



Our work to ensure a safe, sustainable transport network for London

Safety, health and environment annual report 2021/22



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We use a range of data and sources to measure our performance

About this report

Evaluating our work to improve our safety, health and environment performance

Throughout this report, our customers refers to direct users of our services and our workforce includes the staff we directly employ as well as the 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 internal reporting systems and from our police partners. The tragic suicides that take place on our public transport network are not included in the data we collect.

Unless otherwise stated, streets refers to all roads in London, including those managed by the London boroughs. Where we report safety data for streets, we use data collected by the Metropolitan Police Service and the City of London Police, 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 requirements.

Reporting period

Most data covers the period from 1 April 2021 to 31 March 2022. It is clearly marked when data falls outside of this range. Some data is provisional and is subject to change.

Commissioner's foreword

We pressed ahead with service improvements despite the challenges of the last two years

The pandemic has continued to greatly impact our work and our people. As 2021/22 drew to a close, I was hopeful that we were seeing the end of this period of uncertainty. I could not be prouder of everyone who works for us and our partner organisations. People have consistently risen to the challenge, despite the difficult circumstances that have been compounded by repeated funding uncertainty.

I am deeply saddened at the loss of the 105 people working for us who have died from COVID-19, and my thoughts remain with their families and loved ones. I have worked closely with the Mayor to create a fitting memorial to honour and remember the lives of those we tragically lost, and to offer people a place for quiet contemplation and reflection. The plans for the memorial are under way and we hope to open it later this year.

We have continued to press ahead with improvements to our services despite the challenges of the last two years. We focused on the final intensive push to start Elizabeth line services in the first half of 2022, which resulted in the line opening

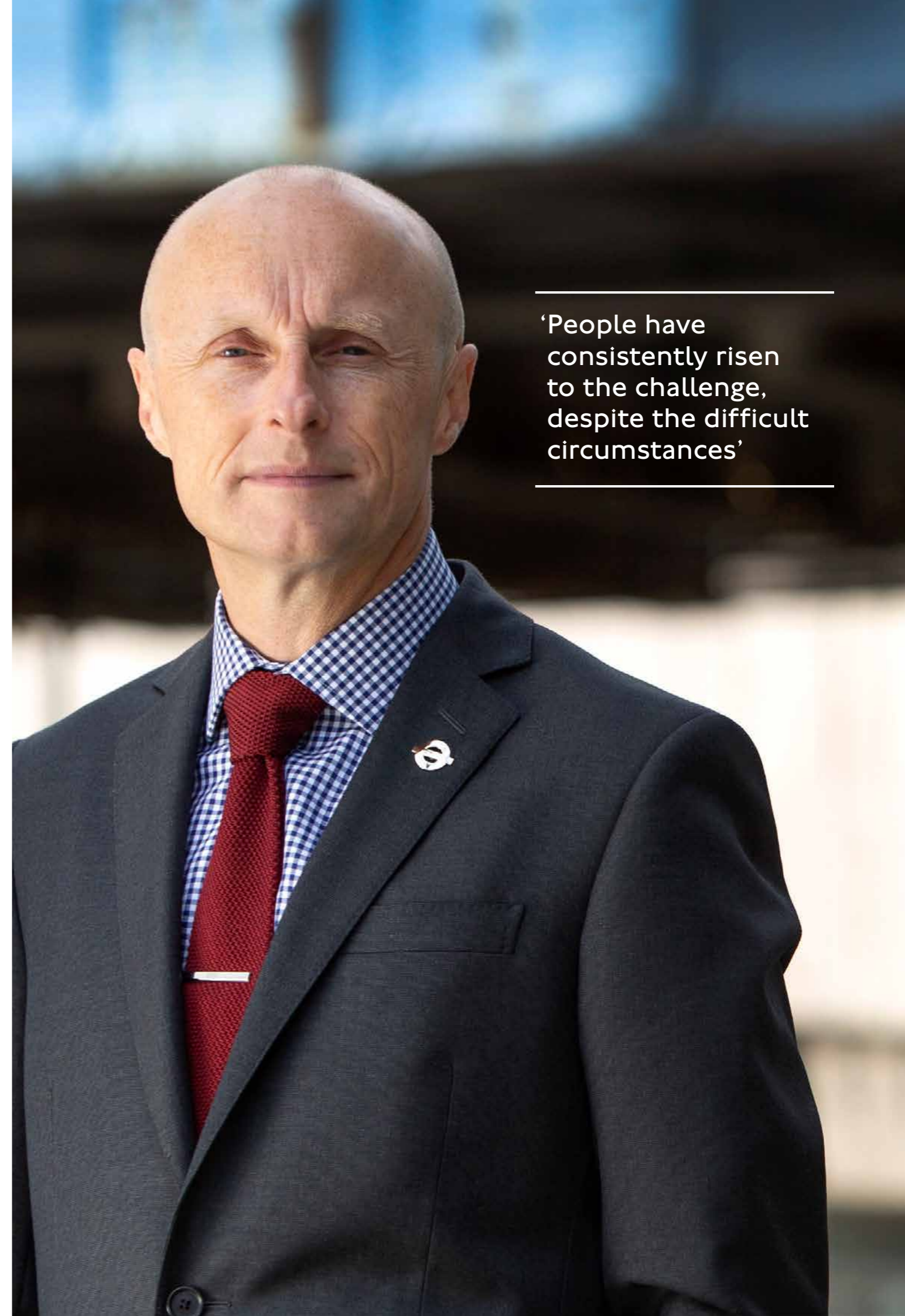
on 24 May 2022. We also opened the Northern Line Extension in September 2021. The extension was a huge collaborative effort between our teams and those of our construction partners Ferrovial Laing O'Rourke. Receiving a Civil Engineering Environmental Quality Assessment of 'Excellent' was an outstanding achievement for all of those involved and is further proof that we are London's green heartbeat. It also shows that we can reliably deliver big projects and make the most of the capital funding available, as further evidenced by our excellent progress on the Bank station capacity upgrade.

I am optimistic about the future and look forward to seeing what we achieve as an organisation in the coming financial year.



Andy Byford
London's Transport Commissioner

'People have consistently risen to the challenge, despite the difficult circumstances'



Chief Safety, Health and Environment Officer foreword

We remain committed to the safety and wellbeing of our customers and people, as well as our environmental performance

Although this report covers a time when the pandemic was no longer a new phenomenon, it was still a very challenging time for us as an organisation, as well as individuals. We showed great resilience when we adapted to ever-changing demands including the arrival of the Omicron variant and the new restrictions implemented by the Government in late 2021. We have been working hard to learn lessons from the pandemic and ensure that we emerge as a stronger organisation, ready for whatever the future may bring.

We published both our Corporate Environment Plan and Sustainability Report in September 2021, setting out our determination to contribute to London becoming a greener city. This was followed by the Vision Zero action plan progress report in November 2021, which provided an update on our Vision Zero goals and set out further commitments under the Safe System pillars.

In March 2022, we published our first ever Bus action plan, which outlined the many ways we are working towards improving our bus services, notably the acceleration towards a zero-emission bus fleet by 2030 and our continued commitment to improve the safety of bus operations for both passengers and other road users.

I am greatly inspired by the progress we have made in all of these areas, even throughout two years of the pandemic. As London moves on, it has never been more important that we stay focused on our commitments to improve safety, health, wellbeing and the environment in everything we do.



Lilli Matson
Chief Safety, Health and
Environment Officer



‘We have been working hard to learn lessons from the pandemic and ensure that we emerge as a stronger organisation’

Key events from 2021/22

Highlights from the past year

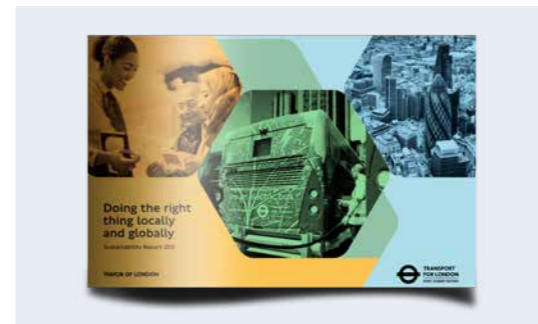


April 2021

Our cleaning regime continues, with Imperial College London finding no trace of coronavirus on our network

May 2021

Kaido team exercise challenge launches to promote good wellbeing among staff



June 2021

Our trial of rental e-scooters launches

July 2021

Flash flooding causes widespread disruption across the transport network

August 2021

Our people start to return to work in our head offices again

September 2021

We published our Sustainability Report and our Corporate Environment Plan

October 2021

Ultra Low Emission Zone expanded up to and including the North and South Circular roads



November 2021

Our Vision Zero action plan progress report is published

December 2021

Government introduces Plan B restrictions, which includes the advice to work from home where possible

January 2022

The requirement to wear a face covering while on public transport and in shops comes to an end

February 2022

Remaining restrictions lifted and requirement to wear a face covering on our services removed

March 2022

Our Bus action plan is published

Our performance

Moving people across London safely and sustainably, while delivering the goals of the Mayor's Transport Strategy



Our scorecard

We assess our progress against a range of agreed measures and have adapted our scorecard to reflect the changes brought on by the pandemic

Measure	Unit	2021/22 target	2021/22 actual	Status
People killed or seriously injured in road traffic collisions	People killed or seriously injured per million journey stages	0.43	0.32	Achieved
Customer injuries per million passenger journeys	People killed or seriously injured per million journey stages	2.52	2.77	Not achieved
Workforce injuries	People killed or seriously injured while working	1,790	1,473	Achieved
People killed or seriously injured in road traffic collisions in or by a London Bus	People killed or seriously injured per million surface journey stages	0.02	0.022	Partially achieved

Measure	Unit	2021/22 target	2021/22 actual	Status
Reduction in CO ₂ emissions from our operations & buildings	Tonnes of CO ₂ emitted	915,000	831,624	Achieved

Our role is to enable London to move safely and sustainably, while delivering the goals of the Mayor's Transport Strategy.

We have adapted our performance scorecard to the particular circumstances of the coronavirus pandemic, while reflecting the need to make progress against the goals in the Mayor's Transport Strategy. We continued to use a rate-based approach to target setting, to reflect fluctuating ridership patterns. We only had a carbon emissions target for the second half of the year.

Performance summary

Keeping our customers and workforce safe remains a priority as passenger numbers increase

The safety of our customers and workforce on our roads, buses and the wider transport network remains a priority as we continue progressing towards working in a more sustainable way.



Road danger reduction

As we progress towards achieving our Vision Zero goal of eliminating all death and serious injury from the capital's roads, we assess our progress through targets that show the number of injuries in relation to the number of journeys. Our aim for this year was to reduce this number to fewer than 0.43 people killed or seriously injured per million journeys, which is well below our target and shows that we are making significant progress in making London's roads safer. We will increase our efforts and continue expanding our road danger reduction programme, where funding allows.



Bus safety

Providing a safe bus network across the capital remains central to our focus. In 2021/22, our aim was to have fewer than 0.020 deaths or serious injuries involving a bus per million surface journey stages. With 0.022 deaths or serious injuries per million journey stages in 2021/22, we narrowly missed our scorecard target. This shows that we still need to do more work in this area.

Buses remain one of the safest modes in London, with the rate of people killed or seriously injured almost 15 times lower than other road users. Our data shows that the top three causes of customer injury on buses are falling while using the stairs or on the lower deck, boarding or alighting the bus, and sudden braking or manoeuvres. This helps us to identify specific areas of safety we need to make progress in.



Customer injuries

We want people to be safe while travelling on our network, whether for work or for leisure. While our aim for 2021/22 was to have fewer than 2.52 deaths or serious injuries per million passenger journeys, the actual figure was 2.77, which missed our target. This was partly influenced by the return of the seasonal peak in intoxication-related injuries in the lead up to Christmas. However, in the last quarter of 2021/22 the rate was 2.55 suggesting that, although the number of customers has been increasing throughout the year, the overall risk of customers being injured on our network has reduced.



Workforce injuries

We have a duty to ensure that everyone who works on our network can do so safely. Our target for 2021/22 was to have fewer than 1,790 people killed or seriously injured, with the actual figure of 1,473, exceeding our scorecard target. However, we remain committed to reducing this number even further and working towards zero harm for our workforce. We have introduced body-worn cameras for our frontline staff to improve the culture of reporting.

We also refreshed our customer communication campaigns that outline the consequences of assaulting our people. We introduced virtual site visits for our workforce to keep them safe during the pandemic and limited in-person visits to those that were essential to our core safety, health and environment assurance activities while restrictions were in place.



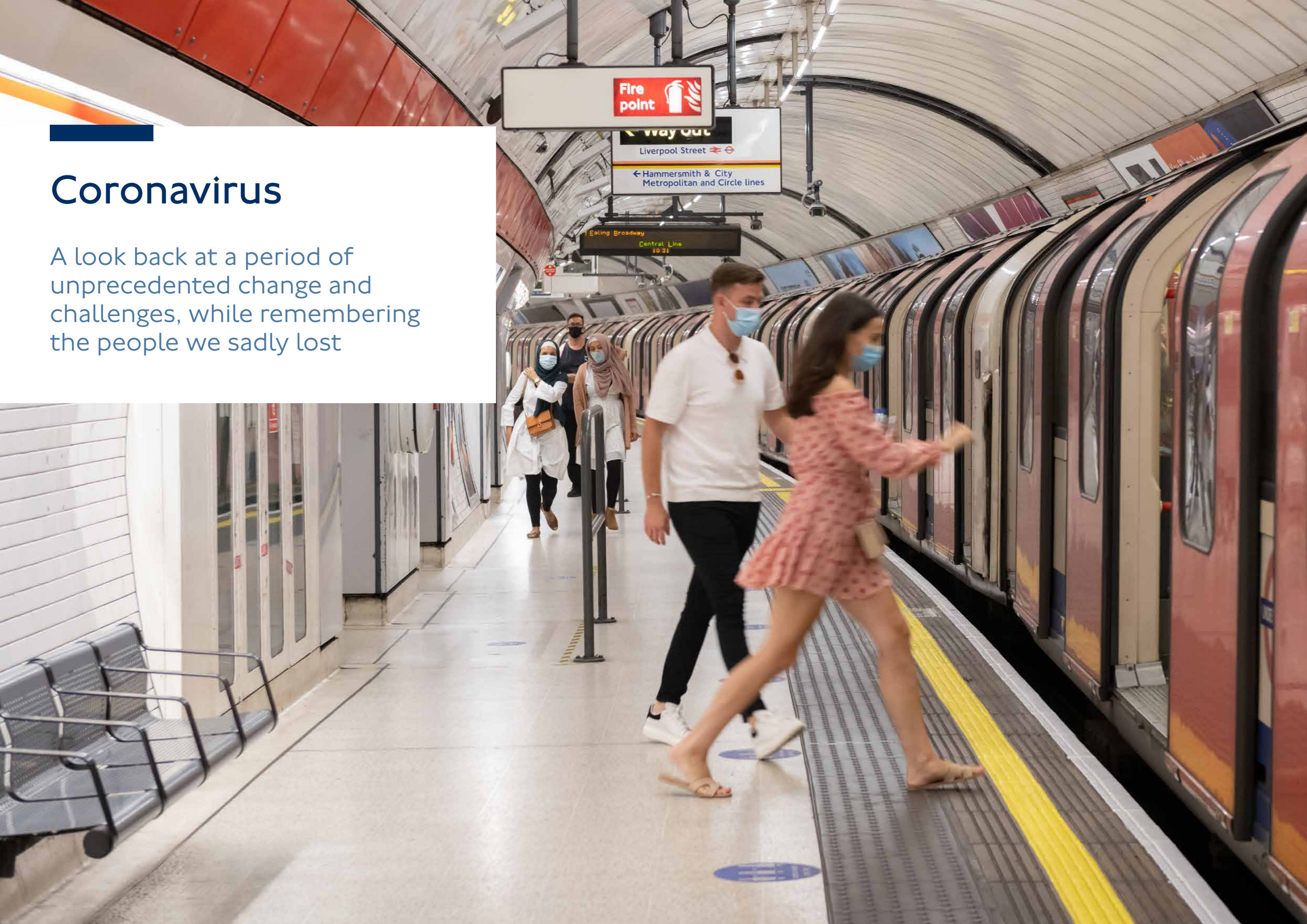
Carbon emissions

As one of London's largest energy users, we are working to reduce the emissions from our own operations and help meet the Mayor's net zero carbon 2030 ambition, as set out in our Corporate Environment Plan. Our scorecard target for carbon dioxide emissions was bettered, with 831,624 tonnes compared to the target of 915,000 tonnes. This shows emissions have reduced since the previous year.

The continued introduction of zero-emission buses to our fleet, combined with reductions in the carbon intensity of electricity, has outweighed additional energy consumption from our services.

Coronavirus

A look back at a period of unprecedented change and challenges, while remembering the people we sadly lost



Recognising the heroes of our transport network

Remembering those who sadly died during the pandemic

As of 31 March 2022, 105 members of our workforce have sadly lost their lives to COVID-19. Each loss is a personal tragedy to their friends, family and colleagues, and our thoughts are with everyone affected. We lost people from across all areas of the organisation and everyone within the organisation pays tribute to the vital role they played in our fight against the pandemic.

Our Employee Assistance Programme, which was set up to provide support, guidance and information on a range of topics including bereavement, continues to be available to all employees and their dependants. The safety of our staff and customers remains a priority, and we are committed to doing everything in our power to keep everyone safe on our network.



We continue to support those affected by the pandemic



Paying tribute to transport workers

Transport Commissioner Andy Byford has worked closely with the Mayor to commission a memorial to commemorate the London transport workers who died from COVID-19 and provide somewhere for their families and friends to visit and remember those they have lost. In October 2021, we announced plans to create a memorial in Braham Street park in Aldgate and are using this opportunity to bring significant improvements to the park while we create the memorial to the transport workers we have lost.

The initial designs were shared with the bereaved families for feedback and we have continued to involve them throughout the design process.

Planning permission for the memorial was granted in April 2022 and the memorial is set to open later this year.

Timeline of face covering regulations

- June 2020**
Face coverings must be worn on public transport, apart from those who are exempt
- July 2020**
The wearing of face coverings on public transport and in shops becomes a legal requirement
- July 2021**
Legal requirement removed but mandate to wear a face covering as part of our Conditions of Carriage retained
- November 2021**
Government reintroduces regulation in response to the new Omicron variant
- January 2022**
Government announces it will no longer be compulsory for people to wear a face covering on public transport and in shops
- April 2022**
We continue to strongly encourage customers to wear face coverings on our services, although this is no longer a Condition of Carriage
- June 2022**
We encourage staff and customers to take appropriate action to keep themselves safe – including using hand sanitiser and wearing a face covering if this helps them to travel and work with confidence

Testing our employees for coronavirus

By 31 March 2022, we had completed more than 7,700 coronavirus tests at our sites. As we move back to a more standard way of working, we are offering colleagues free lateral flow test kit boxes, which can be collected from head office buildings or ordered via our staff intranet.

We have given out more than 12,000 test kit boxes since we started this transition in April 2022. We continue to use staff intranet articles and posters in the workplace to publicise the availability of the free lateral flow test kits.

7,700

coronavirus tests completed at our sites



12,000+

test kit boxes distributed to our workforce



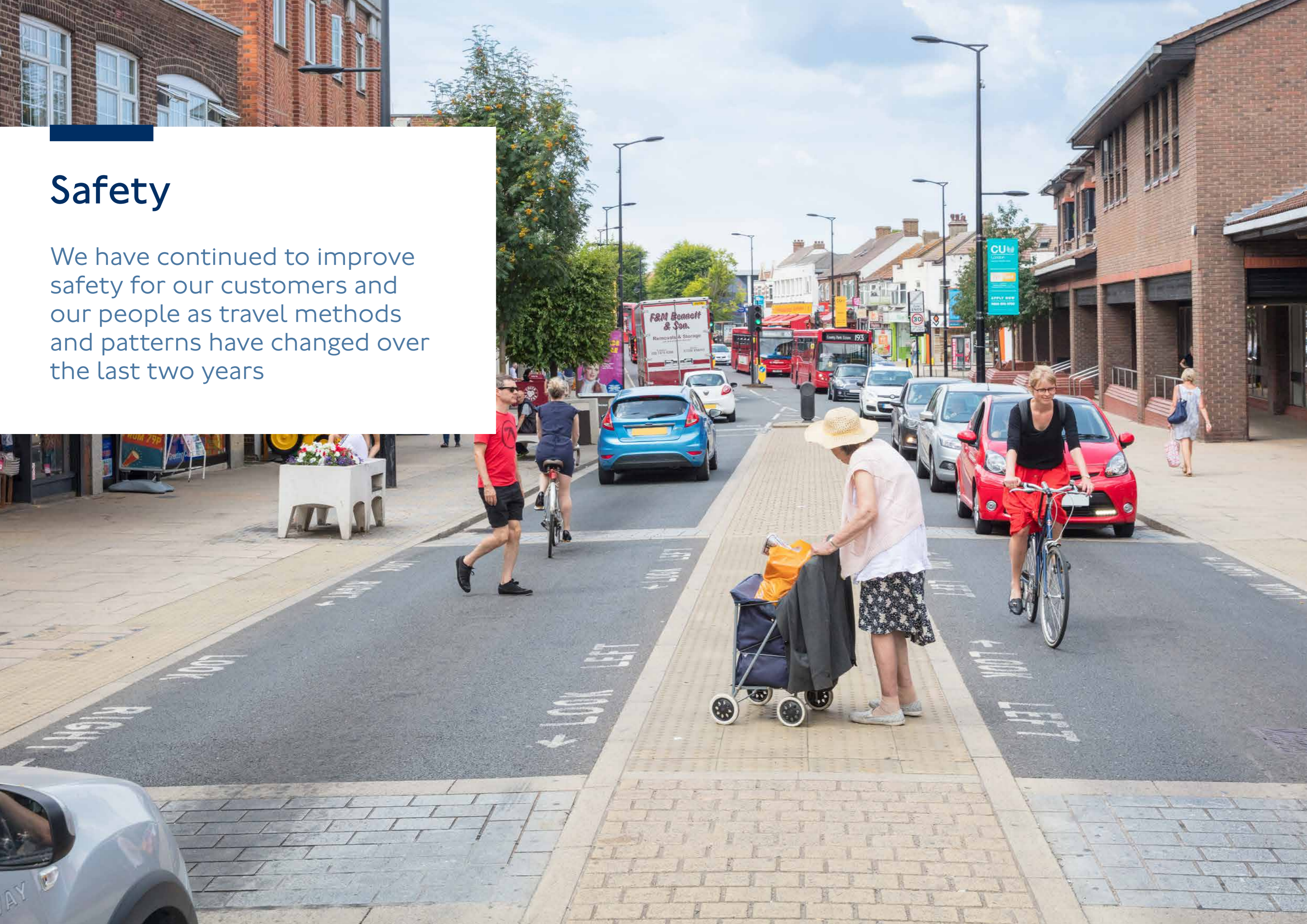
Surface sampling

Air and surface sampling of customer areas by Imperial College London has continued, with no trace of coronavirus reported on the network up to June 2022. Our Occupational Health and Wellbeing team continues to liaise with academic institutions to ensure our approach to safety remains at the cutting edge.

No trace of coronavirus found on our network since the start of Imperial College London's monthly sampling in September 2020

Safety

We have continued to improve safety for our customers and our people as travel methods and patterns have changed over the last two years



Keeping our roads safe

Assessing changes in travel modes, methods and patterns

This year, the capital has transitioned out of the pandemic and Londoners have largely resumed their normal activities. In 2021/22, the number of people killed or seriously injured increased and, according to STATS19 data, figures are more similar to before the pandemic. However, 2020/21 was dominated by lockdowns, which dramatically reduced overall travel and significantly impacted figures for that year.

The largest increases, compared to 2020/21, were in people killed or seriously injured while walking, at 48 per cent, and in those using powered two-wheelers, at 24 per cent. This partly reflects the growth in travel by these modes over the pandemic period. However, the overall absolute numbers of people killed or seriously injured remain below pre-pandemic levels.

We will continue to closely monitor travel patterns, and the overall picture of deaths and serious injuries that develops as a result. Further changes include an increase in new small motorcycle (under 125cc) registrations in London, with the growth in online shopping and food delivery as well as many more people riding for work.

The absolute number of people walking or cycling who were killed or seriously injured increased, compared with 2020/21. In spite of this, casualty numbers still remain below

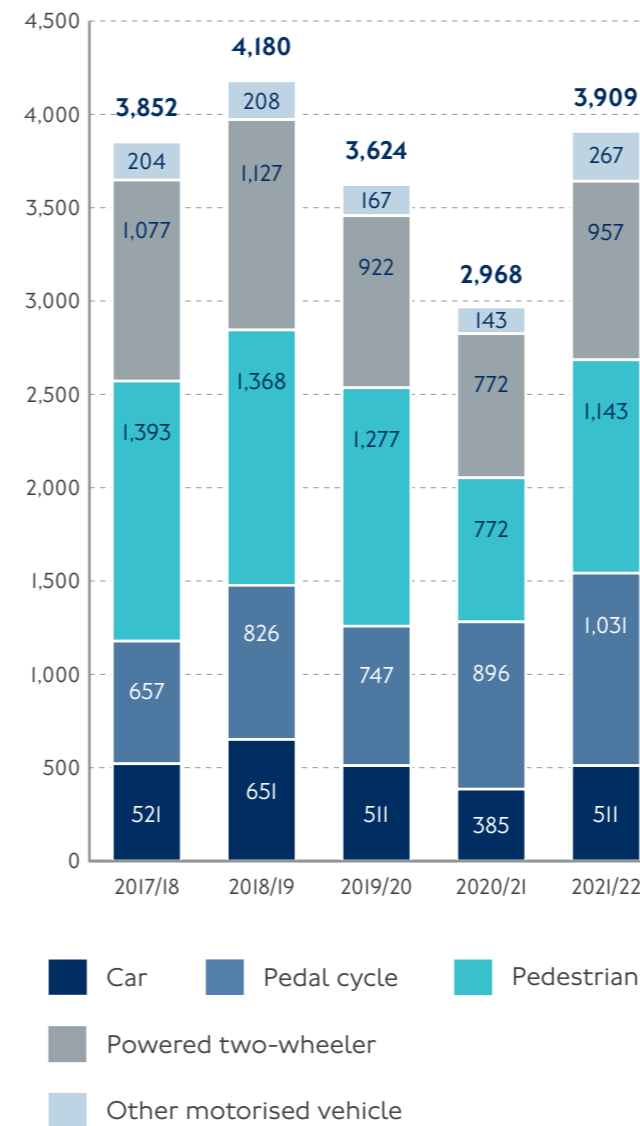
pre-pandemic levels. This is partly due to changes in travel methods and patterns. Analysis shows that the estimated risk of of people being killed or seriously injured while walking decreased by 45 per cent compared to last year.

This is reflective of lower numbers of people walking and changes in journey patterns. This has also been helped by the introduction of positive programmes of road danger reduction such as Low Traffic Neighbourhoods, Streetspace for London, Vision Zero and our Healthy Streets Programmes, which are designed to make roads safer for people who choose active travel modes such as walking and cycling.

While the absolute number of people cycling who were killed or seriously injured increased compared with the last year, the number of journeys has increased substantially since we measured our 2005-09 baseline. This means that across the period overall, the trend we are seeing is that there is a decreasing risk of serious or fatal injury to people cycling.

Achieving Vision Zero requires significant funding at a sustained level to be delivered in full. Such investment has the potential to prevent further avoidable death and injury on our roads, which we estimate to be about 3,600 people being killed or injured.

People killed or seriously injured on our roads (number of injuries)*



* Numbers for 2021 and 2022 are provisional and subject to change



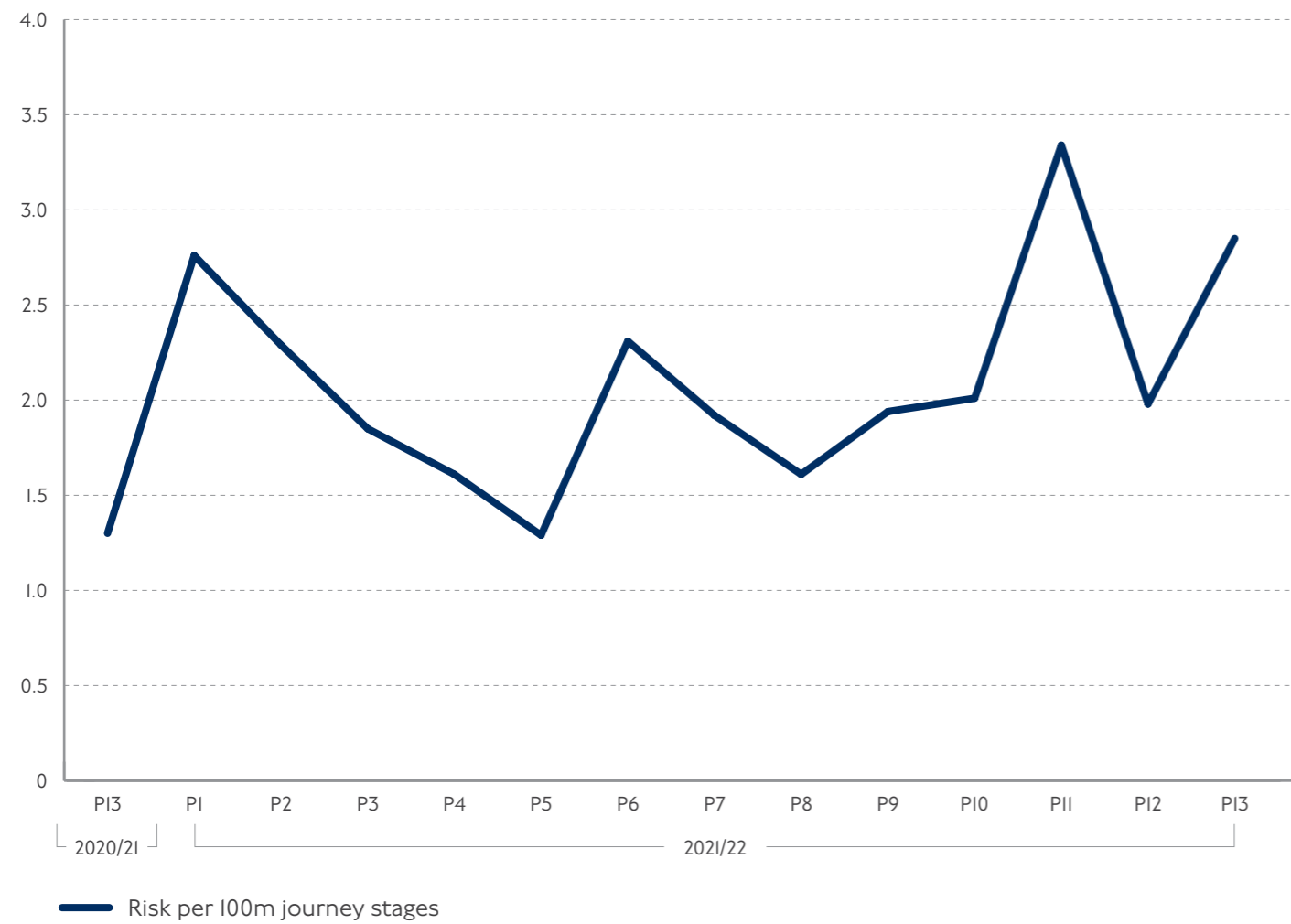
Safety on our buses

We continue our work to prevent people being killed on, or by our buses

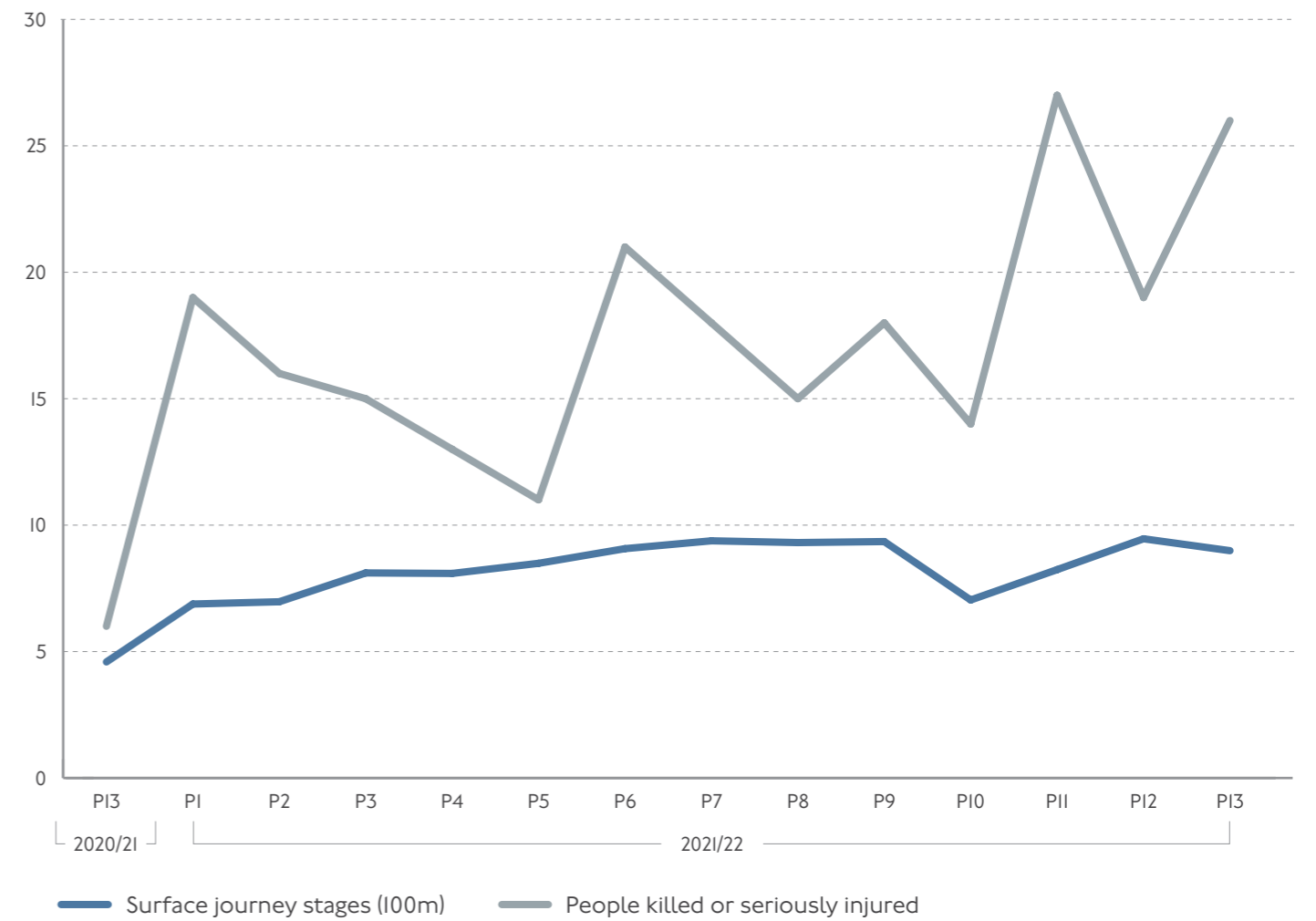
The risk of a bus being involved in a collision that kills or seriously injures either a bus passenger or someone else on the roads remains extremely low. However, there was an increase in the risk per

100 million journeys and the total number of people killed or seriously injured at the end of this year, and we will continue to implement measures to reverse this trend.

Buses involved in a fatal or serious injury collision per 100m journey stages by periods*



Buses involved in a fatal or serious injury collision per surface journey stages by periods*



* Numbers for 2021 and 2022 are provisional and subject to change

Making London's streets safer for everyone

Reducing risk through road safety improvement programmes

Cars remain the vehicle most likely to kill or seriously injure someone on our roads and according to STATS19 data, around 65 per cent of collisions involve cars.

Cars make up around three quarters of motorised traffic in London, and we are working to reduce this number through our road danger reduction programmes such as Low Traffic Neighbourhoods, Safer Junctions, Vision Zero, the Lowering Speed Limits Programme, the Strategic Cycling Network and our Healthy Streets Programmes.

65% 
of road collisions involve cars

75% 
of motorised traffic is made up of cars

We work closely with the Metropolitan Police Service, which is a key Vision Zero partner, to reduce road danger and prevent harm to all road users

People injured by vehicle type in 2021/22 (number of people killed or seriously injured)*


 Car
2,168

 Goods vehicle
456

 Motorcycle
212

 Bus
137

 Other vehicle
115

 Pedal cycle
92

 Private hire
90

 Taxi
70

 Coach
17

* Numbers for 2021 and 2022 are provisional and subject to change



Our work is targeting the main sources of road danger

Customer and workforce injuries

We continue to see a reduction in the number of injuries

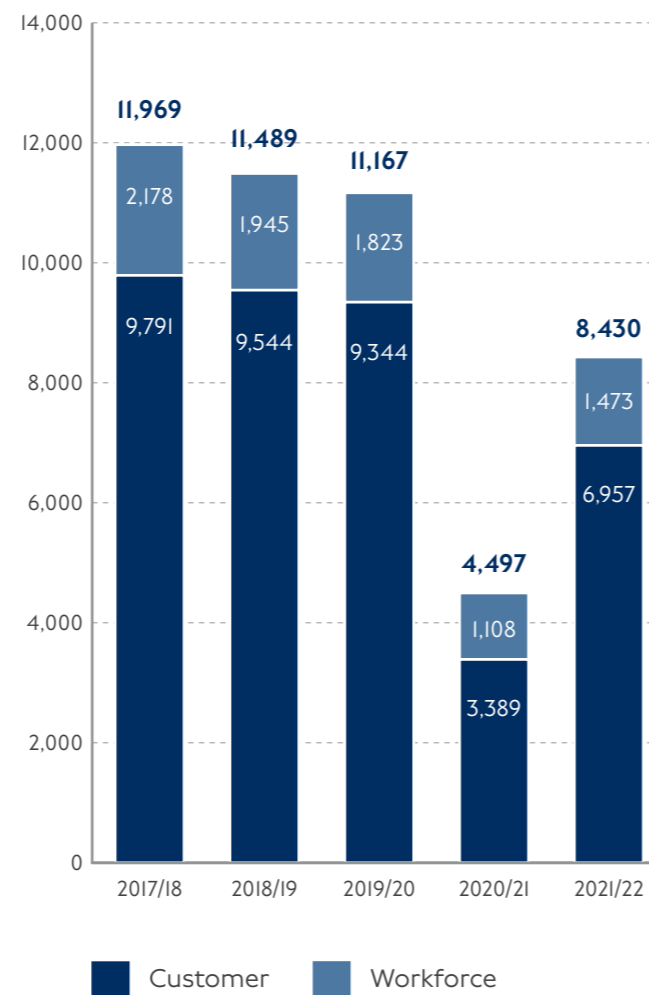
During 2020/21, travel modes and patterns changed greatly due to the pandemic, which made it a unique year for public transport safety. In contrast, as we emerged from the third national lockdown at the beginning of 2021/22, we saw a welcome rise in customer numbers as retail and indoor hospitality industries reopened.

This year ended with 2.51 billion customers using the network, compared to 1.3 billion in 2020/21. Unfortunately, as customer numbers have increased, so too have the total number of workforce and customer injuries, although they remain notably lower than pre-pandemic levels.

Sadly, four customers were killed on the public transport network this year, two on buses and two on London Underground. No one working on our public transport network was killed. This year, 186 customers sustained serious injuries, which remains less than before the pandemic. Also, 24 people in our workforce sustained serious injuries, a slight increase from 20 people last year.

In the years before the pandemic, both our customer and workforce injury numbers had been gradually decreasing. While the numbers for 2021/22 remain unusual as a result of the impact of the pandemic, they continue to reflect the decline seen before the pandemic.

Customer and workforce injuries on public transport (number of people)



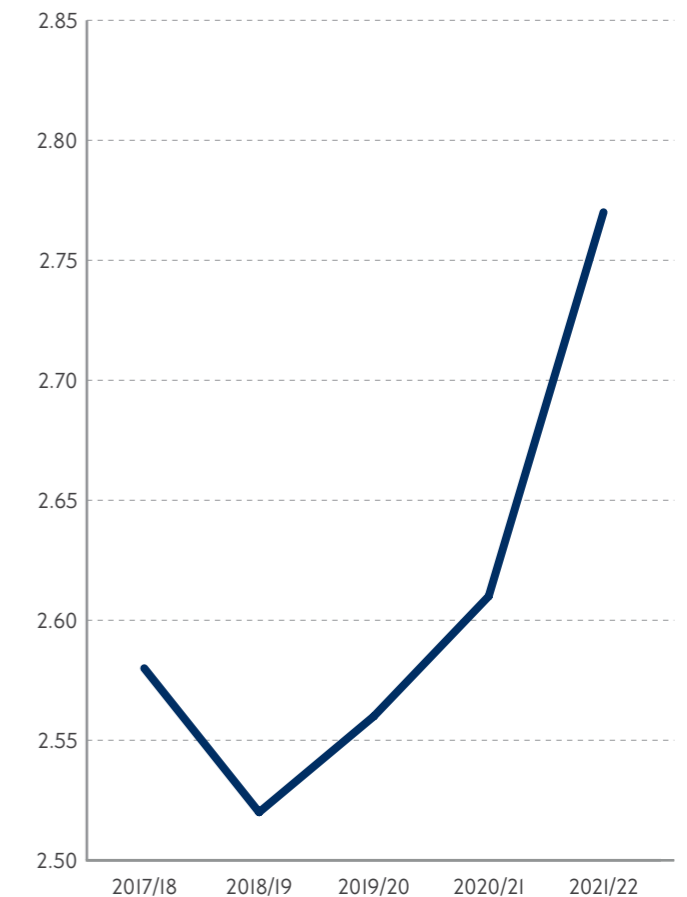
Customer injury rates

We have seen a worrying rise in the number of customer injuries

Our customer injury rate has increased substantially this year, up by seven per cent, compared to 2017/18. This is a worrying trend and suggests that some customer behaviours seen during the pandemic, such as not wanting to hold onto handrails may still persist, despite our much publicised cleaning efforts.

The upward trend could also be explained by customers returning to the network after an 18-month gap and needing to readjust to stations and routes. We will be looking at this closely over the coming year, making sure we evolve our customer marketing campaigns accordingly and providing advice on travelling safely.

Customer injuries (rate of injuries)



Workforce injuries in our Capital teams

There has been a continued decrease in the number of injuries

While lockdown restrictions eased at the beginning of 2021/22, our Capital activities continued under COVID-secure conditions. Visits to sites remained risk-based and were conducted virtually where possible. Our site-based workforce was supported through regular communications linked to their safety and wellbeing. As we have returned to normal, this risk-based approach has continued and has been supported by virtual visits and monitoring. We have been conducting enhanced coronavirus checks on our sites to protect workers' health and ensure we can continue the progression of our projects.

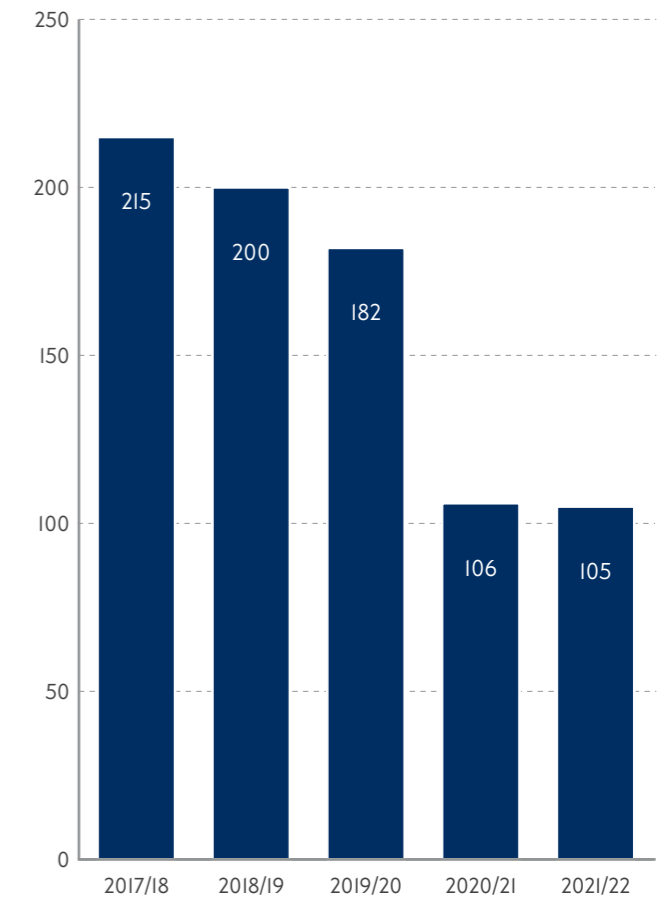
There were 105 Capital workforce injuries in 2021/22, continuing the decrease seen since 2017/18. This is a 42 per cent decline on the last pre-pandemic year of 2019/20. There were 10.6

million hours of work completed this year, compared to 10.4 million in 2020/21. Over the past few years, the continued impact of the pandemic and the completion of several major projects has resulted in a fall in hours worked, from 17.1 million in 2019/20 and 12 million in 2018/19. There can be a correlation between a lower number of hours worked and a lower number of injuries, although this is not fixed.

The injury frequency rate remained relatively stable, with 15 incidents reported under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) in total, compared to 14 in 2020/21, and 11 in 2019/20. It is essential that we look closely to identify the root causes to align the safety improvements across all of our teams.

We have been conducting enhanced coronavirus checks on our sites to protect workers' health and continue to progress our projects

Injuries in our Capital areas (number of injuries)



The rate of injuries within our Capital teams remains relatively stable

 **95**
fewer Capital workforce injuries, compared to 2018/19

Improving safety with our suppliers

Continuing to drive best practice through our Zero Harm Forums

As the construction industry emerges from the pandemic and returns to normal, our Zero Harm Forums have played a major role in the sharing of information, ideas and initiatives between us and our suppliers. From 2022/23 onwards, forums are likely to take place on an annual basis, and we will continue our supplier engagement forums to discuss and progress safety, health and environment-related matters with our suppliers.

We held a Zero Harm sharing event on 11 November 2021, which focused on people working with plant equipment and lifting operations, due to a number of high potential near misses that had occurred at that time. In February 2022, our Zero Harm conference placed carbon, the environment and sustainability at the heart of the agenda. There are more details of this event on page 45.

Our Zero Harm Forums have played a major role in the sharing of information, ideas and initiatives between us and our suppliers



Safeguarding our most vulnerable customers

Our Suicide Prevention Programme has helped reduce the number of suicides by 36 per cent across London Underground since 2018, with 90 per cent of London Underground station staff now trained in suicide prevention. Over the last few years, we have made up to 1,950 life-saving interventions.

We have a duty to educate our employees about suicide prevention, and equip them with the behaviours to ensure effective safeguarding of our most vulnerable customers. As part of this work, we have recently expanded the Safeguarding Award and LifeSaver Award schemes for our staff.



We have shared knowledge and learnings through our Zero Harm Forums

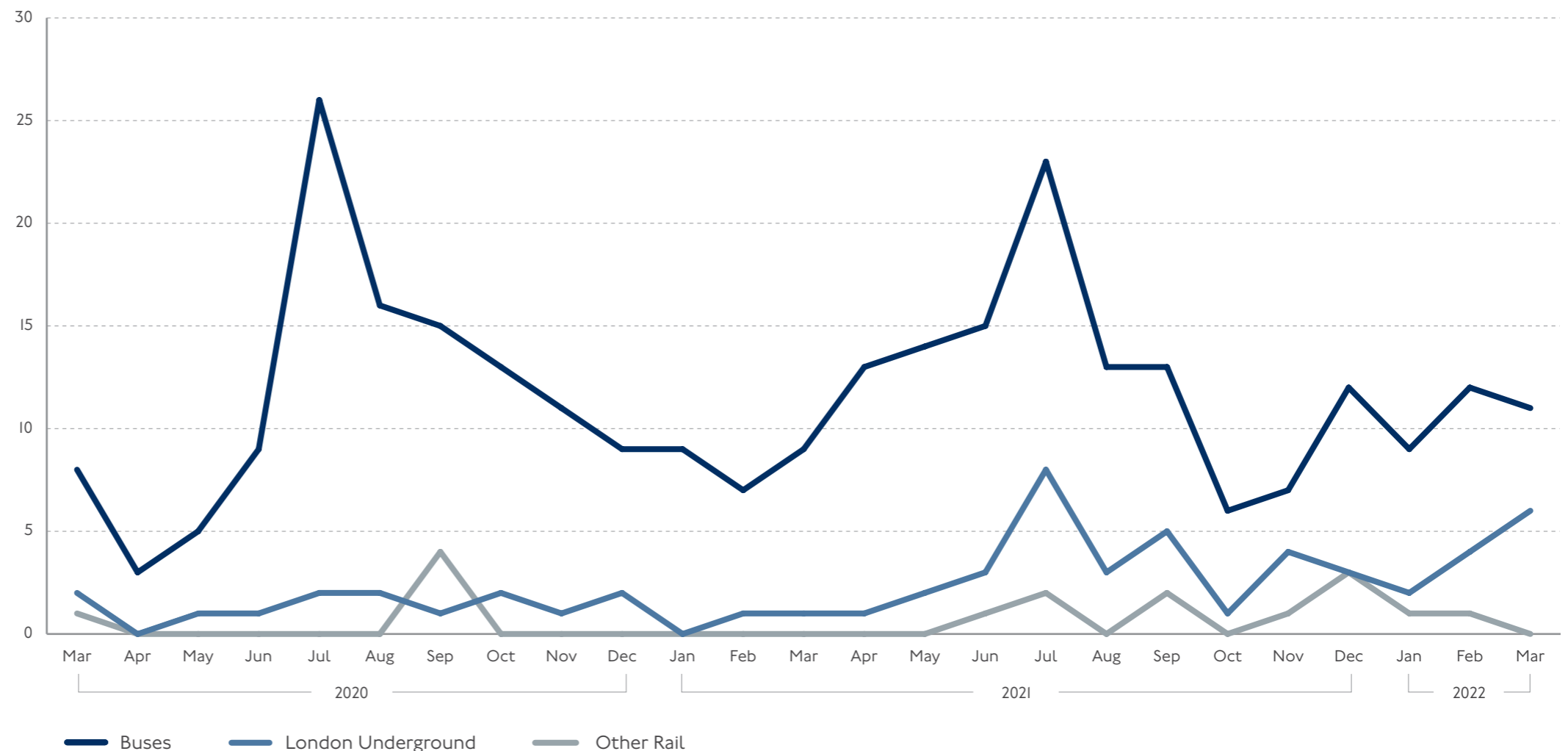
Workplace violence and aggression

We continue to work to ensure our workforce are safe as passenger numbers continue to increase

Our staff should be able to work comfortably and securely, and we consider workplace violence and aggression both a safety and a wellbeing issue. We know that incidents remain underreported, particularly verbal abuse, as violent offences that result in injury are more likely to be reported given that the staff member may require support, treatment, or time off. Police data for violence with injury offences is therefore a more reliable data source for monitoring trends.

Overall, higher passenger numbers have led to increases in the number of offences, with lower figures this year due to pandemic restrictions, more people working from home and fewer road users. In the same way, fewer offences on the rail network last year reflect the lower levels of passenger journeys at the time.

Police recorded work-related violence with injury offences (number of incidents)



 **12%**
increase in bus-related violence with injury offences

53
violence with injury offences on London Underground and other rail modes in 2021/22



The number of bus-related violence with injury offences was 12 per cent higher than 2021/22 (146 offences compared with 132). Where contributory factors are recorded, 44 per cent of bus-related physical assaults, are linked to road rage. Road rage volumes were lower in 2020/21, owing to lockdown restrictions, with 36 offences

in 2021/22 compared with 62 in 2021/22. Police data for London Underground, London Overground, DLR, TfL Rail and London Trams shows there were 53 violence with injury offences in 2021/22, compared with just 18 in 2020/21. This reflects the fact that fewer people were travelling at this time.

Improving the safety of our workforce

Our progress against the 2021/22 workforce safety action plan

The safety of our workforce is a priority and we are committed to preventing violence and aggression on our network by tackling the causes and providing support to those who experience it. Our workplace violence and aggression plan was approved by the Safety, Sustainability and HR Panel in June 2021. In it, we outline our actions around this work.

Our Transport Support Enforcement Officers provide direct support to both our customers and frontline staff. Officers are trained and equipped to deal with the triggers of workplace violence and aggression through engagement, enforcement and problem-solving. Working closely with the British Transport Police, they work in locations with higher levels of violence and emerging customer behaviour issues. A total of 90 officers had

been recruited by the end of 2021/22, with the aim of increasing this to 135 by the end of 2022/23.

Fare evasion remains the biggest trigger for this type of violence and we are recruiting 60 new Revenue Control Officers as part of our strategy to help tackle fare evasion on the London Underground network. There are 27 fully trained officers working across our network and we started training the additional officers in July 2022.

Ensuring our staff have up to date safety equipment is an essential part of our strategy and we plan to roll out additional body-worn cameras, following a successful initial roll out. In addition, emergency communication devices will be given to staff, where there is an operational need.

Bus-related offences in 2021/22



We work together with our police partners to help keep customers safe

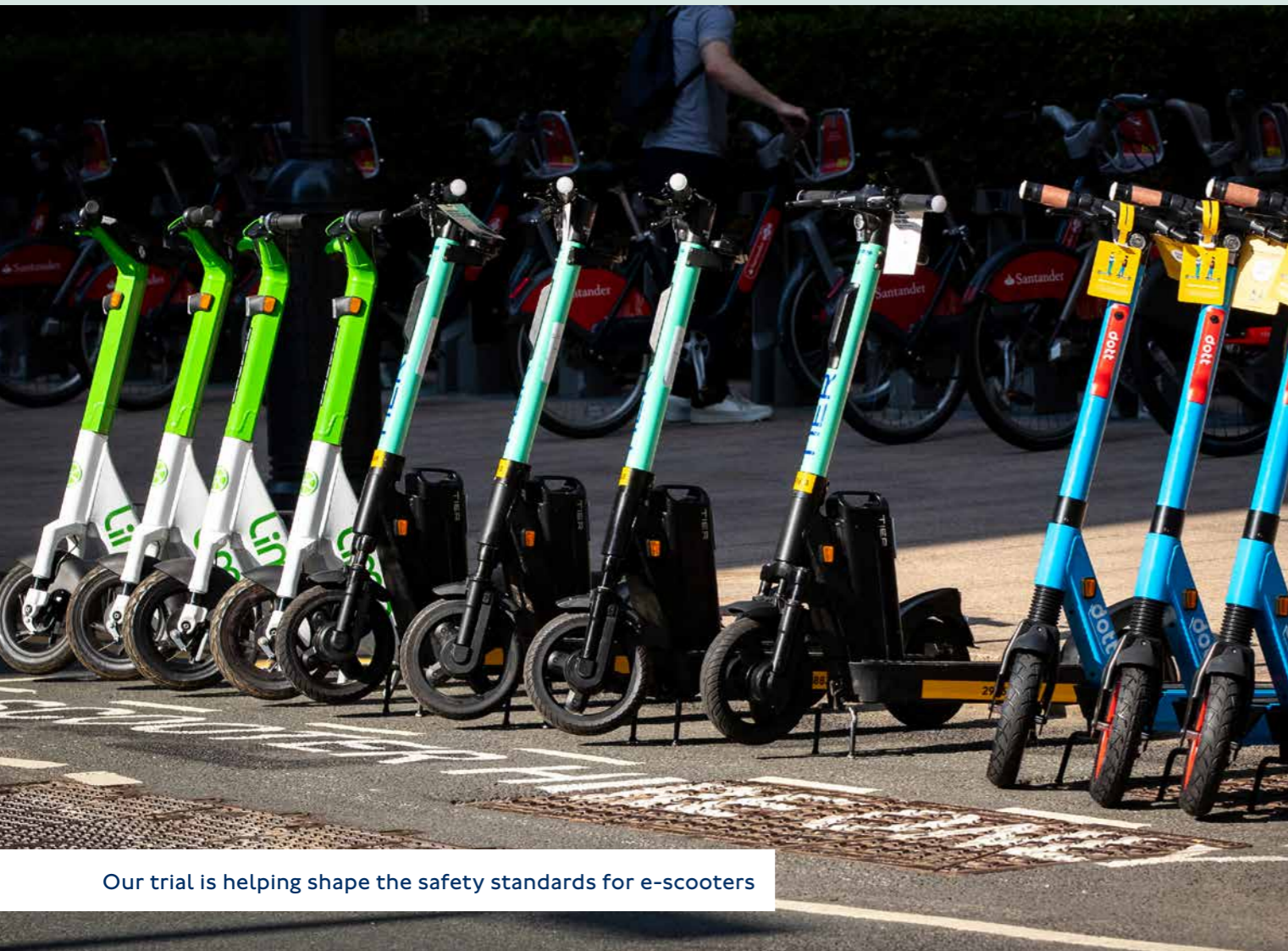
Our e-scooter rental trial continues

Trial will help assess the safety of e-scooters for London and the UK

Our e-scooter rental trial, which started on 7 June 2021, remains the only legal way to use an e-scooter in the capital and is one of more than 30 similar trials around the country. It has been set up to gather data and evidence to inform future legislation and policy. It also helps us consider whether these scooters reduce carbon emissions and whether they are a sustainable transport option. The trial has safety at its core, with high standards for vehicle design, maintenance, parking, rider

behaviour and fleet management, and has expanded significantly since its launch.

The number of vehicles has increased from 600 to 4,010, with more than 800,000 trips made between June 2021 and March 2022. The number of participating boroughs has also doubled to 10. Operators have reported that so far there have been no fatalities, although there were 15 serious injuries, based on STATS19 injury definitions.



Our trial is helping shape the safety standards for e-scooters



Banning e-scooters on the network

Managing compliance to help keep our customers safe

Following fires on our premises and services, we banned customers from using or carrying privately owned e-scooters on our public transport network from 13 December 2021. A total of 19 customers have been reported for prosecution and we continue to monitor compliance levels closely.



602 customers have been prevented from bringing their e-scooter onto our public transport network

Managing risk from fatigue

Throughout 2021/22, we continued to progress our work to reduce the risk caused by fatigue. In 2021, we published our organisational Vision and Values, which includes our goal to have a fatigue management plan in place for use across the organisation by 2023/24. This work is ongoing and runs in parallel to our fatigue management work in the Safety, Health and Environment Management System programme.

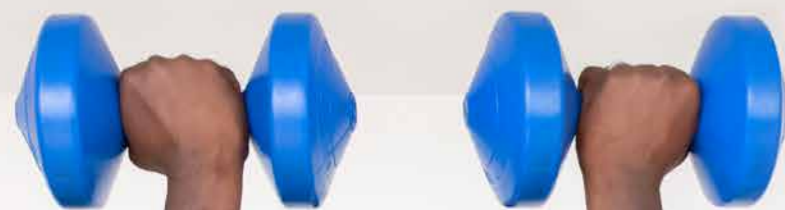
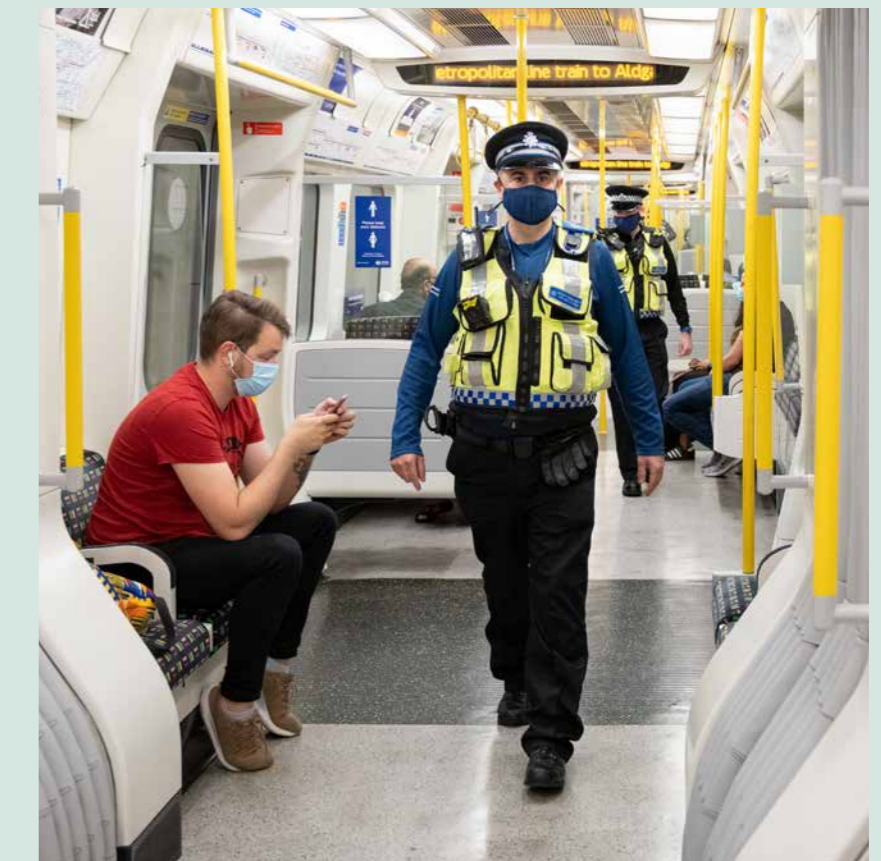
The approach to understand and assess fatigue risk, plan and implement effective evidence-based actions has been tried and tested across 11 of our departments. We aim to roll out our plan to all departments by 2024.

Tackling intoxication on the network

London Underground's intoxication strategy aims to reduce customer injuries and assaults on our staff by intoxicated customers. We also want to help our customers feel safe through targeted engagement, education and enforcement. The key to intervention is consistent staff engagement, and we supported our people with a range of activities in the run-up to Christmas, when these incidents can increase.

This work included an initiative involving a team of medics at selected stations to help intoxicated customers, and treat injuries and share best practice to support vulnerable customers. We also delivered targeted workshops exploring customer behaviours, as well as playing special safety announcements by the London Ambulance Service in selected stations.

Two bus operating companies, Go-Ahead and Abellio, also ran seasonal campaigns targeted at their drivers to raise awareness of these risks.



Reducing road danger

We have various projects that are designed to improve safety across our road network



Lowering speed limits on our roads

Building on the success of reducing speed limits on almost 30km of our roads this year, in March 2022 we reduced the speed limit to 20mph on some of our busiest roads including Marylebone Road, Vauxhall Bridge Road, the A13 Commercial Road and the A23 London Road among others.

Additionally, the temporary 30mph speed limit on the A40 Westway has been made permanent. Subject to funding, we are developing plans to further this work, which is a key part of making our roads safer.



Advancing our Vision Zero ambition

We are working to eliminate all deaths and serious injuries from our roads

Three years on from the Vision Zero action plan, our progress report outlines our achievements to date and commits to new, tougher measures and actions as part of an all-round Safe System approach to road danger reduction. Our bold ambition can only be realised through a shared responsibility between those who build and manage our transport network and those who use it.

A variety of actions is therefore needed to realise our goal, including allowing only the safest vehicles on the roads, reducing conflict between road users – a key component of our Healthy Streets approach – and educating people about travelling safely.

Improving safety at key road junctions

Through our Safer Junctions programme, we have carried out works to introduce a new pedestrian crossing over Battersea Bridge, where a person walking was tragically killed at the beginning of 2021. These works were completed in November 2021 at Chelsea Embankment and Battersea Bridge, with a second phase due to follow in summer 2022.

Subject to funding and consultation, we are developing plans for 10 further Safer Junctions, with the aim of delivering them by 2024.

Delivering our Direct Vision Standard

Reducing the risk to vulnerable road users

Our ground-breaking Direct Vision Standard for heavy goods vehicles (HGVs) is the first of its kind in the world, and requires operators of lorries over 12 tonnes to obtain a safety permit before entering and operating in most of Greater London. The permit is linked to how much the driver can see directly through their cab windows, or the fitting of secondary systems, to ensure the driver can better detect other road users and so substantially reduce the risk of injury to other road users.

The permit is linked to how much the driver can see directly through their cab windows, or the fitting of secondary systems, to ensure the driver can better detect other road users



Our Direct Vision Standard is improving safety for all road users

The Direct Vision Standard in numbers



112,259+

HGVs have had safe systems fitted since March 2021

191,769

HGV safety permits were issued, up to March 2022



76,429

penalty charge notices issued for vehicles that did not meet the standard's requirements, up to March 2022

Our bus ambitions

Designing a bus network for the future



Our Bus action plan will help reshape our bus network

On 11 March 2022, we published our long-term plan for buses, which will see the modern bus network attract more customers and support the Mayor's target for London to become a zero-carbon city by 2030.

Buses are the most commonly used form of public transport in the capital and our Bus action plan describes how we plan to create an even more attractive alternative to car use by focusing on five areas:

- An inclusive customer experience
- Safety and security
- Faster journeys
- Improved connections
- Decarbonisation and climate resilience

The plan's ambition can be seen on route 63 from King's Cross to Honor Oak, where new all-electric buses across the fleet were launched in February 2022. These buses include a range of features, including USB charge points, mobile phone holders, a larger wheelchair and buggy area as well as better real-time travel information on board.

In December 2021, we announced that the majority of bus lanes on our roads would be converted to operate 24 hours a day, seven days a week, following trials that showed that extending bus lane hours on our busiest roads can cut bus journey times and improve reliability.




Bus Safety Standard

We continue to roll out the Bus Safety Standard, which includes a range of measures and new features on buses to improve safety and help address some of the most common injuries.

This work involves purchasing new equipment as well as retrofitting some existing bus fleets, and includes Intelligent Speed Assistance systems to improve the bus driver's field of vision in addition to specially modified flooring which is designed to reduce the risk of passenger slips, trips and falls. Further improvements continue to be planned and rolled out.

 **776**
buses in our fleet meet specifications, as of April 2022

1,485
buses fitted with new Intelligent Speed Assistance technology, limiting buses to the speed limit 

 **634**
new buses now fitted with Acoustic Vehicle Alerting System for quiet-running buses

Taking action against road traffic offences

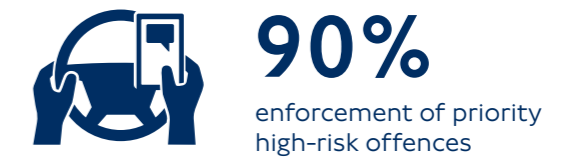
Working with our policing partners to improve road safety for all

The Metropolitan Police Service is a key partner in our Vision Zero ambition to eliminate all deaths and serious injuries on the capital's roads by 2041, and works extensively 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 issues, community engagement and education initiatives as well as actively monitoring and targeting high-risk drivers.

Priority high-risk offences include 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.

The Metropolitan Police Service is a key partner in our Vision Zero ambition to eliminate all deaths and serious injuries on the capital's roads by 2041

Road enforcement in numbers



We are taking action against the most high-risk road behaviours


Tackling speeding

Working to ensure drivers adhere to our speed limits



Speeding enforcement in 2021/22*

 **476,685**
speeding offences

6,266
speeding offences enforced using new specialist cameras in their first two months of operation 

* Results are provisional and are subject to change. The final outcome for 2021/22 will be higher than what is reported here.

Taking action against speeding offences

Gains through new technologies

In line with our commitments in the Vision Zero action plan progress report, we have been working with the Metropolitan Police Service to increase the level of police enforcement of speeding offences. This included a programme to increase the effectiveness of safety cameras and improving the police's capacity to enforce speeding offences. We also introduced a new mobile safety camera system, operated by Roads Policing Police Community Support Officers, to enable us to be more responsive to local concerns, with figures for their first two months of use showing their effectiveness in enforcing offences.

Speed-limiting technology

Securing the compliance of our own fleet of vehicles

A total of 360 vehicles in our fleet were fitted with Intelligent Speed Assistance systems from late 2021 to early 2022 to help ensure our workforce complies with speed limits and actively contributes to our Vision Zero commitment.



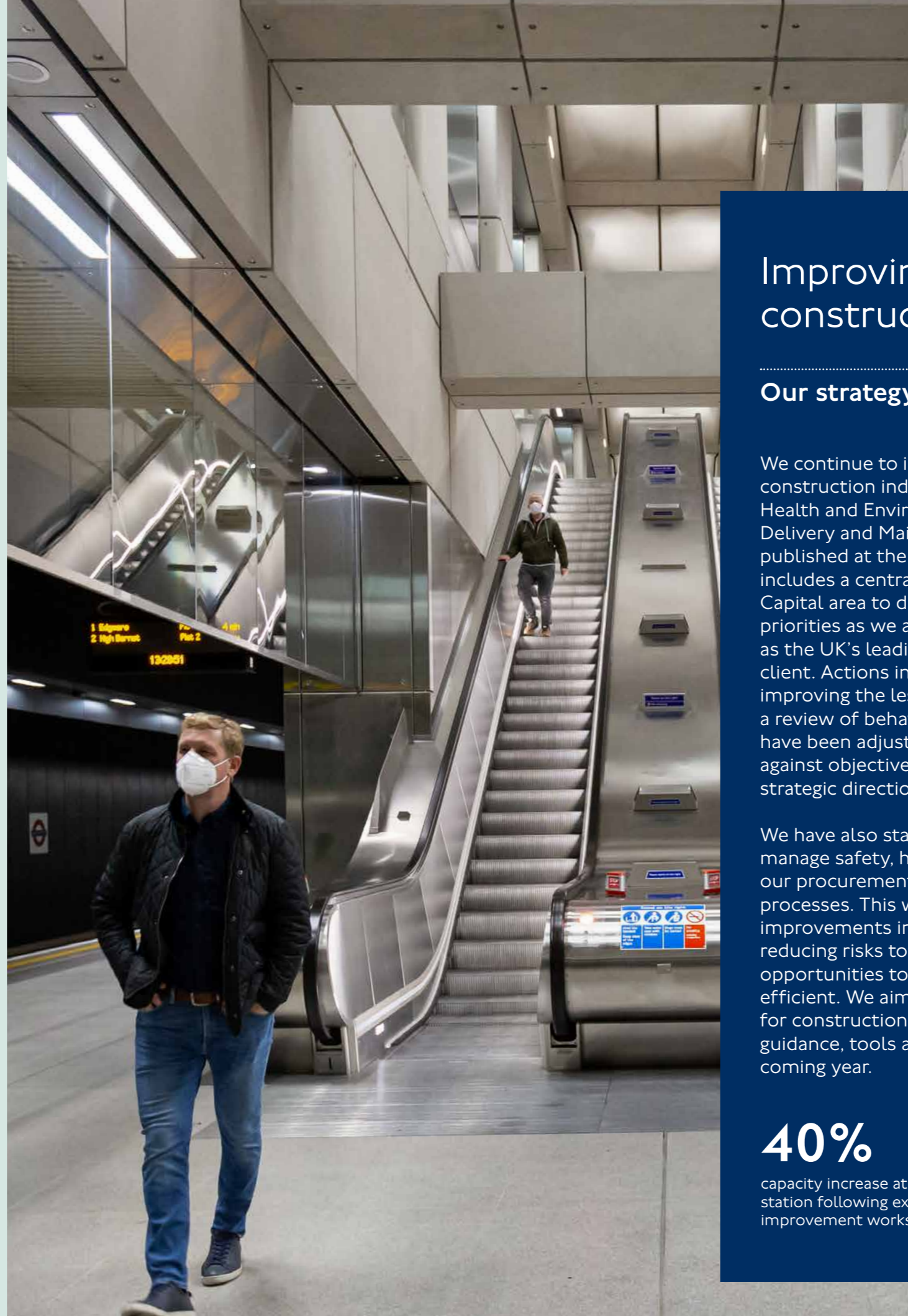
Northern Line Extension

Delivering high sustainability standards

Following six years of construction, we successfully opened the Northern Line Extension in September 2021, delivering two new step-free Tube stations and a three kilometre twin-tunnel running track. This opens up the Tube network to a whole new community in south London. The extension opened on time, despite construction being paused in March 2020 due to the pandemic restrictions.

The project was awarded a Civil Engineering Environmental Quality Assessment & Award Scheme (CEEQUAL) rating of 'Excellent'. Some of the project's key sustainability measures included:

- Transporting more than 845,000 tonnes of excavated material by barge, avoiding 46,965 lorry journeys and so preventing the emission of more than 2,000 tonnes of CO₂
- Reducing the energy consumption of the tunnel boring machine in several ways
- Maximising offsite manufacturing of components and reducing waste as a result of in-situ concreting
- Reducing and reusing packaging where possible
- Selling the temporary infrastructure to other capital construction projects
- Offering surplus materials to local charities or returning them to suppliers
- Using local and recycled materials, with less than one per cent of waste going to landfill
- Using another construction project's excavated material to fill voids around the new Battersea Power Station structure



Improving safety in the construction industry

Our strategy for improving safety

We continue to improve performance in the construction industry through the Safety, Health and Environment department's Capital Delivery and Maintenance Strategy, which was published at the start of 2021/22. The strategy includes a central improvement plan for the Capital area to drive change and address key priorities as we aim to establish ourselves as the UK's leading construction industry client. Actions include data standardisation, improving the lessons learned process and a review of behavioural initiatives. These have been adjusted to account for progress against objectives, new insight and changes in strategic direction.

We have also started to review 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 us and identifying opportunities to make our processes more efficient. We aim to update these specifications for construction and develop associated guidance, tools and training material in the coming year.

40%

capacity increase at Bank station following extensive improvement works



Our Northern Line Extension opens up a whole new area of south London



This year, the combined solved rate was 19 per cent for violence and public order offences recorded against our workforce

Supporting the police with their investigations

Positive outcomes for police investigated violence and public order offences

To enable police investigations to conclude and for cases to progress through the criminal justice process, data presented here covers October 2020 to September 2021 (current) compared 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 offences recorded against staff, down from 75 per cent compared to the previous year. Due to changing customer numbers, bus drivers make up a greater proportion of staff victims and they are less likely to support police investigations, particularly public order offences. We are working with the police and bus operating companies to address this.

The solved rate is the percentage of offences being investigated by the police that have resulted in action against the suspect, such as being charged with the offence, summonsed to attend court or a restorative justice outcome. This year, the combined solved rate was 19 per cent for violence and public order offences recorded against our workforce, slightly lower than the rate for last year, which was 21 per cent.

69%

of staff who are willing to support a police investigation for violence and public order offences



Health

We continued to support the mental and physical health and wellbeing of our people during another challenging year



Health and wellbeing events in 2021/22

We ran a wide range of events throughout the year to inform and educate our workforce, helping them look after their physical and mental health. The needs of our workforce have changed and become

more subtle over the pandemic. We have become more aware of our duty of care towards those who work for us, especially with more people working remotely.



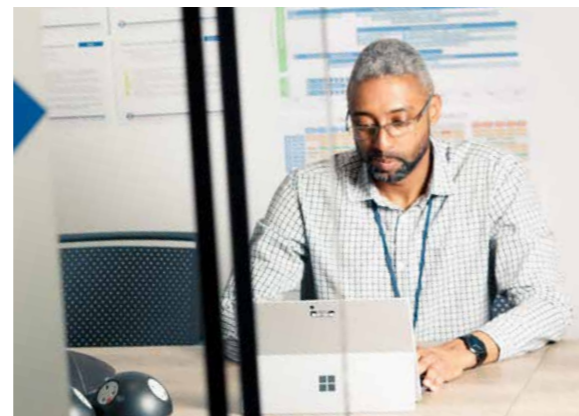
Quarter 1 1 April to 26 June 2021

Able Futures presents Stress in the workplace webinar.

Supporting Colleagues Network runs a Tea & Talk session.

Launch of Kaido Health and Wellbeing Challenge.

Diabetes UK session for Diabetes Prevention Week.



Quarter 2 27 June to 18 September 2021

Supporting Colleagues Network runs a Breathing & Meditation session.

Wellbeing Wednesday to support work-life balance discussions.

Samaritans session to raise awareness of World Suicide Prevention Day.



Quarter 3 19 September to 11 December 2021

Understanding anxiety and five ways to protect your mental health.

Henpicked webinar on menopause awareness.

Talks to support Men's Health Month, supported by Testicular Cancer UK and Prostate Cancer UK.

Thinking about Drinking as part of Alcohol Awareness Week.



Quarter 4 12 December 2021 to 31 March 2022

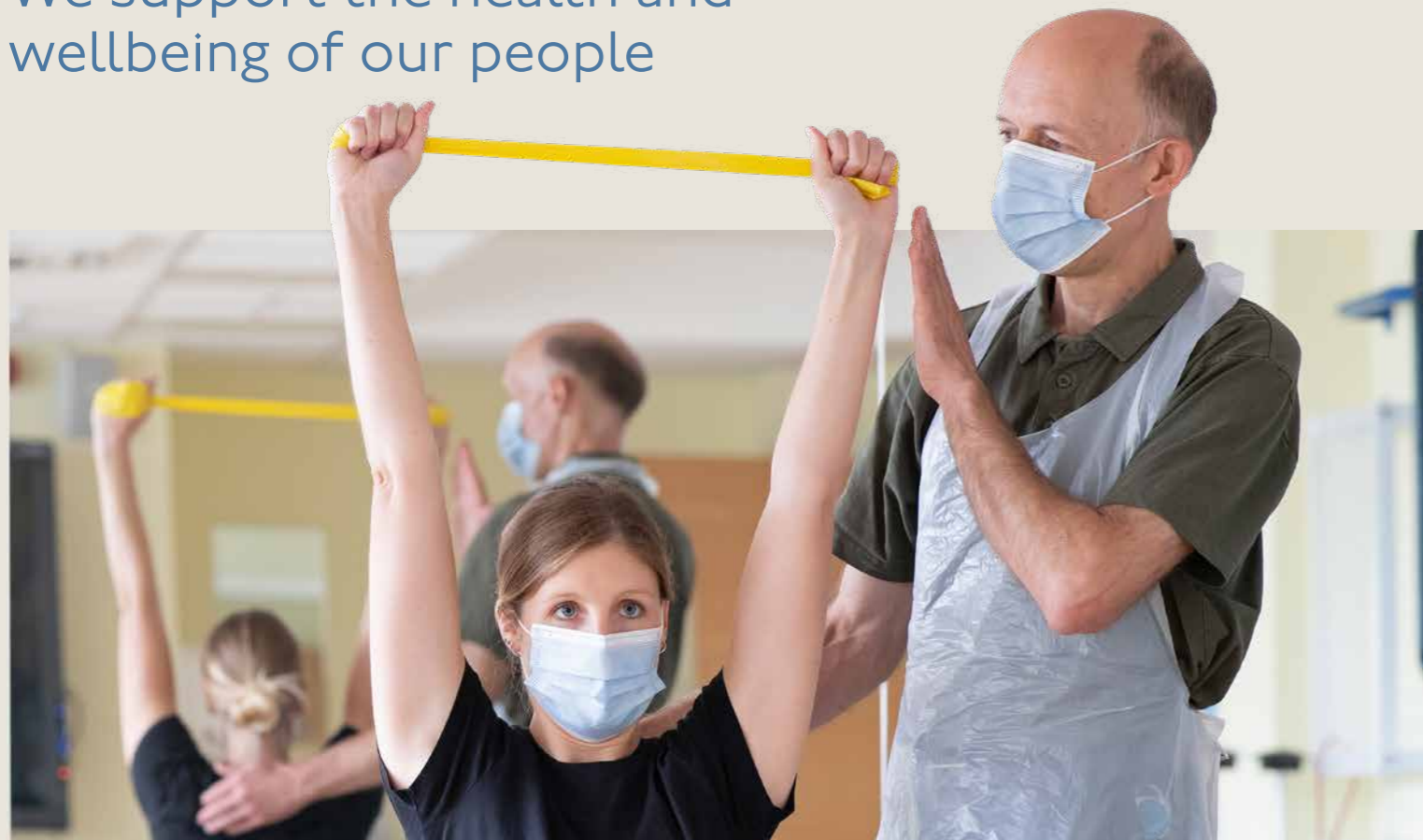
Pilates and posture sessions.

Rail Wellbeing Live webinar on Sleep Better.

Various events in support of Women's Health Month focusing on key matters such as Ovarian Cancer and the Menopause.

Managing our health

We support the health and wellbeing of our people



Our health performance summary

Accommodating our employees in their wellbeing assessments

Our Occupational Health and Wellbeing work in 2020/21 was dominated by the response to the pandemic, with assessments being conducted remotely, either online or over the telephone. Throughout 2021/22, we gradually reintroduced face-to-face appointments, keeping remote appointments as an additional option.

The pandemic also brought some positive changes, with remote working presenting us with the opportunity to move our health and wellbeing services online. In some cases, remote services enable greater participation or flexibility for our staff. To meet this need, we have continued to offer a mix of in-person and remote medical assessments and treatments.

Helping employees to manage their health

We launched our Well@TfL pilot project to assess whether regular engagement and support from us helps people to manage their health better. The first phase of the project ran from August to November 2021. This included a 30-minute mini-health check for more than 100 staff who were then given advice and a personalised health report containing guidance on how they can achieve their health goals.

Participants then had three-month follow up calls to measure their progress and improvement, with the majority of people typically making positive lifestyle changes such as increasing their exercise levels or reducing their smoking.

In addition, most participants followed up on any identified health risks such as elevated blood pressure and cholesterol.

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

Mobile health checks

Our newly commissioned Well@TfL bus visited sites around the organisation, offering staff health checks and wellbeing support. The bus includes the equipment needed for onsite Occupational Health medicals alongside the mobile health checks that are part of our Well@TfL scheme. The project aims to identify trends and inform future action plans by assessing results from more than 1,000 health checks.

603

people have received personalised wellbeing support on site



19%

referral rate based on individual health metrics



Measuring long-term sickness

Supporting our people through long-term sickness

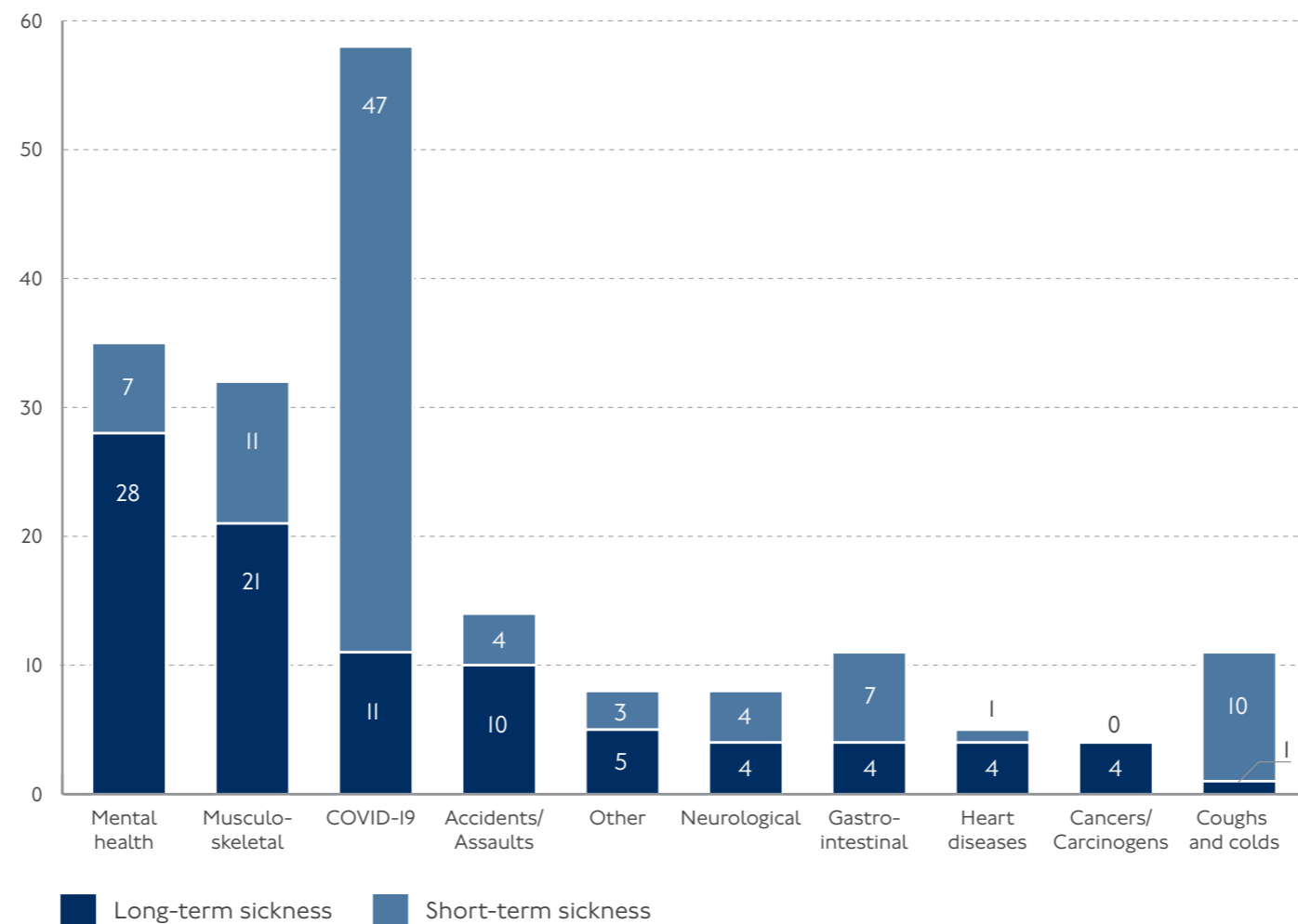
When looking at the health performance of an organisation, it is important to distinguish between short-term and long-term sickness, which are staff absences lasting more than 28 days. While short-term sickness absence can be influenced by factors outside of work, it can also give an indication of trends or lead to long-term sickness absence. At any time, around 60 per cent of absences are caused by long-term sickness.

In 2021/22, the average sickness level was 6.7 per cent, which means that at any point in time, around one in fifteen work days were lost due to absence.

Mental health and musculoskeletal-related health issues remain the top two causes of long-term sickness absence throughout the year. This is in line with the national picture.

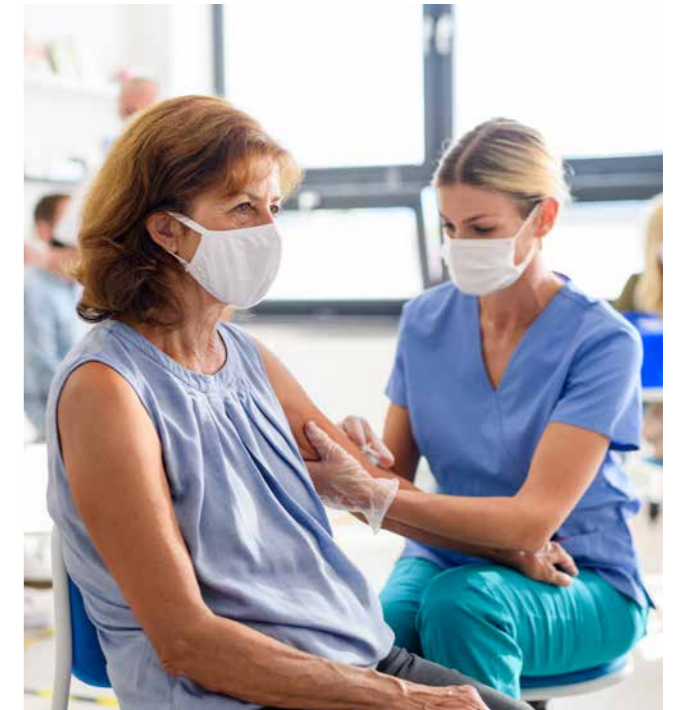
The leading cause of short-term sickness absence in 2021/22 was COVID-19, at 47 per cent. While this was the same as last year, the actual percentage reduced to a rate of 30 per cent from mid-September to mid-December 2021, but the increase in cases to 59 per cent later in the year brought the figure back up to 47 per cent. Coughs and colds accounted for 10 per cent of short-term absences across 2021/22.

Top causes of long- and short-term sickness absence 2021/22 (%)



1 in 15

work days are lost at any point in time as a result of sickness



Supporting colleagues needing flu vaccines

The NHS offers a free annual flu vaccine to people aged over 50 and those with certain underlying medical conditions. We helped our staff to check if they qualified.

We also enabled those who had to pay for a flu jab to claim the cost back through work expenses. We publicised this support extensively across the organisation to raise awareness. This initiative is one of the many ways we support our people to be healthy and able to attend work.



Our health index enables us to better support our people

Developing a health and wellbeing index

Our Occupational Health and Wellbeing team is working closely with the Rail Safety and Standards Board on the development of a health dashboard. This will include a health and wellbeing index for the transport industry, which will enable benchmarking of health data across the sector. Reporting on safety has led to year-on-year improvements and cross-industry reporting on health should lead to similar improvements.

Preventative support for pre-diabetes

We launched the 12-month RESET Health pilot programme in December 2021 to support those living with pre-diabetes, Type 2 diabetes or obesity, with 50 people taking part.

Members are at the early stages of their journey, but initial data for employees who have attended their second monthly check-in shows promising improvements in key factors, including reductions in weight and body mass index and an increase in regular exercise.

Investing in our people's health and wellbeing

Funding awarded through the Employer Health Innovation Fund

In 2021, we were awarded two separate grants from the Employer Health Innovation Fund to invest in staff health and wellbeing. One grant focuses on understanding and overcoming the barriers of operational staff when it comes to engaging with technological health and wellbeing tools. It will be used to implement solutions based on the research findings and recommendations.

The second grant enables us to deliver health and wellbeing assessments for bus drivers, and will be used to identify opportunities for bus operating companies to better meet their drivers' health and wellbeing needs. This work, which began in September 2021, will provide recommendations to improve existing health assessment initiatives, with staff across four bus operating companies being interviewed to gather information.

We will continue working with our partners to deliver health assessments to operators that currently do not use them, using insight from the research exercise for their implementation and management.



We offered wellbeing support to bus drivers

Supporting our bus drivers

Improving the health and wellbeing of our bus staff



Innovation to reduce bus driver fatigue

We launched the combined Fatigue, Health and Wellbeing Innovation Challenge in spring 2021 to trial measures across eight London bus operating companies to help reduce fatigue, and improve the health and wellbeing of our bus drivers.

More than 50 companies responded with a range of solutions, with 10 successful bids, but work has had to be paused due to funding uncertainty. Bus driver fatigue remains a priority and we continue to work with operators and suppliers so the bids can be progressed following further funding.

We need to be more proactive in understanding bus drivers' existing health conditions, identifying those most at risk and enabling intervention

Understanding bus drivers' health conditions

In 2020, we commissioned a special report into bus driver deaths from COVID-19. The results showed that we needed to be more proactive in understanding bus drivers' existing health conditions, identifying those most at risk and enabling intervention.

We identified that we needed to assess information from bus drivers from across all 10 operating companies. This data was provided through special self-service health assessment kiosks or comparable

health assessments, that will give us early indications of conditions such as diabetes, hypertension and heart disease, and will include a lifestyle assessment.

The roll out of these health assessments to bus drivers began during winter 2021, and we are looking to collect aggregated data to define and inform further activities for the Bus Driver Health and Wellbeing Programme.



We are supporting the physical and mental wellbeing of our drivers

Environment

We play a vital role in making the capital greener and more sustainable, providing low-carbon travel services and managing our own waste and carbon emissions



Expanding the Ultra Low Emission Zone

Cleaning the air for even more Londoners through the expansion of our groundbreaking scheme to the North and South Circular roads

We expanded the Ultra Low Emission Zone (ULEZ) in October 2021 to cover the area within the North and South Circular roads. The newly expanded ULEZ is 18 times the size of the original central London zone, introduced in April 2019, with nearly four million people living inside the area. The expansion will bring the health benefits of cleaner air to millions more Londoners, both inside and outside the zone. Heavy goods vehicles, buses and coaches must meet the same emission standards across Greater London under the Low Emission Zone.

In the first month of operation, the compliance rate was 92 per cent, more than double the compliance levels in 2017 when plans for ULEZ expansion were first announced. Average weekday figures show there were 47,000 fewer non-compliant vehicles in the expanded zone in the first month of operation compared to the two weeks before the scheme was introduced, representing a 37 per cent reduction in non-compliant vehicles. By this same measure, there were also 11,000 fewer vehicles driving each day in the zone, which represents a one per cent reduction, although it will take more time for longer-term traffic patterns to fully emerge. Initial monitoring suggests that total traffic on the boundary has also slightly decreased since the scheme expanded.

To support the transition to cleaner vehicles, the Mayor invested £61m in scrappage schemes to help low income and disabled Londoners as well as charities and small businesses to prepare for the regulations. These schemes have so far helped remove more than 15,200 older, more polluting vehicles from London's roads. In May 2022, we started a public consultation on the Mayor's proposals to further expand the ULEZ to include all of Greater London, which will also provide insight into the future of road user charging in the capital.

92%

compliance rate in the first month of the extended ULEZ



The expansion will bring the health benefits of cleaner air to millions more Londoners, both inside and outside the zone



The Ultra Low Emission Zone will bring health benefits to more people

Setting out our sustainability agenda

We published a number of reports this year, which set out our ambitions to address the climate crisis and support London's green and inclusive recovery.



Sustainability Report

Our Sustainability Report aims to capture the social, economic and environmental benefits we deliver as an organisation, and includes key metrics to measure performance. It is aligned with the reporting approach of other large organisations and with the overarching United Nations' Sustainable Development Goals through an approach that complements our London-level strategic policy framework. Everything we do contributes towards the three pillars of sustainability:

Society: Caring about our colleagues, customers and communities through safe, healthy and accessible transport services.

Environment: Operating in a sustainable way, to protect and regenerate the natural world.

Economy: Being financially sustainable and offering affordable services to help provide good quality of life for all.



Corporate Environment Plan

This plan works alongside the Sustainability Report and our approach to improving our environmental performance. It outlines our ambition, targets and plans for the environment. The plan has been developed around five key themes to help us become a zero-carbon London:

Climate emergency: Reduce carbon emissions and ensure we are ready for the impacts of climate change.

Air quality: Reduce emissions and harmful air pollutants.

Sustainable resources: Support a low-carbon circular economy.

Green infrastructure: Protect, connect and enhance our green infrastructure, including the biodiversity, habitats and ecosystems.

Best environmental practices: Deliver our activities responsibly and be a good neighbour.



Sustainable Development Framework

Launched on 22 November 2021, this handbook is our Property Development department's approach to delivering social impact, driving economic development and embodying environmental stewardship in all of our projects. Sitting alongside our property design principles and internal guidance on community engagement, it reinforces the quality and excellence of our work. The framework covers the three pillars of sustainability (social, environmental and economic), making it an all-inclusive tool to measure and continually improve the sustainability of current and future projects.

In December 2021, we shared detailed guidance on the 97 key performance indicators for external feedback in preparation for an open-source launch in spring 2022. We supplied the handbook to our development partners, industry peers, environmental organisations and local authorities, as well as publishing it on our website for further reference.

Tackling the climate emergency

Learning lessons from flash flooding

With climate change, severe rainfall events like those London experienced on 12 and 25 July 2021 will become more intense and frequent.

These two heavy downpours led to severe flash flooding throughout London, causing significant damage to our assets and severely disrupting our services across the capital. Thirty London Underground stations had to be fully or partially closed, with several roads and tunnels also affected. London Overground services were disrupted with severe delays and Pudding Mill Lane DLR station had to be closed.

While services on the network recovered quickly from these events, the assessment of climate-related risks will be a crucial part of our future planning processes to avoid similar impacts on the network as time goes on.

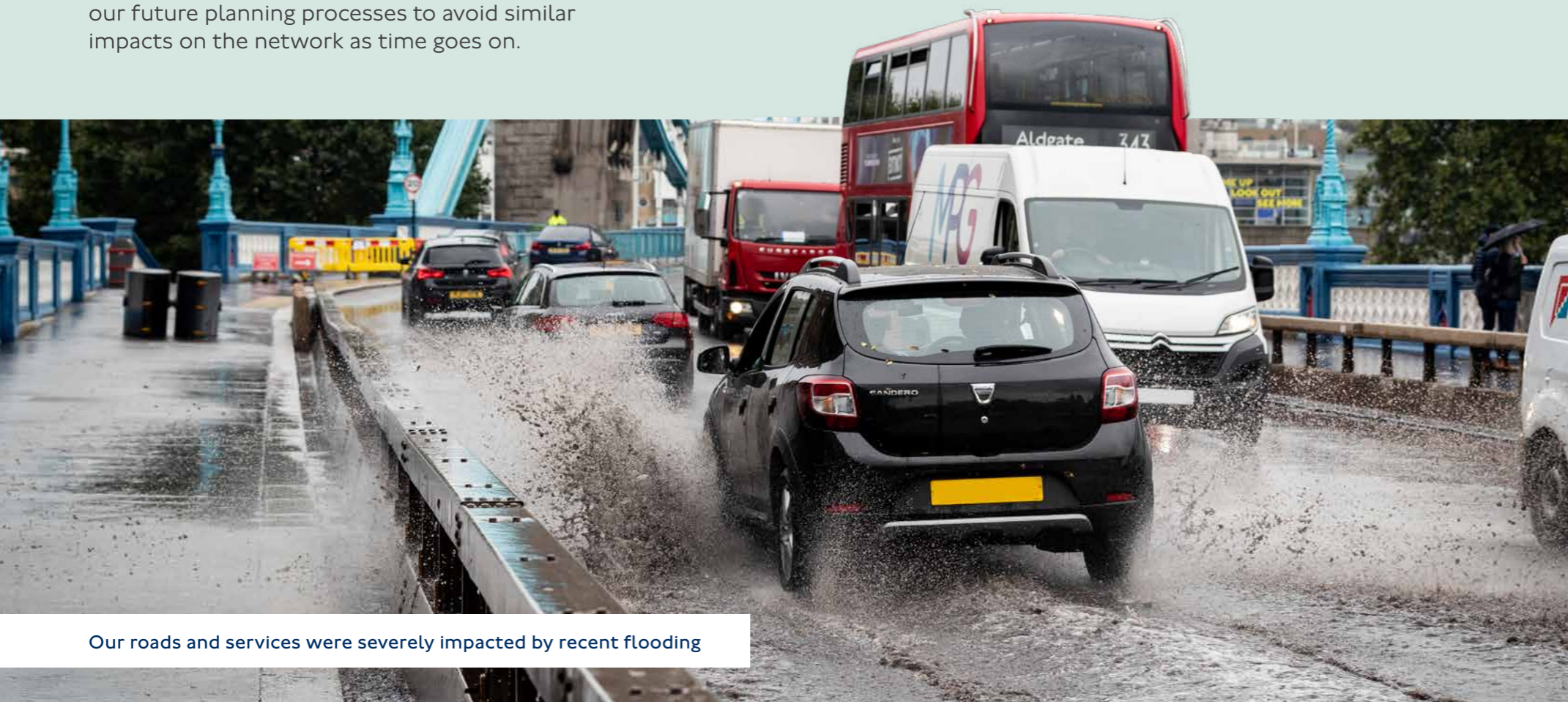
The Mayor convened a series of roundtables over several days, which were attended by the London Fire Brigade, the Environment Agency, Thames Water, London Councils and various London boroughs, as well as the Mayor, Deputy Mayors for Transport and Environment and Energy, and people from our organisation.

The purpose was to identify any joint learnings and actions from the flooding that could result in improved responses by authorities in the future. One result of this work was the setting up of a Task and Finish Group to determine how London can best adapt to future flood events.

These two heavy downpours led to severe flash flooding throughout London, causing significant damage to our assets and severely disrupting our services



Our network has been affected by flooding



Our roads and services were severely impacted by recent flooding

Storm Eunice

Extreme storms dominated the weekend of 18 to 20 February 2022, with numerous trees coming down and other objects blown on to our infrastructure, causing disruption to our services and damage to some assets. While the storm did not cause any significant injuries to our customers, there were two injuries to our people – a member of our cleaning staff and a train operator.



Contributing to COP26

In November 2021, the UK hosted the 26th UN Climate Change Conference of the Parties, known as COP26, in Glasgow. The summit brought countries together to accelerate action towards the goals of the Paris Agreement and the UN Framework Convention on Climate Change. It is essential that governments deliver on the Paris Agreement with robust and tangible plans, and the yearly COPs are critical focal points for that ongoing effort.

We supported the Mayoral participation in COP26 through briefings and by taking part in several events, meetings and roundtables related to the discussions. We communicated our responsibilities and ambitions through a range of activities including a promotional video highlighting the importance of London's transport and how we can help the UK address the climate emergency.

We also supported travel to and from the conference via London's rail terminals, while launching London's new all-electric double-deck buses at the event and using these to transport key participants to various venues.

A strategic approach to the climate crisis

Our strategic approach to the climate emergency

We submitted our Adaptation Reporting Power 3 submission to the Department for the Environment, Food and Rural Affairs at the end of April 2022. This report set out our main climate risk governance, strategy, approach to risk management and

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 currently major or above. The number of risks scoring major or above, is set to rise by 2050 and 2080.

The main risk areas for our assets are **temperature, precipitation and storms**



We continue to monitor and assess the impacts of climate change

Our electricity consumption

Working to make our services more sustainable in the long term

As London recovered from the pandemic, service levels on public transport increased, which led to a rise in our electricity consumption compared to last year. Total electricity consumption across our network was about 10 per cent higher than in 2020/21. We remain London's largest user of electricity and the CO₂ emissions produced as a result make up the second largest portion of our overall carbon footprint, with our bus fleet being the largest.

We have a strategy to move to 100 per cent renewable energy by 2030 and are using Power Purchase Agreements with renewable generators to achieve this. Procurement for this has started, with the aim of securing up to 13 per cent of our consumption in this first step. We are working with the Greater London Authority Group to explore opportunities to jointly procure renewable electricity in this way, with an aim to make further joint procurements throughout the next decade.

1,610

giga watt hours of electricity consumption on our network



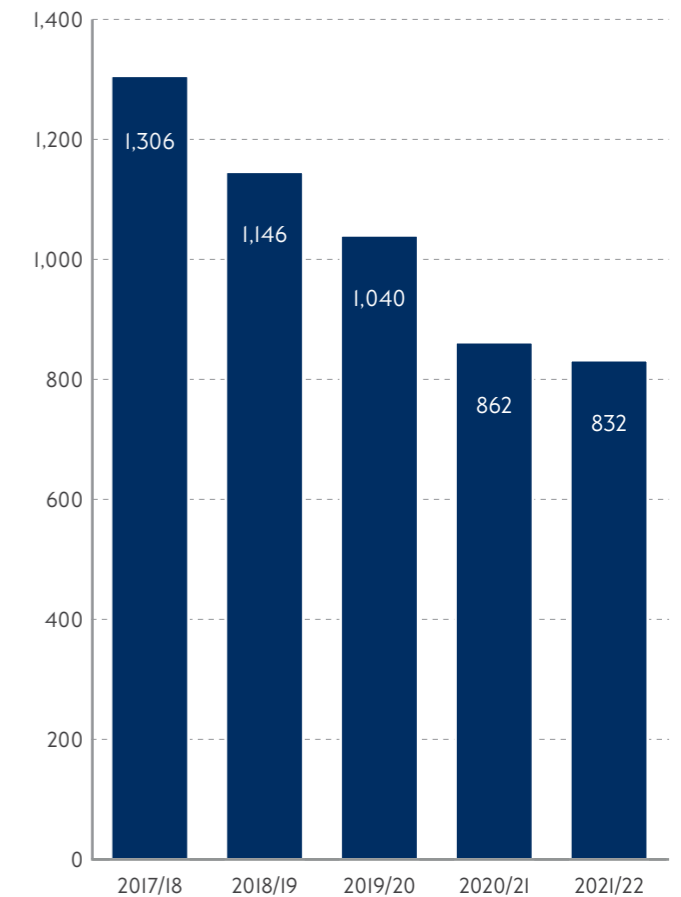
10%

less electricity consumption than last year



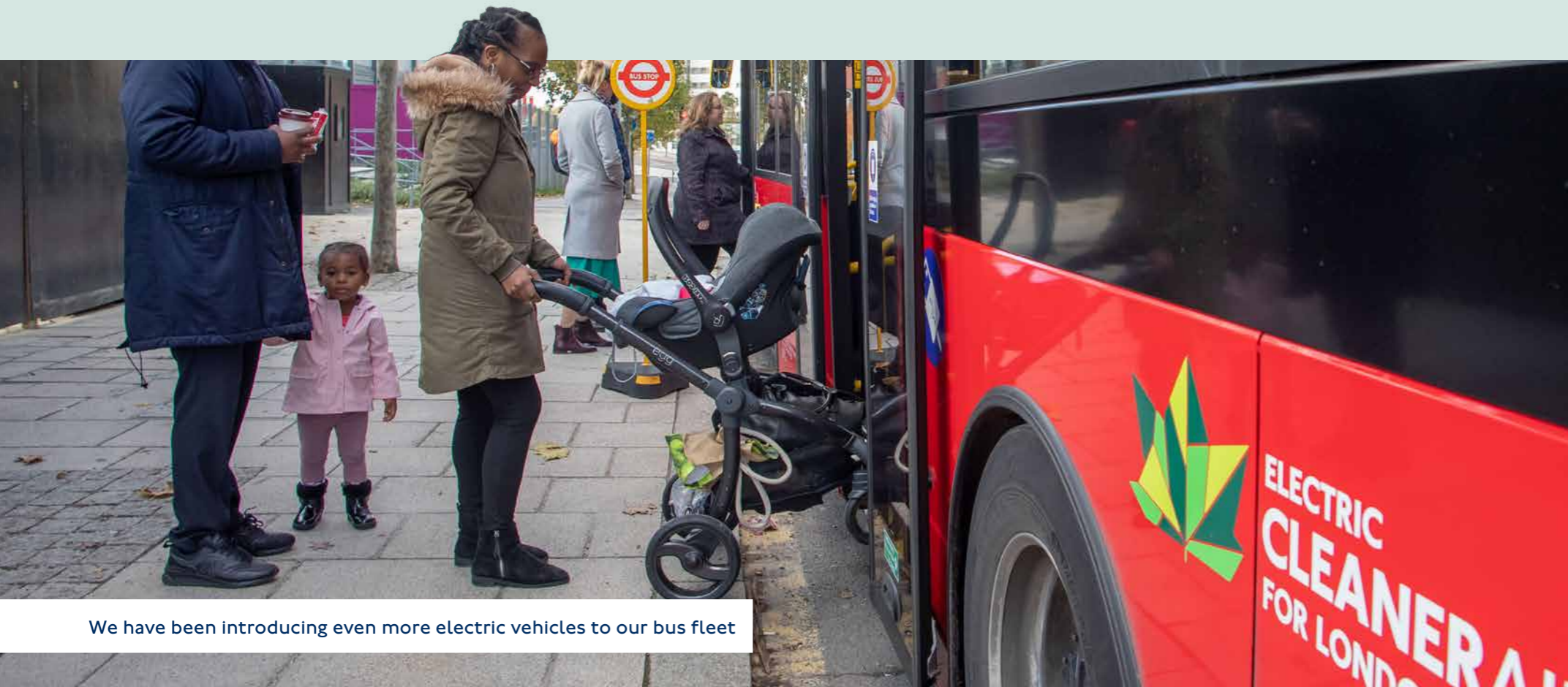
We have a strategy to move to 100 per cent renewable energy by 2030 and are using Power Purchase Agreements with renewable generators to achieve this

CO₂ emissions from our operations (kilotonnes)



The CO₂ emissions from our operations decreased by three per cent compared to the previous year.

The continued introduction of zero-emission buses into our fleet combined with reductions in the carbon intensity of electricity outweighed the additional energy consumption from public transport services recovering from the pandemic.



We have been introducing even more electric vehicles to our bus fleet

Creating a zero-emission bus fleet

We are on course to deliver greener buses for London

To help us decarbonise public transport and further enhance air quality much faster than planned, in September 2021 the Mayor announced that all new buses entering the fleet will be zero-emission. This sets us on track to eliminate diesel, its exhaust gases and particulate matter from all our buses by 2034, three years earlier than planned. This will also contribute to the wider plans the Government has to cut CO₂ emissions in the UK by 68 per cent, against 1990 levels, by 2030.

We are aiming for 10 per cent of our 9,000 buses to be zero-emission by the end of 2022. As of 31 March 2022, there are more than 800 zero-emission buses in our fleet, helping us reduce our reliance on diesel, cut harmful emissions and reduce CO₂ in the capital. The fleet also includes 20 double-deck zero-emission hydrogen fuel-cell buses, launched in June 2021, with technology that helps us reduce emissions and ensures our buses emit nothing except water vapour.

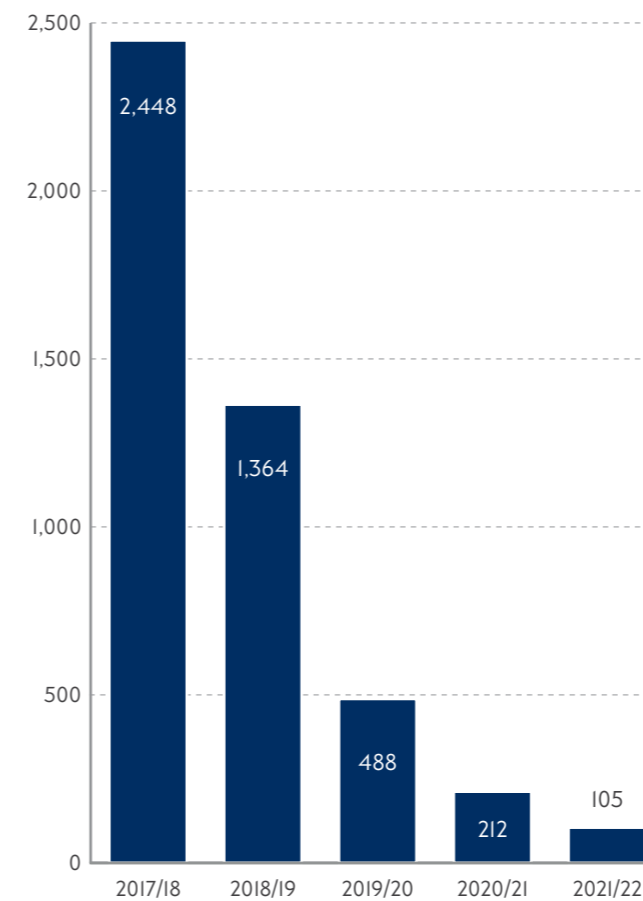
We will continue adding zero-emission buses as quickly and affordably as we can to make the entire fleet zero-emission by 2034, with options for bringing this forward to 2030 if funding support for vehicles and infrastructure is provided by the Government.

 **800+**
zero-emission buses
in our fleet

10%
of our 9,000 buses will be
zero-emission by 2023

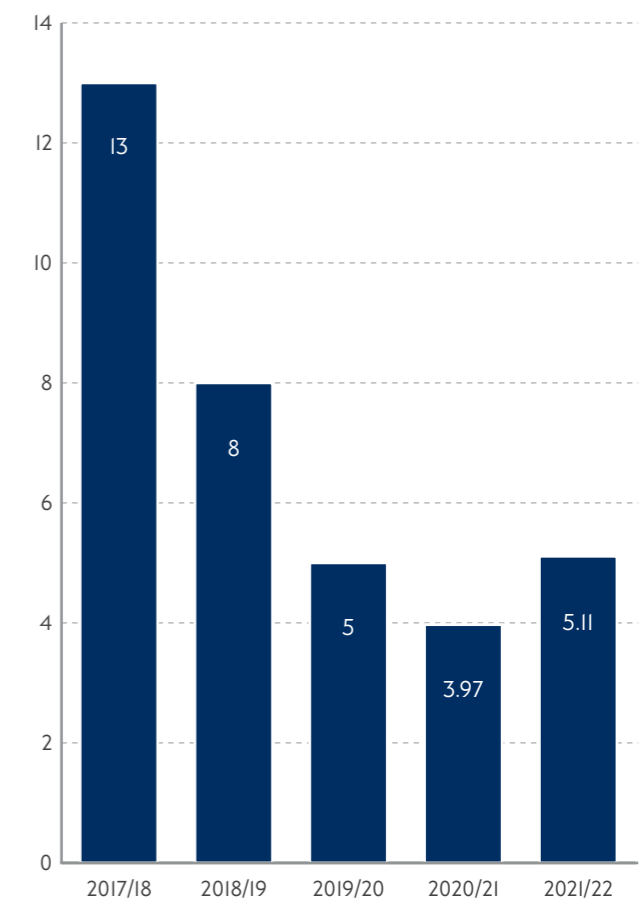


Nitrous oxide emissions from our buses (tonnes)



Our core bus fleet now meets or exceeds the Euro VI emissions standard. Nitrous oxide emissions from our fleet continued to fall this year as more zero-emission vehicles were introduced.

PM10 emissions from our buses (tonnes)



Particulate matter emissions increased slightly compared to last year, in part due to changes to emissions factors used in calculating the data, and with increased levels of services leading to higher estimated emissions from tyre and brake wear.



We estimate that London could need between 40,000 and 60,000 charge points by 2030, with up to 4,000 of these being rapid charge points

Infrastructure investment will encourage people to go electric

Supporting London's drivers to switch to electric vehicles

Our strategy for increasing electric vehicle uptake

London's ongoing investment in electric vehicles is tackling the twin dangers of air pollution and climate change. This supports the Mayor's wider target of decarbonising the transport network and for London to become a zero-carbon city by 2030.

The Mayor set out his vision on how to deliver the infrastructure needed by 2030 in the Electric Vehicle Infrastructure Strategy published in December 2021.

About a third of the country's total electric vehicle (EV) charge points are in London, showing a 55 per cent increase in the number of EV charging points delivered in the capital between 2019 and 2021. Through modelling, we estimate that London could need between 40,000 and 60,000 charge points by 2030, with up to 4,000 of these being rapid charge points that could fully charge a vehicle in as little as 20 minutes.

This means that there will soon be many more EV charge points across the capital, with a more equal spread of infrastructure access in inner and outer London. This will improve access for all users, and will be especially important for those people without off-street home charging and high-mileage users who have regular recharging needs such as zero-emission taxi and car club fleets. All parties will be better served by charge points being more evenly spread across the capital.



2.6million

tonnes of CO₂ emissions could be cut every year up to 2030 by switching to EVs

Improving our use of renewable resources

Capitalising on our waste heat and solar capabilities

We are the largest energy consumer in London and have committed to increasing the proportion of energy we consume from renewable sources as part of the Mayor's ambition to decarbonise the city.

The waste heat project builds on the success in one of our developments, and gives us the opportunity to offer the use of currently uncaptured thermal energy from ventilated air on the Tube network to power heating and hot water in buildings. This has the potential to serve more than 15,000 households.

The work of our solar private wire project will enable us to receive zero-carbon electricity directly from local solar assets, which will reduce carbon emissions, and focuses on the direct connection to new-build solar photovoltaic generation. We will be seeking a partner in the market to assess the sites and deliver the panels, on our agreement.

Work is progressing on both projects to establish the route to market and develop the contract strategy, specification documents and the production of a financial and carbon model.



Working to achieve zero carbon

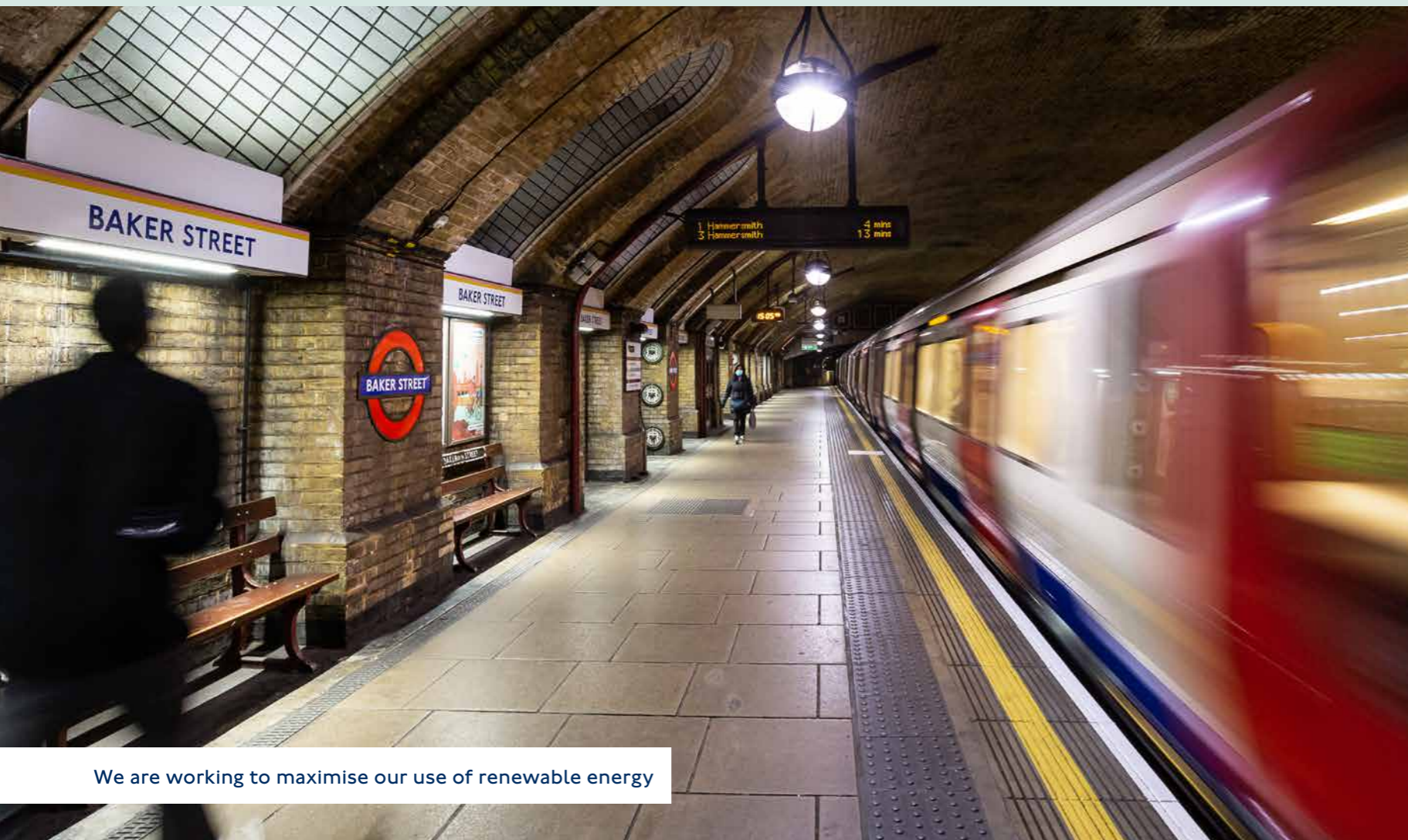
Our conference to support Zero Harm was an opportunity to discuss zero-carbon initiatives

Working with our supply chain will be critical to delivering our net zero carbon ambitions. A total of 43 different suppliers and more than 160 people from our business attended our Zero Harm Conference in February 2022 to share ideas on how to make real improvements to support London's net zero carbon target.

This was the first of our conferences to focus on carbon and was organised to help us better collaborate with our Capital suppliers, sharing practical ideas on the management and reduction of carbon in construction-related activities. The event included discussions on how the work of our Capital projects can play a part in reducing emissions and protect London's environment, and enabled us to show our vision of being a green heartbeat for London.

We had the opportunity to describe the key elements of our Corporate Environment Plan, including its environmental framework and ambitions. We had the opportunity to present real-life examples of how decisions at the project design stage can shift a project towards net-zero carbon among other innovations, along with examples of carbon reduction.

Together, we concluded that it is essential for everyone working in the Capital area to integrate effective actions for reducing carbon emissions as standard for us to get to our net zero carbon target as a city.



We are working to maximise our use of renewable energy

Increasing our use of sustainable resources

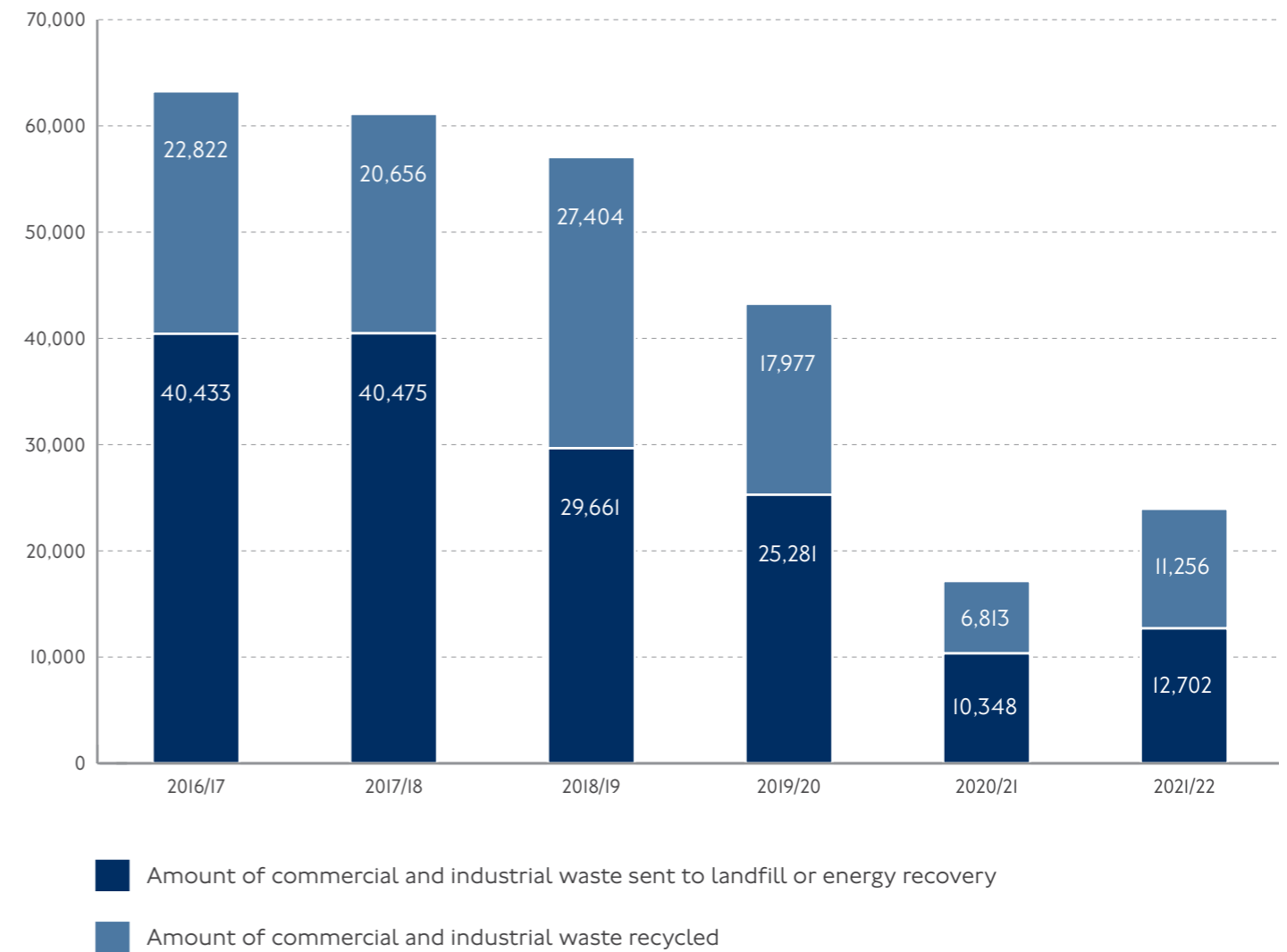
Waste and recycling performance

We are committed to making London a zero-waste city and embedding circular economy principles in how we operate, maintain and improve our network. The amount of commercial and industrial waste collected across our network increased this year as passenger waste went up in line with greater passenger numbers. The same was true of office waste compared to last year due to our staff returning to our offices.

Overall, 47 per cent of all our commercial and industrial waste was recycled, and more was diverted from landfill by being converted into energy in the waste recovery process. We have increased the number of dedicated recycling services at stations and depots to improved recycling, and will monitor the impacts and introduce more recycling facilities where possible.



Commercial and industrial waste collected and recycled (tonnes)



47%

of our commercial and industrial waste was recycled in 2021/22



Planting trees on our network

We are still ahead of our average one per cent target for planting trees on our streets and will continue to replace any trees that have had to be removed due to disease or for safety reasons next year to add to our mayoral target.

Tree planting in 2021/22

 **849**
trees planted

812
new tree locations 

 **24,581**
trees across the network

Integrating sustainable drainage systems

Making use of surface water run-off

Our work to incorporate Sustainable Drainage Systems (SuDS) across our infrastructure continued this year and we installed a rain garden in Wandsworth capturing 500m² of surface water run-off on our roads as part of our commitment. Water enters the SuDS from the footway via a perimeter kerb with drainage slots, and from the carriageway via three gullies connected to a perforated pipe in the foundation of the SuDS. As well as being an attractive feature, the rain garden will help support local biodiversity. The installation is part of our scheme to improve safety for all road users in this area.

We successfully secured £640,000 of funding from Thames Water for the delivery of new SuDS projects on our roads and are working with the Greater London Authority to identify schemes that use climate vulnerability data to make our roads better adapted to climate change.



Our rain gardens are designed to efficiently use surface water



Polychlorinated biphenyls on the Tube

Removing toxic substances from our equipment and systems

Polychlorinated biphenyls are substances in the environment that are toxic to humans and animals, and their use was banned in the UK in the 1980s. London Underground has equipment that contains components that predate this ban, with several electrical capacitors identified as being potentially dangerous. Following surveys and testing to pinpoint which components require removal, we have started programmes to replace these components and expect to complete this work by the end of 2023.

About Transport for London (TfL)

Part of the Greater London Authority family led by Mayor of London Sadiq Khan, we are the integrated transport authority responsible for delivering the Mayor's aims for transport. We have a key role in shaping what life is like in London, helping to realise the Mayor's vision for a 'City for All Londoners' and helping to create a safer, fairer, greener, healthier and more prosperous city. The Mayor's Transport Strategy sets a target for 80 per cent of all journeys to be made by walking, cycling or using public transport by 2041. To make this a reality, we prioritise sustainability, health and the quality of people's experience in everything we do.

We run most of London's public transport services, including the London Underground, London Buses, the DLR, London Overground, Elizabeth line, London Trams, London River Services, London Dial-a-Ride, Victoria Coach Station, Santander Cycles and the London Cable Car. The experience, reliability and accessibility of these services is fundamental to Londoners' quality of life.

We manage the city's red route strategic roads and, through collaboration with the London boroughs, we are helping to shape the character of all London's streets. These are the places where Londoners travel, work, shop and socialise. Making them places for people to walk, cycle and spend time will reduce car dependency, improve air quality, revitalise town centres, boost businesses and connect communities. As part of this, our expanded Ultra Low Emission Zone and fleets of increasingly environmentally friendly and zero-emission buses are helping to tackle London's toxic air.

During the pandemic, we took a huge range of measures to ensure people were safe while travelling. This included extensive cleaning regimes across the public transport network and working with London's boroughs to introduce the Streetspace for London programme, which provided wider pavements and cycle lanes so people can walk and cycle safely and maintain social distancing. London's recovery is vital to the UK's recovery as life returns to normal. We want to ensure London avoids a car-led recovery and we continue to reassure people the capital and our transport network is safe and ready for them.

We have constructed many of London's most significant infrastructure projects in recent years, using transport to unlock much needed economic growth. This includes major projects like the extension of the Northern line to Battersea Power Station and Nine Elms in south London, as well as our work at Barking Riverside and the Bank station upgrade.

Working with Government, we completed the Elizabeth line in time for Her Majesty the Queen's Jubilee. This transformational new railway adds 10 per cent to central London's rail capacity and supports the delivery of high-density, mixed-use developments, which are planned around active and sustainable travel to ensure London's growth is good growth. We also use our own land to provide thousands of new affordable homes and our own supply chain creates tens of thousands of jobs and apprenticeships across the country.

We are committed to being an employer that is fully representative of the community we serve, where everyone can realise their potential. Our aim is to be a fully inclusive employer, valuing and celebrating the diversity of our workforce to improve services for all Londoners.

We are constantly working to improve the city for everyone. This means using intel, data and technology to make services intuitive and easy to use and doing all we can to make streets and transport services accessible to all. We reinvest every penny of our income to continually improve transport networks for the people who use them every day. None of this would be possible without the support of boroughs, communities and other partners who we work with to improve our services. By working together, we can create a better city as London's recovery from the pandemic continues.

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July 2022

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