Board



Date: 9 November 2017

Item: Commissioner's Report

This paper will be considered in public

1 Summary

1.1 This report provides an overview of major issues and developments since the meeting of the Board held on 19 September 2017 and updates the Board on significant projects and initiatives.

2 Recommendation

2.1 That the Board note the report.

List of appendices to this report:

Commissioner's Report - November 2017

List of Background Papers:

None

Mike Brown MVO
Commissioner
Transport for London
November 2017

Commissioner's Report

9 November 2017



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'. We are committed to creating a 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 on foot, by cycle or using public transport by 2041. To make this a reality, we prioritise health and the quality of people's experience in everything we do.

We manage the city's 'red route' strategic roads and, through collaboration with the London boroughs, can help 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 and improve air quality, revitalise town centres, boost businesses and connect communities.

We run most of London's public transport services, including the London Underground, London Buses, the Docklands Light Railway, London Overground, TfL Rail, London Trams, London River Services, London Dial-a-Ride, Victoria Coach Station, Santander Cycles and the Emirates Air Line. The quality and accessibility of these services is fundamental to Londoners' quality of life. By improving and expanding public transport, we can make people's lives easier and increase the appeal of sustainable travel over private car use.

We are moving ahead with many of London's most significant infrastructure

projects, using transport to unlock growth. We are working with partners on major projects like Crossrail 2 and the Bakerloo line extension that will deliver the new homes and jobs London and the UK need. We are in the final phases of completing the Elizabeth line which, when it opens, will add 10 per cent to London's rail capacity.

Supporting the delivery of high-density, mixed-use developments that are planned around active and sustainable travel will ensure that 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 freezing fares so everyone can afford to use public transport, using 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. We all need to pull together to deliver the Mayor's Transport Strategy; by doing so we can create a better city as London grows.

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I Introduction

This report provides a review of major issues and developments since the Board meeting of 19 September.

2 Safety and security

Croydon tram derailment

This report comes to the Board on the first anniversary of the tragic tram derailment at Sandilands, on 9 November 2016. Our thoughts remain with all those affected and we continue to do all we can to offer our support.

Since the derailment, we have introduced a number of additional safety measures to the tram network, including extra speed restrictions, enhanced speed monitoring, new signage for drivers and an upgrade of the CCTV recording system.

An in-cab driver protection device has been fitted to all trams. Any sign of driver distraction or fatigue will result in the driver being alerted immediately.

We continue to work with the wider tram industry on these improvements and are considering what further measures could be introduced to improve safety.

We have actively worked with the Rail Accident Investigation Branch (RAIB) and will support all recommendations contained in its report when it is published, which we understand will be by the end of the year.

The Sarah Hope line continues to be available, providing counselling and other support.

Parsons Green

The driver and our station staff responded quickly to the incident involving an explosive device at Parsons Green on I5 September. Their prompt action helped to reduce the risk to our customers on the trains and at the station.

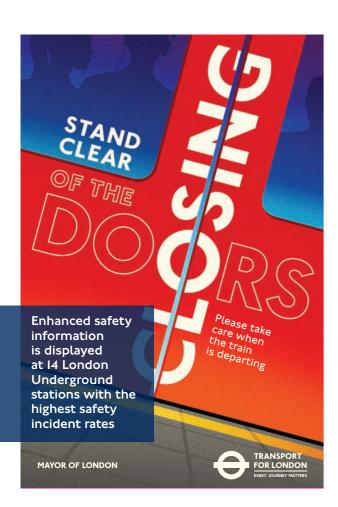
Increasing on-street security

On I6 October, we hosted a multi-agency workshop to discuss and agree to a range of protective measures for use in new street designs. We will continue to work with our partner agencies on hostile vehicle mitigation measures on central London bridges, to improve access for pedestrians and cyclists and ensure bus services can operate reliably.

Customer safety

Our customer safety campaign across London Underground continues with enhanced safety information on 4I escalators across I4 stations with the highest or increasing safety incident rates. This is part of our campaign that also encourages customers to keep clear of the closing train doors and to take extra care on stairs.

Our Travel Ambassadors recently completed a trial supporting customers who are unfamiliar with the network. The trial focused on managing risks on escalators at the four stations where



there are the most accidents: Waterloo, Oxford Circus, King's Cross and London Bridge. The Travel Ambassadors helped direct customers towards lifts, assisted nervous customers on escalators and intervened where they could to help reduce accidents. We are exploring how we can build on this positive work, particularly during holiday periods.

Workforce and construction supplier safety

Our target for this year is to decrease workforce injuries in London Underground by I7 per cent, and we have an agreed workforce safety improvement plan to achieve this. The plan's dual focus is on good safety leadership – showing we care – and making safety personal for everyone in the workforce. We will achieve this by improving processes and encouraging our people and our suppliers to find solutions to safety challenges. Senior managers have been meeting local teams and reinforcing the message about making the Underground safer.

Over the past year, we have introduced new manual handling training for staff in our maintenance teams, and we are now launching this for our fleet staff. We have seen a 10 per cent drop in workforce injuries compared to last year.

We are also focusing on the safety of frontline construction staff. Our 'Zero Harm' programme continues with suppliers to help share good practice. We are focusing on the importance of safety as a core value and we are setting up a safety improvement group to address the increasing incidence of slips, trips and falls.

Streetworks prosecutions

BT has been fined after we successfully prosecuted the company for serious lapses in safety that put the public at significant risk in Lambeth. It is the second time in 12 months we have taken BT to court for unsafe working practices as part of our commitment to tackle poorly managed or unsafe roadworks.

The prosecution follows unsafe work carried out on Streatham Hill at the junction of Leigham Court Road, Lambeth on I March. BT failed to properly sign and guard the working area, enabling pedestrians to walk dangerously close to heavy plant and machinery.

On 4 October, BT pleaded guilty at Westminster Magistrates' Court to the unsafe execution of streetworks with significant risk to public safety and was fined £25,000 – the highest fine imposed to date in London for safety breaches – and ordered to pay a further £2,764 in court costs.

Cadent Gas Ltd (formerly National Grid Gas) was also prosecuted for unsafe execution of streetworks and a failure to cooperate with us in mitigating the risk to public safety. The two offences were committed between I7 and 22 March 2017 when Cadent Gas Ltd failed to comply with safety regulations in the course of

carrying out works in Burdett Road, by the junction of Thomas Road, on our road network in Tower Hamlets. The company did not properly sign and guard the work area and forced vehicles into the opposite lane which could have caused a serious collision. It also failed to address the management of traffic in relation to the works, despite our repeated demands for it to do so.

Cadent Gas Ltd pleaded guilty to both offences and was fined £10,000 and ordered to pay our prosecution costs of £3.004.

Improving bus safety

Our Bus Safety Programme is contributing to the Mayor's Vision Zero approach of reducing road danger. It aims for no one to be killed in or by a London bus by 2030, and for deaths and serious injuries from road collisions to be eliminated from London's streets by 2041.

We recently appointed the Transport Research Laboratory to conduct a study into incidents involving London buses. This will help us prioritise measures to reduce or eliminate casualties, such as:

 Marketing and communication campaigns for drivers, customers and other road users

- Highway and junction design
- Parking/loading restrictions
- Driver training

Vision Zero – boroughs' workshop

On 16 October, we hosted a workshop with senior officers from London boroughs to improve awareness and understanding of the Vision Zero approach. The workshop enabled discussion and contributions to the proposed strategy and delivery plan and the sharing of knowledge, views and ideas on how they can be achieved. The workshop provided an opportunity to propose and discuss new opportunities for road danger reduction and how we can work better together in partnership.

Improving motorcycle riding standards

We want to increase and improve motorcyclist training and raise the standard of motorcycle delivery company operations. On 24 October, we launched a new package of motorcycle safety initiatives: developing a new Fleet Operator Recognition Scheme standard for motorcycle delivery companies, and offering a range of rider training schemes aimed at different riding audiences. These initiatives will contribute to delivering the Mayor's Transport Strategy proposals to improve the safety of vulnerable road users.

Direct Vision Standard

We are developing a Direct Vision Standard to ensure that Heavy Goods Vehicles (HGVs) on London's roads are as safe as possible by providing drivers with direct vision of vulnerable road users around them.

On 22 September, we published the interim star ratings for the Direct Vision Standard for Euro VI HGVs. We also set out how an HGV permit scheme, combining the standard with current, recognised safety measures, would be the best way to improve the safety of lorries on our roads. This was the result of intensive consultation and discussion with the freight industry, vehicle manufacturers and vulnerable road user groups. We will continue to work with these stakeholders during the next phase of consultation starting in November.

Safer Travel at Night

As part of our work to improve the safety of travelling by taxi and private hire vehicles in London, officers from TfL and the Metropolitan Police Roads and Transport Policing Command were mobilised over September and October. This was part of Operation Safer Travel at Night (STAN) to deter and disrupt illegal taxi and private hire activity and get people home safely.





The operation coincided with the beginning of the new academic term when there is an influx of new students to London who are often unfamiliar with the rules for using taxis and minicabs in the Capital. Officers were out engaging with members of the public to raise awareness of the ways to get home safely using a taxi or a minicab and the dangers of using unbooked minicabs. This included engagement both with students at university events across London and with venue door staff in priority locations.

Officers talked to members of the public about the importance of reporting any sexual offences or driver conduct that made them feel uncomfortable so that it could be investigated by TfL and the police, and action taken against any drivers found to be behaving in a criminal or inappropriate manner.

The operation also involved high-visibility patrols in priority areas to deter illegal activity as well as plain clothes patrols, roadside taxi and private hire vehicle and driver checks, private hire operator visits, crime prevention advice and the following up of intelligence leads linked to taxi and private hire journey-related sexual offences.

Planning is under way for the December phase of Operation STAN, which will see an uplift in engagement and enforcement activity across London to help people get home safely over the festive period.

National Hate Crime Awareness Week

Between I4 and 2I October, we worked with the police services and others to support National Hate Crime Awareness Week, which raises awareness of what a hate crime is and how to report it.

We took part in at least one event in each London borough on each day of the Hate Crime Awareness Week, at community centres, transport hubs and on the network. We started the week with a press launch showcasing how we work with partners in the British Transport Police, Metropolitan Police Service and Tell MAMA (Measuring Anti-Muslim Attacks), as well as a community event at

the East London Mosque and a journey on the Route 25 bus. We ended the week at Stratford Bus Station.

Alongside these events, we launched an internal Hate Crime E-Learning course and events were set up in our offices to promote the course and raise awareness among our staff.

Uber private hire licensing decision

On 22 September, we informed Uber London Limited (ULL) that it would not be issued with a private hire operator licence at the expiry of its licence on 30 September. We concluded that ULL is not fit and proper to hold a private hire operator licence.

We considered that ULL's approach and conduct demonstrate a lack of corporate

responsibility in relation to a number of issues that have potential public safety and security implications. These include its approach to:

- Reporting serious criminal offences
- How medical certificates are obtained
- How Enhanced Disclosure and Barring Service (DBS) checks are obtained
- Explaining the use in London of Greyball – software that could be used to block regulatory bodies from gaining full access to the app and prevent officials from undertaking regulatory or law enforcement duties

ULL submitted an appeal to the Westminster Magistrates' Court on I3 October against our decision. ULL has requested that the first hearing takes place on a date to be fixed by the Court from II December 2017.

Following an approach from ULL, and at the Mayor's request, I met with the company's global CEO in London on 3 October. The constructive meeting centred on what needs to happen to ensure a thriving taxi and private hire market in London, where everyone operates to the same high standards.

3 Healthy Streets and healthy people

Walking and cycling

Cycle Superhighways

We ran a public consultation for Cycle Superhighway 9 (Kensington Olympia to Brentford High Street) from 2I September to 3I October. Our proposals include creating a safe and convenient cycle route between Olympia and Brentford, including linking the town centres of Chiswick and Hammersmith. We are also proposing to make improvements for pedestrians, alongside measures to remove so called 'rat-running' on some residential roads in Chiswick, and local improvements to tackle problem junctions.

On 28 September, we launched a public consultation for Cycle Superhighway 4 (Tower Bridge Road to Greenwich). Our proposals include a continuous segregated cycle route, new pedestrian crossings, and improved public spaces. The consultation is due to close on 19 November.

Vauxhall

We are working closely with the London Borough of Lambeth to return the one-way road system at Vauxhall to two-way, and improve the area for pedestrians and cyclists, with construction planned to start in 2019. On 6 October, we submitted a planning application to Lambeth for the proposed bus station buildings, following several public engagement events earlier this year.

Rotherhithe to Canary Wharf Crossing

This important new cross river connection for pedestrians and cyclists in east London will improve sustainable travel choices and support growth. As part of the development of the business case for the scheme, we have evaluated the possible solutions looking at costs, benefits, risks and other considerations. On I3 October, a paper was presented to the Programme and Investment Committee that recommended the provisional selection of a bridge as the preferred option to be developed in more detail.

Work is now underway on the design, considering factors such as landings, alignment and spans, heights and clearances above water, access arrangements and lifting mechanisms. The options for the new crossing will be the subject of a public consultation plan to start this month.

Dockless Cycle Hire – code of practice published

The potential to get more people cycling is huge, and dockless bikes are a way to make cycling more accessible while complementing London's existing public transport network.

On 8 September, as a result of our engagement with the London boroughs, Department for Transport, the Metropolitan Police Service and the



Royal Parks, we launched our 'Dockless bike share code of practice'. The code outlines the requirements that operators are expected to meet in order to run dockless cycle hire in London safely, and support the goals of the draft Mayor's Transport Strategy.

The code complements the existing legal and regulatory framework and will be updated as necessary to reflect best practice and the interests of all Londoners.

Autumn ambles

More than 2,200 people took part in over 40 walks on 23 and 24 September. New walks included a Rock 'n' Roll music tour in Camden, a tour around parts of Shoreditch and a dementia-friendly stroll in Southwark. The next weekend, 'Winter Wanders', will take place in February.

Events

After an extremely busy summer period we continue to support major events in the capital. Most recently, we supported the NFL International Series matches at Wembley and Twickenham, the annual street party on Regent Street, the Ealing half marathon and London Poppy Day.

Streets

Oxford Street

We are working jointly with Westminster City Council on the proposals for transforming Oxford Street, and in October we published a detailed report responding to the issues raised from the public consultation which closed on 18 June. More than 12,000 responses were submitted from a wide range of local residents, businesses and stakeholders, with 62 per cent of respondents supporting the transformation of the area. We are working with Westminster to address local concerns and develop designs to create one of the world's best outdoor shopping experiences.

Together with Westminster City Council, we will carry out a further public consultation in November, outlining our plans in more detail as well as the effects our proposals are likely to have. Subject to the results of this consultation, works could start on site in summer 2018.

Transport for London Lane Rental Scheme

We have been successfully operating the Transport for London Lane Rental

Scheme on 56 per cent of our network since 2012. The current regulations contain a sunset clause that means the scheme will end in March 2019.

The scheme has been successful and we believe it should continue, so we ran a consultation, which closed on 16 September, to extend the sunset clause.

In parallel, we ran a second consultation on the detailed operation of the scheme, which closed on 28 September. This looked at whether the scheme should continue in London, and whether other local authorities should be able to introduce it on their roads.

We are now awaiting the decision from the Government regarding a way forward following both of these consultations.

Launch of Stratford Gyratory

The London Borough of Newham began work in October to remove the gyratory system around Stratford town centre. The improvements are being funded through the Local Implementation Plan Major Scheme programme and will be carried out in phases until spring 2019. The plan will create a more attractive, accessible and people-friendly town centre, replacing the one-way system with two-way traffic, and with segregated cycle facilities around Stratford. Other benefits include wider pavements, improved local spaces, better lighting and more street trees, in line with the Healthy Streets approach.



Ardleigh Green Bridge replacement

We are replacing the current structure on the AI27 Southend arterial road in the London Borough of Havering. Following the installation of one half of the new bridge in September, highway works are progressing well, with major elements such as drainage and highway foundations completed. We are on track to finish the lighting and traffic switch by December 2017, with full re-opening of the highway on schedule for spring 2020.

Highbury Corner

In October, we completed the planned utility diversions for the demolition of Highbury Corner Bridge, which will take place during a 20-day closure over Christmas this year. The bridge will fully re-open to traffic in early 2018.

In November, we will publish our response to the consultation on our proposals for improving the Highbury Corner area. We intend to proceed with the proposals



to make the area more pleasant and accessible. We have considered feedback and made some changes to our proposals, including partially opening the arboretum to the public, extending the cycle lane on Canonbury Road, and curtailing bus route 277 at Dalston. We are now further developing the design, and construction is planned to start in 2018, after the current bridge works are completed.

Power Road Bridge

We are replacing the Power Road Bridge that carries the A406 North Circular Road (Gunnersbury Avenue) over Broad Street to Old Kew railway line.

Following the successful phase I demolition of the western side of the bridge, we are on track to complete the reconstruction and switch traffic on to the new western deck in March 2018. Phase 2 demolition of the eastern deck will take place in Easter 2018.

A406 Staples Corner

Working through the night over two weekends, we successfully replaced expansion joints on the A406 Staples Corner flyover and re-opened the bridge on the morning of II September. We took the opportunity to carry out a number of routine maintenance activities and capital works that will save at least six nights of closures over the next I2 months.

Westminster Bridge South

This project will introduce significant improvements and connectivity for pedestrians and cyclists.

On 2I September, we commissioned the traffic signals at Lambeth Palace Road/ Westminster Bridge Road junction, and we began construction of the north and southbound bus stop bypasses and realignment of the pedestrian crossing on Lambeth Palace Road in early October. The project is on track to be finished by Christmas 2017.

Connected and Autonomous Vehicles – Innovate Competition

On 19 October, the Government announced the winners of a recent Innovate UK competition for a share of funding for a test centre for Connected and Autonomous Vehicle technology. We are a contributing partner to the project, which is being led by Transport Research Laboratory and Digital Greenwich.

This project helps strengthen the development of London's digital economy and provides us with the opportunity to test some important infrastructure in a controlled environment, for example monitoring congestion and air quality. We will be able to use the information gathered to feed into our investment plans for traffic

management systems. We expect the test centre, based in the Queen Elizabeth Olympic Park and Greenwich, to be operational within 18 months.

Improving Air Quality T-Charge go-live

On 23 October, the new £10 'T-Charge', the toughest emission standard of any world city, started in central London. A free online vehicle checker is available on our website to help motorists check

whether their vehicle will be affected.

Up to 6,500 of the oldest, most polluting vehicles are expected to be potentially liable for the new emissions standard, which will apply to motorists who own vehicles that do not meet Euro 4 standards – typically those diesel and petrol vehicles registered before 2006.

The T-Charge (also known as the Emissions Surcharge) will operate on top of, and during the same operating times as, the Congestion Charge (Monday to Friday 7am-6pm), so it will cost £21.50 per day to drive a pre-Euro 4 vehicle in the zone.

Cleaning the bus fleet

We remain on course to deliver the Mayor's air quality objectives by making the bus fleet cleaner, with zero-tailpipe-emission technologies. Route RVI between Covent Garden and Tower Gateway is now predominantly hydrogenfuelled as two additional Van-Hool vehicles have entered service.

With these new vehicles we now have 10 fuel-cell buses in our fleet. Our pure electric fleet will increase to 120 vehicles by early next year, then to 170 in 2019, following the award of contracts to convert routes CI, 46, 70, 153, 214 and 360.

To date, we have delivered just over 1,500 ULEZ-compliant buses into service as part of a retrofit programme of conventional diesel vehicles to bring them up to the Euro VI engine emission standard.

Rapid charging infrastructure

We are installing rapid charging infrastructure to support the decommissioning of the oldest, most polluting taxis and achieve the goal of having 9,000 zero emission capable taxis on the roads by 2020. The move will also encourage vehicle owners to switch to electric vehicles.

The first sites became operational in October. Individual operators are responsible for operating the points, servicing and accepting payment. Some may offer membership schemes too and most offer pay as you go mechanisms. We are continuing to make progress towards the target of delivering 100 rapid charge sites by the end of March 2018. On 6 October the first five sites on our land were commissioned. Over the next three years, 300 new rapid charging points will be installed on borough and private land, as well as our own land.

4 A good public transport experience

Open data – boosting London's economy

On I3 October, we published research by Deloitte showing that our open data is generating annual economic benefits and savings of up to £I30m a year for customers, road users, the city and for TfL.

More than 80 data feeds are now available for developers through the free unified Application Programming Interface, which ensures accurate real-time data is available from one system for more than I3,000 developers.

For almost 10 years, we have been releasing a significant amount of data, such as timetables, service status and disruption information. It allows developers to create products and services quickly, and extends the reach of our information channels within stations, at bus stops and online.

We have worked with both professional and amateur developers, ranging from start-ups to global innovators, on new products in a form that customers want to use. More than 600 apps are being powered specifically using our open data feeds, used by 42 per cent of Londoners.

The report found that our data saves time for passengers and allows them to plan their journeys better, travel more easily and take more journeys. At the same time the research showed the scale of the commercial opportunities we are creating for developers and the value and savings we are generating through partnerships with major technology platforms.

New customer information trial

We have started a trial at Shoreditch High Street station with Arriva Rail London to help customers have better journeys on London Overground by informing them how busy the next trains will be. Using new technology, customer information screens show – by means of green, amber or red lights – the individual carriage capacity of the next two trains, enabling easier boarding.

As well as improving customer journeys, this could also enhance service reliability by reducing the time taken for people to board. The technology analyses historic 'loadweigh' data from the trains, alongside back-office data on station entrances and exits, to predict and display carriage capacity.

The trial is expected to last until December and, if successful, could be expanded to more stations. The project has been funded by the Department for Transport's Station Innovation programme in partnership with Innovate UK and the Transport Systems Catapult. The provision of this data is part of our wider customer information strategy, providing more helpful, real-time information using new technology to improve journeys.



Car Free Day

On 22 September, our schools and young people team ran a special and highly imaginative 'STARS' Car Free Day as part of World Car Free day. The STARS programme – Sustainable Travel, Active, Responsible, Safe – helps primary and secondary school children adopt safe and sustainable ways of travelling to school and has grown from 180 schools in 2007 to 1,420 in 2017, with participating schools achieving an average of six per cent decrease in car use. The objective was to trigger behaviour change at the start of the school year when new travel habits are formed and to encourage schools to get more involved in sustainable travel.

Elizabeth line

Crossrail construction progress and railway fit-out

The project is approaching 90 per cent complete. It remains on schedule to open

as planned in December 2018 and Crossrail Limited continues to forecast that the programme will be delivered within its $\pounds 14.8$ billion overall funding envelope. The key risks continue to be Crossrail Ltd's management of cost and schedule pressures on a small number of contracts, and Bombardier's software development and testing for the new Elizabeth line trains. We are monitoring both of these risks closely at senior levels.

The Elizabeth line project recently celebrated a significant milestone with the completion of the permanent track for the line. The final rail clips were put in place 35 metres below ground, at Whitechapel station. A team of more than 1,000 people has installed 63,000 sleepers, 51,419 metres of rail and over 800 sections of long welded rail which make up the new Elizabeth line tracks.

With the track fully laid, the project has entered a new phase as construction trains can now travel the full length of both new tunnels from end to end.

With just over a year to go until the Elizabeth line opens, the project is now focused on installing platform screen doors, signalling, tunnel ventilation and communications systems along with the overhead lines that will power the new trains.

Seventeen escalators have been fully custom built at Canary Wharf station and the frameworks for 37 more have been completed at Paddington, Bond Street, Tottenham Court Road, Farringdon and Liverpool Street. Together, these add up to I.6km of escalators.

In total, 8I escalators will be installed and commissioned at nine new Elizabeth line stations between Paddington and Woolwich, with a total length of 2.8km. In addition, we are installing 54 lifts at these nine stations and all 4I stations on the Elizabeth line will have step-free access.

Significant attention continues on the safety regime and construction as well as the plans for testing and commissioning, regulatory approvals, operational readiness and handover in mid-2018 to ensure a period of trial running and operations before Elizabeth line passenger services begin at the end of 2018.

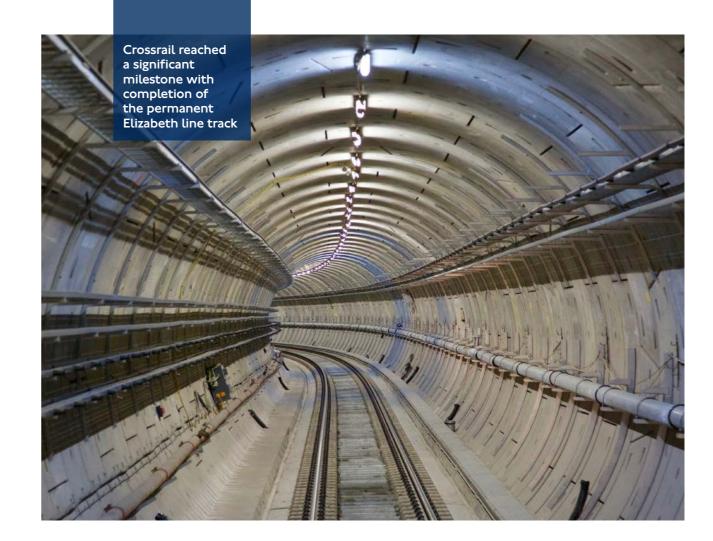
Network Rail's surface works

The upgrade of the existing rail network for Crossrail, being carried out by Network Rail. continues. Overall. the work is 90 per cent complete. Additional funding is required to ensure that the scope of the surface works is delivered in full, including station upgrades to the east and west. Crossrail will continue to push Network Rail for the more detailed construction schedule for the station building upgrades due to be completed by December 2019. The main works tender for upgrade of the western stations was issued in October 2017 to enable phased completion of the station upgrades between September-December 2019.

There has been a strong focus on the installation of CCTV, platform extensions and gauging work on the western surface section as well as preparation for the critical works being carried out over Christmas. The striking new station at Abbey Wood was handed over for management by MTR (operator of TfL Rail and the Elizabeth line) in October.

New Elizabeth line trains

Three of the new Class 345 trains are now running every day between Liverpool Street and Shenfield. They are part of a fleet of 70 that will operate on the new line. The trains will initially be 160 metres long and made up of seven carriages, and will later be extended to nine carriages and the full length of 200 metres to carry up to 1,500 people.



London Underground

Northern line extension

The Northern line extension will provide two new stations, at Battersea Power Station and at Nine Elms, with two new tunnels linking Battersea with the Northern line at the Kennington loop.

We have now completed enabling works for the junctions between the Kennington Green and Kennington Park tunnels and the existing Northern line in preparation for removing I20 cast iron tunnel rings from the Kennington loop by the end of November. Following this, we will install new track junctions, signalling, and points and crossings at each of the two junctions to create the permanent connection between the current line and the new extension over I0 days at Christmas.

Both tunnel boring machines (TBMs) have made good progress towards the two Kennington ventilation shafts, where their journeys will end. With the tunnels complete, we will remove the TBMs and associated equipment via the Kennington shafts or pull them back into the Battersea crossover box. Once we have done this, we can begin completing the crossover box, which is an integral part of the new Battersea Power Station underground station.

The Battersea Power Station roof level capping beams and cross beams have been completed on time, enabling the lower level basement excavation to progress.

Both TBMs have passed through Nine Elms station box where excavation activities are under way and planned for completion in spring 2018.

Modernising the Circle, District, Hammersmith & City and Metropolitan lines

We are preparing trains for automatic train control (ATC) running on the Metropolitan, District, Circle and Hammersmith & City lines from 2018. ATC systems control train movements, giving a more frequent and reliable service. The modifications include new antennas, changes to the train cab and other equipment for reading the train's position. By the end of September, 30 trains had been modified. We are on track to complete 50 of the 192 S stock trains by the end of the year.

The ATC train simulator is in operation at Hammersmith and we have completed pilot training sessions for drivers. We have recently operated the first train on the main network using our new communications-based train control (CBTC) signalling. The S stock train ran in protected manual operation with legacy signalling protection between Goldhawk Road and Latimer Road. The test was successful, with no weak spots detected. This is a major milestone for the modernisation project, showing that our new communications system works. It keeps us on track for the first signalling area (between Hammersmith and Paddington) to come into service next year.

Thales' signalling upgrade has begun on four of the I4 signalling migration areas, and two more are due to begin this quarter. We are writing to lineside neighbours to tell them about the work we are doing. We now have I2 of the 46 signalling equipment rooms (SERs) ready to have ATC equipment installed. A further 28 SERs are currently in construction and we are evaluating tenders for another five.

Work to deliver the track layout has progressed ahead of plan, with layouts at Rayners Lane now in service, and 24 of the 29 more reliable new layouts complete.

Metropolitan Line Extension (MLX) – Mayoral Decision (MD2170)

Responsibility for delivery of the MLX was transferred to us from Hertfordshire County Council on 20 November 2015 following a direction from the previous Mayor. Under those arrangements we were directed to provide up to £49.23m towards the cost of delivery and be responsible for costs above the £284.4m funding package.

Since taking over the MLX, we have worked with the supply chain to progress the design and obtain market prices for delivery. These show that the outturn cost will be significantly in excess of £284.4m. The increased project costs weaken the MLX business case and that along with the loss of its operating grant mean we are no longer able to bear cost risk.

On 28 September 2017, the Mayor directed us to continue to provide up to £49.23m towards the MLX but to no longer be

responsible for costs above the current £284.4m funding package. We are directed to close out our current activities on the scheme and not begin any new activities unless and until arrangements to provide additional funding for the scheme are put in place.

The Transport and Works Act Order powers necessary for us to deliver the MLX expire in August 2018. In order for us to remobilise and undertake the work required to keep the powers intact, a revised funding package, with revised funding terms, will need to be agreed by 31 December 2017. The Programmes and Investment Committee will be kept updated on this.

Bank

We are working to increase capacity at Bank station by 40 per cent. Piling for the new station box is more than 80 per cent complete, and the tunnelling work is progressing well with over 220 metres of sprayed concrete lining now finished.

We are scheduled to complete the new electrical rooms and a purpose-built cable shaft in November. This is a key milestone for the project as it enables us to hand over the site to our power contractor for the I2-month installation of the new station high-voltage transformers, freeing space so that we can build the new Central line triple escalator.

We have created a new staff welfare facility to replace the old station

operations room, and removed the redundant analogue station systems.

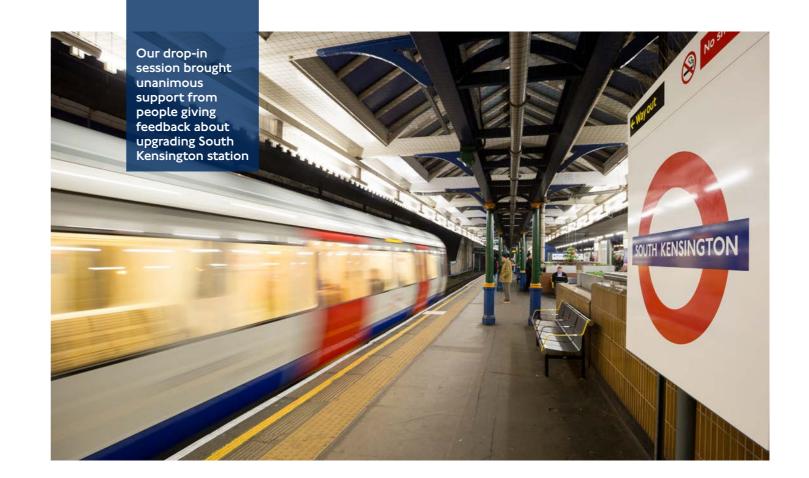
We have finished high-level work on ceilings and services for the new Waterloo & City entrance in the Bloomberg building. Next, we are manufacturing and installing vitreous enamel finishes to the lifts, columns and public stairs.

Bond Street

At Bond Street works are progressing towards the opening of the new station elements, including the new ticket hall, new interchange passageways from the Central line to the Jubilee line and step-free access from the new ticket hall to platforms. Final inspections and trial operations are under way. Lifts and escalators are also having their final inspections. We expect the station to come into use by the end of the year and the contractor is seeking opportunities to improve the date.

Victoria

We continue to modernise Victoria for the nearly 9I million customers who use it every year. Work continues on the east and westbound link passages to the District and Circle lines, the associated lifts and the new south ticket hall escalators. We plan to open the new station in stages, with completion in 2018. We continue to work on fire and communications systems, and the mechanical, electrical and architectural fit-out in the remaining tunnels linking the south ticket hall.



Paddington

Our work on the step-free link between the new Elizabeth line station at Paddington and the Bakerloo line is on schedule. We have now completed the steps and chains, floorplates and handrails of the two new escalators as planned.

We have substantially finished the cable management system, and installed the power cables linking through the Crossrail station.

The ceiling raft is in place throughout the link. A collaborative work programme has allowed us to complete the work above the escalators in parallel with the escalator installation going on below. The panelling in the main link is progressing.

Holborn

We have launched a public consultation on our plans to improve Holborn station. The station is one of the busiest in London, with hundreds of thousands of people using it to commute and to visit the area every day.

The proposed modernisation would more than double the station's size, increasing capacity by around I40 per cent, as well as creating a new second entrance and exit on Procter Street.

Step-free access would also be provided as part of the plans, with three new lifts in the existing Kingsway entrance. Seven

hundred metres of tunnel would create new interchange routes between the Central and Piccadilly lines, helping cut down on crowding during peak periods.

The consultation will run until 17 November.

Finsbury Park

Our work to turn Finsbury Park into a step-free station is progressing well. We are installing two lifts and refurbishing the southbound staircase. We are on track to complete the basic construction work by spring next year.

Fitting out will then begin, with step-free access ready by the end of 2018.
Alongside this, builders are also busy constructing a new western entrance to the station, due to open in 2019. We are working very closely on the project with Network Rail and the train operator, Govia Thameslink Railway.

Tottenham Hale

We are modernising Tottenham Hale station to create a fully accessible, integrated transport hub for customers travelling on our network and National Rail (NR) services.

Building on the Mayor's pledge to regenerate the area, the £30m upgrade will have wide-reaching benefits for customers. It will also provide a welcoming station entrance for those travelling to Stansted Airport.

Sitting alongside our upgraded bus station and taxi rank, the new station building – more than four times bigger than the current footprint – will provide LU and NR services under one roof, and enable customers to travel seamlessly between platforms.

Our contractors, Hochtief UK, began work last year and the scheme is now a quarter of the way through. Piling foundations to support the new station are being installed and a retail unit, which will sit beside it, is taking shape.

Alongside the new station, we are extending and improving the existing NR footbridge to provide better links to community facilities, such as the Hale Village development, which is bringing more homes to the area. The modernisation will also ensure the station can cope with increased customer numbers and London's predicted population growth.

South Kensington station improvements

On 19 September, we held a public dropin session showing our plans for the station upgrade at South Kensington, and our search for a joint venture partner. The session was attended by more than 90 people, and all of those who filled in feedback forms supported our proposals to increase capacity at the station.

Camden Town Unlimited lease

We have been working closely with the council and local community to shape our plans for station capacity, accessibility, and over station development at Camden Town.

Following discussions, we are pleased to announce that Camden Town Unlimited, the local Business Improvement District, is moving into the former Auction Rooms behind Camden Town station. We are providing this building to Camden Town Unlimited temporarily at a peppercorn rent so it can run its operations.



Rail Night Overground

We are finalising preparations for the launch of Night Overground in December. Services will run all night on Fridays and Saturdays on the East London route between New Cross Gate and Dalston Junction initially, before being extended to Highbury & Islington next year. The East London section of the Overground route serves an area popular for museums, restaurants, bars and night spots. It will connect with the Night Tube at Canada Water on the Jubilee line and, from next year, Highbury & Islington on the Victoria line, with Whitechapel station added next summer following completion of Elizabeth line works.

This year marks the tenth anniversary of the London Overground. Since we took over suburban rail routes in 2007, passenger numbers have increased six-fold and the network is regularly in the top three most reliable railways in the country.

London Overground Customer Service Consultation Launch

We have announced plans, along with Arriva Rail London (ARL) which operates London Overground, to review and modernise customer service on the network.

We are delivering an ambitious programme of improvements on the Overground network, which includes the Night Overground services (above) from

December and a new fleet of trains on many lines next year. To further improve customer service, ARL will begin meeting with its staff and trade unions to discuss a range of initiatives, including making London Overground staff more visible and available at stations, providing assistance and information where it is most needed, and modernising the process for selling tickets to reflect changes in how people are paying for their travel.

As part of the programme, ARL is considering increasing the number of staff it directly employs in permanent roles, and reducing reliance on agencies to cover customer service positions. The proposed new positions would be multifunctional so that staff are skilled to work in different areas of customer service, such as helping vulnerable people on their journeys. The plans are being developed so that there will not be a need for compulsory redundancies. All stations

will continue to be staffed at all times while trains are running.

The plans fully reflect the lessons we have learned from customer service improvements on London Underground, as well as recommendations from London TravelWatch's review into the London Underground programme published last year.

High Speed 2 (HS2)

HS2 achieved Royal Assent for Phase I in February 2017, which will deliver fast passenger services between Birmingham and London by 2026. The project includes two significant new stations at London Euston and Old Oak Common, with the latter also serving the Elizabeth line. The Euston Four Stations Masterplan (incorporating HS2, National Rail, LU and Crossrail 2), led by HS2, is nearing completion – but the work at this stage is not expected to confirm the full transport implications, with HS2 largely proceeding in line with the hybrid bill design until a Master Development Partner is appointed by DfT in January 2018. Known operational impacts on our roads and services are being assessed and planned for where possible, however their full extent will not be known until HS2's construction contractors are appointed in early 2018. A collaborative agreements workshop was held with HS2 on 25 September, with consensus achieved on a number of points relating to the agreement's structure.

Buses

Speeding up the bus network

We have delivered more than 80 of our planned I70 bus priority schemes for 20I7-I8 across I8 London boroughs, both on our roads and borough road networks. One such scheme is the creation of an extra lane on the northbound approach to Rotherhithe Tunnel, which is estimated to deliver 2.5 minutes of journey time saving per bus in both directions. These schemes have provided aggregated bus journey time savings of more than one hour.

Kingston Cromwell Road Bus Station

We awarded the contract to complete the detailed design for Kingston Cromwell Road Bus Station to BAM Nuttall on 6 October. The proposed works will comprehensively redevelop and improve Kingston Bus Station, enhance the customer experience, and improve the commercial offer and safe operation of the station.

Bus services to London's hospitals

We are delivering the highest priority actions from our review of bus services to London hospitals. Earlier this year we restructured and increased the frequency of route RII to serve Queen Mary's Hospital in Sidcup, and diverted route 5 to serve Queen's Hospital in Romford, which now provides a direct bus link from the Barking area.

We have also completed a public consultation and, subject to agreement

from Kent County Council to use their 'Fastrack' bus-only roads, we will re-route the 96 to serve the Darent Valley Hospital in Dartford, which will give direct links from more areas of the boroughs of Bexley and Greenwich.

Next month, we plan to re-route the I78 to run via Tudway Road, to better serve the areas of the east part of Kidbrooke Village which will improve direct access to Queen Elizabeth Hospital, Woolwich.

Buses Customer Experience Programme

More than two thirds of London's 25,000 bus drivers have now attended the 'Hello London' training course, which supports their pivotal role of carrying 55 per cent of public transport passengers across the capital each day. Ninety-four per cent of drivers rate the course as excellent or very good.

Supporting this is a marketing campaign to show that drivers do more than just drive the bus. Drivers are recognised for good service where customers observe instances where their actions make a positive difference. We have made more than 900 commendations to date.

In addition to bus drivers, we are also putting our front-line operational bus staff through a one-day version of the course to improve customer focus and support the difficult job drivers do. This illustrates the contribution supporting staff can make to improving the overall customer experience.



Private hire operator licence fees

In September we confirmed changes will be made to the fees private hire operators are charged for the cost of licensing, compliance and enforcement activity. The new fees more accurately reflect the resources required to regulate firms, based on the size of their operations.

The Capital's private hire industry has grown dramatically, from 65,000 licensed drivers in 2013/14, to more than II6,000 today. The number of vehicles has increased from 50,000 to 88,000 over the same period. With this growth, there has been a substantial increase in the cost of ensuring private hire operators fulfil their licensing obligations and in tackling

illegal activity to keep passengers safe. It is estimated that over the next five years enforcement costs alone will reach £30m, up from a previous estimate of £4m.

As set out in the Mayor's Taxi and Private Hire Action Plan, income from operator licensing fees will be used to contribute to funding an extra 250 compliance officers, who are all now in post. The team plays a pivotal role in keeping Londoners safe. It also provides reassurance to those travelling at night, by means of a highly visible, uniformed presence in the West End, City and other areas across London.

5 New homes and jobs

Crossrail 2

We have completed further work to address the affordability challenge set by the Secretary of State that London should pay for half of the cost of Crossrail 2 during construction. We have responded to this by examining different ways to reduce the overall cost of the scheme through benchmarking and value engineering and exploring opportunities for additional funding streams, including the potential for private sector funding.

An All-Party Parliamentary Group met on 25 October to discuss the business case for Crossrail 2 and how this vital piece of infrastructure can be funded. Colin Stanbridge, Chief Executive of the London Chamber of Commerce and Industry and John Dickie, Director of Strategy and Policy at London First, outlined the importance of Crossrail 2 to businesses across London and the South East and potential funding options, building on the successful Crossrail I funding package.

We are continuing to talk with businesses and stakeholders about the scheme, highlighting the benefits of Crossrail 2 for the regions and the UK economy as a whole, and making the case that transport investment is not a zero-sum game.

Supporting the UK economy

On 2 October, Val Shawcross CBE, our Deputy Chair and the Deputy Mayor

for Transport, officially opened the new factory of John Bradley and Son (Springs) Limited, one of our suppliers based in Oldham.

We have a strong relationship with the 70-year-old family business, which specialises in the production of a range of materials including sheet metal and springs for the rail, aerospace and agriculture industries. By supplying tool cabinets for the Tube, which are used both in depots and for track work, as well as steel parts for rail tracks, they help keep public transport in London working for the millions of people who rely on it every day.

In 2016-2017, we spent around £300,000 with the company, which employs II0 staff. Its new factory, which is II0,000 square feet in size, combines its three previous sites into one, enabling it to improve efficiency during production and spend more time developing new products.

More than 60 per cent of our suppliers are companies outside London and this investment supports around 50,000 jobs outside the Capital. Over the last three years, we have spent more than £700m in the North West, including £400m in Manchester. Last year alone, this investment in the region supported thousands of jobs in the North West.

Affordable housing

Blackhorse Road

On 2 October, we selected BLLQ LLP as the preferred bidder in a joint venture partnership to develop a I.8 acre site opposite Blackhorse Road station in northeast London.

We will now work with BLLQ LLP to deliver some 350 new homes at Blackhorse Road, 50 per cent of which will be affordable. Subject to permissions, work could start on the site in 2019, with the first homes available in 2022. The site is surrounded by a number of mixed-use developments, which together are creating a new neighbourhood of around 1,700 homes, alongside retail, commercial and leisure spaces.

Last year we brought to market five sites that will deliver 1,000 homes. This year, progress is accelerating and we will bring forward sites that will deliver 3,000 homes.

Southwark station: over-station development

On 27 September, the Finance Committee approved and authorised our proposal to acquire land and assets next to Southwark station held by regeneration specialist U+I Group plc. We are considering the station for an over-station development comparable in height to Palestra. By acquiring the land and assets, we will enable that development and unlock additional social housing.

Completing this acquisition is also dependent on reaching an agreement with Southwark Council to include its land and assets in the proposals, which includes existing social housing.

Brent Cross London

The Brent Cross development is part of a significant regeneration programme in the London Borough of Barnet, bringing 7,500 new homes and 27,000 jobs to the area with a new town centre, an expanded shopping centre, new parks and public spaces, and significant investment in our highways assets including the MI/ A406 junction.

In October, we entered into a section 278 agreement with the lead developer, Hammerson and Standard Life Investments, which sets out the requirements and assurance processes it must follow when undertaking works on our roads. The key next step is the developer's submission to us of its detailed construction programme later this year, which will follow the appointment of the main contractor.

6 Our people

Recent awards

Employer Recognition Scheme Gold Awards

I am delighted to say we were one of five London-based employers to receive a Gold award from the Employer Recognition Scheme which honours organisations that sign the Armed Forces Covenant and demonstrate 'outstanding support' for current and former service personnel.

The technical expertise and skills that exservice personnel have developed during their military service, such as problemsolving and working under pressure, are ideal for a number of roles within the transport industry and I am proud to count them among our people.

National Transport Awards

At the National Transport Awards, we won the 'Most Innovative Transport Project' award for Plug and Play traffic signals, and the 'Excellence in Technology' award for our Differential Bus Priority project.

We were also highly commended for our pedestrian guardrail removal in the 'Excellence in Cycling and Walking' category, and for our 'Report It to Stop It' campaign in the 'Excellence in Travel Information & Marketing' category.

National Rail Awards

We won a number of categories at the National Rail Awards this year.



London Underground was named 'Operator of the Year'. In recent years we have made major improvements across the network, with customer satisfaction rising to its highest ever level, capacity at record levels thanks to new trains and signalling systems, and close to I.4 billion customer journeys now made each year.

The judges were particularly impressed by a number of successful network-wide initiatives and strategies including:

- The systematic management of performance, line by line
- The empowerment of employees at local stations to meet customer needs
- Senior management's determination to implement radical growth strategies including Night Tube and networkwide efficiency measures including allautomated ticketing

In addition, a trial designed to improve performance of the East London Line, which involved collaborative working between Arriva Rail London, Govia Thameslink Railway and Network Rail, won the 'Outstanding Teamwork Award'.

The trial sought to address the dependence on the Sydenham rail corridor to deliver trains on time by reordering the priority of late-running trains to reduce impact on local commuter trains. The judges noted the trial involved challenging standard industry practice and encouraged behavioural change. The result was a significant improvement in train performance. It was also noted the lessons learned could be adapted to other parts of the network such as the Anglia Route network of Network Rail.

National Television Awards

The BBC Two documentary 'The £15 Billion Pound Railway', which looked at the construction of the Crossrail project and assembly of the Elizabeth line trains, has been shortlisted for a National Television Award in the Factual Entertainment category. The awards are on 23 January 2018.

Marketing Awards

At the Marketing New Thinking awards we won the 'Mobile Innovation' category for work with Twitter to prioritise our messages on their service – a world first. We were also highly commended in the 'Marketing for Good' category for the 'Report It to Stop It' campaign to encourage more reporting of sexual offences.

Emirates Air Line wins customer experience award

In partnership with our operator Mace Macro, the Emirates Air Line (EAL) won the British Institute of Facilities Management (BIFM) award for Impact on Customer Experience. This award recognises an organisation that proactively designs, manages, monitors and adapts the customer journey.

The award recognised Macro's focus on improving customer experience as its primary goal by establishing a Guest Experience Team, which implemented a number of initiatives to challenge and promote the customer experience in real time.

Bridging the skills gap – Year of the Engineer

London Transport Museum is proud to be a partner of the 2018 Year of Engineering. This new government-led initiative aims to give thousands of young people aged seven to 16 direct and inspiring experiences of engineering, challenging traditional perceptions. It also aims to tackle a lack of diversity in the profession.

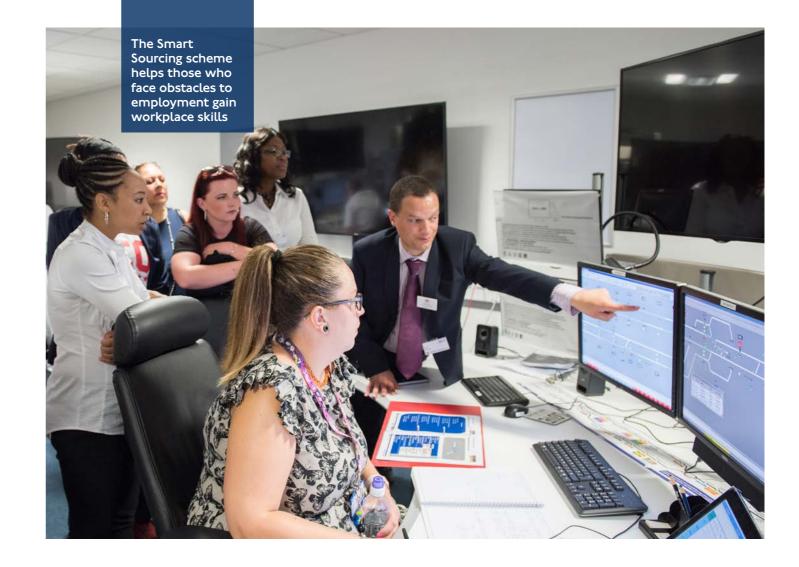
The Year of Engineering will build on a multitude of national and regional initiatives that already promote engineering as a career choice. This includes the Museum's Enjoyment to Employment programme, which aims to turn children's early love of transport into a rewarding career in industry through work with children and young people.

The Museum has offered to share the governance model from Tubel50 to coordinate a pan-TfL approach to the Year of Engineering. The Museum will open two exciting new galleries next year to support this. Digging Deeper, supported by Biffa Award, will open in March and explore the history of tunnelling from Brunel to Crossrail. Future Engineers is a hands-on interactive gallery aimed at children aged seven to II and their parents, and will feature a new Tube train simulator. It will open in July, supported with funding from the DCMS/Wolfson Galleries Improvement Fund and the Luke Rees-Pulley Charitable Trust. It will also include a new temporary exhibition, delivered in collaboration with Crossrail, celebrating the opening of the Elizabeth line. The Development team is currently seeking corporate funding to cover the costs of the gallery redevelopments.

On 7 September, the Year of Engineering was officially launched at the Science Museum with ministers in attendance from across Government including Chris Grayling, Secretary of State for Transport, and Greg Clark, Secretary of State for Business, Energy and Industrial Strategy.

World Mental Health Day and Health and Wellbeing Week

To mark World Mental Health Day (10 October) and the national Health and



Wellbeing Week (23-27 October), we held a number of events encouraging all our staff to engage on improving their physical and mental wellbeing at work during the working week. Events included staff challenges, mental health lunchtime talks and our directors were encouraged to demonstrate their commitment to the event with many holding walking or standing meetings, writing blogs about how they manage stress and their coping strategies.

Welcome on board

In September, we welcomed the 2017 graduate and apprentice intake as we continue to equip the next generation of transport professionals with the right skills to support London's continued success and economic growth. This year saw a record 182 apprentices join the

organisation across 23 different schemes as we strive to meet the Government's ambitious Enterprise Act. We also welcomed 43 graduates.

Smart Sourcing

On 29 September, our Smart Sourcing Team hosted a 'Moving Forward' Masterclass as part of National Inclusion Week. It was a full day of employability skills to help people who face barriers to employment gain the confidence and tools to progress their careers.

Our Smart Sourcing programme helps us to ensure our opportunities are open to all talented people, no matter what their background, and this event is part of our outreach programme to improve social mobility and to increase the diversity of our workforce.

7 Securing value

Reducing costs

We have made good progress against this year's transformation cost reduction targets. £25Im of embedded savings in our budget have been delivered to date compared to our total year's target of £699m.

Momentum continues with our organisational restructuring. Consultation has closed and new structures have gone live in Technology and Data, Commercial and Finance. London Underground, Surface and our new Engineering Directorate, have launched their senior management structures.

Further design work is currently under way to develop recommendations for changes to our operating models in business areas, including London Underground (not frontline operational staff), Engineering, Surface, HSE and Major Projects. If these recommendations are approved, and if any organisational change is proposed, these business areas may launch formal consultation with our Trades Unions and will engage with employees from November.

UK and TfL Credit Rating Downgrade On 22 September, Moody's downgraded the UK Sovereign credit rating from Aal with negative outlook to Aa2 with stable outlook, citing weakening public finances, an erosion of economic strength as a result of the Brexit vote and increasing challenges to policymaking. Following this decision, Moody's downgraded our credit rating from Aa2 with negative outlook to Aa3 with stable outlook, reflecting the close institutional, operational and financial linkages between TfL and the Sovereign. We do not anticipate any immediate financial impact from this rating action.

Our credit ratings from Standard and Poor's and Fitch Ratings remain unchanged at AA and AA- respectively, both with negative outlook.

Annual Advertising Report

On 27 October, we published our first Advertising Report. The report includes details on our investment in the advertising estate and information on the number of advertisements that we have carried since the updated Advertising Policy was introduced in July 2016. It also details the number of complaints we have received and the number of advertisements that we have rejected, and summarises the work of the Mayor's Advertising Steering Group.

Generating income

Our contactless technology in New York

On 25 October, the board of the New York Metropolitan Transportation Authority (MTA) decided that they will implement a new fare collection system modelled on the contactless system that we developed for London.

There has been extensive coverage of this in the press in both New York and London, and it shows how significant our technology is to the future of the New York MTA.

The licence deal with Cubic will earn us a total of £15m in royalties through deals in a number of global cities.



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