



# TfL Budget 2016/17 and Business Plan

March 2016

MAYOR OF LONDON



**TRANSPORT  
FOR LONDON**  
EVERY JOURNEY MATTERS

## About Transport for London (TfL)

We are the integrated transport authority for London. Our purpose is to keep London moving, working and growing, and to make life in our city better. We reinvest all of our income to run and improve London's transport services.

Our operational responsibilities include London Underground, London Buses, Docklands Light Railway (DLR), London Overground, TfL Rail, London Trams, London River Services, London Dial-a-Ride, Victoria Coach Station, Santander Cycles and the Emirates Air Line.

On the roads, we regulate taxis and the private hire trade, run the Congestion Charging scheme, manage the city's 580km red route network, operate all of the Capital's 6,200 traffic signals and work to ensure a safe environment for all road users.

We are delivering one of the world's largest programmes of transport capital investment, which is building the Elizabeth line, modernising Tube services and stations, improving the road network and making it safer, especially for more vulnerable road users, such as pedestrians and cyclists.

We are a pioneer in integrated ticketing and providing information to help people move around London. Oyster is the world's most popular smartcard, and the rise in contactless payment is making travel ever more convenient. Real-time travel information is provided directly by us and through third party organisations, which use the data we make openly and freely available to power apps and other services.

Improving and expanding transport in London is central to driving economic growth, jobs and housing across the country.

In early 2016 a proposal was announced for developing a new partnership between the DfT and TfL that will provide joined-up strategic direction for the specification and management of rail passenger services across London and the South East. This proposal will be progressed over the coming year and is not reflected in the budget presented in this document.

### Reporting on our business

Our financial year runs from 1 April to 31 March.

Throughout this document we have highlighted the schemes that will see the most significant developments or progress over the next five years.

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# Mayor's message

Signing off this Budget and Business Plan will be one of my last tasks as Chairman of TfL, so please forgive the note of nostalgia at the beginning of this forward looking document.

I will leave behind a transport system that is carrying half a billion more people than four years ago. And we are doing this more efficiently, reliably and safely – with greater customer satisfaction – than at any time in London's history.

Delays on the Underground have been halved since 2008 and major upgrades have been delivered on the Jubilee, Victoria and Northern lines with more to come. We've introduced 191 new, British made, fully air-conditioned, walk-through trains on four Tube lines, and 45 London Overground and 66 Crossrail trains are in production.

The Elizabeth line is almost ready. The tunnels are complete and the first trains will be running through central London from the end of 2018. The 100km route will add 10 per cent capacity to the Capital's rail network and change the way people travel.

The London Overground has helped transform the Capital. This orbital rail network has brought new homes, jobs and prosperity to neglected parts of our city. And with Government agreeing to transfer all inner London rail services to TfL, there is now a fantastic opportunity to improve these networks.

A massive £4bn programme of renewal and modernisation on the roads is making junctions safer and finally changing the hideous legacy of 1960s gyratories. We've also experienced a fantastic cycling revolution with the new segregated network of Cycle Superhighways contributing to a record 645,000 bike trips each day.

My New Routemaster has proved itself a worthy and green successor to the iconic original, banishing the ugly, junction-clogging bendy buses. There are now more than 600 of these vehicles on London's roads with another 400 planned for the next year.

The transport network is safer too. The number of people killed or seriously injured on London's roads is down by 40 per cent. Crime has also fallen to an all-time low of just seven per million journeys. And that's despite a massive overall increase in people travelling on our systems.

The Capital's population is set to rise from 8.6 million today to 10 million by 2030, so it's more important than ever that TfL maximises every penny it has to reinvest and provide for London today and tomorrow.

I've laid the foundations for my successor to continue to support this growth with vital projects such as Crossrail 2, which will unlock hundreds of thousands of new homes and jobs, and tackle the capacity crunch at Clapham Junction and Waterloo.



Two recently-proposed, east-west cross-city tunnels will cut congestion by up to 20 per cent in central London, with nine smaller tunnels and 'fly-unders' unlocking land for thousands of homes.

The Bakerloo line extension will also help meet the anticipated growth in south London while the continued modernisation of the Tube will provide ever more reliable and more frequent services across the whole network.

As this Budget and Business Plan describes, I will hand over a leaner, fitter TfL with a sustainable and ambitious programme for future investment – with a guarantee of Exchequer funding going beyond the next mayoral term of office.

I stand ready to help my successor in any way I can as my passion for London will not end with my mayoralty.

A handwritten signature in black ink, appearing to read 'Boris Johnson'.

**Boris Johnson MP**  
**Mayor of London**

# Commissioner's message

London is one of the greatest cities in the world. We're proud of the role we play in keeping it moving, working and growing, which in turn makes life in this city better. It's what drives our organisation – and me – every day.

Our focus is to achieve this while rebuilding and transforming the Capital's road, rail and Tube networks for the millions of people who use them, now and for London's future generations – every journey does matter.

There's unprecedented demand for our services. Every day around 30 million journeys are made on the network and this will continue to increase as the Capital's population rises from 8.6 million today to 10 million in 2030.

In November we received our funding settlement from Government confirming that, from 2019, our grant will be directed uniquely towards capital investment in transport infrastructure. This will make us the only major European city transport provider without an operational subsidy.

We have planned for some time to achieve operational break-even by running our business more effectively, and as part of a continuous savings programme have already taken 15 per cent out of our costs. In this Budget and Business Plan we will take out more.

We're supporting thousands of jobs and new homes, stimulating vital economic growth. But we need to do more, spend less and make every pound go further. At the same time, we must find new ways to increase our income while our services provide value for money at an affordable price.

Our ambitious commercial plans include property development, advertising and retail opportunities, they will generate £3.4bn by 2023, and be reinvested back into improving our services.

Another significant opportunity comes from technology and the rapid pace at which it's evolving. Today we are world leaders with the Oyster card, contactless payments and our use of open data, but we must continue to ask ourselves if we are making the most of technology across the network.



It's clear that there are real challenges ahead, but it's exciting too. The Elizabeth line, for instance, is a huge opportunity to build and cement our reputation for delivering world-class transport that can truly transform lives and communities.

A handwritten signature in black ink, consisting of a stylized 'M' followed by a horizontal line.

**Mike Brown MVO**  
Commissioner of Transport

# Introduction

This document is structured around the four pillars of TfL's strategy: Customer, Delivery, People and Value. We explicitly link the objectives and work of employees to these pillars and this document provides a clear connection to TfL's priorities and the Mayor's Transport Strategy goals.

Our investment grant was protected in the autumn Spending Review. This is vital to complete the planned modernisation of the network, while the phasing out of our general grant requires careful prioritisation of resources.

As part of this Budget 2016/17 and Business Plan we are progressing additional schemes as set out in the GLA Budget published in February 2016. These include:

- Doubling TfL's Growth Fund from £300m to £600m to support the GLA Group in unlocking further growth and regeneration potential across London through transport enhancements
- Doubling our station accessibility fund from £75m to over £150m, which could see 12 more step-free stations in addition to the existing programme
- £250m towards two new Overground stations at Old Oak Common providing connections to the planned Old Oak Common HS2, Crossrail and National Rail

stations and regeneration to the local area. This will be supplemented by additional fares and commercial revenues, as well as contributions from new development

- £100m for a potential extension of the tram network to Sutton. Work continues into feasibility and funding with the relevant boroughs – Sutton and Merton – which have identified around £50m of local funding. However, there remains a shortfall to be addressed by looking at the scheme's scope, value engineering and increasing the local contribution from development
- Establishing a £20m road safety technology fund to develop new road safety and autonomous vehicle technologies in London and help meet the Mayor's new target for reducing the most serious road casualties by 50 per cent. We are already looking at technologies for use on buses, such as autonomous emergency braking and intelligent speed adaptation
- Beyond the measures that are already funded, going further to improve conditions for cyclists in London by making more junctions safer; introducing additional Superhighways, Quietways and Grid routes; looking at more locations for Mini-Hollands and new cycle parking, and expanding the Cycle Hire scheme
- Expanding Oyster and contactless to provide an integrated payment and fare structure to the Cycle Hire network

- One hundred more road and transport enforcement officers to help tackle congestion, improve road safety and support cab enforcement

- Working with Government to fund the measures in its National Air Quality Action Plan, for instance the Ultra-Low Emission Zone and reducing emissions from buses and taxis

The Mayor's Budget published in February 2016 covers the period to 2018/19. As we deliver the schemes it contains, the next phase of work will include:

- Developing new rail infrastructure schemes to support London's growth including Crossrail 2, which the recently formed National Infrastructure Commission believes should be taken forward as a priority; an extension to the Bakerloo line into southeast London; and a proposal to extend the Elizabeth line 20km further east to Bexley, Ebbsfleet and Gravesend
- Preparing the way for inner suburban rail services to be transferred to TfL over the next few years, beginning with the southeast franchise in 2018 – the first step towards creating a London Suburban Metro
- Progressing the Mayor's vision for 13 new river crossings by 2050, by starting construction on the Silvertown Tunnel and

advancing plans for two major new east London crossings at Gallions Reach and Belvedere. Construction of the Garden Bridge is expected to start in summer 2016

- Continuing to increase river passenger numbers by developing plans for new piers and service routes, particularly as new housing and employment opportunities emerge in east London, while increasing the use of the river for freight transport
- Directing TfL and third-party funding into accessibility improvements at stations to ensure that more than half our stations are step-free by 2018, while pushing towards complete accessibility on the bus network
- Developing further proposals for strategic road tunnels that have the potential to help reduce congestion and dramatically improve quality of life. We are also looking at a number of smaller-scale tunnels and 'flyunders' to unlock housing, enable regeneration and improve traffic flow, for instance the A13 Riverside Tunnel near Barking

# Customers – the heart of our business

People – our customers, users and employees – are at the centre of what we do. We must make sure we can meet demand, while providing safe and reliable services for all our customers.

## Trips made by London residents (all forms of transport)



Source: London Travel Demand Survey, published in 2015

London's population is expected to grow from 8.6 million today to nearly 10 million by 2030, growth which equates to a full Tube train of new people arriving in the Capital every three days.

We must make sure our services can meet the demands of a growing population. We are modernising our public transport network to reduce delays, boost capacity and take as much of the hassle out of people's journeys as possible. Investment in our roads, streets and urban realm will make our city a better place in which to live and work. We continue to join forces with London's boroughs and private developers to transform these areas.

We listen carefully to comments and complaints about our services and take action to address them. This includes improving frontline customer services, providing greater safety and security, offering better real-time information, and enhancements to accessibility and payment options.

We aim to operate openly and transparently. We publish an enormous amount of information about our activities and decisions, allowing our performance to be scrutinised by the people we serve.

#### Improving transport services

Sustained investment over the past decade has transformed our Tube, Overground, DLR and bus services. We will work tirelessly to build on this even further.

#### Our vision for London Underground and London Rail

We are committed to delivering world-class rail and Tube services and are focusing on the main priorities of safety and reliability, increasing capacity, growing the network and transforming customer service.

Safety underpins everything we do, from large-scale capital projects to business change programmes.

In 2015, we achieved the ambitious Mayoral target of reducing Tube delays by 30 per cent. Building on this we continue to look for innovative ways to improve reliability, for instance through predictive monitoring of track and signals to prevent failures that cause delays.

Our capital programme is adding capacity through:

- A huge transformation of London Underground, including the Northern and Metropolitan line extensions; modernisation of the Metropolitan, District, Hammersmith & City and Circle lines; and more new trains designed to make journeys faster and more reliable
- Major upgrades to improve stations, including Tottenham Court Road, Bond Street, Bank and Victoria
- The Barking Riverside extension on the London Overground and DLR enhancements at Royal Docks
- The Elizabeth line and Crossrail 2



Staff will be more visible and have the latest technology to help

#### The Night Tube

Between 2000 and 2014, demand for Tube travel after 22:00 increased by 84 per cent. We have therefore made a commitment to Londoners to introduce a new 24-hour service.

The Night Tube will see six to eight trains an hour through central London on Friday and Saturday nights on core parts of the Central, Jubilee, Northern, Piccadilly and Victoria lines.

Overnight weekend services will help our customers – whether leisure users or workers – and support London's vibrant night-time economy, boosting business and jobs.

We expect to introduce night-time services to other lines across our rail and Underground network in the coming years.

#### Better customer service

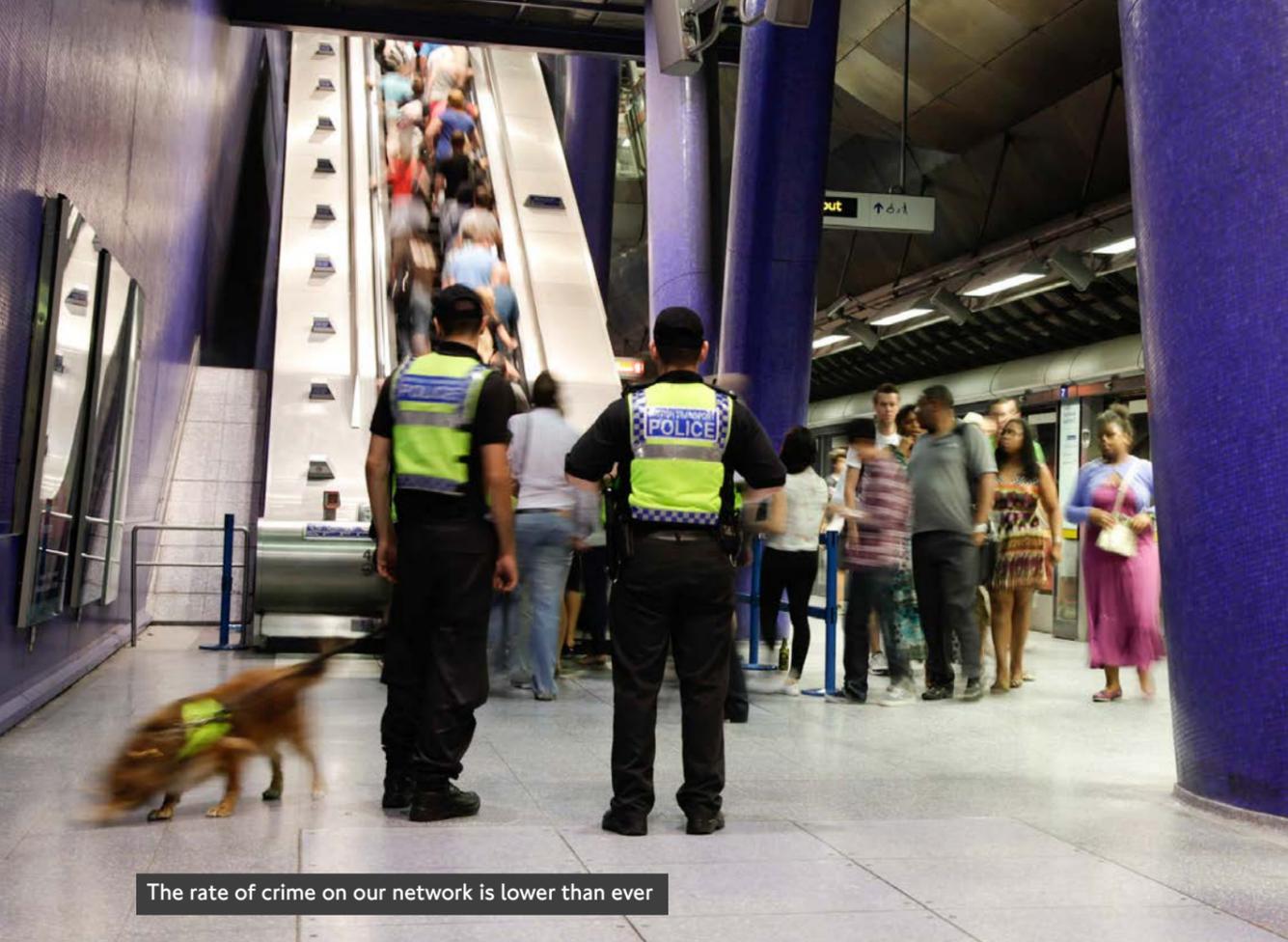
We will continue our focus on delivering improvements by listening and fixing those issues that frustrate our customers most. Our priorities for the year ahead are extending

Oyster and contactless payments across our network, better customer service, and harnessing technology and open data to provide people with enhanced information and services.

#### Payments

Contactless payment has transformed the way in which our customers pay for travel. The use of this payment method has risen steadily and now accounts for 26 per cent of all pay as you go Tube and rail journeys, and 23 per cent of bus trips. We will continue to extend the acceptance of contactless payment across our network, including the Emirates Air Line and River Services in 2016. From October 2016, taxis will also accept card payments for all journeys.

We have adapted our ticketing system to prepare for the Night Tube. With the introduction of 24-hour services, significant changes were required to ensure customers pay the correct fare and get the advantage of fare capping when a journey spans two traffic days.



The rate of crime on our network is lower than ever

#### Improvements across the board

We are improving customer service right across our network. At Tube stations, we have moved our staff out into the busiest areas to support people.

On our bus network we are introducing new, bespoke training to every one of our 25,000 drivers to provide them with better awareness of all our customers' needs. This will start to be rolled out later in 2016.

#### Better information for our customers

Seventy-nine per cent of Londoners now use the internet on mobile devices while on the move – customers rely on real-time information to help them make more informed decisions when travelling. Our free, open data policy powers nearly 500 apps in the market. We have a plan to release more data – in particular about our roads – to our community of 6,000 developers to create more products and information to improve travel options in London.

#### A safe and secure network

Londoners deserve safe and secure services and we are proud that the rate of crime on our network is lower than ever. We fund more than 2,500 dedicated transport police officers and Police Community Support Officers. We work closely with forces including the British Transport Police, City of London Police and the Metropolitan Police Service.

#### Effective policing and enforcement

We have brought together a number of organisations and policing agencies as part of the London Transport Community Safety Partnership (LTCSP). We will continue to work with these partners to achieve the priorities and actions set out in the latest Right Direction report published this year. The document is the Mayor's strategy to improve transport safety, security and reliability in the Capital up to 2017.

LTCSP priorities for 2016/17 include:

- Tackling unwanted sexual behaviour on public transport through Project Guardian



A total of 95 per cent of bus stops will be wheelchair-accessible by the end of 2016

- Enhancing the safeguarding response across the network
- Improving the response to hate crime on the transport system

#### Improving access for all

Everyone should be able to travel around London with confidence.

As part of our commitment to making the Tube more accessible, 2016/17 will see Vauxhall and South Tottenham stations become step-free, with Ealing Broadway and Tottenham Court Road also being made step-free as part of Crossrail. The DLR network was the first fully accessible railway in the UK and provides step-free entrance and exits to all stations and trains.

After more than 45 per cent of our rail and Underground stations were made step-free in early 2015, a new £76m partnership programme was announced in June 2015. This

will ensure up to 12 additional stations become step-free over the next 10 years, helping us achieve the target of ensuring half of our rail and Tube stations are step-free by 2018. The programme will maximise contributions from developers, local authorities and other external partners to match TfL funding and provide a total of £152m for the initiative.

Work is planned to start in mid 2016/17 on a two-year refurbishment of our Jubilee line trains. The improvements will make journeys more comfortable.

Our bus network is one of the most accessible in the world and a vital lifeline for older and disabled passengers. Plans are for 89 per cent of bus stops to be wheelchair-accessible by the end of 2015/16, rising to 95 per cent by the end of December 2016. As of January 2016, two boroughs, the Royal Borough of Kingston upon Thames and the City of London, have achieved 100 per cent, while 12 boroughs have reached 95 per cent.

### Door-to-door transport services

Dial-a-Ride continues to provide a free door-to-door service for people less able to use our public transport network. Essential for many, it has some of the highest customer satisfaction scores of any TfL service, regularly achieving 92 out of 100.

We are working with the boroughs on the Social Needs Transport Roadmap, which will deliver incremental steps towards integrating the provision of social needs transport across London, and improving service delivery for customers.

### Meeting growing demand

We are carrying record numbers of passengers as demand continues to rise. We continue to invest in order to improve reliability of journeys and customer satisfaction.

### London Underground

Following the record number of passenger journeys last year, we expect even more in 2016/17 as total journeys are forecast to reach 1.4 billion.

To accommodate this rising demand, we continue to increase capacity and will run 86.7 million train kilometres in 2016/17, which is 4.8 per cent more than last year.

Despite carrying more people and running more services, we are expecting to achieve a customer satisfaction score of 85 out of 100.

### Buses

Buses are the most used form of public transport in London and around 96 per cent of the Capital's residents are within 400 metres of a bus stop.

In the long term, we expect the number of bus passengers to continue rising as the city's population grows, reaching about 2.6 billion per year by 2022. Bus kilometres operated on the network will increase by 0.8 per cent to 498 million in 2016/17.

Satisfaction with the network is expected to score 85 out of 100 in 2016/17. This reflects our focus on improving customer service, information, passenger comfort and driver performance.

### The road network

By 2030, there will be at least two million road trips a day added to the 21 million already taking place. We are working hard to transform our streets and places, renewing assets and introducing new traffic technology as part of our Road Modernisation Plan. We are also working with the boroughs through their Local Implementation Plans to deliver their own schemes on the roads they manage.

### Cycling

A total of 645,000 daily cycle trips take place on an average day in the Capital, which is twice the number seen back in 2001. It's also only slightly less than the amount of DLR and Overground journeys combined.



Our aim is to increase cycling trips to 1.5 million a day by 2026, so we are delivering a range of programmes to make London more cycle friendly.

### Walking

Investment through the Road Modernisation Plan and Local Implementation Plans will improve the experience for pedestrians, ensuring London remains an attractive place in which to walk.

Approximately 6.4 million 'walk-all-the-way' journeys are made on an average day, which represents 24 per cent of all trips. In addition, there are an estimated 29 million walked stages made as part of longer journeys that involve more than one form of transport.

Walking journeys (trips and stages) are expected to increase by 30 per cent between 2011 and 2041, owing to population growth and increased public transport use.

### DLR

We will run 6.8 million train kilometres in 2016/17, which is 7.9 per cent more than last year. Building on the record levels of passenger journeys in 2015/16, numbers are predicted to hit 127 million in 2016/17, another all-time high. We forecast a score of 89 out of 100 for customer satisfaction.

### London Overground

The popularity of London Overground continues to rise with passenger journeys increasing over the past year by seven per cent to 196.2 million. We are expecting to operate 10.2 million train kilometres in 2016/17.

Since taking over the West Anglia route on 31 May 2015, we've set about a major overhaul of the line, improving both the stations and trains. A score of 83 out of 100 for overall customer satisfaction is anticipated.



Design work for the Elmers End tram line enhancements will be completed

#### TfL Rail

Services between Shenfield and Liverpool Street will increase during 2016/17, with 2.7 million train kilometres operated, a 22.7 per cent rise on last year. A total of 49 million passenger journeys are forecast during 2016/17.

The station investment programme will improve ambience and facilities for passengers, building on the service enhancements already introduced. A score of 83 out of 100 for overall customer satisfaction is anticipated.

TfL Rail services will be integrated as part of the new Elizabeth line as the full network is opened during 2019.

#### London Trams

This year will see the completion of design work for the Elmers End line enhancements. The project will include a second platform at Elmers End station and double tracking of the line. To accommodate passenger journeys reaching a record 30.9 million – 3.3 million

more than in 2015/16 – we will run three per cent more services, equating to 3.3 million train kilometres in total. The customer service forecast is 89.

#### London River Services

The Mayor's River Concordat (2008) and the success of the 2013 Mayor's River Action Plan have helped to nearly double river passenger numbers in the past five years. Our passenger target will rise to 10.5 million for 2016/17. Over the longer term, the aim is to increase river passenger journeys to 12 million by 2020.

#### Emirates Air Line

We anticipate 0.2 per cent more passengers, taking numbers to 1.8 million a year.

Table 1: Service and passenger journeys

Performance indicator	2015/16 Budget	2015/16 Forecast	2016/17 Budget
<b>Service volume – operated kilometres (millions) – higher is better</b>			
London Underground	84.0	82.7	86.7
Buses	496	493	498
DLR	6.5	6.3	6.8
London Overground	9.5	10.2	10.2
TfL Rail	2.2	2.2	2.7
London Trams	3.2	3.2	3.3
<b>Passenger journeys (millions)</b>			
London Underground	1,344	1,350	1,405
Buses	2,445	2,323	2,338
DLR	119.3	118.0	127.0
London Overground	168.5	182.8	196.2
TfL Rail	26.6	39.8	49.0
London Trams	31.1	27.6	30.9
Cycle Hire	9.85	10.3	10.6
London River Services (incl. Woolwich Ferry)	10.0	10.2	10.5
Emirates Air Line	1.7	1.6	1.8

London Overground includes West Anglia inner services following their transfer to TfL in May 2015  
TfL Rail is the National Rail service from Liverpool Street to Shenfield

Table 2: Customer satisfaction

Performance indicator	2015/16 Budget	2015/16 Forecast	2016/17 Budget
Customer satisfaction survey (score out of 100) – higher is better			
London Underground	84	85	85
Buses	84	85	85
DLR	88	89	89
London Overground	82	83	83
TfL Rail	80	83	83
London Trams	88	89	89
Cycle Hire	82	82	82
Emirates Air Line	93	93	93
Transport for London Road Network (TLRN)	74	74	74

London Overground Includes West Anglia inner services following their transfer to TfL in May 2015  
TfL Rail is the National Rail service from Liverpool Street to Shenfield

Table 3: Cycling levels

Performance indicator	Unit	2015/16 Budget	2015/16 Forecast	2016/17 Budget
Central London cycling growth in the number of km cycled on an average week day	%	4.0	2.0	2.5
Cycling levels on the TLRN	index	348	335	352

# Delivery – our plans and promises

We are committed to delivering safe, reliable, clean, sustainable and accessible transport services day in, day out.



With London's population growing relentlessly, it's vital we make the most of our existing assets while expanding the network for future generations. This will help create the jobs, housing and economic growth needed to maintain the Capital's position as the powerhouse of the UK economy.

Our multi-billion pound investment programme is increasing capacity and improving connectivity for the many millions who use our rail, Tube, bus and road networks every day. It's also benefiting local economies and minimising negative environmental impacts.

#### Unprecedented demand

Over the past six years, passenger numbers on the London Overground, DLR and tram networks have increased by more than 109 per cent. The Tube's busiest day was 4 December 2015, when more than 4.8 million journeys were made. The first week of December 2015 was also a record with more than 28.8 million journeys in total. Demand is forecast to increase by more than 10 per cent on the Tube by 2020/21, and around 50 per cent across London Rail services (excluding the Elizabeth line). This underlines the importance of increasing capacity through our capital programme.

#### Record Tube reliability

Significant progress has been made in improving reliability on the Underground. Excluding industrial action, in 2015 we met the Mayor's commitment to cut delays by 30 per cent when compared with 2011.

Although reliability on the Tube has never been better, there is still more we can do. The Remote Track Condition Monitoring System installed on the Victoria line more than a year ago, has significantly reduced the number of 'lost customer hours' by predicting and preventing signal failures. This year will see traction electronics upgraded on 46 trains across the network, reducing the likelihood of them failing. We are focused on investigating innovative ways to improve reliability.

#### More reliable buses

Excess waiting time (EWT), the measure for bus reliability, increased to 1.2 minutes in 2015/16. This was a result of increased congestion caused by the construction of major highway and urban improvement schemes. We will continue to review the network and introduce congestion mitigation measures, such as bus priority and active traffic management, while slowing the pace of construction schemes. Our aim is to return reliability to 1.1 minutes in 2016/17.

#### Maximising capacity on our network

##### Four Lines modernisation

This upgrade is one of the most important investments currently being made in the Tube. The Metropolitan, District, Hammersmith & City and Circle lines make up 40 per cent of the Underground network and to improve reliability and ensure a world-class service on these lines, a programmed replacement of fleet, signalling and supporting systems is under way. The works will replace equipment that, in some cases, dates back to the 1920s.



New Tube for London will introduce new state-of-the-art trains

New S-stock trains have already been introduced on the Metropolitan, Hammersmith & City and Circle lines and by the end of 2016, the roll-out will be completed on the District line. These new walk-through trains are fully air-conditioned and offer more room for customers. They also have lower floors allowing step-free access from train to platform, feature colour contrasting interiors and provide audio and visual service updates.

As part of this programme we are also upgrading the signalling control system across these lines, with the contract awarded to Thales in July 2015.

The modernisation will improve journey times and provide an overall capacity increase of 33 per cent. By 2022, the busiest sections of the four lines will see up to 32 trains an hour at peak periods. There will also be more off-peak services to meet growing demand.

#### Bakerloo, Central, Piccadilly and Waterloo & City lines

Currently there is equipment that dates back to the 1970s on the Bakerloo and Piccadilly lines and to the 1990s on the Central and Waterloo & City lines. The New Tube for London programme will increase capacity through improved signalling, and provide more walk-through trains, which can carry more people. It will achieve capacity increases of 60 per cent across the Piccadilly line, 25 per cent across both the Central and Bakerloo lines and up to 50 per cent on the Waterloo & City line.

In 2016/17, preparation work will get under way for the new Piccadilly line trains contract. These higher capacity, energy-efficient models will feature walk-through, air-cooled carriages so customers can enjoy more comfortable journeys. Work on delivering the wider New Tube for London programme will increase significantly in 2016/17, beginning with an infrastructure upgrade on the Piccadilly line to support new power and signalling systems.

### Victoria line

By the end of 2016 there will be up to 36 trains an hour on the Victoria line at peak times, the equivalent of a train every 100 seconds. This will make it one of the most intensive railway services in the world and the most frequent rail service in the UK.

### Jubilee line

In 2016/17 on the Jubilee line, improvements to train and signalling assets will help improve reliability on the line. This includes work on signalling 'pinch points' and providing additional depot facilities. Train procurement will also get under way to allow an increase in services of up to 32tph by the end of 2020.

### Reducing congestion at stations and improving accessibility

**Tottenham Court Road**  
As well as the work already completed – a new ticket hall five times larger than the previous one with two new distinctive glass entrances – the upgrade will deliver step-free access throughout the station. The area around it will also feature a wider pavement, enhanced pedestrian crossings and junction improvements to benefit cyclists and buses. The new passenger facilities will be fully open in November 2016.

### Bank station

Each morning up to 100,000 people use Bank station. Demand often overwhelms capacity at this vital transport hub, which means trains are held and customers are regularly prevented from entering until the platforms are cleared. As part of the project, we will create more capacity on platforms, stairs and concourses for the Northern line, and build a new entrance

at Cannon Street. In 2016/17 we will provide a new, modern station control room.

### Bond Street

The station already accommodates more than 150,000 passengers each day, and this is expected to rise to more than 225,000 when Elizabeth line services start running. The upgrade will provide more capacity, step-free access and make it easier to change between services, including an interchange with the Elizabeth line. There will also be a new entrance to the north side of Oxford Street on Marylebone Lane. The new station is scheduled to open in 2017.

### Victoria

Almost 80 million passengers use the station each year, on average more than 200,000 a day. It reaches its capacity on most weekday mornings meaning customers are held at entrances. The refurbished northern ticket hall will open in January 2017, providing 40 per cent more capacity.

### Future Tube station capacity programmes

Camden Town station is used by around 28.6 million passengers each year. Demand has grown substantially, especially during peak hours when it has risen by around 60 per cent over the past 10 years. This has led to increased congestion and the need for 'exit-only' station control at weekends. In 2016/17, detailed design will begin on the station redevelopment and preparations will continue for the required planning consent, which we will seek in 2017.



New five-car Overground trains have resulted in a 25 per cent capacity increase

Holborn station provides a vital interchange between the Piccadilly and Central lines. Demand for services is already high and customers are sometimes prevented from changing lines, or are held outside the station owing to congestion. In 2016/17, the proposed concept design for station improvements will be drafted and consulted on. When delivered, the project will boost capacity at the station and make changing between services easier.

At Elephant and Castle, work with third parties continues on proposals for a new, expanded and accessible entrance to the Northern line that will be integrated with the wider redevelopment of the urban centre. During 2016/17, the proposals will be taken through to detailed design with work expected to start on site in 2017.

At Tottenham Hale, once the detailed design is completed, 2016/17 will see work start on a capacity upgrade that includes expanding the station, improving the interchange with National Rail services and providing step-free access.

The Finsbury Park capacity upgrade is under construction, with work due to be finished in 2018.

### Integrated Stations Programme

This initiative is designed to improve station safety, maintenance and operation, while offering a better experience for customers by improving ambience, passenger information and retail provision.

In 2016/17, work will be completed at Holland Park, Vauxhall, Sloane Square, Paddington and Stepney Green stations and work will start on at a further seven stations.

### London Overground Vital capacity improvements

Demand for London Overground services has risen continuously since its launch. The introduction of a fifth car on the north, east and west sections of the network, where trains have been extended by 25 per cent, has helped to ease congestion. These works were completed in January 2016.

We expect demand for London Overground services to continue increasing. Our intention is to boost off-peak and evening frequencies, running more trains during the late evening period and providing later last trains. Plans will be developed throughout 2016/17 and introduced in December 2017.

#### **Gospel Oak to Barking line electrification**

In 2016/17, we will complete the preparation work needed to introduce electric four-car trains on the Gospel Oak to Barking line.

Platforms will be lengthened and, from February 2017, eight two-car diesel trains will be replaced with the same number of four-car electric trains. This will provide a 90 per cent increase in train capacity. Additionally, the improved acceleration and braking on the electric models will enhance journey times and reliability.

#### **Barking Riverside extension**

With 10,000 new homes planned for the Barking Riverside development area, a new 4km rail link is required to unlock the area's full economic potential. The line will enable London Overground services to operate between Gospel Oak and Barking Riverside with four-car trains, once the line is electrified. In 2016/17, the tender for the main works contract will be issued.

#### **Better stations**

A programme to relieve congestion and improve accessibility at London Overground stations is under way, with work starting in 2016/17 at the following locations:

- West Hampstead – new entrance plus wider stairwells and platforms
- Dalston Kingsland – removing a retail unit from the ticket office to improve capacity
- Hackney Central – planning proposals have been submitted for improved entrance access and work to relieve congestion

Additionally, further improvements will be made to the stations taken over from West Anglia last year, and at the following 14 sites:

- Bush Hill Park
- Silver Street
- Bruce Grove
- Seven Sisters
- Stamford Hill
- Stoke Newington
- Rectory Road
- Chingford
- Highams Park
- Wood Street
- Walthamstow Central
- St. James Street
- Clapton
- Emerson Park

This will include new customer information screens, passenger help points, better CCTV, improved general maintenance, automatic gates and new vending machines.

#### **London Suburban Metro**

With demand for rail travel higher than ever before, work is under way to create a more joined-up London rail network with more

frequent services, offering better customer service and increased capacity.

As the franchises come up for renewal over the next few years, there is an opportunity to build on the success of the London Overground and create a London Suburban Metro service, with the potential for more than 80 per cent of stations to have a train every 15 minutes, up from 67 per cent today. We will work to set up a new partnership with the DfT during 2016 that will lead on this and oversee the transfer of rail services that operate mostly or wholly within the Greater London boundary to TfL, when the current franchises are due for renewal.

#### **London Trams**

Demand for London Trams has doubled since 2000 and the service now carries 31 million passengers a year. With south London's population and job market growing, long-term demand for services is expected to increase. This year will see four new trams delivered, combined with 'double-tracking' and a new platform at Wimbledon. This will result in a 50 per cent boost in capacity and will alleviate congestion on the Wimbledon to Croydon route by allowing 12 trams an hour to run in each direction during peak times. We are also working towards increasing the maximum service on the New Addington link from eight to 10 trains an hour by 2020. This will provide a 25 per cent capacity increase.

#### **DLR**

After we successfully completed the first phase of the double-tracking programme at

Pudding Mill Lane, peak capacity has increased by 20 per cent on the Stratford to Canary Wharf route, providing space for 1,100 more passengers an hour in each direction. Design work is now under way on the second phase between Pudding Mill Lane and Stratford. When complete, this will enable a train to run every three minutes at peak times.

#### **Buses**

Around 6.5 million bus journeys are made each week day. We will invest annually in bus reliability at important locations through:

- Initiatives to support the Road Modernisation Plan. Schemes have been identified along 24 routes, which we are planning to deliver over the next three years
- Growth bus priority schemes to support Opportunity Areas identified in the London Plan. These will further develop the bus network through new and/or improved infrastructure. Schemes being delivered in 2016 include Loampit Vale in Lewisham (summer) and Plumstead Road in Greenwich (by the end of the year)
- Measures to help relieve pinch points on the network. In 2016, we will introduce these at locations including Camden Road, North End Road in Slade Green and Brentfield Road in Neasden

#### **New Routemaster buses**

More than 600 of the new buses are in service and we are on track to reach 1,000 by 2017. The newest models are also fitted with the



600 New Routemasters have already been delivered, and a further 200 are due to be delivered in 2016

latest Euro VI engine, which results in fewer oxides of nitrogen (NOx) and particulate matter emissions.

The New Routemasters can operate in electric-only mode when the battery is fully charged, particularly at low speeds when caught in traffic. This helps reduce emissions in more congested parts of the Capital.

We are committed to working with the bus manufacturers to ensure that even more environmentally friendly vehicle technology is made available for London in the near future.

#### Bus stations

We have identified a number of major bus stations in need of redevelopment including Kingston, Harrow and Edgware, and we will renew as many as possible over the next 10 years. We are currently transforming West Croydon bus station into a lighter, more airy interchange with better customer information, fully-accessible bus stops and CCTV. Work will be completed in summer 2016.

#### The Road Modernisation Plan

The city's roads and streets were not designed to withstand the pressures of today, so to keep London moving and our economy growing, it is vital they are brought up to date.

#### Major highway enhancements

As part of the Road Modernisation Plan, investment is being channelled into 'transformational' projects. These are designed to radically improve living and travelling conditions by providing safer, greener and more attractive streets and town centres, while enhancing conditions for cyclists and pedestrians. Work in 2016/17 will include the schemes set out below.

#### Elephant and Castle northern roundabout

Highway works are well under way and are expected to be finished by summer 2016, along with interim urban realm improvements for the newly created peninsula public space. The final transformation will be completed after the upgrade to the Northern line station in 2022.



Major improvements are taking place across TfL's roads as part of the Road Modernisation Plan

#### Euston Road/King's Cross

We are working closely with Camden Council to make Euston Road safer, improve the environment for pedestrians and cyclists, and better connect the communities to the north and south of Euston Road.

We are also considering a number of changes in the wider King's Cross area, including revisions to the one way roads and new facilities for pedestrians and cyclists. These aim to simplify the local road network and improve conditions for vulnerable road users. We consulted on high level plans in February 2016, and intend to conduct a further consultation in early 2017.

#### Vauxhall Cross

Concept design work is scheduled to be finished by late 2016. This includes further development of the highway, urban realm and bus station designs, incorporating public consultation responses and securing the approvals needed to progress the scheme.

#### Wandsworth town centre gyratory

Following a public consultation in late 2015, the design for removing the gyratory will be developed further during 2016/17, alongside progressing relevant land negotiations. A planning application is due to be submitted in June 2016.

#### Old Street roundabout

The main construction works are scheduled to start in early 2017, subject to further design and necessary approvals. The proposals will transform the area, with significant improvements for cyclists and pedestrians. This includes creating a new peninsula space by incorporating the roundabout's existing central island into the surrounding footway.

#### Bow interchange

Construction has started on vital safety improvements for pedestrians and cyclists at the roundabout. This interim scheme is due to be delivered throughout 2016. It will bring immediate benefits ahead of the longer-

term Bow Vision Programme, which we will implement in partnership with the London Boroughs of Tower Hamlets and Newham.

### Croydon Fiveways

Proposals to improve road capacity will be further developed throughout 2016/17, alongside plans to provide new cycle lanes, more accessible pedestrian crossings and enhanced bus services. A detailed consultation on the preferred option is scheduled for late 2016.

### Improving our assets

Our plan is to transform London's roads to radically improve living and travelling conditions through safer, greener and more attractive streets and town centres. Projects for 2016/17 include:

- Resurfacing 400,000 square metres of carriageway
- Re-laying 48,500 square metres of footway
- Replacing more than 15,100 metres of road safety barriers
- Renewing more than 1,100 lamp posts and replacing in excess of 4,500 conventional street lights with energy-efficient LEDs
- Renewing and modernising traffic signals at more than 140 junctions

This work will take place alongside maintenance on a number of bridges and tunnels.

### The Structures and Tunnels Investment Programme

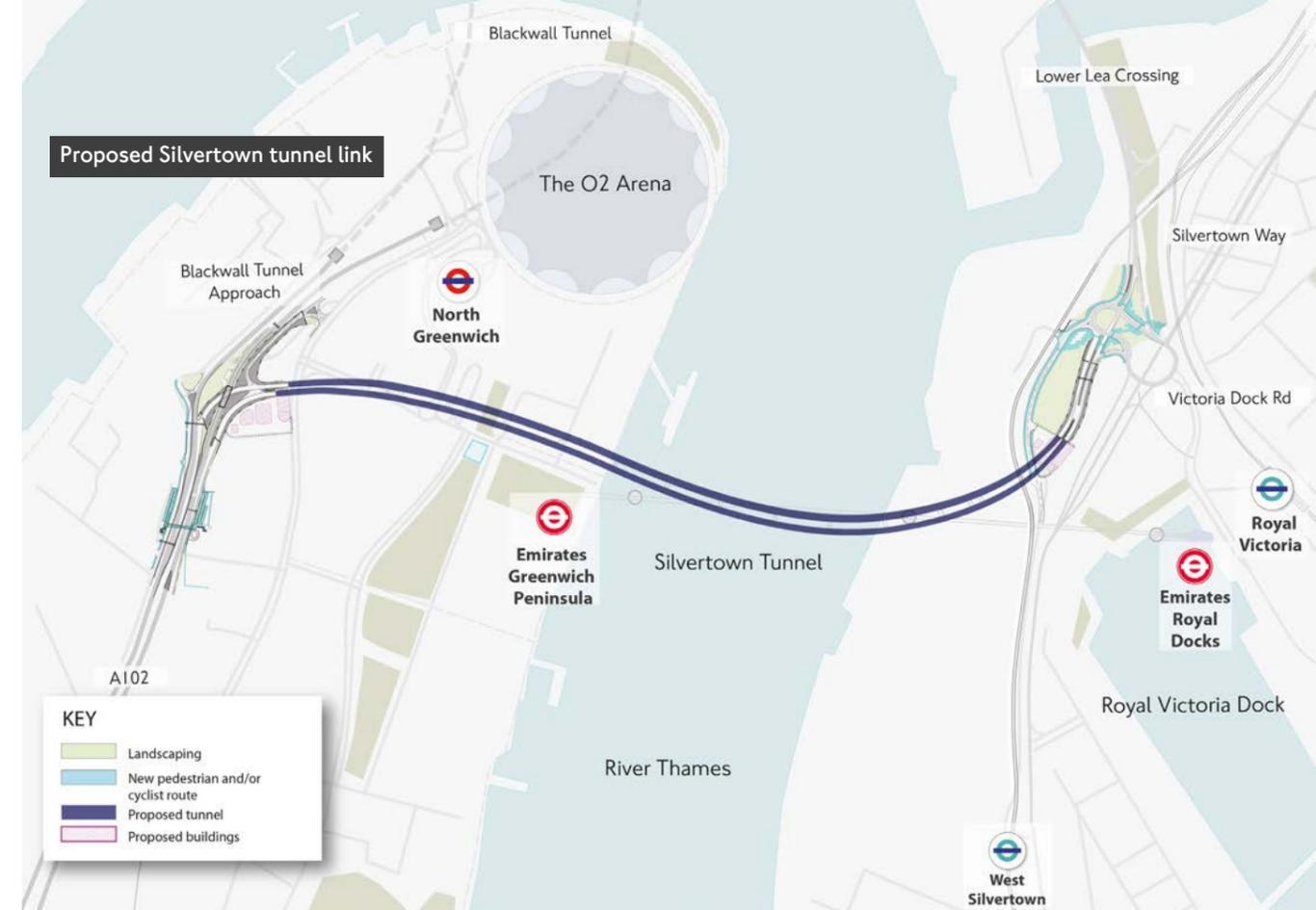
Spanning the next 10 years, this is a collection of major renewal and replacement works on vital bridges and tunnels on the Transport for London Road Network (TLRN). They are all being strengthened or refurbished to prolong their life and reduce the need for emergency repairs or maintenance, which have an impact on residents, road users and businesses. These assets have been prioritised owing to their poor state of repair, existing traffic load and speed restrictions.

In 2016/17, improvements focus on four road-over-rail bridges that need replacing – Highbury Corner Bridge, Upper Holloway Bridge and structures at Arleigh Green and Power Road. The work will involve diverting the utility apparatus (eg for water and gas) on to a new service bridge or trough. This will allow the existing structures to be demolished and rebuilt, which will involve major road and rail works.

### Connecting the Capital

The Silvertown Tunnel is one of 13 new river crossings that are planned to be delivered by 2050, and work will continue to realise this vision. Crossrail will provide a new river crossing option in 2019, and consultation and development work will continue on two major crossings in east London, to be delivered around 2025 at Gallions Reach and Belvedere.

Feasibility work will continue on further river crossings, many of which are intended to rectify the lack of crossing options to the east of Tower Bridge.



Plans are for a 1.4km twin-bore road tunnel under the Thames with highway connections to Silvertown in the north and the Greenwich Peninsula in the south. It will improve capacity and make the road network around the Blackwall Tunnel more resilient. It will also provide opportunities for greater road and public transport connectivity to East London allowing 36 double deck buses every hour to cross the Thames. Over the next year preparatory work will continue.

### A13 Riverside Tunnel

We are working with the London Boroughs of Barking & Dagenham and Havering on plans to deck over a 1.3km stretch of the A13 to create a new neighbourhood of 5,000 homes, as well as support a further 28,300 homes and 1,200 jobs in the surrounding area. Much of the £960m funding required will be self-generated by the scheme.

### Improving road safety

#### Taking a new approach to road safety

In 2014, we saw the lowest number of people

killed or seriously injured (KSI) on the Capital's roads since records began. We challenged ourselves to reduce KSIs by 50 per cent by 2020, compared with the 2005-2009 baseline. In addition, we are working towards a longer term goal of significantly reducing London's roads from death and serious injury.

To meet this ambition we are taking a new approach to road safety, concentrating on minimising the five main sources of road danger. Over the next year, we will embed this across all our road safety activities, with a continued focus on vulnerable road users (pedestrians, cyclists and motorcyclists).

### Pedestrian town centres

Delivery plans will be finalised for the Pedestrian Town Centres programme, which will improve safety for people on foot in Tooting and Peckham. It will include physical enhancements to the public realm, as well as supporting initiatives for those using the town centre, such as raising awareness of pedestrian safety among more vulnerable people.

### Road safety engineering

The annual review of London's collision data, which identifies locations most in need of road safety measures, highlighted 41 sites that required further examination. Detailed investigations are now under way. During 2016/17, design will start on schemes for all these locations and we expect to have final plans ready for 40 per cent of them by the end of the year.

### Safety camera upgrade

By the end of 2016, we will complete our £50m investment to upgrade the Capital's safety cameras from wet film to digital. This is an essential step forward in making them more sustainable in the longer term.

### 20mph limits on the TLRN

During 2016/17, construction will get under way on eight further trials of 20mph zones, with six due for completion by the end of 2016. Further research will also be carried out on their impact. We will also finalise and disseminate a toolkit of innovative means of reducing vehicle speeds by late spring 2016.

### A safer bus network

In 2016/17, we will focus on reversing the recent trend that has seen a marginal increase in collisions on the bus network. We are developing a collision reduction programme covering all areas of bus safety.

A number of innovative new technologies are also being considered as part of a new bus safety standard. These include automatic

collision avoidance systems and Intelligent Speed Assistance, which automatically restricts buses to the speed limit. By the end of 2016, bespoke 'In the Zone' training will have been given to all 24,700 bus drivers in the Capital. This will increase their awareness of vulnerable road users, particularly pedestrians and cyclists.

### Enforcement and policing

Our work with the Metropolitan Police Service and City of London Police has significantly increased the level of visible roadside enforcement and engagement activity, contributing to a record low for KSIs in the Capital.

Throughout 2016/17, we will continue to work with the police and other enforcement partners on initiatives such as Operation Safeway, which enforces the rules of the road, and Operation Cubo, which targets uninsured vehicles. This is alongside the work of our dedicated road safety specialists including the Cycle Safety Team, Motorcycle Safety Team and the Commercial Vehicle Units in the Roads Transport Policing Command (RTPC) and City of London Police.

### Commercial vehicle enforcement

We continue to target freight vehicles and drivers that pose a serious risk. We recently launched the London Freight Enforcement Partnership, which brings together resources and expertise from us, the Metropolitan Police Service, City of London Police and the Driver and Vehicle Standards Agency to further improve safety, air quality and road reliability. Through this partnership, freight

enforcement in the Capital will benefit from shared intelligence, better use of technology, and more joint roadside operations.

The partnership will make it easier to identify commercial drivers and operators that choose to operate illegally, undercutting and destroying the businesses of those who are law abiding. Targeted action is being taken against the most serious offenders, and the partnership is working with the Office of the Traffic Commissioner to remove them, and the danger they pose, from the road.

This builds on our work with other agencies, including the Industrial HGV Task Force and Commercial Vehicle Units, to target unsafe and non-compliant HGV operators, drivers and vehicles. This will continue throughout 2016/17 and beyond.

### Keeping London moving

#### Smart roads

We are looking into the feasibility of adopting some of the smart techniques that Highways England uses on its motorway and expressway network on London's strategic roads. This investigation would consider whether such techniques can improve reliability, safety and environmental impact.

#### Split Cycle Offset Optimisation Technique (SCOOT)

This technology allows us to vary signals according to traffic conditions and is proven to reduce delays by, on average, 12 per cent at each junction. It also gives priority to buses and

in peak periods delivers an average saving of 2.3 seconds per bus, per junction.

The first 200 sites of the current programme have been operating successfully since September 2014. A further 400 went live 12 months later. By September 2016, another 300 sites (900 in total) will be live.

### Surface Intelligent Transport Systems (SITS)

The SITS programme adopts a dynamic and coordinated approach to the management of the road network and will deliver £1bn of benefits by 2036.

It uses technology to analyse traffic in real time, keep road users updated through various media channels and smooth traffic flows. SITS will unlock additional road capacity to meet the changing future needs of London, improve journey time reliability and, through enhanced customer information, help people plan their journeys. The detailed business case for developing the specification, plus the procurement documentation, was approved by the TfL Board in September 2015. The contract is expected to be awarded in September 2017.

### The London Streets Traffic Control Centre (LSTCC)

In 2016/17, the LSTCC will continue to build on its partnerships with the Highways Agency, Metropolitan Police Service and local authorities to provide a joined-up response to incidents and planned events that could affect journey time reliability on the Capital's road network. With the co-location of the



London Streets Traffic Control Centre

London Streets Tunnel Operations Centre into the Surface Transport Traffic Operations Centre (STTOC) planned for April 2016, we will enhance our incident response and resilience.

#### London Streets Tunnel Operations Centre (LSTOC)

The LSTOC currently uses a collection of individual and mainly analogue control and communication systems to monitor and manage tunnel equipment. This covers ventilation, fire detection, emergency telephones and signage, overheight vehicle detection, CCTV and public address communications. These systems are obsolete and expensive to maintain. They are also inefficient because operators have to move around the control centre to access them separately.

The LSTOC upgrade project involves installing a single traffic and tunnel safety control system. It will enable operators to coordinate responses to incidents, ensuring tactical control of all tunnel and traffic systems to minimise disruption and improve our response in emergency situations.

Phase one (all 12 tunnels moved over to the new system) is scheduled to be completed by July 2016.

#### Policing London's roads

We will continue to fund and work with the Metropolitan Police Service's RTPC to police our roads as part of our efforts to cut congestion and disruption. This is being done through intelligence-led activities and deployment of Metropolitan Police Service and our resources, including on-street officers and cameras. This enables us to provide a 24/7 response to incidents, with a continued focus on strategic corridors and vulnerable areas of the road network.

We are further enhancing enforcement capability by introducing another 80 TfL Roads and Transport Enforcement Officers. Half are already deployed, with all of them expected to be in post by May 2016. They will be specially trained and equipped to resolve issues affecting the road network.

#### Congestion Charging re-let

The Congestion Charging and Low Emission Zone schemes (collectively known as London Road User Charging or LRUC) are an integral part of the Mayor's Transport and Air Quality Strategies. The Traffic Enforcement Notice Processing (TENP) contract also plays an important role in smoothing traffic flows and improving bus journey time reliability on the TLRN.

The TENP contract was re-let in June 2015, while the LRUC re-let will be completed in 2016/17. In addition to delivering significant operational savings across the five year life of the contract, customers will benefit from service improvements including a mobile app and direct debit payments.

#### Cycling

Investment in cycling is providing a major boost, supporting the growing number of people taking to two wheels in central London and encouraging further growth across the Capital.

#### Central London Cycle Grid

This is a combination of Cycle Superhighways and Quietways, the Grid will complement our other cycling programmes. To deliver it we are working with eight inner London boroughs, the Royal Parks plus the Canal and River Trust.

There are 126 borough schemes which contribute to 85km of the Grid, with a further 15km being Cycle Superhighways. The programme is now entering peak construction time. Thirty-nine of these schemes (17.22km) are either being built or complete. Designs

for 105 of them have been received from boroughs; of these we have approved 95.

#### Quietways

The Quietways programme is a network of radial and orbital cycle routes across the Capital. The well-signed, direct back-street routes will link important destinations and may include parks or waterways. Quietways are designed to appeal to non-cyclists as well as enthusiasts, providing a quieter alternative away from main roads for those who wish to travel at a more leisurely pace.

Construction is well under way on the first two routes, with Quietway 1 from Waterloo to Greenwich due to be finished in spring 2016, and Quietway 2 from St Pancras to Walthamstow scheduled for the end of 2016.

Work is scheduled to begin on a further five Quietway routes in 2016/17:

- Regent's Park/Marylebone to Gladstone Park in Dollis Hill
- Elephant and Castle to Crystal Palace
- Aldgate to Hainault
- Waterloo to Croydon
- Clapham Common to Wimbledon

The second phase of the Quietways programme will see 22 more routes built by the end of 2018, many of which are already at the advanced stages of planning.



Existing Cycle Superhighways will be upgraded in 2016/17 and eight new routes opened

### Cycle Superhighways

New routes are being designed to even higher standards. The four existing Cycle Superhighways are being upgraded, and we have introduced innovative cycle priority junctions using cutting edge technology to help reduce serious collisions between cyclists and left-turning traffic.

CS5 inner (Oval to Pimlico) was fully opened in November 2015. By summer 2016, eight routes comprising more than 60km of new cycling infrastructure will have been opened:

- CS1 (Tottenham to Liverpool Street)
- CS2 (Bow to Aldgate) – a full upgrade to the original route
- CS3 (Barking to Tower Gateway) – a rolling programme of site-specific upgrades
- CS7 (Merton to the City) – site-specific upgrades

- CS8 (Wandsworth to Westminster) – site-specific upgrades
- North-South Cycle Superhighway (phase 1 – St George’s Circus to Stonecutter Street)
- East-West Cycle Superhighway (phase 1 – Tower Hill to Lancaster Gate)

During 2016/17, further public consultations are scheduled to be completed, for instance on phase two of the North-South Cycle Superhighway and the first phase of CS11.

### Mini-Hollands

The greatest potential for increasing cycle journeys is in outer London. The Mini-Hollands programme will provide significant investment in local areas and town centres, transforming them for cyclists and creating better places for everyone. Three boroughs – Waltham Forest, Enfield and Kingston upon Thames – have been selected to receive Mini-Hollands funding. Construction is well under way with some schemes, for instance the Walthamstow Village project, already complete. Those scheduled

to be finished in 2016/17 include Blackhorse Village in Waltham Forest, the Enfield Town to Meridian Water Quietway and Portsmouth Road in Kingston upon Thames.

### Cycle parking and Cycle Superhubs

High quality and secure cycle parking is essential if we are to get more people on two wheels, as a lack of appropriate facilities is often cited as a barrier to cycling.

The Cycle Superhubs programme will provide secure cycle parking facilities across London. In 2016/17, detailed feasibility studies will be carried out for proposed hubs at Waterloo, Abbey Wood, Romford, Barking and Tottenham Hale, with implementation planned for 2018/19. We will also continue to monitor the performance of Hounslow West and North Greenwich Superhubs, which will be completed in March 2016.

In addition, we will work with the boroughs to provide more cycle parking on streets, outside stations and at schools.

### Better junctions

We are working closely with road user groups and safety organisations to improve cycling provision at 33 of the Capital’s biggest and busiest junctions, concentrating resources on high priority locations. Many of the schemes will be completed as part of other major works, such as the Cycle Superhighways programme, and some will be stand-alone projects.

By summer 2016, consultations will have been carried out for 26 of the junctions.

Ten will have been improved – Elephant and Castle, Stockwell Cross, Apex (Shoreditch), Blackfriars, Bow roundabout, Lancaster Gate, Oval, Parliament Square, Spur Road and Tower Gateway.

Construction is due to start in spring 2016 at Archway gyratory. Subject to the outcome of a recent public consultation for proposals at Westminster Bridge South, enabling works are scheduled to begin in late 2016. This will be followed by main works in early 2017.

Further into the future, work to make the Borough High Street/Tooley Street junction safer will start in 2018, and construction at Marble Arch and the St Paul’s gyratory will start in 2019.

### Cycle Hire

We are improving the scheme for customers and in 2015 introduced a new app. We also ran a successful trial of the Blaze laserlight, which can be attached to the bikes to make them safer. This financial year will see the lights added to all 11,500 Santander cycles.

### Promoting cycling

The fourth Prudential RideLondon will be held on 30 and 31 July. The event promises a weekend of cycling activities on traffic-free roads and includes the family-friendly FreeCycle, the London-Surrey 100, Women’s Grand Prix, Men’s Classic, the handcycle race and Junior Grand Prix. RideLondon attracts huge crowds and worldwide media coverage.



The Elizabeth line is vital to London's future as it will increase the city's rail network capacity by 10 per cent

**Delivering the River Action Plan  
Woolwich Ferry life extension**

The project has now moved on to the second phase, which consists of three schemes designed to extend the service to at least 2025. This is in line with current timescales for a new river crossing at Gallions Reach.

Customers will benefit from two new ferries with more capacity and higher loading frequency, and marine works will take place so an automated mooring system can be installed. Finally, the existing life-expired ferry management offices will be replaced enabling the service to be run more efficiently.

**Pier and service extensions**

Maintaining the current upward trend in annual river passenger journeys will depend more and more on increasing pier capacity and creating new service routes. Plans for 12 additional piers will be progressed, many of which will be completed by 2020. The

majority of these are for east London where existing river services will be expanded to serve the rapid rise in housing and jobs.

**Unlocking growth for the future of London  
Elizabeth line**

A total of £14.8bn has been committed for the Elizabeth line's construction by Crossrail. It is Europe's largest infrastructure project. The Elizabeth line will stretch from Reading and Heathrow in the west to Shenfield and Abbey Wood in the east. The first services, between Liverpool Street and Shenfield, began operating last year with trains running through central London from the end of 2018. Full Elizabeth line operation is scheduled from the end of 2019.

Tunnels are complete and the construction programme has now progressed to fitting out the tunnels, shafts and portals with track, ventilation, high voltage and traction power, signalling, communications and overhead line equipment.

**Crossrail 2**

Crossrail 2 will link existing National Rail lines in Surrey and Hertfordshire with a tunnel running from Wimbledon in the south to Tottenham Hale and New Southgate in the north.

It will transform connectivity across the whole of the wider South East and take pressure off Tube and National Rail services coming in to the Capital from the South West and North East. When it opens, the new line would have capacity to carry more than 270,000 people in to and across London during the morning peak. It will also support around 200,000 new homes and jobs.

The National Infrastructure Commission has recognised the national significance of Crossrail 2 and has recommended earlier this month that it should be taken forward as a priority with funding to develop the scheme fully.

The line is being developed jointly with Network Rail and solves a number of challenges across the regional rail network.

Towns and cities across the South East from Southampton to Cambridge would benefit.

We have established a wholly owned development company, Crossrail 2 Ltd, to help drive forward the project, and work is under way to analyse the results of our third consultation on the project. This feedback, and further planning and engineering work, are informing the line's design and development throughout 2016/17. Current proposals would see Crossrail 2 services begin in the early 2030s subject to being granted permission to build it.

We are working closely with the West Anglia Taskforce to build the case for early four-tracking of the West Anglia Main Line by 2024. This would act as a precursor to Crossrail 2, enabling early delivery of up to 20,000 homes and 10,000 jobs along the whole West Anglia corridor. This includes the Upper Lee Valley, which is London's largest Opportunity Area.

Construction work continues on 10 new stations – Paddington, Bond Street, Tottenham Court Road, Farringdon, Liverpool Street, Whitechapel, Canary Wharf, Custom House, Woolwich and Abbey Wood.

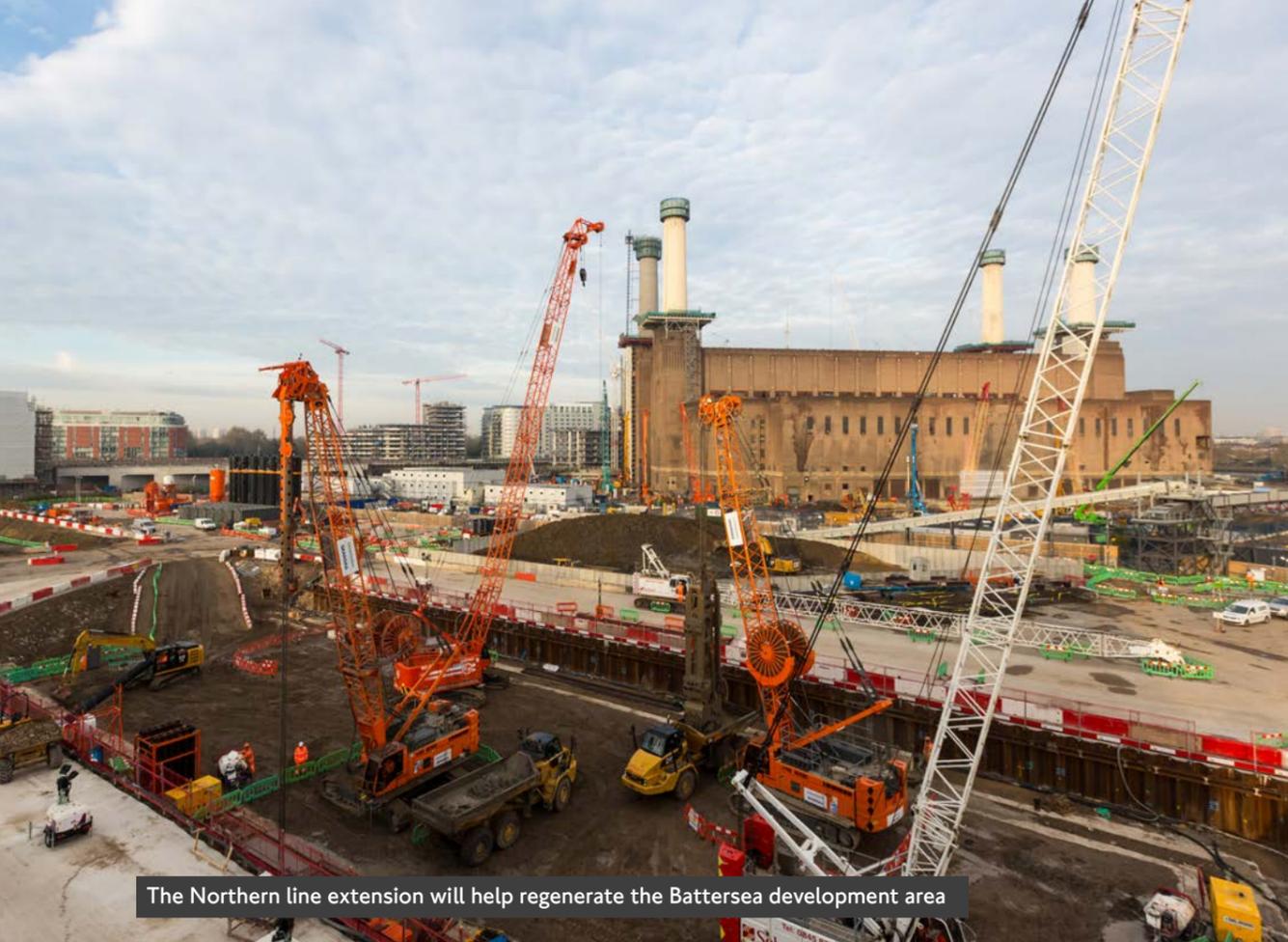
Work has also started at inherited stations to improve gatelines, signage and ticket machines, along with standards of cleanliness. We are committed to making every Elizabeth line station step-free through accessibility schemes at locations including Maryland, Manor Park, Hanwell, Seven Kings, Langley, Taplow and Iver.

Manufacturing of the new 200-metre trains by Bombardier in Derby is progressing. They will be tested in 2016/17, ahead of roll-out in 2017/18.

The upgrade of the existing rail network is being carried out by Network Rail and is now more than 60 per cent complete. The first section of the Stockley Flyover, which is used by Heathrow Express and Heathrow Connect services, is now in operation and excavation work has finished on the Acton 'Dive Under', which is due to end in 2016.

Now 70 per cent complete, the 100km Elizabeth line route will transform the way people travel across London, adding an extra 10 per cent capacity to the Capital's rail network.

We are working on a proposal, which is in the early stages of development, to extend the Elizabeth line 20km beyond Abbey Wood to Bexley, Ebbsfleet and Gravesend. It could unlock potential for 23,000 new homes and be delivered within 10 years.



The Northern line extension will help regenerate the Battersea development area

#### Northern line extension

This will connect Kennington to Battersea Power Station, with a new intermediate station at Nine Elms. The extension will be designed and developed with latent capacity, and will be able to accommodate at least 30 trains an hour in the peak.

The tunnel excavation works between Kennington and Battersea will begin in late 2016/17. We will also continue station works at Battersea and Nine Elms. The project will be financed by the GLA borrowing against income from incremental business rates, developers' contributions and the Community Infrastructure Levy.

#### Metropolitan line extension

Stretching from Croxley up to Watford Junction, the extension will enable six trains an hour to travel into central London at peak times, with four an hour off-peak. In 2016/17, detailed designs will be completed and engineering will start on two new stations and a 400-metre viaduct.

#### Bakerloo line extension

After assessing a number of options we have confirmed we will focus on an extension from Elephant and Castle to Lewisham via the Old Kent Road, as a first phase. This alignment provides the greatest opportunity to support growth with the potential to unlock 25,000 new homes while improving access to jobs in central London. Next year more detailed work will be carried out before another public consultation and we could then seek permission from Government to start constructing the extension by 2020.

#### London Trams extension to Sutton

In line with our Tram 2030 Strategy, we are exploring options for extending the tram to Sutton to support housing growth along the corridor between South Wimbledon to Sutton town centre.

We are working closely with the boroughs to develop an understanding of the case for extending the tram to Sutton, how this could be funded and delivered, and in what timescale. To support this, we have made a provision in this Business Plan of £100m towards the cost of delivering the project.

#### Growth Fund

This fund was established in 2012 and supports 15 critical transport infrastructure projects to bring forward development in growth areas. This includes support for the delivery of the extension to the Gospel Oak to Barking line into Barking Riverside; a new ticket hall for the Northern line station at Elephant & Castle and the Fiveways junction project in Croydon.

All the projects are essential to unlocking growth and will help support the delivery of 55,000 new homes and thousands of new jobs.

#### Improving the environment

Transport is a major contributor to air pollutants and carbon dioxide (CO<sub>2</sub>) emissions in Greater London. We must manage the local and global environmental impacts of our operations while maintaining a world-class service that offers our customers value for money.

We operate a reliable, high capacity network while still focusing on lower polluting services including trains, buses and cycling. We also promote walking with major improvements to pedestrian areas, while encouraging the use of the cleanest vehicles for freight and private transport. We will continue to drive environmental performance and report on our

progress each year, including monitoring the benefits of schemes and policies that reduce carbon and air pollutant emissions.

#### Ultra Low Emission Zone (ULEZ)

The ULEZ will cover the same area as the Congestion Charging zone. It will require all cars, motorcycles, vans, minibuses, buses, coaches and HGVs being driven within the zone to meet specific exhaust emission standards. If they do not, an additional daily charge will apply. The ULEZ will come into force on 7 September 2020 and will operate 24 hours a day, 365 days a year.

The scheme comprises three important elements: a significant increase in low and zero emission buses; new emission requirements for taxis and PHVs; and considerably cleaner vehicles across our wider fleet.

To maximise the benefits of the Ultra Low Emission Zone, we will continue our efforts to make London the Ultra Low Emission Vehicle (ULEV) capital of Europe.

Our Ultra Low Emission Vehicle Delivery Plan includes further details on the range of programmes to increase uptake of ULEVs, including expanding the range of ultra low emission commercial vehicles and enabling private car owners to choose a ULEV.



All new taxis presented for licensing in the Capital will be zero emission capable from 1 January 2018

#### Reducing nitrogen dioxide

We have installed almost 2,000 buses with exhaust after-treatment technology to cut oxides of nitrogen (NO<sub>x</sub>) emissions from the fleet. In addition, we will replace any un-retrofitted Euro III engine vehicles with new buses that benefit from the ultra low emission Euro VI engine. These two initiatives will cut 1,000 tonnes of NO<sub>x</sub> a year from the fleet – a 20 per cent reduction compared with 2012.

#### Zero Emission Capable taxis (ZEC)

As part of the ULEZ scheme, from 1 January 2018 no new diesel taxis will be licensed and all taxis presented for licensing for the first time must be ZEC. This means the vehicles must have CO<sub>2</sub> emissions below 50g/km and a minimum zero emission range of 30 miles. With our support, a number of manufacturers are developing ZEC taxis suitable for use in London.

In 2016/17, we will appoint a delivery partner to administer a purchase grant scheme plus a

decommissioning scheme for older vehicles. These will stimulate the uptake of ZEC vehicles and enable the removal of the oldest, most polluting diesel taxis from London's streets.

Work will continue to support the electrification of the taxi, private hire and other commercial fleets, through development of a network of up to 300 rapid charge points by 2020.

#### Air Quality Fund

The fund has committed £20m over 10 years to help boroughs tackle local air quality hotspots. They can apply for up to £400,000 in funding for innovative local projects such as supporting low emission vehicles, reducing engine idling or transforming a street to make it less polluted and more attractive for pedestrians and cyclists. The second phase of the initiative was launched in 2015, with 42 projects awarded funding. These will be delivered between 2016 and 2019, with our support, along with up to five new flagship Low Emission Neighbourhood schemes.

#### Reducing carbon emissions from our operations

CO<sub>2</sub> emissions are being managed across our services, both through sourcing lower carbon energy and improving the efficiency of our operations. In 2016, we plan to complete a deal to connect directly to 30 megawatts of locally-sourced, low-carbon electricity. This will cut costs and support our environmental strategy. We also have a target to introduce 120 ultra low emission vehicles into our support fleet.

#### Cutting overall emissions from buses

More than 19 per cent of London's bus fleet is hybrid, with 1,650 vehicles using diesel-electric technology. As part of the ULEZ scheme, this will increase to around a third of the bus fleet by 2020, with 3,000 vehicles. We remain firmly at the forefront of demonstrating and evaluating new technology that offers zero tailpipe emissions. We have eight hydrogen fuel cell buses running on route RV1 from Covent Garden to Tower Gateway and 17 all-electric buses are being trialled across four routes. The overall number will exceed 70 in autumn 2016, when routes 507 and 521 will switch to all-electric operation and 300 zero emission buses in total by 2020.

With funding secured from the European Commission, we have just started assessing diesel-electric hybrid buses that use high-power wireless charging infrastructure. Two 'inductive power transfer' stations have been installed at Walthamstow Central and Canning Town bus stations to serve route 69. We are also introducing the world's first pure-electric double-deck buses to London in early 2016.

#### Reducing emissions from our assets

Our goal is to lead by example in reducing the impact our operations have on the environment. We are upgrading our street lighting to LEDs, delivering significant CO<sub>2</sub> and energy savings. More than 4,500 street lights will be converted to LEDs by March 2017, and all traffic signal replacements will use LED extra-low voltage.

Table 4: Environment

Performance indicator	2015/16 Budget	2015/16 Forecast	2016/17 Budget
<b>Environmental performance</b>			
Hybrid bus fleet	1,650	1,650	1,700
Zero emission bus introduction	8	25	70
NO <sub>x</sub> emissions from bus fleet (Tonnes)	3,308	3,308	3,290

Table 5: Reliability

Performance indicator	Unit	2015/16 Budget	2015/16 Forecast	2016/17 Budget
<b>Lower is better</b>				
London Underground: excess journey time	Minutes	4.50	4.53*	4.35
London Underground: total lost customer hours	Millions of hours	18.8	18.2	17.9
TLRN: unplanned serious and severe disruption	Hours per event	2	2	2
Buses: excess wait time	Minutes	1.1	1.2	1.1
TLRN: serious and severe disruption	Hours	1,500	1,500	1,500
<b>Higher is better</b>				
TLRN: journey time reliability (AM peak)	Per cent	87.0	87.0	87.6
DLR: departures	Per cent	99.0	98.5	99.0
London Overground: public performance measure	Per cent	94.5	94	94
TfL Rail: public performance measure	Per cent	92.0	94.0	94.3
Emirates Air Line availability	Per cent	95	95	95
TLRN: carriageway in state of good repair	Per cent	92	92	92
Footways in a state of good repair	Per cent	93	93	94
Traffic signal availability	Per cent	99.1	99.1	99.1
Dial-a-Ride scheduled trips	Per cent	90	90	91

\* Including industrial action. Would be 4.26 if industrial action was not included

Table 6: Safety and security

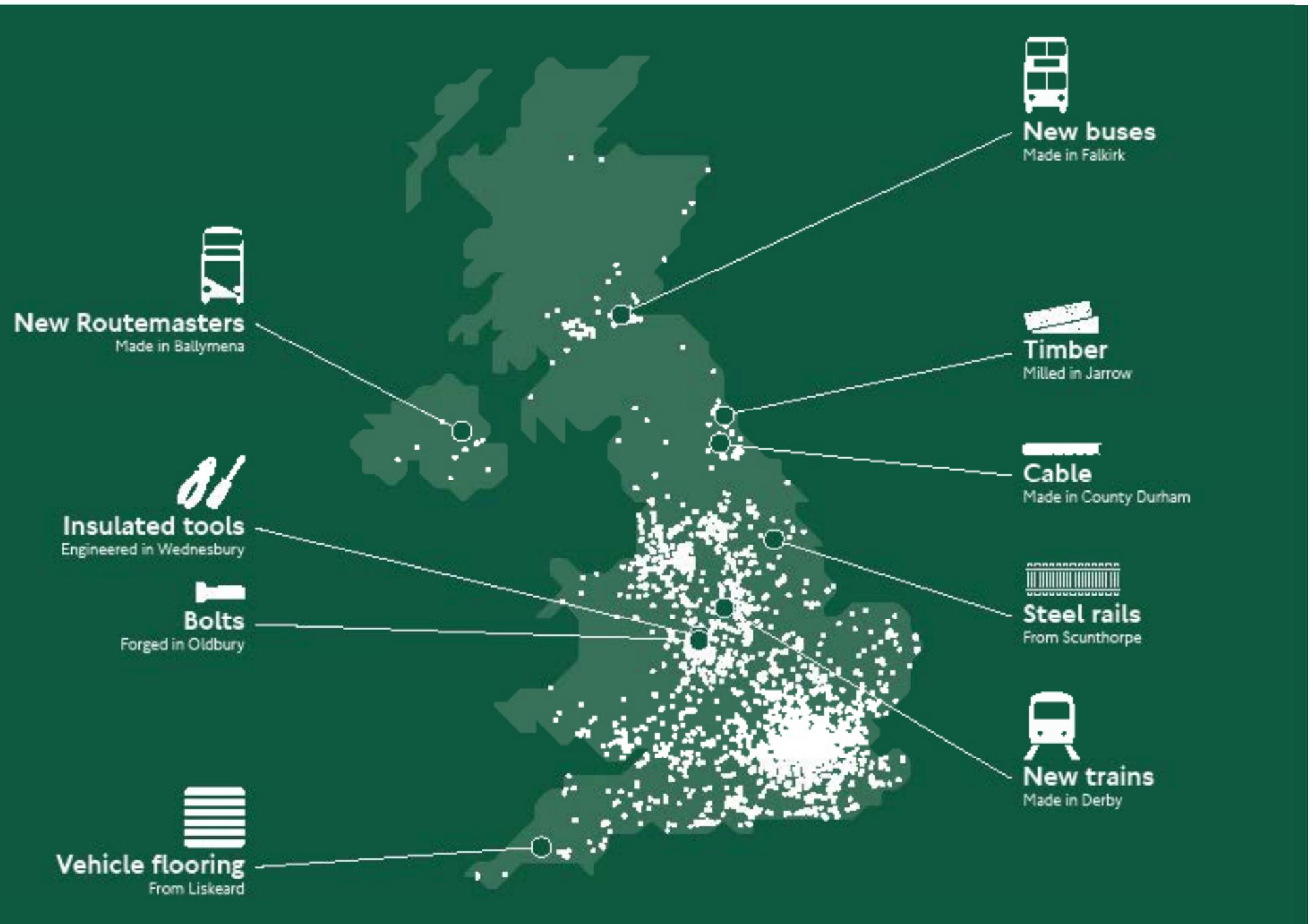
Performance indicator	Unit	2015/16 Budget	2015/16 Forecast	2016/17 Budget
<b>Lower is better</b>				
London Underground and DLR: recorded crime	Million passenger journeys	7.1	7.0	6.7
London Overground: recorded crime	Million passenger journeys	7.5	7.5	6.3
Buses: recorded crime	Million passenger journeys	7.3	7.7	7.6
Rail and Underground significant injuries per million	Rate	0.40	0.18	n/a
Rail and Underground: RIDDOR* reportable injuries	Rate	n/a	0.31	0.31
<b>Higher is better</b>				
Cumulative reduction in KSIs on London roads (from 2005-09 baseline)	Per cent	38.6	41.7	43.9

\*Reporting of Injuries, Diseases and Dangerous Occurrences Regulations

# Our people – dedicated to customer service

We need to recruit, reward and develop the right people with the right skills and behaviours. Whether employed directly, or contractors employed through our supply chain, dedicated people are vital to ensure our organisation provides excellent customer service and helps London prepare for the future.

We work with thousands of suppliers across the UK, supporting an estimated 60,000 jobs outside London.



### Graduates and apprentices

We are carrying out a huge programme of investment in London's transport network and will need the next generation to help deliver it. We continue to invest in graduate and apprenticeship schemes that offer structured training programmes to ensure we have the right skills for the future.

Across our organisation there are currently 19 apprenticeship schemes and we are designing a further seven for September 2016. They combine hands-on experience with academic study, resulting in qualifications ranging from Level 2 (GCSE standard) through to Level 6 (Bachelor's degree). Many also offer the opportunity to work towards professional qualifications in subjects ranging from engineering and transport planning to finance and human resources. We anticipate offering up to 150 new apprenticeships in 2016.

At the same time, we are taking an active role in designing new apprenticeship standards for the transport industry. We are involved in 11 employer consortium government 'Trailblazer' groups, including for rail engineering, passenger transport, quantity surveying and project management.

Our graduate programme continues to go from strength to strength. In 2016, we will welcome 211 graduates and undergraduates (including 35 'Year in Industry' and 18 summer placements), covering subjects such as transport planning,

project management, commercial, general management, engineering, finance and information management. As a result, our total number of new graduates will exceed 350.

We again featured among the 2015 Times top 100 graduate employers and were named the Graduate Employer of Choice for the transport and logistics sector. As well as that, we were winners in the 'Job Crowd Top Companies For Graduates To Work For' awards for the transport, logistics and distribution sector (larger intake category).

### Educating, inspiring and providing opportunities

We are committed to inspiring the next generation of transport professionals, with a particular focus on promoting careers in engineering and technology. We have also contributed to the DfT's Transport and Infrastructure Skills Strategy, which was published in early 2016.

Our school skills programme includes activities aimed at young people, their parents and teachers to encourage more of our future talent to pursue science, technology, engineering and maths subjects, and to address under representation within our sector.

### Supporting career progression and development

To be effective, our managers need the right skills and knowledge to lead their teams and be clear about what is expected of them.



Apprentices in training

This year, we are embedding 'Maximising Potential', our first organisation-wide framework for measuring and assessing talent. It will help us identify the people we need now, and those who can lead the organisation in the future. Most of all, it will help ensure we have the people and skills to deliver the services that London requires. In addition, we are developing a strategic plan that will allow us to generate insights to make better workforce planning decisions.

Following our successful executive education programme in 2015/16, we are giving even more of our senior managers the opportunity to participate in this challenging programme, which has a strong emphasis on creating engaging and more commercial leaders.

### Promoting diversity and supporting society

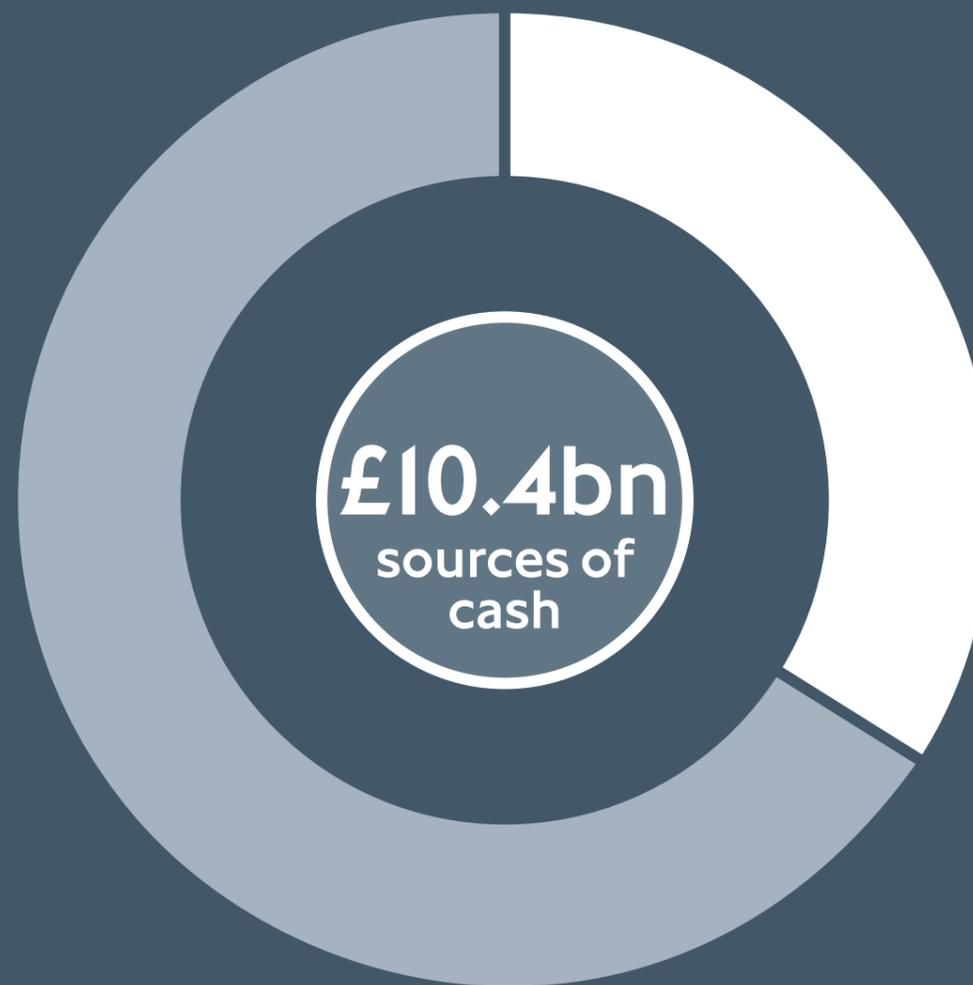
We continue to mark 100 years since women joined the transport industry with events, exhibitions and other activities that highlight the opportunities available to them in the industry.

In 2016, we will publish our new Action on Equality Scheme, which will outline our continuing work to ensure we recognise and support London's diverse communities. It focuses on both our customers and employees – we aim to be an employer of choice for people from all equality groups and backgrounds – and follows on from our Single Equality Scheme.

We are also being reviewed by the Equality Framework for Local Government. This is a voluntary assessment we undertake to ensure we are realising our ambitions. We intend to achieve the 'excellent' rating once again.

# Value – delivering more with less

Providing value for money for fare and tax payers. Focusing on better, simpler and cheaper, and spending to save.



### Commercial development

The overall objective of our commercial development programme is to generate £3.4bn in additional net income from our assets over a 10-year period. This revenue is essential if we are to fund our ambitious transport infrastructure investment plans. We are in a good position as we hold a very large asset base – the biggest under a single ownership in London.

We own 5,700 acres of land, including more than 400 sites with potential for development. And we generate income from more than 1,000 retail units in and around our stations, 800 railway arches, 61 car parks and 38 street vending pitches.

Our asset base has the potential to see us become one of the UK's great estates with a mix of residential, commercial, office and retail. It also means we can help support London's growth beyond transport.

We have looked at the way we manage our assets and recognised a huge opportunity to deliver the infrastructure London needs through new communities, homes, space and support for small businesses, and improved digital connectivity. This is in addition to generating the revenues we require for investment in the transport network.

### Property development

We have prioritised our property portfolio and identified 75 sites for development over the next 10 years, two thirds of which are located in Zones 1 and 2. These have been selected based on ease of delivery and the value they will deliver – £1.1bn to invest in our network, combined with local transport improvements, homes that Londoners can afford and new commercial space to support jobs.

Over the next decade, these sites have the potential to deliver 10,000 new homes covering more than 300 acres, with 10 million sq. feet of residential and commercial space.

Much of our land forms part of the operational transport network, which means developing it is not always straightforward. However, beyond the first 75 sites there is still more scope for this land to be used for the homes London needs. We will work closely with our public and private sector partners to find solutions and earmark as many sites for redevelopment as possible.

In February 2016 we announced the 13 organisations on our Property Partnerships framework, with whom we will be working in joint ventures on the bulk of the first 75 development sites.

### Earls Court

In 2014 we established the Earls Court Partnership with Capital and Counties to redevelop Earls Court 1 & 2, which forms part of the Earls Court Masterplan.



The partnership, in which we are a 37 per cent shareholder, will drive the redevelopment of our landholdings in the area and will contribute to the creation of 7,500 new homes and 10,000 new jobs.

### Advertising and sponsorship

We have one of the largest out-of-home advertising estates in the world (20 per cent of the UK market and 40 per cent of the London market). Combining the assets of London Underground, London Overground, the DLR, Victoria Coach Station, trams and our on-street advertising, we can reach more than 1.5 billion people a year.

From October 2016, we are changing the way we manage our advertising space on the rail network by entering into partnership with the private sector. This new approach will help us generate an estimated £1.2bn over 10 years. It will also allow us to use technology to provide customer information in a new and engaging way.

Through a new commercial media partnership we will bring together advertising, sponsorship and experiential marketing to provide a more compelling proposition for advertisers and a better experience for our customers.

We have already had great success in generating additional revenue through sponsorship as part of our Santander Cycle Hire partnership. At £44m, it is the largest public-sector sponsorship in the world. However, it offers so much more as we are using Santander's marketing expertise to give people a more accessible and enjoyable experience, as well as to reach new customers so the scheme can expand and thrive.

### Retail

We have more than 1,000 retail units but, until recently, we have not fully realised their potential in terms of added revenue, or providing a service for customers. Their location



We are making more of our station assets to generate revenue, for example at Hammersmith station

offers a valuable opportunity for retailers – huge guaranteed footfall with access to people from across London’s diverse communities.

By making sure we have the right businesses in the right locations, we can generate the revenues required to support our investment plans and provide our customers with the services they want and need. Our plans are to ensure a mix of small, independent businesses and larger retailers.

Our estate is also offering start-up businesses the chance to test their concept and flourish. We intend to develop this further through our street vending pitches and various pop up facilities.

#### Digital connectivity

As the Capital and its population expands and technology develops, the need for digital infrastructure grows with it.

Our network provides a unique opportunity to improve digital connectivity through high-speed fibre over our vast estate of tracks and tunnels. We can also enhance mobile coverage across London by using our thousands of lamp columns and other on-street infrastructure to host telecommunications equipment. Although in the early stages of development, we believe that we have the capacity to connect London, and not just through transport.

#### Strategic risks

In preparing the Budget 2016/17 and Business Plan we have tried to achieve a balance of the risks and opportunities, in operating, maintaining and upgrading a diverse transport network.

In particular we have considered the risks which could impact the delivery of our strategic priorities and the potential financial and non-financial impacts. They include:

- Exposure to various economic risks, such as disruption to financial markets affecting our ability to borrow and lower than forecast GDP growth
- Knowledge retention and timely staff development, as well as continuing negotiations with trade unions that could affect the levels of service provision
- A disruption to service quality owing to large-scale asset renewal and replacement programmes, frequent line or major station closures, and changes to operational procedures and resource requirements after upgrades are completed
- Domestic or international terrorism and other security threats that may cause casualties, disrupt service, damage assets and create fear among the travelling public
- An information or cyber security incident or the failure of critical IT systems (applications, networks and infrastructure) impacting business operations and support services

- Key elements of investment programmes not being delivered on time and to budget or delivering expected benefits
- Targets set by external stakeholders not being met, including targets for improved air quality

Where appropriate, we adopt risk-specific mitigation strategies to limit our exposure. We maintain a general fund to ensure liquidity and protect us from short-term effects that may arise from specific risks.

We are reviewing strategic risk and our Strategic Risk Register, approach and reporting documentation are being refreshed. This will mean we can provide meaningful and simplified strategic risk information to support decision making.

We continue to work with the Audit and Assurance Committee to enhance the way we manage strategic risks, and provide regular updates at these meetings. In addition, we are investing in training and systems so our employees can manage risk effectively and efficiently.

# Financial summary

This Budget 2016/17 and Business Plan reflects a financially balanced position that includes the impact of the Spending Review announced in November 2015. Business rates and revenue grants as an income source reduce from 21.2 per cent of total income in 2015/16 to 11.3 per cent by 2020/21 as a result of reduced income from central Government.

To mitigate this reduction in Government funding, we are implementing a number of measures both to reduce expenditure and to increase income. These measures include projects to generate new commercial income and grow existing revenue streams as well as to reduce operating costs. At the same time we are taking steps to value engineer cost out of the investment programme.

Our objective is to reach break even on direct operating costs by 2018/19, earlier than anticipated in the 2014 Business Plan. This new Plan also works towards a position where direct operating costs (excluding financing costs) and capital renewals are covered by operating income by 2020/21.

We have set a strategic objective to reduce operating costs by nearly nine per cent against the 2015/16 outturn position over the next five years. This enables us to continue with the planned capital investment programme.

The capital programme comprises two parts: capital renewals to maintain and renew the current network and new capital investments, which are schemes to enhance or add new elements to the network. This plan assumes capital renewals remain at an equilibrium rate of some £1bn a year, and that new capital enhancements are some £1.2bn a year. We have begun to identify value engineering options on new capital investment projects and we are targeting programme cost reductions of 10 per cent against the estimated final cost through better cost management. Further initiatives will reduce the annual cost of our capital renewals while not degrading our assets.

Over the past three years fares have been increased in line with inflation. In this Plan, fares income from January 2017 and in subsequent years is assumed to increase at the rate of RPI inflation plus one per cent,

which is consistent with our assumption in the 2014 Business Plan. Decisions on fares are taken each year by the Mayor. Overall fares income growth over the five years is 45 per cent (2015/16: £4.6bn/2020/21: £6.6bn) with a third of the growth attributable to the start of Elizabeth line operations. The remaining two thirds is a mixture of volume from continuing growth in population and employment in London and from inflation. As in previous plans, we use a number of external and independent RPI inflation forecasts, including from the Office for Budget Responsibility and from a number of UK banks, to determine our forecast of RPI.

For 2016/17, we have re-baselined our savings programme against the 2015/16 outturn. We have been refining our budgeting and forecasting processes and, from now on, we will account for our performance primarily against demanding annual budgets rather than on a multi-year savings programme.

The case for investment in Crossrail 2 has been strongly endorsed by the National Infrastructure Commission, which recommended it should be taken forward as a priority. This Budget and Business Plan does not allow for any expenditure or income relating to Crossrail 2. Any subsequent announcement by Government on funding the development of Crossrail 2 would be in addition to the numbers presented in this document.

This Budget 2016/17 and Business Plan is susceptible to changes in a wide range of assumptions and external forecasts, including:

- GDP growth
- Inflation
- Passenger volumes
- Congestion levels

# Sources of cash

We have five main sources of income including fares, government grant and borrowing, which is used to fund and invest in operating and capital expenditure.

## Fares income

Our largest source of cash is fares revenue (46 per cent) contributing towards the cost of operating and improving our transport services. Increased demand, inflation increases and the addition of the West Anglia service, a new route run by London Overground, account for an increase in this figure in 2016/17 compared to 2015/16.

We are committed to affordable transport. Decisions on fares are taken each year by the Mayor.

## Grants

These make up 24 per cent of our total cash receipts and are received from both central and local government.

The main grants are:

- DfT general grant, £447m – this is a direct contribution to our operating costs
- DfT investment grant, £944m – this is used solely for capital improvements to relieve congestion, improve reliability on vital routes and enable us to comply with UK transport policies. Central government has provided a funding commitment to 2020/21

- Business rates retention, £854m – this is generated from a proportion of local business rates and paid to us by the Greater London Authority (GLA)
- Northern line extension funding, £159m – a grant is provided by the GLA. It is financed through incremental business rates generated and retained within a new enterprise zone, developers' contributions raised by Wandsworth and Lambeth borough councils
- The GLA precept that is funded from local Council Tax receipts

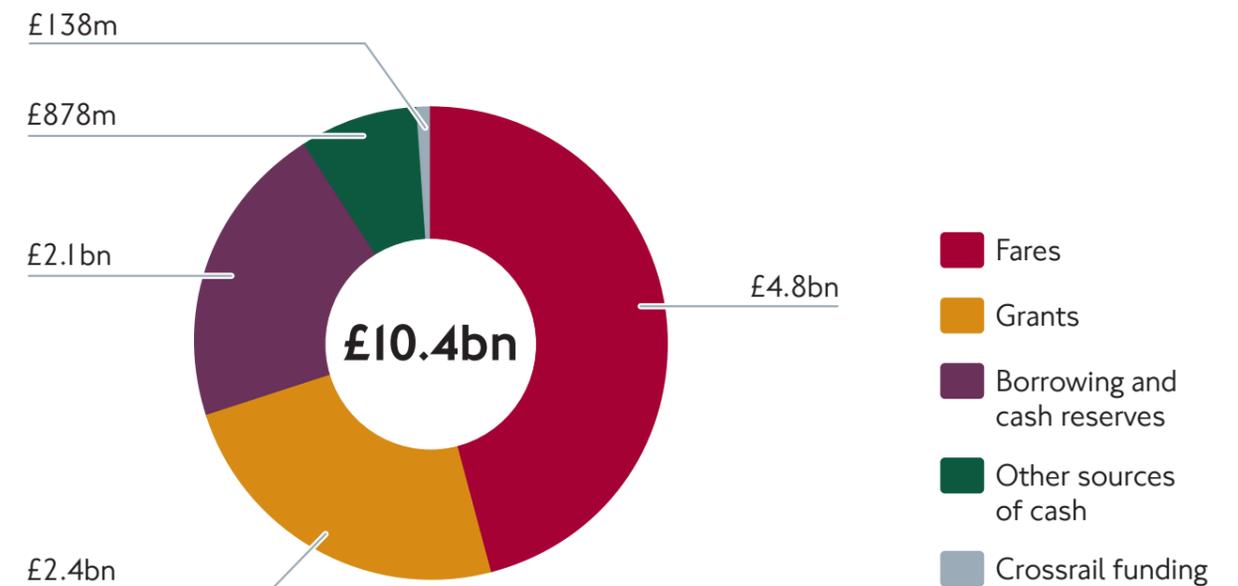
## Borrowing and cash reserves

We borrow from a variety of sources using a combination of mechanisms that include bonds, commercial paper, loans for specific projects from the European Investment Bank and the Public Works Loan Board. Borrowing and draw down of cash will make up 20 per cent of our income in 2016/17.

When considering borrowing, we assess many factors, including cost, market conditions and the level of flexibility on offer. Our borrowing limits are set out in our funding agreement with central government and are approved by the TfL Board.

Cash balances, beyond a prudent minimum, are allocated to specific investments outlined in the Plan. Our cash balances are only used to fund capital investment and are fully allocated to future projects.

TfL sources of cash 2016/17



## Other sources of cash

We receive income from the Congestion Charge and road network compliance. In addition, we generate cash from commercial opportunities such as advertising and property sales, rental and development. Our retail estate is being improved at stations such as Embankment and Canary Wharf and we are continuing to work with third-party sponsors for the Cycle Hire scheme.

This currently makes up eight per cent of our income, but will become increasingly important as the DfT general grant is phased out over the coming years.

## Crossrail funding

Europe's largest construction project is set to transform rail services in London and the South East. It is the responsibility of Crossrail Ltd, a wholly-owned subsidiary of TfL, and financing for the scheme makes up one per cent of our income. It is jointly sponsored by us and the DfT. Government funding for Crossrail stopped in 2015/16 as scheduled.

# Financial tables Budget 2016/17

Table 7: Operating Account

TfL Group (£m)	2015/16 Budget	2015/16 Forecast	2016/17 Budget
<b>Operating Account</b>			
Fares income	4,640	4,571	4,811
Other operating income	641	685	696
General Grant	659	591	447
Business Rates Retention	848	773	854
Other	35	47	33
<b>Total Operating Income</b>	<b>6,822</b>	<b>6,667</b>	<b>6,841</b>
Direct Operating Cost	(6,634)	(6,392)	(6,401)
<b>Net income from operations before capital renewals</b>	<b>188</b>	<b>274</b>	<b>440</b>
Capital Renewals	(1,381)	(1,328)	(1,086)
<b>Net cost of operations before financing</b>	<b>(1,193)</b>	<b>(1,053)</b>	<b>(645)</b>
Financing and Group items	(344)	(315)	(349)
<b>Net cost of transport operations</b>	<b>(1,537)</b>	<b>(1,368)</b>	<b>(994)</b>

Table 8: Capital Account

TfL Group (£m)	2015/16 Budget	2015/16 Forecast	2016/17 Budget
<b>Capital Account</b>			
New Capital Investment	(1,130)	(1,086)	(1,020)
Crossrail	(1,535)	(1,613)	(1,398)
<b>Total Capital investment</b>	<b>(2,665)</b>	<b>(2,699)</b>	<b>(2,419)</b>
<b>Financed by:</b>			
Investment Grant	925	925	944
Property Income	385	387	127
Borrowing	601	598	732
Crossrail funding sources	893	945	138
Other Capital grants	146	127	168
<b>Total</b>	<b>2,950</b>	<b>2,982</b>	<b>2,109</b>
<b>Net Capital Account</b>	<b>285</b>	<b>282</b>	<b>(311)</b>

TfL Group (£m)	2015/16 Budget	2015/16 Forecast	2016/17 Budget
Net cost of transport operations	(1,537)	(1,368)	(994)
Net Capital Account	285	282	(311)
<b>Net movement in cash and working capital</b>	<b>(1,252)</b>	<b>(1,087)</b>	<b>(1,305)</b>

Table 9: Balance sheet

TfL Group (£m)	2015/16 Forecast	2016/17 Budget
<b>Long term assets</b>		
Tangible assets	34,792	37,484
Intangible assets	121	78
Share of associate net assets	71	71
Long term debtors and derivatives	456	480
<b>Total long term assets</b>	<b>35,440</b>	<b>38,113</b>
<b>Current assets</b>		
Stocks	69	69
Debtors and prepayments	581	529
Loans receivable (short term)	1,283	855
Cash and investments	3,093	2,010
<b>Total current assets</b>	<b>5,026</b>	<b>3,463</b>
<b>Liabilities</b>		
Creditors	(2,380)	(2,236)
Finance lease creditors	(680)	(586)
Borrowings	(9,112)	(9,845)
Provisions	(172)	(85)
Pensions	(2,881)	(2,868)
<b>Total liabilities</b>	<b>(15,225)</b>	<b>(15,620)</b>
<b>Total net assets</b>	<b>25,241</b>	<b>25,956</b>
<b>Capital and reserves</b>		
General fund	(150)	(150)
Earmarked reserves	(3,007)	(1,900)
Other reserves	(22,084)	(23,906)
<b>Total capital employed</b>	<b>(25,241)</b>	<b>(25,956)</b>

Numbers may be subject to rounding

Table 10: Cash summary

TfL Group (£m)	2015/16 Forecast	2016/17 Budget
Net revenue expenditure	(1,451)	(1,243)
Net capital expenditure	(3,640)	(3,377)
Working capital movements	(500)	221
<b>Cash spend</b>	<b>(5,591)</b>	<b>(4,399)</b>
<b>Financed by:</b>		
Transport and other grants	2,457	2,440
GLA precept	6	6
Net borrowing and other financing	598	732
Crossrail funding sources	945	138
<b>Total funding</b>	<b>4,006</b>	<b>3,316</b>
<b>Net movement in cash</b>	<b>(1,585)</b>	<b>(1,083)</b>
<b>Opening cash</b>	<b>4,678</b>	<b>3,093</b>
Crossrail sponsors funding account	1,445	799
Other TfL cash balances	1,648	1,211
<b>Closing cash</b>	<b>3,093</b>	<b>2,010</b>

Numbers may be subject to rounding

# Budget 2016/17 by business unit

Table 11: Rail and Underground

Rail & Underground (£m)	2015/16 Budget	2015/16 Forecast	2016/17 Budget
Fares income			
London Underground	2,556	2,557	2,704
London Rail	472	487	541
<b>Total fares income</b>	<b>3,029</b>	<b>3,044</b>	<b>3,245</b>
Other operating income			
London Underground	140	148	158
London Rail	26	27	28
<b>Total other operating income</b>	<b>165</b>	<b>175</b>	<b>187</b>
Operating expenditure			
London Underground	(2,191)	(2,140)	(2,117)
London Rail	(557)	(531)	(588)
Renewal and reliability projects			
LU Net Renewal & Reliability Projects	(157)	(118)	(112)
<b>Total operating expenditure</b>	<b>(2,906)</b>	<b>(2,790)</b>	<b>(2,817)</b>
Net capital expenditure			
London Underground	(1,185)	(1,150)	(1,132)
London Rail	(294)	(234)	(320)
Net capital expenditure	(1,479)	(1,384)	(1,452)
<b>Net investment spend</b>	<b>(1,637)</b>	<b>(1,502)</b>	<b>(1,565)</b>
London Underground	(838)	(702)	(499)
London Rail	(354)	(252)	(338)
<b>Net service expenditure</b>	<b>(1,191)</b>	<b>(955)</b>	<b>(838)</b>

Table 12: Surface Transport

Surface Transport (£m)	2015/16 Budget	2015/16 Forecast	2016/17 Budget
Bus fares income	1,611	1,527	1,566
Bus contract costs and ticket commission	(2,036)	(1,992)	(2,041)
<b>Direct bus subsidy</b>	<b>(425)</b>	<b>(464)</b>	<b>(475)</b>
Other bus income	29	33	42
Bus operating expenditure	(84)	(77)	(78)
Bus capital expenditure	(139)	(121)	(65)
<b>Net bus service expenditure</b>	<b>(620)</b>	<b>(630)</b>	<b>(576)</b>
Other Surface Transport			
Other operating income	382	395	399
Other operating expenditure	(828)	(792)	(752)
Other capital expenditure	(345)	(367)	(297)
<b>Net service expenditure</b>	<b>(1,410)</b>	<b>(1,394)</b>	<b>(1,227)</b>

Table 13: Specialist services

Specialist services (£m)	2015/16 Budget	2015/16 Forecast	2016/17 Budget
Other operating income	57	72	63
Operating expenditure	(772)	(733)	(707)
Net capital expenditure	(163)	(154)	(165)
<b>Net service expenditure</b>	<b>(878)</b>	<b>(814)</b>	<b>(808)</b>

# Five-year business plan

Table 14: Operating account

TfL Group (£m)	2016/17 Budget	2017/18 Draft	2018/19 Draft	2019/20 Draft	2020/21 Draft
<b>Operating Account</b>					
Fares income	4,811	5,117	5,584	6,165	6,621
Other operating income	696	768	859	867	884
General Grant	447	228	0	0	0
Business Rates Retention	854	874	894	914	934
Other	33	33	33	33	6
<b>Total Operating Income</b>	<b>6,841</b>	<b>7,019</b>	<b>7,370</b>	<b>7,978</b>	<b>8,445</b>
<b>Direct Operating Cost</b>	<b>(6,401)</b>	<b>(6,491)</b>	<b>(6,680)</b>	<b>(7,129)</b>	<b>(7,390)</b>
<b>Net income from operations before capital renewals</b>	<b>440</b>	<b>528</b>	<b>690</b>	<b>850</b>	<b>1,055</b>
Capital Renewals	(1,086)	(1,021)	(1,059)	(930)	(996)
<b>Net cost of operations before financing</b>	<b>(645)</b>	<b>(493)</b>	<b>(369)</b>	<b>(80)</b>	<b>59</b>
Financing and Group items	(349)	(540)	(522)	(589)	(631)
<b>Net cost of transport operations</b>	<b>(994)</b>	<b>(1,033)</b>	<b>(891)</b>	<b>(669)</b>	<b>(572)</b>

Table 15: Capital account

TfL Group (£m)	2016/17 Budget	2017/18 Draft	2018/19 Draft	2019/20 Draft	2020/21 Draft
<b>Capital Account</b>					
New Capital Investment	(1,020)	(1,299)	(1,262)	(1,077)	(1,396)
Crossrail	(1,398)	(689)	(168)	(176)	(12)
<b>Total Capital investment</b>	<b>(2,419)</b>	<b>(1,989)</b>	<b>(1,430)</b>	<b>(1,253)</b>	<b>(1,408)</b>
<b>Financed by:</b>					
Investment Grant	944	960	976	993	1,010
Property Income	127	279	135	232	199
Borrowing	732	901	500	500	601
Crossrail funding sources	138	109	143	25	25
Other Capital grants	168	246	265	166	28
<b>Total</b>	<b>2,109</b>	<b>2,495</b>	<b>2,019</b>	<b>1,917</b>	<b>1,863</b>
<b>Net Capital Account</b>	<b>(311)</b>	<b>506</b>	<b>589</b>	<b>664</b>	<b>455</b>

TfL Group (£m)	2016/17 Budget	2017/18 Draft	2018/19 Draft	2019/20 Draft	2020/21 Draft
Net cost of transport operations	(994)	(1,033)	(891)	(669)	(572)
Net Capital Account	(311)	506	589	664	455
<b>Net movement in cash and working capital</b>	<b>(1,305)</b>	<b>(527)</b>	<b>(302)</b>	<b>(5)</b>	<b>(117)</b>

# Key milestones in 2016/17

## London Underground

Delivery area	Project name	Description	Date
Northern Line Extension	Battersea Station	Complete diaphragm walling and piling for crossover	Jul-16
		Initial civils design for main station box issued for construction	Jul-16
		Complete diaphragm walling and piling for Battersea station box	Mar-17
Track	Track partnership management	16 per cent of track on the Bakerloo, Central, Victoria and Sub-surface lines replaced since 2010, to renew life-expired assets and support service reliability and capacity improvements works	Dec-16
		Ballasted track renewal & re-ballast – achieve 13500 metres	Mar-17
		Track drainage renewal – achieve 7000 metres	Mar-17
		Deep Tube renewal – achieve 6448 metres	Mar-17
		Renew points & crossing units – achieve 16 units	Mar-17
Civils	Earth Structure Stabilisation	Practical completion on embankment stabilisation from Kingsbury to Wembley Park	Jun-16
Power and cooling	Four Lines Modernisation	Key enabling works completed for high voltage network resilience cable installation	May-16
		Final remote terminal unit delivered to site for the west end of the District line high voltage traction substation upgrades	Jul-16
		Gate 6 review undertaken of east end of the District line high voltage traction substation upgrades	Oct-16

Delivery area	Project name	Description	Date
Power and cooling (continued)	Power Control Systems	Contract recommendations delivered	Nov-16
	Further Out of Service Fans	Bring into beneficial use fans at Forest Road, Waterloo and Baker Street	Nov-16
Legacy Train System	Central Line '92 Tube Stock	Central line traction card overhaul of 90 trains complete	Mar-17
Lifts & Escalators	Escalator refurbishment	Bring into use St Johns Wood escalator 3 module c refurbishment	May-16
		Bring into use West Ham escalator 5 module 3	Aug-16
	Lift refurbishment	Bring into use Elephant & Castle lift 1 following replacement	Jul-16
	Escalator replacement	Bring into use Chancery Lane escalator 1 following replacement	Jan-17
Stations	Victoria Station Upgrade	South ticket hall station operations room complete	Dec-16
		Handback north ticket hall worksites to Landsec after sectional completion	Jan-17
		Sectional completion of the North Ticket Hall, access to Victoria line and London Fire Emergency Passenger Access Shaft	Jan-17
	Tottenham Court Road Station Upgrade	Seele north plaza works complete	Sep-16
		New Passenger Facilities Open	Dec-16

Delivery area	Project name	Description	Date
Stations (continued)	Bank Station Capacity Upgrade	Start on Site	Jun-16
		Tunnelling set up decommissioned	Jul-16
	Paddington Station Bakerloo line link	Start of tunnelling work	Apr-16
	South Kensington Station Stabilisation	Finish on site	May-16
	Camden Town Station Upgrade	Award of integrator contract	Sep-16
	Integrated Stations Programme	Holland Park Station – Completion of closure works (station re-opens)	Sep-16
		Sloane Square Station – Start on site	Nov-16
	Bank Station Waterloo and City line entrance	Back of house Fit-out complete	Dec-16
Earls Court Development	Test & Handover of roads 51 & 52	Oct-16	
Four Lines Modernisation	Depots	Hammersmith depot conversion phase 4 (Road 6, 8, 9 & 10) physical works complete	Feb-17

Delivery area	Project name	Description	Date
Four Lines Modernisation	Automatic Train Control	Thales installation starts in SMA0.5 & SMA01	May-16
		Thales installation at Hammersmith Service Control Centre	Jul-16
		Start of installation of South Ealing Test Track	Sep-16
		Final design review 2 complete for integrated communications system	Oct-16
		Train version 2 handed over to Thales	Nov-16
		Automatic train control guide way data gathering completed	Dec-16
		Automatic train control final design review 2 completed	Mar-17
		Automatic Train Control Infrastructure	Tranche 1 migration area 3 Signalling Equipment Rooms available for Thales
	Tranche 2 migration area 4, 5, 6, 11 Signalling Equipment Rooms available for Thales		Jan-17
	Tranche 3 migration area 2, 7, 8, 9, 11 and 14 Signalling Equipment Rooms available for Thales		Mar-17
	Infrastructure	Farringdon city siding concept design completed	Oct-16
		Hammersmith Service Control Centre available for pilot service control training	Mar-17
		Platform train interface nosing stone moves completed	Mar-17
	Rolling Stock	Last D stock removed from operational service	Dec-16
		Rollout of new air conditioned trains on the District line complete	Dec-16

## London Rail

Delivery area	Project name	Description	Date
DLR	Limehouse Station	Commence construction for escalators on site	Jun-16
	Royal Docks Capacity Enhancements	Appoint design & build contractor for Custom House	Sep-16
	Beckton Depot Wheel Lathe	Commence works on existing asset	Oct-16
London Overground	West Anglia Stations	Start on site for package 2 of works	Jun-16
		Completion of first station gateline	Sep-16
	London Overground Stations Capacity	Start on site at West Hampstead station	Jan-17
		Start on site at Hackney Central station	Mar-17
	Gospel Oak to Barking	Platform extension works complete on site	Mar-17
	Barking Riverside Extension	Completion of GRIP 4 design submissions to London Overground	Mar-17
Trams	Additional Trams	Acceptance of first new vehicle carbody	Mar-17
Crossrail	Rolling Stock	Driver training simulator available at Ilford	Jan-17
		First class 345 train delivered to Ilford for provisional acceptance	Feb-17

## Surface Transport

Delivery area	Project name	Description	Date	
Assets	Silvertown Tunnel	Silvertown Tunnel – Development Consent Order (DCO) Application Acceptance. (This will give us powers to build, charge for and operate the tunnel.)	Jun-16	
	Ardleigh Green Bridge Replacement	Commence Utility Diversions onto Service Bridge	Jun-16	
	River Action Plan Pier Extensions	River Action Plan Pier Extensions – Westminster finish on site	Oct-16	
	Upper Holloway Railway Bridge Replacement	Service troughs complete	Oct-16	
	LSTOC User Interface Upgrade	Phase 2 requirements developed.	Jan-17	
	Silvertown Tunnel	Invitation to negotiate issued	Feb-17	
	Power Road Bridge	Completion of Board Piling to main abutments	Feb-17	
	Bus Stop Accessibility	95% of London bus stops to be accessible	Mar-17	
	Highbury Corner Bridge	50% of Skanska Utility Works Complete	Mar-17	
	Major highways enhancements	Elephant & Castle Northern Roundabout	Completion of highway construction works (for Phase 1)	Jun-16
		Cycle Superhighways East/West	EW Completion of construction (Parliament Square to Tower Hill except potential permanent scheme at Trinity Square)	Jul-16
		Cycle Superhighways North/South	NS Completion of construction Phase 1 (St George's Circus to Stonecutter Street)	Jul-16
		Cycle Superhighways Route 1	Completion of Construction (excludes Balls Pond Road)	Jul-16

Delivery area	Project name	Description	Date
Major highways enhancements (continued)	Cycle Superhighways Route 2 upgrades	Completion of Construction	Jul-16
	Cycling Quietways	Completion of first two routes	Dec-16
	Stockwell Gyrotory Better Junction	Stockwell Gyrotory Better Junction – completion of works (including urban realm)	Jan-17
	Central London Grid TLRN	Central London Grid TLRN delivered by Projects and Programme Directorate – construction completed for 75% schemes delivered by PPD	Mar-17
	Quietways TLRN	Quietways TRLN – construction completed for 60% of Schemes delivered by PPD	Mar-17
	TLRN Regional Improvement Programme	75% of 'Top 20' Regional Improvement Schemes complete	Mar-17
Network performance and safety	Road Space Management SCOOT	900 sites enabled (cumulative)	Oct-16
	Surface Intelligent Transport System	Procurement Commenced	Oct-16
	Bus Priority Roads Modernisation Plan on TLRN	Construction completed for 50% of the 24 schemes delivered via PPD	Mar-17
	Traffic Corridor Improvements	Traffic Corridor Improvements – 100 CP schemes delivered	Mar-17
	21st Century Traffic Signals Communications	2558 (cumulative) traffic signal sites commissioned	Mar-17

Delivery area	Project name	Description	Date
Service operations and environment	CC & TE Contract ReLet	CC & TE Contract ReLet – Service Go Live	May-16
		CC & TE Contract ReLet – operations review	Mar-17
	New Routemaster	Delivery of 800 New Routemasters	Jul-16
	Cycle Hire Transformation Re-let	Bike Maintenance and Supply Contract Award	Sep-16
	ULEZ	Appoint Taxi Grant & Compensation Scheme delivery agent	Sep-16
	Woolwich Ferry	Preferred bidder selected for vessel supply	Aug-16

#### Specialist services

Delivery area	Project name	Description	Date
Customer Experience, Marketing & Communications	River Service – CPC	CPC acceptance on 21 London piers, providing customers with a similar experience to that on TfL's Rail and Bus services.	Jul-16
	Ticket Vending Machines	Roll out of the Cashless (Release 1) TVM complete	Dec-16
	New Pin Entry Device	Deployment of the new Payment Card Industry Data Security Standard (PCI DSS) compliant solution across the LU estate.	Mar-17
Information Communication Technology Transformation	Mobile Programme	A further four application releases ready for deployment based on business priority. Together with associated support, training and transition activities.	Mar-17
	WiFi Phase 3	Tottenham Court Road provisioned with WiFi by March 31st 2017	Mar-17
	WiFi Phase 3	Bond Street provisioned with WiFi by March 31st 2017	Mar-17

## Commercial Development

Delivery area	Project name	Description	Date
Commercial Development	Property	Analyse results from surveys measuring (1) tenants' satisfaction with TfL as a landlord (2) customer perceptions of the quality of retail environment in stations and set improvement targets	Jun-16
	Advertising	New Advertising Service contract go live	Oct-16
	Property Development	Complete demolition of Earl's Court 1	Oct-16
		Six major sites brought to market	Mar-17

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Windsor House  
42–50 Victoria Street  
London SW1H 0TL

March 2016

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