 February 2022 at around 05:20 a route N207 double decker bus caught fire on Bayswater Road leading to catastrophic damage to the vehicle.

The driver had been alerted by two passengers that smoke was emitting from the rear of the bus. At this point the driver continued to a safe place and stopped the bus, contacted the control centre for emergency assistance, and assisted passengers to exit.

An investigation is being undertaken to establish the cause of the fire.

Fatal Collision Involving Bus and Pedestrian - 4 February 2022

On Friday 4 February 2022 at around 08:55, a route 135 bus proceeding along Great Eastern Street was involved in a collision with a woman using a pedestrian crossing. The emergency services attended but unfortunately the woman suffered fatal injuries and died at the scene.

An investigation is underway to determine the root causes of the incident and to make recommendations.

Fatal Collision Involving Bus and Pedestrian - 7 March 2022

On Monday 7 March 2022 at around 12:45, the route 12 bus was stopped at a set of traffic lights on Regent Street behind a person cycling. When the traffic lights changed the person cycling went straight ahead and the bus turned left into Margaret Street. There were several people waiting at the near side kerb as the pedestrian signal for Margaret Street was red.

As the bus made the turn, a collision occurred with a woman walking, resulting in her being knocked to the floor where she sustained a head injury. The emergency services attended but unfortunately the woman suffered fatal injuries and died at the scene.

An investigation is underway to determine the root causes of the incident and to make 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 4.

Engagement with London Fire Brigade

We meet the London Fire Brigade (LFB) every quarter to share 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 the LFB inspectors. It has also allowed us to identify areas where we can work more closely together to ensure that 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 railway networks. 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 safety and health on our railways. We continue to work closely with them to identify opportunities for improving how we manage health and safety. During Quarter 4, we had a number of constructive discussions with the ORR on how we manage issues such as our long-term plans for TfL, our SHE Management System, customer and workforce safety.

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.

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 as of 1 February 2022. 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 clearly communicated and reassured our workforce, through articles on the intranet and posters displayed in workplaces, that we are continuing to make free lateral flow tests available, even after the Government phased out the free tests from 1 April 2022.

Face coverings on public transport

As part of the Plan B COVID-19 restrictions ending in England, 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. At that time, we retained the requirement for face coverings under our Conditions of Carriage, which meant customers continued to be required to wear a mask when using our network.

From 24 February 2022, we removed the requirement set out in our Conditions of Carriage for customers to wear face coverings. This was informed by a variety of factors, including the shift in the Government's approach towards living with COVID-19. We also considered the results of independent testing by Imperial College London, which has found no trace of coronavirus on customer-facing areas of our public transport network since September 2020 right up to March 2022.

We have continued our customer and staff messaging to encourage face coverings to be worn, especially as they have given customers the confidence to use public transport, particularly those who are vulnerable.

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

We have made reusable face masks available to our staff, complete with our iconic roundel logo, whether they work on the frontline or in our head offices. These can be ordered by team managers or team admins who can order up to two face coverings per team member.

COVID-19 testing schemes

By 31 March 2022, we had completed over 7,700 tests at our test sites. As we move back to a business-as-usual operation, we are offering colleagues free lateral flow test kit boxes. We have set up locations at our head office buildings and colleagues can collect one each per week, or order for their team via an online form available on the intranet. We have given out over 4,000 test kit boxes since we started this transition on 1 April 2022 and continue to use intranet articles and posters in the workplace to publicise the availability of the free lateral flow test kits.

Imperial College London sampling

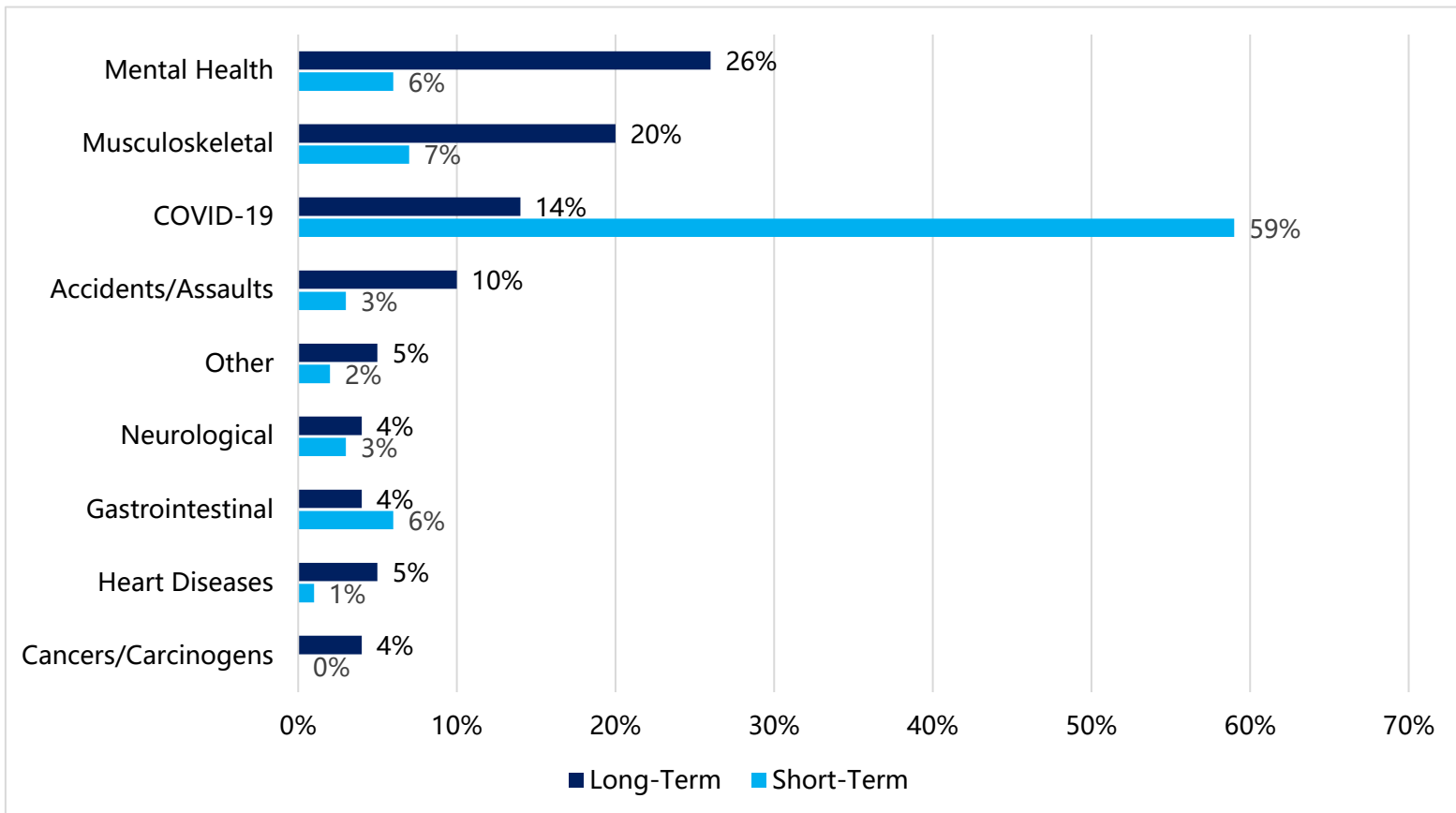
Air and surface sampling of customer areas by Imperial College London continues, with no trace of coronavirus found on the public transport network. This remains the case after the most recent testing was carried out in March 2022. Our Occupational Health team continues to liaise with academic institutions to ensure our approach to safety remains at the cutting edge.

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 4 2021/22



In Quarter 4 of 2021/22, coronavirus remained the top cause of short-term absence at 59 per cent, a significant increase from the previous quarter (30 per cent). 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 4 of 2021/22, mental health remained the top cause of long-term absence, accounting for 26 per cent of all long-term absences. Musculoskeletal-related absence was again the second highest cause at 20 per cent. These two categories have each reduced by two per cent since Quarter 3. 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 sessions on Breathing and Meditation as well as Time to Talk Day on 3 February 2022.

Health updates

Health Surveillance

The Health and Safety Executive (HSE) visited TfL on 21 March 2022 and issued a contravention notice and two improvement notices which highlighted the need for a better health risk management system; where health risks are identified within the workplace and actioned appropriately. One of the actions could require the need for health surveillance, which monitors the health of workers, when they are exposed to hazard(s) within the workplace.

TfL were given a six-week period to make changes to our ways of working, before the HSE revisits and reviews our practices to ensure they are complying with relevant health and safety legislation.

A great deal of work has been implemented so far to identify where the risks are within TfL and how these are recorded and maintained, including the design of a Health Surveillance decision making tool, to assist managers in this step. Training has been rolled out to staff at Acton Depot who will be completing skin surveillance for their teams and further training sessions will be held in the coming weeks and going forwards for those who identify the need for this to take place within their teams and as a result of the risk assessment.

As a longer-term plan to comply with all relevant health and safety legislation, work is being completed to ensure a health risk management system can be implemented across the whole of TfL and health surveillance can be carried out for those where it is required.

Well@TfL

Well@TfL Acton Pilot Project

Over 100 staff received a 30-minute mini-health check during the first phase of the Acton Pilot Project (August – November 2021). These mainly looked at metabolic risk factors, such as cholesterol profile, blood glucose, body composition, blood pressure and QRISK₃, which is the risk of a cardiac event in the next 10 years. Each individual received a record card to keep track of their results and advice during the health check, as well as the option of a bespoke health report support their health goals.

The three-month follow up calls indicated that people had made positive lifestyle changes such as increased their exercise levels or reduced their smoking. In addition, most participants had also followed up on any identified health risks such as elevated blood pressure and cholesterol.

Staff are now returning for their six-month follow up appointments, including those who attended throughout the night shifts.

Well@TfL Mobile Health Checks

Since the Well@TfL project first launched in September 2021, 603 members of staff have received bespoke wellbeing support onsite and of those, 114 have received GP referrals based on their health metrics, which is a referral rate of 19 per cent. The project aims to analyse the results from over 1,000 health checks.

RESET Health

RESET Health was launched in December 2021 as a pilot project and we have now 50 employees who have signed up to the programme. RESET Health is a 12-month programme providing support for those living with pre-diabetes, type 2 diabetes, or obesity. Members are at the early stages of their journey and initial data shows promising improvements for those employees who have onboarded the programme during the months of December and January.

The table below shows preliminary results for those employees who have attended their second monthly check-in with RESET Health clinicians.

Indicators	Baseline Average	Week-8 Average	Percentage
Weight (Kg)	104.0	97.9	-5.9 per cent
BMI (kg/m ²)	34.9	32.8	-5.8 per cent
Waist Circumference (cm)	110.0	103.5	-5.5 per cent

Early Headline Outcomes: (data from 11 employees who onboarded the programme more than 12 weeks ago)

- One member who started with pre-diabetes recently reported normal HbA1c levels after 12 weeks.
- After 12 weeks, of the three members who were living with obesity, who had recorded BMI in the overweight range, one member's BMI is now in the normal range.
- One member has gradually built up endurance by following a structured cycling plan, supported by RESET health, to increase levels of exercise. They have now completed cycling events accumulating a total of 400km cycled.
- One member's waist circumference has decreased by 22 cm (137cm down to 115cm).

Tube Dust on LU

We have commissioned two academic studies to be conducted by independent researchers at Imperial College London on the health impacts experienced by LU workers (such as Train

Operators and station staff) exposed to tunnel dust. A short-term study will investigate sickness absence, while a long-term Retrospective Cohort Epidemiological study will analyse mortality, morbidity, and cancer incidence.

The short-term study is underway. Data collection is in progress which includes reviewing sickness absence records and dust monitoring to determine whether there is any association between employment role, tube dust exposure and absence.

The short-term report is due to be published in late 2022, while publication of the long-term report is expected in 2025.

Environment

Saving Energy Through Traction Re-Sectionalisation

The LU network consists of 272 stations covering 400km of track with trains undertaking a great deal of acceleration and braking each day.

Our modern electric trains employ dynamic braking, where the kinetic energy of the train is converted to electrical energy. This is either dissipated as heat or in regenerative braking mode, the energy is collected from the train's brakes and fed back into the power mains to supply electricity for other trains. LU first pioneered regenerative braking technology on the Victoria line in 2015. However, this can only work where trains are braking and accelerating at the same time, on the same electricity substation loop.

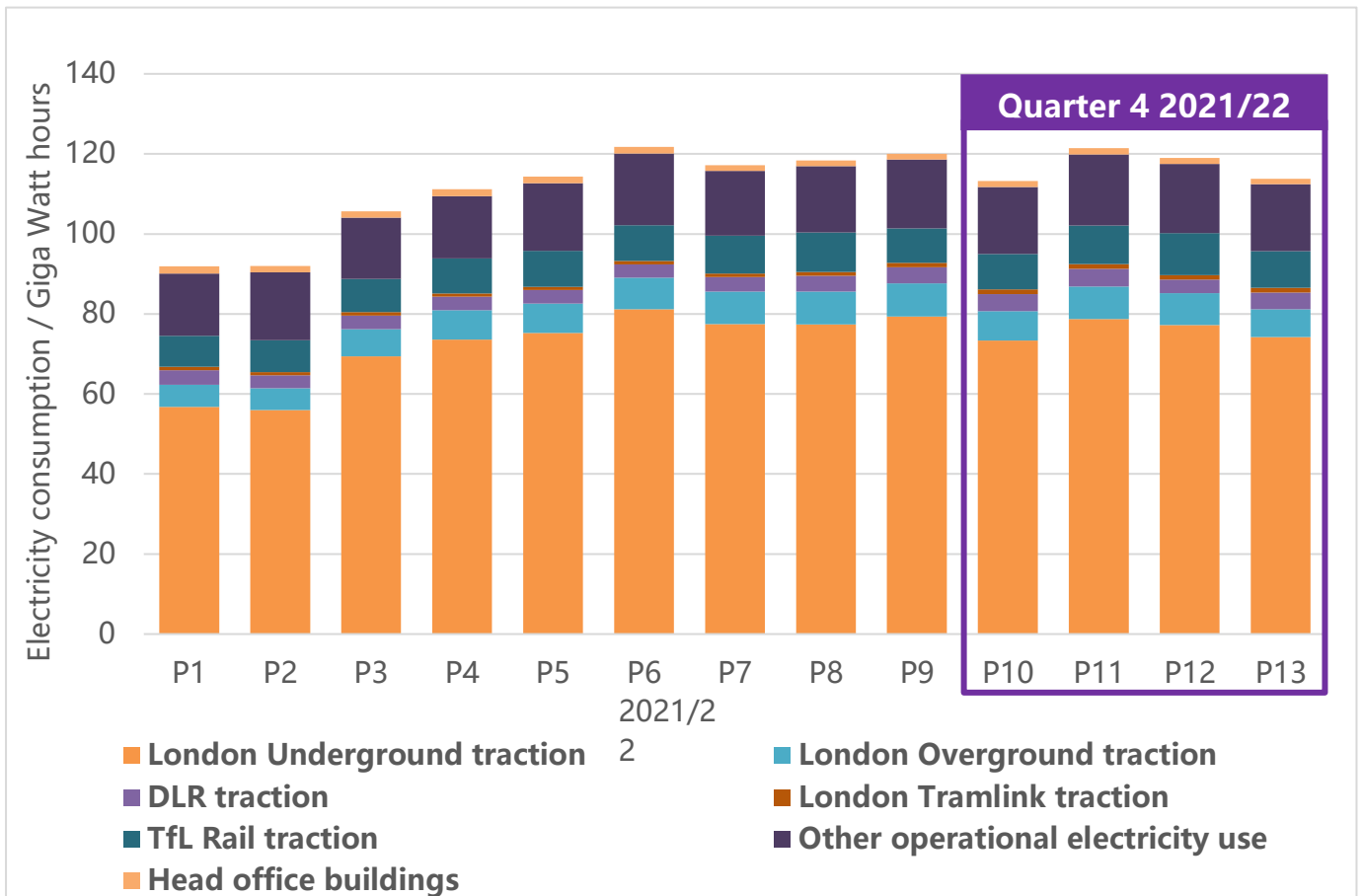
TfL Engineering, Asset Performance & Capital Delivery and Network Operations have worked together to improve energy efficiency by resectioning and extending Direct Current traction, enabling greater opportunities for regenerative braking and reduced energy consumption.

The benefits of this collaboration are significant. We reduced our energy bill by nearly £790,000 a year, saved 700 - 800 tonnes of carbon emissions and reduced energy usage by 5.74GWh annually – equivalent to providing gas and electricity to over 350 UK homes. This progress supports our journey to achieve net zero carbon across our operations by 2030 and our goals to improve our financial and environmental performance across our network.

Energy consumption and carbon emissions from our operations

The coming years are crucial in our fight to prevent devastating climate change. The UK must make significant reductions in its carbon emissions if it is to meet its legally binding goal of reaching net-zero carbon by 2050. The Mayor has set an ambitious goal of London becoming carbon neutral by 2030.

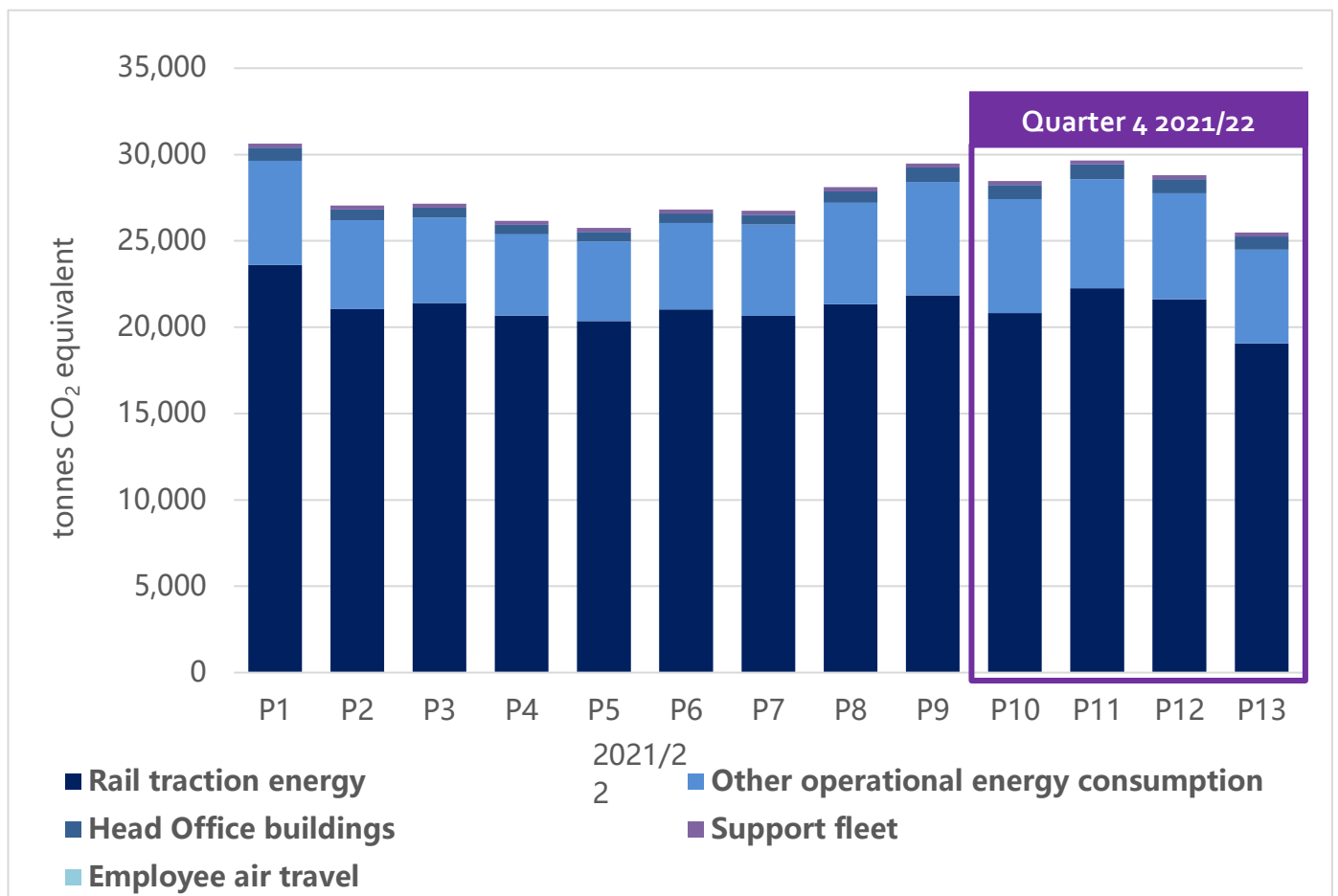
Transport is responsible for more than a quarter of London’s carbon emissions, and this share is increasing as other sectors decarbonise. We play a vital role in providing low carbon public transport to Londoners and in promoting walking and cycling. However, we must also lead by example and reduce carbon emissions from everything we do.



Electricity consumption – provisional 2021/22 (giga watt hours)

Electricity consumption was 10 per cent higher in 2021/22 than in 2020/21, commensurate with higher levels of service provision this year. Period 13 was shorter in length than other periods (covering fewer number of days) and therefore less electricity was consumed in the final period of 2021/22.

CO₂ emissions (excluding buses) 2021/22 (tonnes)



Carbon dioxide emissions from operations, excluding buses, track closely to electricity consumption. Despite increased consumption this year compared to last, carbon emissions only increased by one per cent, as the UK electricity grid continues to decarbonise.

Carbon Literacy training

We are developing a carbon literacy training programme to improve competence in carbon management across the organisation and support delivery of our Corporate Environment Plan. TfL's training course is being developed in house and will be accredited by the Carbon Literacy Project. Alongside carbon reduction, the course will lead to cost efficiencies due to an increased awareness of energy and resource consumption. The first courses are expected to be delivered in summer 2022.

Zero Harm Conference - engaging on Carbon with our suppliers

Over 160 people attended our first Zero Harm Conference dedicated to discussing carbon on 8 February 2022 to share ideas on how to move forward with tangible improvements to support London's net zero carbon target. There were 75 people who attended from outside TfL who represented 43 different supplier companies, and 87 people from TfL.

Organised to create a channel for closer collaboration with our suppliers, the TfL Zero Harm Conference Carbon Special provided the opportunity for TfL and its capital suppliers to foster links and share practical ideas on the management and reduction of carbon in construction related activities.

Attendees were presented with real-life examples of how decisions at project design can shift a project towards net zero carbon as well as the use of low carbon construction materials and innovations in piling and anchor posts. Presentations included examples of carbon reductions from design to site at Colindale Station Redevelopment and the Northern Line Extension.

Adaptation Reporting Power

Our Adaptation Reporting Power 3 submission was submitted to the Department for the Environment, Food and Rural Affairs at the end of April 2022. This report sets out our main climate risk governance, strategy, approach to risk management, and a high-level asset climate risk assessment. The main risk areas for our assets are temperature, precipitation, and storms, all of which have at least one risk score which is major or above today. The number of risks scoring major or above, is set to rise by 2050 and 2080.

Sustainable Drainage Systems Funding

Following on from the installation of a number of Sustainable Drainage Systems (SuDS) on London Roads Network in Quarter 3, TfL has successfully agreed £640k of Thames Water funding for the delivery of sustainable drainage (SuDS) projects on TfL's road network, including outside Edgware Road station, at Tolworth roundabout, Nine Elms Lane and Old Street.

Highgate Disused Tunnels

A series of disused tunnels at Highgate LU station provide a significant and ecologically important roosting and hibernating habitat for bats. The Bat Conservation Trust and Haringey's Ecology Team led the annual bat count in January 2022, during which, the highest ever count of hibernating bats was recorded. Nine volunteers surveyed both tunnel sets for about two and half hours and found mostly Natterer's bats (our highest count of these species to date) and also five Daubentons and three Brown Long-eared bats. Bats are of major environmental significance due to being important indicators of how well an

ecosystem is doing and play essential role in pest control, pollinating plants and dispersing seeds.

