

Transport for London investment programme report

Extended Quarter I 2020/21
(1 April 2020 – 1 August 2020)

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Please note that safety and sustainability information will no longer be referenced in this report. There is a quarterly Safety, Sustainability and Human Resources Report published on our website, which provides an overview of health, safety and environmental performance for London Underground, TfL Rail, Surface Transport and Crossrail services.

Introduction

This report provides an update on a range of projects that will create world-class transport services in London

The quarterly investment programme report gives a progress update on the major projects and sub-programmes that seek authority each year (unless extraordinary approvals are needed) to the Programmes and Investment Committee.

For each major project or programme, the financial and milestone data represents the position at the end of the quarter and we include commentary for key achievements and progress made. The report also contains, as far as possible, updates on any notable progress made after quarter end.

For a programme and project with a defined start and end, we include when it is planned to be substantially complete and being used by customers. Works that are delivered in a prioritised sequence, such as road resurfacing or track renewal, are referred to as 'annual' as they are controlled and measured within each financial year. This report only includes progress on committed projects and programmes.

Financial records of spend to date, authority and Estimated Final Costs (EFC) represent the entire duration of each separate project or programme, except for annual portfolios where spend to date, authority and EFC figures represent the current financial year. Where authority is significantly lower than EFC, it has been given for the current stage of works and further authority will be sought when appropriate.

To ensure continued transparency across our organisation, the reporting EFC for projects is based on the current risk profile and opportunity realisation at the time of publication. As a result, project EFC could fluctuate every quarter, however, this does not automatically mean there is an increase in spend authority.

Owing to the coronavirus pandemic there is an unprecedented impact on our projects and programmes. As such, we are unable to accurately assess the full impact on our EFCs.

We also include cumulative EFC movements for savings and efficiencies that have been embedded since our 2018 Business Plan, while protecting safety, services and reliability. Numbers in brackets represent an EFC increase and numbers without brackets represent an EFC decrease. Commentary is provided for cumulative movements greater than £2m.

This report does not contain commercially sensitive information and therefore some EFCs and authorities are marked with an asterisk until the main contract has been awarded. On schemes where there is commercial confidentiality, the EFC, authority and spend to date may also be withheld.

All financial figures are gross and may not appear to align with costs detailed in the TfL Budget, which are net of any third-party funding. In addition to the committed projects and programmes included in this report, we will be seeking to obtain capital spend authority for schemes such as the Bakerloo Line Extension and Crossrail 2.

Each programme or project also has an overall RAG milestone status, which represents the average forecast date variance against plan for 2020/21 strategic milestones:

On time or early:



Up to 89 days late:



90 or more days late:



N/A (without 2019/20 strategic milestones):





Safety is at the heart of everything we do

The strategic milestones for the first half of 2020/21 – the key milestones listed in the TfL Budget – are detailed in the Appendix (page 39).

Our investment programme is delivered by the following areas of the business: Major projects, London Underground, Surface and Other and the report structure reflects this

- Major projects is responsible for our largest and most complex projects. It comprises line upgrades such as the Piccadilly line upgrades and the Four Line Modernisation, network extensions, and major station upgrades, which are covered on pages eight to 15 of this report. Future projects (see page 16) will be reported in detail following financial authority approval
- London Underground comprises stations, accessibility, track renewals, power, cooling and energy, rolling stock renewals and signalling and control, which are covered in pages 17 to 21
- Surface Transport comprises Healthy Streets, Air quality, Public transport and Asset investment. These are covered in pages 22 to 31
- Other comprises technology and data, TfL Growth Fund and the Elizabeth line (including Crossrail), which are covered in pages 32 to 38

The impact of the coronavirus pandemic

In March, to help fight the spread of COVID-19, the Government and the Mayor gave clear instructions to stay safe and to stop travelling in all cases other than people making absolutely essential journeys.

For this reason, we brought all our construction projects, including Crossrail, to a temporary Safe Stop unless they needed to continue for operational safety reasons. We continued with essential maintenance of the transport network.

This was done to ensure the safety of our construction and project teams and also to further reduce the number of people travelling on the public transport network. It was vital that the transport network is only used for absolutely essential journeys.




For each project where work has restarted on site, a full review of the working practices was undertaken, together with submissions from the supply chain on how they would manage their site and their workforce in accordance with the social distancing guidelines. These were then subject to a peer review of construction managers and work only restarted once this process had been completed.

Mayor's Transport Strategy themes

The Mayor's Transport Strategy sets out a bold vision for a growing, welcoming London, where 80 per cent of journeys will be made by walking, cycling or public transport by 2041.

We are making streets healthy, pleasant and productive places to stop at, travel through and live on. Listening to and acting on suggestions from our customers will enable us to make walking, cycling and public transport the first choice for the vast majority of trips, and everyday operational excellence will unlock the new jobs and homes our city needs.

This report looks at our investment programme in respect of the following themes from the Mayor's Transport Strategy:

- Healthy Streets and healthy people 
- A good public transport experience 
- New homes and jobs 



Streetspace opens up more space for Londoners to walk and cycle

Business at a glance

Keeping London moving, working and growing to make life in our city better

How we report on our business

Underground

London Underground

Elizabeth line

Currently operating as TfL Rail

Buses, streets and other operations

London Buses, Transport for London Road Network, London Dial-a-Ride, London River Services, Santander Cycles, Victoria Coach Station and Emirates Air Line

Rail

DLR, London Overground and London Trams

Major projects

Responsible for our largest and most complex projects

Property development

Our commercial and residential estate and building portfolio

Media

Advertising estate and digital marketing infrastructure

Facts and figures

979 Trains on the TfL network



580km

TfL-operated highways



755km

TfL-operated Rail and London Underground routes



9,330

Buses on the TfL network

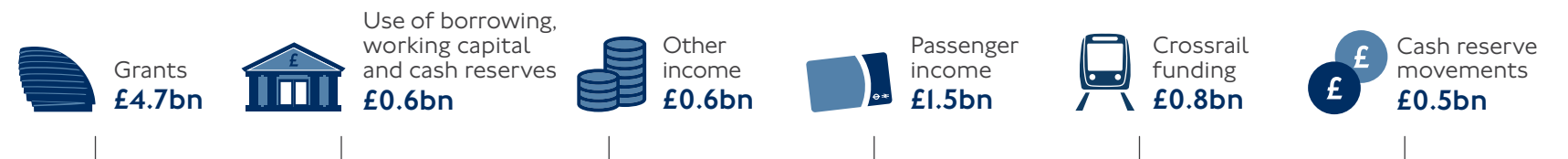


6,300

Traffic signals operated by TfL



2020/21 Emergency Budget at a glance



Sources of funds
£8.7bn

82%

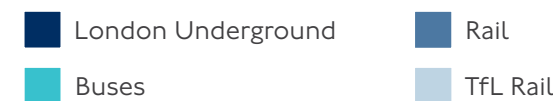
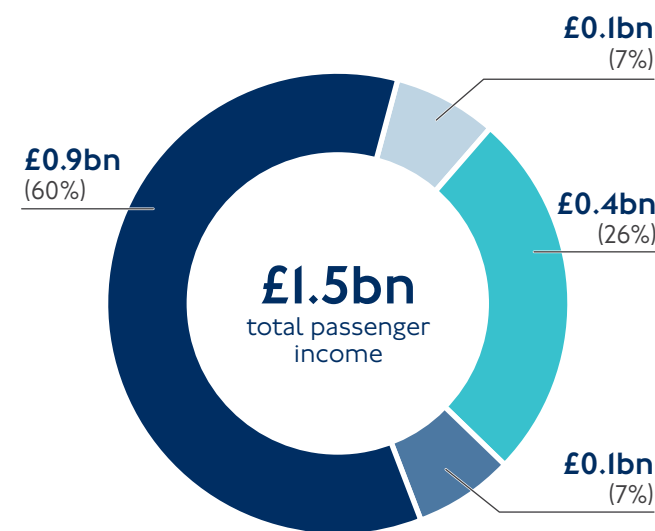
spent on running and operating the network every day



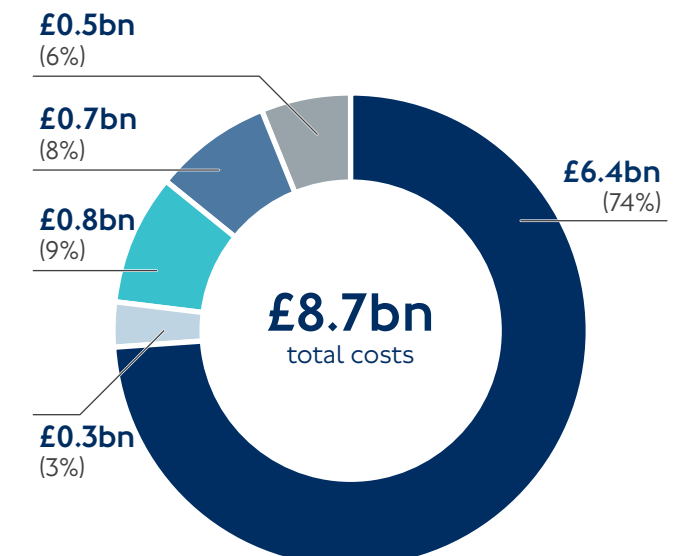
18%

spent on renewing and improving the network through one of the largest capital investment programmes in Europe

Total passenger income

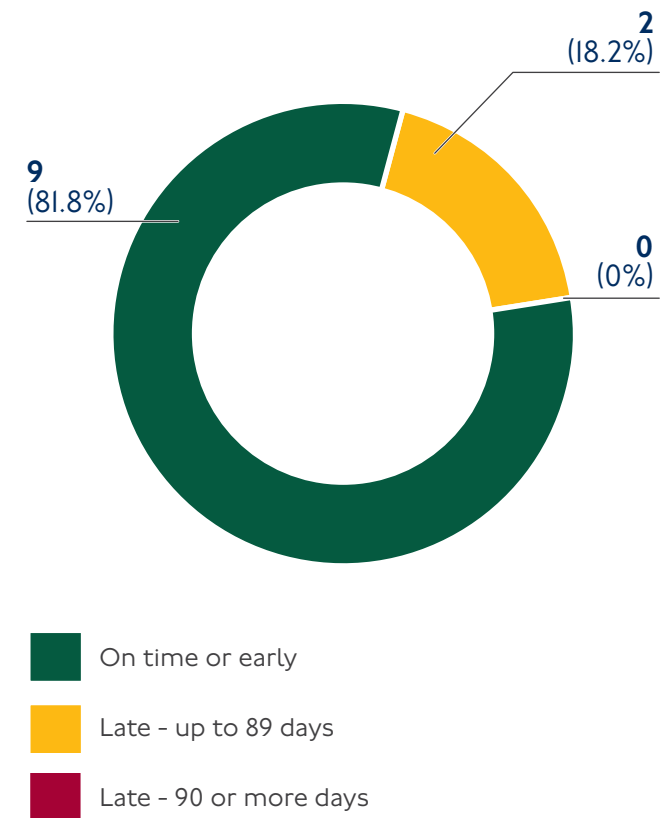


Total costs



2020/21 strategic milestone performance strategy

The overall performance for all TfL 2020/21 strategic milestones is summarised as follows:



The late milestones are shown in the Appendix on page 39.



Project milestones are shown as green, amber or red

Major projects

Line upgrades 

Four Lines Modernisation

Forecast completion year	Spend to date (£m)	Spend authority (£m)
2023	4,926	5,412

2020/21 strategic milestone RAG On Track

We have introduced 192 new S-stock trains on the Circle, District, Hammersmith & City and Metropolitan lines.

The first section of the signalling system operating between Hammersmith and Euston Square and up to Finchley Road on the Metropolitan line, was extended in Quarter 2 2019/20.

The operation of the new signalling system was extended from Latimer Road to Euston Square on the Circle and Hammersmith & City lines, and from there to Finchley Road on the Metropolitan line, and to Paddington on the District and Circle lines. This was a significant step for the project as it continues to boost capacity.

Quarter 1 2020 saw a Safe Stop of all site works in response to the coronavirus pandemic. To mitigate the financial impact of this, 55 per cent of our team were furloughed. The programme was authorised to restart site works from 6 June 2020. Due to much of the works being inside and/or in small spaces, such as cabs, a staged approach was taken to maintain the safety of staff while restarting targeted works.

EFC (£m)	EFC movement post plan (£m)
5,339	14

The EFC reflects the revised budget and is based on information available at that time. Within Major projects a series of deep-dive reviews is underway, assessing and challenging cost and schedule. These reviews will provide an update on the full impacts of the coronavirus pandemic and related issues.

There was a strategy to drive down costs to ensure later increases in the complex programme could be dealt with efficiently. Reductions were achieved through value engineering solutions, innovation and providing optimum scope to bring the planned benefits.

Signalling software development work continued with Thales throughout the pandemic and continues to support testing and go-live plans for year 2020/21.

While virtually all works were stopped a small number of targeted interventions were undertaken to further drive system reliability. These works required innovation and cooperation during the lockdown to ensure staff safety and deliver increased reliability.

The coronavirus pandemic resulted in the suspension of District line operator training for the new Communication Based Train Control. While this is being restarted there remains a risk on the availability of trained and familiarised operators to support service. This may result in a further delay of the planned go-live date.

In response to the ongoing financial challenge, the programme has implemented a number of measures to minimise expenditure through furlough, challenging scope and rephasing of works.

The above measures, combined with the Safe Stop and progressive return to site works, have had an impact of up to five months on a range of key milestones. The complex interaction of these changes in combination with the annual timetable change cycle is under review. However, it is likely that the introduction of new timetables, increasing train frequency in the central area, may be delayed.

The programme continues to drive toward delivering within the Emergency Budget. There are a number of pressures however work is ongoing, in collaboration with our key suppliers, to determine confidence in the outcome for the year.

The combined effect of the coronavirus pandemic delays and the complexity of re-planning the closure-based works integrating future events in London, is expected to lead to an extension of the programme. While this planning activity remains ongoing it is anticipated that the EFC will increase to reflect this delay. The re-planning and revised cost estimate will be complete in line with the next Investment programme report.



Railway System Enhancements (formerly World Class Capacity)

Forecast completion year	Spend to date (£m)	Spend authority (£m)
2024	130	245

2020/21 strategic milestone RAG ██████████

This programme includes upgrades to signalling, power, trains and track to maximise capacity on the Jubilee and Northern lines with the existing train fleets.

While many of the works are standalone, a significant proportion are essential to other programmes, including further upgrades to the Jubilee line, the opening of the Northern Line Extension, as well as the reconfiguration of the Northern line at Bank.

To enable the new capacity works, we have completed speed improvement and track works to the Northern line and continue to focus on delivering power enhancement works, including an upgrade to the signalling software on the Northern line. A new wheel lathe has been delivered to Morden depot and its commissioning is getting underway. We have remobilised our sites following the Safe Stop and are now operating in a COVID-19 secure way, the full impact of this is being assessed.

On the Jubilee line, a new wheel lathe has been delivered to Stratford Market depot and the tender response for a signalling upgrade has been received and is being considered as part of the wider Jubilee line enhancements. The continued business requirement, priority and timing of proposed capacity enhancements to the Jubilee line are being reviewed as part of the challenges caused by the impact of the coronavirus pandemic.

EFC (£m)	EFC movement post plan (£m)
181	14

The EFC reflects the revised budget and is based on information available at that time. Within Major projects a series of deep-dive reviews is underway assessing and challenging both cost and schedule. These reviews will provide an update on the full impacts of the coronavirus pandemic and related programme issues. The output of the reviews will be reflected in the next Investment programme report.

The EFC has reduced since the 2019 Business Plan as a result of realising savings of £18m on uncommitted power works, following an assessment of the required resilience works. This has been offset by an increase in risk of £2m across the programme and an increase of the uncommitted cost estimate of £2m - this is being reviewed further. The impacts of the coronavirus pandemic remain under review.



DLR Rolling Stock and Systems Integration

Forecast completion year	Spend to date (£m)	Spend authority (£m)
2025	56	603

2020/21 strategic milestone RAG ██████████

New DLR trains and infrastructure are vital to support the regeneration of the east London area.

Sixty per cent of the existing DLR fleet will be replaced as part of this programme and it will provide increased capacity on the line. The Beckton depot will be extended, with sidings for the new trains, a new maintenance facility and a new automatic train operation test track. Thales automatic train operation signalling system will be updated and the traction power strengthened.

The contract for the next generation of DLR trains by Construcciones y Auxiliar de Ferrocarriles is under way. Preliminary design is complete and final design has started. The manufacture of fixtures and items for the new trains has begun. A 1:1 scale mock-up of the train has been manufactured and is being shipped to the UK.

There has been a 12-week impact on train manufacture as a result of the coronavirus pandemic and a revised depot delivery strategy has been implemented, resulting in the deferral of the Southern Sidings works from 2020/21 to 2022/23. This allows the Northern Sidings to proceed to the revised programme. The Thales signalling system update has proceeded to plan with the completion of the Preliminary Design.

Cost impacts and additional risk has increased by £6m however it is proposed to offset these increases through reduction in other risk allowances.

EFC (£m)	EFC movement post plan (£m)
603	0

The EFC reflects the revised budget and is based on information available at that time. Within Major projects a series of deep-dive reviews is underway assessing and challenging both cost and schedule. These reviews will provide an update on the full impacts of the coronavirus pandemic and related programme issues. The output of the reviews will be reflected in the next Investment programme report.



Piccadilly Line Upgrade – rolling stock (formerly Deep Tube Upgrade Programme)

Forecast completion year	Spend to date (£m)	Spend authority (£m)
2027	196	3,294

2020/21 strategic milestone RAG On Track

This programme is designed to deliver a fleet of newly designed, high-capacity, walk-through, air-cooled trains to replace some of the oldest on our network.

Due to affordability challenges caused from the coronavirus pandemic, we had to enact a six-month deferral to key infrastructure works supporting the new train introduction. Trains are now due to arrive prior to infrastructure works being ready to receive them. The forecast date for first train into passenger service is now April 2025 (from October 2024). The ambition is to pull this delay back over time.

The preliminary design for the new trains has continued to plan. Collaborative discussions are ongoing with Siemens Mobility Ltd about the impact of the coronavirus pandemic on the train delivery schedule, which has resulted in a forecast four-month delay to detailed design completion. This is now forecast for completion in February 2021 (from October 2020). This is still in advance of the planned milestone in March 2021.

EFC (£m)	EFC movement post plan (£m)
2,936	28

The EFC reflects the revised budget and is based on information available at that time. Within Major projects a series of deep-dive reviews is underway assessing and challenging both cost and schedule. These reviews will provide an update on the full impacts of the coronavirus pandemic and related programme issues. The output of the reviews will be reflected in the next Investment programme report.

Since the 2019 Business Plan £54m of cost reductions have been identified. Of this, £29m relates to risk and uncertainty mitigation. These savings are offset by a £10m increase in project length as a result of the emergency budget decision to defer third party contract spend by six months where possible, increase in new rolling stock scope for anti-dragging doors and enhanced cab security and other minor increases.

The One Person Operation CCTV contract has been awarded.

To introduce new rolling stock, we need to reinforce and upgrade the London Underground High Voltage power network. We have approval for the High Voltage Power Procurement Strategy, this will enable the High Voltage Design and Build Framework Supplier Questionnaire to be released to the market, the first step in this process.

The current train radio systems are obsolete, so we are working with Connect to develop a new radio in time for the introduction of the new rolling stock. The concept design work for this is complete.

The Piccadilly Line Upgrade will drive down costs while delivering significant safety and sustainability improvements. As part of this we are working with the Department for Transport (DfT), Network Rail and the supply chain under the Transport Infrastructure Efficiency Strategy and will be delivering three example projects. An updated Collaboration Agreement was issued and is close to being settled from respective legal teams. This agreement will facilitate supplier contracts to be issued to allow full commencement of these projects.

Network extensions

Northern Line Extension

Forecast completion year	Spend to date (£m)	Spend authority (£m)
2021	952	*

2020/21 strategic milestone RAG On Track

The Northern Line Extension is a twin-tunnelled extension from Kennington to a new terminus at Battersea Power Station, via a new station at Nine Elms. This supports the regeneration of the Vauxhall Nine Elms Battersea Opportunity Area.

As a result of the coronavirus pandemic all site work on the Northern Line Extension was safely stopped on 24 March 2020. Site work restarted on 27 May 2020, which resulted in a 64-day construction delay across the programme. We continue to work with our supply chain to assess the coronavirus-related impacts and our target date for achieving train service availability between Kennington and Battersea remains Autumn 2021. However, we have now used up our contingency so any further events like a second wave of the coronavirus pandemic would impact the completion date.

EFC (£m)	EFC movement post plan (£m)
*	*

The EFC reflects the revised budget and is based on information available at that time. In Major projects a series of deep-dive reviews is underway assessing and challenging both cost and schedule. These reviews will provide an update on the full impacts of the coronavirus pandemic and related programme issues. The output of the reviews will be reflected in the next Investment programme report.

Assessment of the full impact of the coronavirus pandemic is ongoing and discussions continue with the main works contractor over both cost and schedule.

During the site Safe Stop period we continued working remotely, undertaking off-site manufacturing where possible, detailed design and producing Assurance documentation required for achieving the High Voltage 22kV Power-on milestone which was due in June and as a result of the coronavirus-related stoppage is now reforecast for early October 2020. We were able to undertake some limited but critical works on site, using an exemption process to work within the High Voltage switchgear rooms at Kennington which were undertaken adhering to Public Health England guidelines.

In dealing with the impact of the coronavirus pandemic on our works programme, we have embraced new ways of working, including the use of technology. The Railway Systems team has successfully undertaken virtual factory acceptance testing of the Emergency Traction Current Discharge System and train radio, with all tests passed successfully.

To facilitate the re-opening of the Northern Line Extension sites on 27 May we implemented measures across all sites to comply with social distancing, such as coronavirus-related signage, thermal cameras at site entrances, and segregation screening in the communal areas.

At Battersea, the remainder of the roof slab of the new station box was handed over to the Battersea Power Station Development Company, to enable the continuation of the next phases of their oversite development.

At the new Kennington Park and Green shafts, external brickwork cladding is being applied to the headhouses. Cable management system, CCTV, tunnel ventilation and ducting installation have all restarted. Landscaping works are due to start in late August.

Our main focus beyond Quarter I will be fitting-out the new stations, installing and switching on the High Voltage power supply, and extending the signalling used on the Northern line into the extension.

* This information is withheld for reasons of commercial sensitivity



Silvertown Tunnel

Forecast completion year	Spend to date (£m)	Spend authority (£m)	EFC (£m)	EFC movement post plan (£m)
2025	65	*	*	*

2020/21 strategic milestone RAG



The Silvertown Tunnel will tackle traffic congestion at the Blackwall Tunnel and the knock-on effects on travel, the environment, the economy and growth across the southeast of London.

The tunnel will connect Silvertown and the Greenwich Peninsula, which are areas subject to significant planned redevelopment in future. The new tunnel, within the extended Ultra Low Emission Zone (ULEZ), will effectively eliminate congestion and help improve air quality, with no increase in carbon emissions. It will allow for a transformative new cross-river bus network for east London, with plans for at least 20 buses per hour in each direction, all of which are expected to be zero emission. There is currently only a single bus route through the Blackwall Tunnel – the least reliable TfL bus route in London.

User charging at the Silvertown and Blackwall Tunnels, set by us, is a fundamental part of the scheme, helping to manage traffic levels for the long term.

Following an extensive tender process, the design, build, finance and maintenance contract was awarded to Riverlinx consortium on 21 November 2019. We are in discussions to arrange the relevant agreements for land access. We are

working with the utility companies to plan the required service diversions. We keep monitoring existing structures and noise levels ahead of construction. Contracts have recently been awarded for support to the next stages of traffic, environment and socio-economic monitoring and associated mitigations.

Ground investigation works have begun along with utility surveys and pavement, ecological and contaminated land survey works. Marine works began in June 2020. The start of construction notice was placed in the London Gazette on 5 August enabling new byelaws at the Blackwall Tunnel to support existing network operations.

The programme impact in relation to the coronavirus pandemic Safe Stop on 25 March 2020 and subsequent restart of the works from 27 May 2020 is likely to extend the Planned Permit to Use date. We are continuing to work through a revised programme with Riverlinx, including potential acceleration measures.

* This information is withheld for reasons of commercial sensitivity.



The Silvertown Tunnel project will link Silvertown to Greenwich Peninsula



Barking Riverside Extension

Forecast completion year	Spend to date (£m)	Spend authority (£m)
2022	172	287

2020/21 strategic milestone RAG



We are delivering a new rail link to serve the 10,800 new homes planned for the Barking Riverside development area.

We will build a spur from the Tilbury Loop line east of Barking, to extend our service to a new station at Barking Riverside. The overall length of the extension is approximately 4.5km from Barking station; it includes modifications to the existing Network Rail infrastructure and new lines running on a viaduct of approximately 1.5km. A four-carriage London Overground service running at 15-minute intervals is planned.

During Quarter I, the coronavirus pandemic severely hampered project progress. A safe site shut down was completed on 26 March 2020 and on-site activities restarted on 8 June 2020. During this time only safety critical activities, such as inspections of temporary works, or high priority tasks which could be delivered in accordance with Public Health England's guidelines, were granted 'exemptions' to be undertaken.

EFC (£m)	EFC movement post plan (£m)
*	*

During Quarter I, the EFC has been significantly impacted by the delay costs from the coronavirus pandemic, and the impact of buried utility services and mitigations to redesign the infrastructure and settle a number of compensation events.

The full impact of these factors on the EFC is still to be determined, with a full project review under way. The project continues to review all options to mitigate cost increases, as well as formalise the contractual position with the main works contractor.

While the site was closed, an exemption was granted for a contractor working for the City of London to remove a series of pylons adjacent to the viaduct. The opportunity to complete these works, while the main works contractor was off-site, has de-risked the programme and achieves a key condition for the eventual hand back of land at the end of the project.

Other activities that were granted exemptions include delivery of materials to the station site, ensuring the team were well placed for remobilisation, and preparations for the installation of the steel framework for the Barking Riverside station building. The implementation of coronavirus mitigation measures that enable greater social distancing of the workforce, such as additional welfare facilities, one way walking routes and installing body temperature cameras, was also completed prior to the restart.

During the safe site shut down we completed the designs, asset protection agreements and procurement arrangements required to resolve the remaining utilities issues preventing piling for the viaduct. Also, following the cancellation of a major signalling stage (Stage 9) that was due to take place at Easter 2020, extensive re-planning of the Rail System workstream was undertaken. Stage 9 signalling commissioning is now planned for December 2020 and stakeholder engagement to secure the possessions of Network Rail infrastructure required to deliver the revised plan is ongoing.

Easing of national lockdown arrangements and confirmation that the site is COVID-19 Secure enabled the project to restart. Following a period of remobilisation, including inductions to revised working arrangements, works to divert the Thames Water sludge main at Pier I4 have been completed. This allows removal of the redundant main prior to commencement of piling in this area. At Pier I3, completion of the pile cap redesign, engagement with UKPNS and establishment of vibration monitoring to safeguard High Speed I power cables, has enabled installation of sacrificial sheet piling ahead of the bored piling.

Rail systems works during weekend possessions has restarted with successful delivery of permanent way, overhead line equipment, signalling and telecoms activities through June and July. All signalling gantries on the existing network required for the Barking Riverside Extension have now been installed. Possessions have also been used for viaduct construction adjacent to and crossing the operational railway, including piling for the approach ramp and lifting of steel beams into place for deck spans.

At the station, the main steel frame and platform canopy are complete, the lower canopy steelwork is well underway, and blockwork has started. On the south viaduct all pile caps have been poured, pier walls are well progressed and deck spans have been installed. On the north viaduct piling is required at the last two pier locations (Piers I3 and I4) and piling for the approach ramp continues.

* This information is withheld for reasons of commercial sensitivity



Bank station upgrade

Forecast completion year

2022

Spend to date (£m)

525

Spend authority (£m)

656

2020/21 strategic milestone RAG



We are boosting capacity at Bank station by 40 per cent. This includes creating a new Northern line tunnel, platform and circulation spaces, a new entrance on Cannon Street, the introduction of step-free access to the Northern line, additional interchange between the DLR platforms and two new moving walkways between the Central and Northern lines.

The project was significantly impacted by the coronavirus pandemic with all site activities safely stopped for nine weeks. The project has remobilised following extensive reconfiguration of the site including implementation of one-way systems, additional welfare facilities and updated working procedures so that social distancing guidelines can be followed. The project is fully mobilised and has returned to pre-coronavirus activity levels.

All four of the new escalator barrels in the new parts of the station are now completed. The last of these being from the Northern line to the DLR level. All but one of the additional new cross passages are now completed. Tunnelling is now nearly completed and by Quarter 3 the project will have completed all civil and tunnelling works.

EFC (£m)

701

EFC movement post plan (£m)

(38)

The EFC reflects the revised budget and is based on information available at that time. In Major projects a series of deep-dive reviews is underway assessing and challenging both cost and schedule. These reviews will provide an update on the full impacts of the coronavirus pandemic and related programme issues. The output of the reviews will be reflected in the next Investment programme report.

The increase in EFC since the 2019 Business Plan reflects the latest view of the programme's risk and opportunities and the impact of the coronavirus pandemic which includes Safe Stop, Safe Start and prolonging the project. Further analysis of the impact of the coronavirus pandemic is ongoing which could affect the current EFC. Risk mitigation reviews are continuing, along with opportunities to reduce the current EFC. We continue to collaborate with the main works contractor to identify and realise potential savings and mitigate the impact of the coronavirus pandemic.

With tunnelling and secondary lining works that form a new link to the Central line, now complete, work has started on installing the support structures for the new moving walkways. This will reduce the journey time from the Northern line to Central line.

The new station entrance on Cannon Street continues to take shape with interior wall construction and floor screeding completed. Works to fit out services have now started. We have taken delivery of nine of the 12 new escalators that have been manufactured. These are now undergoing final preparation in readiness for installation in early 2021.

In this quarter we have carried out enabling works during several Northern line and DLR closures to prepare the existing parts of the station for the new tunnel connections.

Due to the impact of the coronavirus pandemic, the proposed window for the start of the Northern line (Bank branch) closure has been delayed to October 2021 - January 2022. The closure will tie in the new southbound running tunnel constructed as part of the project, which creates wider Northern line platforms at the station.

Cable pulling of the High Voltage cables that will feed the new station entrance has been completed and the remaining works are on schedule to enable the power to be turned on in early 2021.



High Speed 2

Forecast completion year	Spend to date (£m)	Spend authority (£m)
2028	12	11

2020/21 strategic milestone RAG

High Speed 2 (HS2) is a new high-speed railway connecting London to the West Midlands and the North of England. Our work consists of new TfL assets, infrastructure and operational facilities at Euston and Old Oak Common.

The HS2 project has not suffered any material delay or setback from the coronavirus pandemic, with project teams in both organisations successfully transitioning to a remote working environment and are continuing to collaborate with each other. HS2 Ltd's construction partners carried out a safe-stop of all their London construction sites in March, but the majority were back in operation by the end of April following a carefully planned and risk-based review.

Following the Government's announcement in February to give the project the go ahead and the publication of the Oakervee review we have taken part in the DfT-led 'OneEuston' high level review of requirements which concluded at the end of July. The review seeks to determine the most effective way to deliver HS2 at Euston, while recognising the design requirements and constraints from all stakeholders, including HS2, Network Rail, Lend Lease, the London Borough of Camden and us.

EFC (£m)	EFC movement post plan (£m)
80	(34)

This project is fully refundable by HS2 Limited and the scope of works is dependent on third party requirements. The new EFC is based on more detailed analysis of the scope and impacts of the HS2 works as we understand them at the current time.

However, this EFC does not yet take into account the impact of the Oakervee Review as the Government has not yet responded to the Oakervee Review recommendations. The main changes to the EFC arise from increasing staff resources and bus mitigation costs.

We are working with HS2 Ltd to support the early works programme to minimise disruption at Euston and on the Hampstead Road, including alternative solutions for utilities diversions to minimise the impact on the road network, and at Old Oak Common on their planned works near the Elizabeth line depot. We are continuing to review designs for our elements of the new HS2 Euston station and the substation and ventilation building and have facilitated piling enabling works at Old Oak Common. We have continued working with HS2 Ltd and its supply chain in finalising the Blue Book suite of management processes that define the long-term working arrangements between ourselves and HS2 Ltd.

Future projects

We continue to develop major projects – currently at an early stage – that will deliver the new homes and jobs that London and the UK need.

Crossrail 2

The Independent Assurance Panel (IAP), led by David Orr, has recently carried out a 'health check' on the methodology and outcomes of Crossrail 2's 2019 Cost Estimate. Their review supports the work done to date and confirm it is a credible figure and provides significant confidence in the Strategic Outline Business Case Estimate. The IAP have put forward several recommendations that the Team will address and put forward relevant advice to the Senior Responsible Officers later this year.

Due to the ongoing financial impact from the coronavirus pandemic, we continue to discuss options with the Government about the future of the scheme. The Team have therefore been focusing on putting Crossrail 2 'in good order'. Our priority in discussions with Government going forward will be asking the Secretary of State to refresh the 2015 safeguarding directions in order to protect the route from future development.

Bakerloo Line Extension

We continue to develop aspects of the scheme, including liaising with the DfT, developing and cementing the business case for the scheme, securing greater cost certainty and confirming the shortlist of options and assessment criteria for the further stages of work. This includes an integrated ticket hall at Elephant & Castle station. We are also working with the boroughs and other stakeholders to determine further funding sources for the scheme and safeguard the preferred route alignment.

The extension of the Bakerloo line would open up wider opportunities to more people and improve air quality. It would also support thousands of much-needed jobs and homes in the New Cross, Lewisham and Catford and Old Kent Road Opportunity Areas – something that is ever more crucial in light of the coronavirus pandemic.

We are working closely with Network Rail, the Greater London Authority (GLA) and the London Boroughs of Southwark and Lewisham, to make sure we safeguard the best possible scheme. This will reflect the feedback received from our last round of public consultation, which closed in December 2019. We received 8,749 responses to the consultation and are analysing the results. We will publish our consultation report and responses to issues raised later in 2020. We continue to develop aspects of the scheme, including liaising with DfT, developing and cementing the business case, securing greater cost certainty and confirming the shortlist of options and assessment criteria for the further stages of work.



We continue to discuss the future of Crossrail 2 with the Government

London Underground

Stations 

Forecast completion year	Spend to date (£m)	Spend authority (£m)	EFC (£m)	EFC movement post plan (£m)
2022/23	173	535	1,132	0

2020/21 strategic milestone RAG



The targeted renewal of existing assets will improve safety and reliability. Station enhancements will reduce congestion and improve customer journey times.

Station enhancements

At Knightsbridge, the shell of the new parts of the station has been built and is ready for fit out. The coronavirus pandemic has impacted the procurement of contractors to carry out the fit out works throughout Quarter I, delaying the opening date of new Brompton Road entrance.

The Colindale station project was brought to a Safe Stop in line with government guidance. There was no progress in Quarter I but we will now proceed with detailed design starting in September 2020. The project will bring significant improvements, including a spacious new entrance, a new lift providing step-free access to the platforms and new homes around the station.

The Stratford south western entrance project has also been paused.

At Tottenham Hale, site works to upgrade the station were stood down on 24 March 2020. Having gone through the Safe Start process, work restarted on 30 June 2020. Construction works restarted on 6 July 2020. The existing Network Rail ticket gateline and associated structures have been demolished and excavations and foundation works are progressing.

Station developments and retail

In August, the 'start on site' milestone was met at West Ham, as works to redevelop land alongside the Jubilee line began. The site is being developed by Berkeley Homes and will provide around 4,000 new homes for London. It will improve transport connectivity through three new pedestrian, cycle and road bridges, as well as a new station entrance over the Jubilee line eastbound track. Works started following four years of negotiations between ourselves and the developer, which were successfully concluded in March 2020. Works are fully funded by the developer.

At Paddington, we are working with Great Western Developments to construct a new station entrance to the Bakerloo line, with a much-enlarged ticket hall and step-free access to the platforms as part of redevelopment of adjacent buildings. Design work and demolition of redundant assets continues.

At Walthamstow Central we are working with developer Capital and Regional on a capacity enhancement scheme. Following commercial negotiation, a Cost Indemnity Letter has been signed which allows us to recover associated internal resource costs. An internal resource has been remobilised to progress design development relating to the planned station enhancement works in preparation for submission of a revised planning application later this year.

At Waterloo, negotiations with H B Reavis to progress the demolition and redevelopment of Elizabeth House, a 1960's building over the station, are progressing after the scheme obtained planning permission in Autumn 2019. Subject to legal agreements, the developer will deliver a lift shaft providing a step-free connection to the Northern line. The developer contribution of £4.5m will deliver, at a minimum, the lift shaft. Consideration is being given as to how best to deliver the lift fit-out works. The Waterloo York Road ticket hall, which closed in November 2019 to enable the developer to undertake unforeseen remedial works, was successfully brought back into use in March 2020.

Accessibility

Forecast completion year	Spend to date (£m)	Spend authority (£m)	EFC (£m)	EFC movement post plan (£m)
2023/24	79	176	176	0

2020/21 strategic milestone RAG RAG

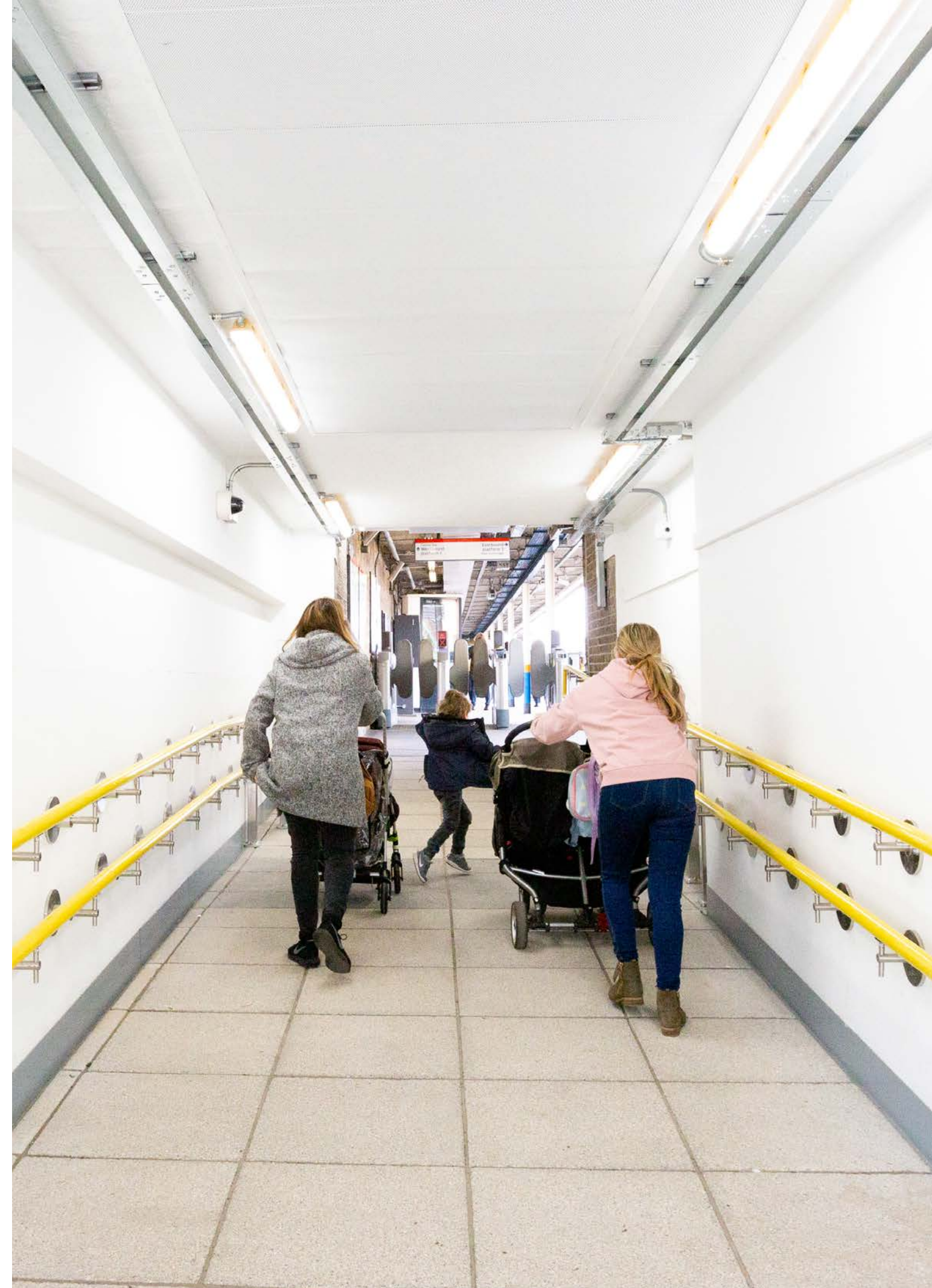
We are working on a wide programme of accessibility improvements, customer service and information enhancements across the Underground network. We will make more than a third of stations accessible by 2022 by providing step-free access at a further 12 stations.

We are working on a wide programme of accessibility improvements, customer service and information enhancements across the London Underground network. As part of the Mayor's step-free access programme we are planning to make 12 stations accessible. Four of these stations have already been completed: Newbury Park, Buckhurst Hill, South Woodford and Mill Hill East. Cockfosters is due to be completed by the end of October.

The impact of the coronavirus pandemic on the programme is being assessed. The accessibility programme undertook the Safe Stop initiative and ceased on site work on 23 March. In June, eight projects restarted works on site in accordance with government guidance and following a rigorous review of site set up and protocols to ensure the safety of operatives and customers at our stations.

The impact of revised ways of working, the agility of the wider supply chain, and its impact on on-site productivity and the delivery of step-free access is currently being reviewed.

Due to the impact of the coronavirus pandemic on our finances, work has now been paused while we await the outcome of funding discussions for three projects which were in the very early stages of construction and six projects were in the design phase before the pandemic.



Step-free access enables more people to travel on our network

Track renewals

Forecast completion year	Spend to date (£m)	Spend authority (£m)	EFC (£m)	EFC movement post plan (£m)
Annual	11	73	73	0

2020/21 strategic milestone RAG On Track

We are replacing our ballasted and deep Tube track, points and crossings, and track drainage infrastructure to improve reliability, reduce maintenance costs and increase capacity.

We implemented Safe Stop status in response to the coronavirus pandemic.

Following this, the only works delivered during Quarter I were those deemed operationally safety critical. These were 1,218m of rail replacement works completed on the Piccadilly line at Heathrow and 101m on Croydon Tram Link at Love Lane.

Signalling preparation work has started on site for the Acton Town Christmas works, where 11 Points and Crossings units will be replaced. The programme of agreed holding works for planned work sites cancelled due to the coronavirus pandemic has started. Additionally, planning has enabled Deep Tube Renewals to recover to previous levels of delivery for 2020/21.

Power, cooling and energy

Forecast completion year	Spend to date (£m)	Spend authority (£m)	EFC (£m)	EFC movement post plan (£m)
2023/24*	55	90	88	0

2020/21 strategic milestone RAG On Track

We continue to support a number of third party and major projects by providing power works, such as relocating the substation at Euston station for HS2, installing cable routes for the Northern Line Extension and works for the Piccadilly line and Bank station upgrades.

Power

We are delivering a rolling portfolio of power renewal works to improve the condition of assets. The first projects are complete, including replacing substation emergency battery systems, power generation fire control systems and Central line traction power protection systems. Others are in delivery phase including depot traction isolation replacement and high voltage network switchgear.

Progress has been impacted by the coronavirus pandemic and risk-based Safe Stop control. Works continued where safe to do so, such as remote design work, procurement and site works on assets essential for safe operation of the railway. This included completing key objectives of replacing uninterruptible power supply equipment at two operational signal control centres ensuring constant power supply and station emergency lighting power supply equipment.

Approximately 40 per cent of works planned for 2020/21 have been rephased to be delivered within current financial constraints. A project extending the life of the main power control system to address obsolescence risks and combine three power control systems into one has continued largely to plan, achieving design and manufacturing phase milestones. Once completed, this system will monitor and safely operate traction, station, signalling and depot power supplies on all lines.

Cooling

We continue to upgrade the cooling of our power assets to support the new Four Lines Modernisation signalling system and good progress continues to be made.

Energy

The Solar programme has been paused due to funding constraints.

* The figures represent power and energy projects until 2023/24 and authority is sought in stages for future unapproved works

Rolling stock renewals

Forecast completion year	Spend to date (£m)	Spend authority (£m)	EFC (£m)	EFC movement post plan (£m)
2023/24	247	525	970	0

2020/21 strategic milestone RAG

We are modifying our passenger rolling stock to improve safety, accessibility, reliability and customer satisfaction, as well as to reduce maintenance costs. We are also modifying or replacing some of our existing engineering vehicles that support track maintenance and infrastructure renewals.

A Safe Stop was applied to all of the depot work on our passenger fleet projects. These are now operating in a COVID-19 Secure system of work.

We carried out the installation of the first Bakerloo four-car unit with LED saloon lighting. This unit has been in service since February 2020. We are now embarking on the fitment of the LED system to a three-car unit which will be in service by November 2020. The fleet will then start the installation throughout while incorporating the scope to deliver Rail vehicle accessibility requirements across the fleet.

On the Central line improvement programme, we are centralising our production process at Acton Rail Engineering Workshop.

We continue to work with our supply chain to enable the installation facilities for the improvement programme on the full fleet.

Construction work continues on a new train workshop building to support the Train Modification Unit at Acton Works Depot. The majority of civils works have been completed and the project has moved onto mechanical and electrical fitout works. Works to connect the new building to the depot's substation have also started.

In China, the first seven pre-production engineering wagons manufactured by CRRC have successfully passed static testing. Four of these wagons are on a ship bound for the UK with expected arrival early September. Upon arrival they will undergo dynamic testing off network

before being joined by the remaining three pre-production wagons on our network early 2021 for infrastructure testing. Once these wagons have been fully tested and approved, the remaining 66 wagons will be built and shipped. Minor delays were experienced due to coronavirus pandemic restrictions and local lockdowns in China, however, CRRC were quick to get back up and running and are working to mitigate these delays to ensure timely delivery.

The two Kirow cranes are now approved for use within Ruislip Depot supporting lifting and loading operations. The introduction of these cranes delivers safety and productivity benefits to the engineering operations in Ruislip Depot.

The mechanised renewals vehicle will improve the way track is renewed in the deep Tube sections of the Bakerloo, Central, Jubilee, Northern, Piccadilly and Victoria lines. The three allocated wagons have been fully overhauled and have returned to Ruislip Depot where the fitment of the track renewal equipment will begin shortly. This project was able to continue throughout the coronavirus pandemic period as the overhauler and component manufacturers were able to put safe and socially distanced practices in place quickly. They are due to be in service later this year.

The tender documentation for replacing our track recording vehicle, which records and monitors the alignment and condition of the track, is almost ready for market engagement.

The project to give train operators better control over unauthorised entry into the cab from the saloon has been progressing well. The contract was awarded and the first train installation on the Waterloo & City line has been done.



Piccadilly line signalling control systems have now been commissioned

Signalling and control

Forecast completion year	Spend to date (£m)	Spend authority (£m)	EFC (£m)	EFC movement post plan (£m)
2023/24	90	196	180	0

2020/21 strategic milestone RAG On Track

We are extending the life of our track-based signalling and control assets. This ensures they can continue to support a safe, reliable and maintainable service.

Siemens is continuing the design for the life extension of the Central line signalling and control systems. This project will maintain the reliability, availability and safety of the signalling assets and resolve obsolescence concerns. Once the design has been finalised, we will work with Siemens to deliver pilot sites and complete trials.

Works to replace the signalling system in Northumberland Park depot on the Victoria line has started, the concept design phase will be finalised in Quarter 2.

Completion dates for the signalling and control projects have been impacted by the coronavirus pandemic and the revised budget. For this reason, most works on these projects have been suspended.

We have finalised commissioning of all the new Piccadilly line signalling control systems at the control centre in west London. The migration of control has progressed well and is now complete.

Surface

Healthy Streets

Forecast completion year	Spend to date (£m)	Spend authority (£m)
2021/22	669	811

2020/21 strategic milestone RAG

The Healthy Streets Approach prioritises health and wellbeing, with the overall objective of creating a transport system where everyone can travel safely by the healthiest and most resource-efficient means, specifically walking, cycling and public transport. It is central to achieving the 80 per cent mode share target in the Mayor’s Transport Strategy.

Following the decision to pause all construction work on our sites in March, there were some 20 schemes within Healthy Streets where work was safely stopped on site and resulted in traffic management barriers, and in some cases, temporary signals remaining on site.

While the projects were in Safe Stop, regular checks were undertaken by us and the supply chain to ensure the sites remained safe.

In late April, work on all but two projects were paused and most of the teams placed on furlough. The two exceptions were Old Street Roundabout and Highbury Corner Gyratory.

EFC (£m)	EFC movement post plan (£m)
811	0

The EFC is based on the July 2020 Programmes and Investment Committee paper. In 2020/21 the programme and project authority includes the delivery of the Streetspace for London plan and the restart of some projects in the first half of the year, following Safe Stop due to the coronavirus pandemic. The EFC also covers the continuation of Old Street Roundabout.

A further Programmes and Investment Committee paper is required to set out estimated project spend in the second half of the year and future years.

Design work for Old Street Roundabout continued due to the safety critical nature of the scheme and the cost to pause all works on the project was prohibitive. Construction was temporarily stopped but restarted in early June 2020. On Highbury Corner Gyratory the only remaining activity on the scheme was to install the Hostile Vehicle Mitigation measures so work on this continued due the safety and security implications. The works started in June 2020 and are planned to complete in late September 2020.

The previous budget for the first half of 2020/21 was £82m and the revised budget is £34m, £11.7m of which is for our Streetspace activities.

The Streetspace for London plan was a new scheme with a specific allocation of funds to deliver temporary measures as a response to the coronavirus pandemic.

Given the significant reduction in available budget, many projects continue to be paused, this includes most of the transformational schemes and the permanent cycling routes. Design activities have restarted on the Bus Priority programme, small safety related schemes and local junction improvements.

With the exception of Old Street Roundabout, Highbury Corner Gyratory, Bus Priority and the safety schemes, all other projects and programmes in the portfolio are undergoing a cost review to identify savings before they can restart activity.

Highbury Corner

The main highway and urban realm works were completed in Autumn 2019. During the Safe Stop period, design continued on the Hostile Vehicle Mitigation measures. Installation began on 22 June 2020 and are due to complete by late September.

Old Street Roundabout

Construction is progressing at Old Street Roundabout, where a new design will improve safety for cyclists and pedestrians with new and improved crossings, fully segregated cycle lanes and a new public space with an accessible main entrance to the station and shopping arcade.

Construction work was temporarily paused during lockdown, but the design activities continued and were not impacted by the pause. A soft restart began on 8 June to prepare the site ahead of the main works restarting two weeks later. An interim traffic switch is planned for October 2020, ahead of the main traffic switch in January 2021.

Due to the impacts of the coronavirus pandemic, and also several significant changes on the project, there has been a delay to the completion date of up to two years, and we are now forecasting an Autumn 2022 finish.

Cycleway 4

Work on the section between Tooley Street and Rotherhithe Roundabout restarted on 15 June and officially opened on 11 September. The remainder of the route is being considered under the Streetspace for London plan.

Cycleway 9

Work restarted on the Kew Bridge junction on 6 June and it officially opened on 3 September. The remainder of the route is being considered under the Streetspace for London plan.

Safer Junctions

Of the five remaining schemes that were paused on site due to the pandemic, we have returned to site and completed Camberwell town centre and Clapham Road/Union Road. We are on site and will complete the works in the first half of the year for Edgware Road/George Street and Britannia junction in Camden. The Edgware Road corridor and Kingsland Road/Balls Pond Road have been prioritised for completion in late October.

Streetspace for London plan

When the coronavirus pandemic took hold earlier this year, it was clear that we and boroughs needed to act quickly to adapt London's streets and public transport system to respond to the challenge London faced. In May 2020 the DfT issued statutory guidance urging local authorities to reallocate road space to people walking and cycling, both to encourage active travel and to enable social distancing during restart.

As a result, the Streetspace for London plan was formed, providing a strategic framework to rapidly respond to the coronavirus pandemic and subsequent recovery following the end of lockdown by creating more space for people to walk and cycle safely. Millions more journeys will need to be made by walking and cycling while capacity on public transport is constrained by social distancing needs.

As part of this plan we are transforming London's main roads and funding boroughs to repurpose general traffic lanes and parking spaces for temporary cycle ways and wider footways. Types of schemes cover:

- The introduction of strategic corridors for walking, cycling and bus journeys on our road network
- Town centre, station and interchange schemes on our and borough roads to increase space for pedestrians
- Low Traffic Neighbourhoods and School Streets on borough roads to open up residential streets for people, helping create a safer and more pleasant environment for walking and cycling and reduce car traffic



Encouraging more Londoners to walk and cycle helps social distancing on our network

By delivering this programme, it will make it easier and safer for people to keep up social distancing and help people walk and cycle more often. The wider mental and physical health benefits of increased walking and cycling are critical in responding to the pandemic. This includes helping Londoners stay healthy, therefore reducing their chance of developing more severe coronavirus symptoms, as well as reducing the burden on the NHS from non-coronavirus related consultations and admissions, such as those relating to the health impacts of poor air quality and traffic collisions. Measures are also intended to discourage a sharp increase in car use; if people switch even a fraction of their previous journeys to cars, essential deliveries and emergency services will be gridlocked.

Of the DfT settlement, £55m in funding was allocated in May 2020 to fund the programme, with £45m assigned to borough-led schemes and £10m for ours. Guidance was issued to boroughs and published on our website to enable local authorities to bid for scheme funding, with us managing the assessment process on the DfT's behalf. At the end of July, boroughs had been assigned more than £30m to deliver 860 Streetspace schemes by mid-October 2020, with a further £13m assigned to borough sunk costs.

Progress continues to reflect the rapid requirement for roll out of schemes to support London's recovery from the pandemic. By late August more than 220 borough schemes had been completed, with many more in construction. More than 27km of new or upgraded cycle infrastructure had been completed, including segregated routes along Park Lane and on CS8 between Chelsea Bridge and Lambeth Bridge.

On our road network, more than 16,500 square metres of highway space had been reallocated to pedestrians, reducing overcrowding at key locations including Brixton town centre, Camden High Street and Waterloo Road. Pedestrians also benefit from more than 2,100 signal timing changes, providing more than 240 hours of additional green man crossing time to pedestrians each day.

Delivery of the programme continues at pace, with targets for the end of the first half of the year on track. This includes complementary schemes such as installation of new cycle parking on the TfL Road Network, eight new Cycle Hire docking stations and the conversion of 77km of bus lanes on the TfL Road Network to operate 24/7 Monday to Sunday, improving bus reliability and providing improved provision for cyclists.

Direct Vision Standard

The Direct Vision Standard (DVS) was created to improve the safety of all road users, particularly the most vulnerable such as pedestrians, cyclists and motorcyclists, by assessing vehicle blind spots. The DVS assesses and rates how much a driver can see directly from their heavy goods vehicle (HGV) cab in relation to other road users and assigns a star rating from zero (poor) to five (excellent). Any vehicle rated zero star will be required to fit additional safety equipment to increase the vehicle's safety to meet the minimum one-star requirement. Upon application, an HGV Safety Permit recording the vehicle's star rating or safe system is issued.

DVS launched in October 2019 on a voluntary basis, with a 12-month pre-compliance period within which hauliers will be able to apply for a permit. To date more than 94,000 permit applications have been received and 31,500 granted. Enforcement of the scheme was due to begin in October 2020; however, this date has been revised to 1 March 2021 in alignment with the LEZ date to support the freight industry in its recovery from the coronavirus pandemic and during the pandemic.

Preparation of the core systems for the launch of the enforcement element of the scheme are on track against a re-planned schedule.

On 2 March, we launched a new 20mph speed limit on our roads in central London, which is a key role in the Mayor's Vision Zero ambition to eliminate death and serious injury from London's transport network. The new speed limits are being enforced across all our roads within the Congestion Charging zone, including Millbank, Victoria Embankment and Borough High Street, following strong public support for the proposals.

To support these speed reductions, we have recalibrated speed cameras in central London and are using mobile speed cameras to ensure drivers comply. A marketing and communications campaign was launched to announce the speed limit change and educate drivers on its purpose. This is closely aligned with our current 'Watch your speed' campaign. More than 50km of our road network is now subject to a 20mph speed limit.

Phase two of this work has been paused, owing to funding constraints. This phase would have introduced lower speed limits on a further 140km of our roads in inner and outer London. However, where opportunities exist, we are introducing 20mph speed limits into social distancing schemes being delivered under the Streetspace for London plan.

Air quality

Forecast completion year	Spend to date (£m)	Spend authority (£m)
2023/24	274	510

2020/21 strategic milestone RAG On Track

The Air quality programme reduces the impact of transport on air quality and climate change by targeting vehicles in our contracted and regulated fleets, and all vehicles driving in London.

In response to the coronavirus pandemic the Congestion Charge, LEZ and ULEZ Schemes were suspended between 23 March and 18 May 2020. In addition, the new LEZ standards and charges, and enforcement of the DVS have both been postponed from October 2020 until March 2021.

On 15 May 2020, the Mayor published details of the Streetspace for London plan, to support this, he also announced the intention to implement temporary changes to the conditions and scope of the Congestion Charge scheme.

Accordingly, in May we re-tasked the internal and supplier delivery teams and implemented temporary changes to the charge value, charging hours and days for the Congestion Charge on 22 June 2020.

Together these changes have entailed re-prioritisation and re-planning of projects within the Air quality programme. The ULEZ Expansion date of October 2021 is unchanged.

EFC (£m)	EFC movement post plan (£m)
628	(41)

The EFC increase is mainly due to broadened scope for Bus Electrification to support Bus Fleet Opportunity Charging (£5m) and Grid to Gate (£42m), which aims to support zero emission bus fleet, and will enable power supply at bus garages to allow for overnight charging. Following the changes made to the operational hours of the Congestion Charge Scheme, expenditure has increased by a net (£12m).

In addition savings have been achieved across the portfolio due to risk released for SCR Retrofit, and other projects, noted reduction for DVS £2m, and LEZ Stronger £4m, as well as an increased over programming £3m. The impact of the coronavirus pandemic has also resulted in deferred activities of £6m, which will be reviewed as part of the 2020 Business Plan.

The EFC reflects the revised budget to 2023/24.

Air Quality Management (ULEZ Expansion, LEZ and DVS)

All office-based work on the Air Quality Management programme has continued throughout the coronavirus pandemic and remote working for the project team has been implemented.

All on-site workstreams, for example, camera and signage survey work, that were paused as part of our Safe Stop in March were restarted in June 2020 with appropriate social distancing and safety measures in place.

Following the resequencing of activities and development of a revised plan, the delivery of LEZ, DVS and ULEZ Expansion to the current launch dates remains feasible.

ULEZ

On 8 April 2019 we successfully introduced the new ULEZ in central London. It enforces the world's toughest vehicle emission standard and is the first to operate 24/7. The ULEZ replaced the T-Charge and operates in the same area of central London as the Congestion Charge. The ULEZ expansion project will extend the central London ULEZ, up to the North and South Circular Roads. The project is now progressing with key activities including:

- Implementation of the cloud platform which will enable the migration of the back-office systems to the cloud to manage the larger volumes of data

- Preparation of the individual back office system elements for the phased migration to the cloud
- Design and development of the upgraded data warehouse with Siemens to house the increased volumes of camera images
- Detailed design development for signage and camera placement
- Obtaining required consents and approvals from relevant boroughs

Low Emission Zone 2020

These will strengthen the emission requirements for the existing Low Emission Zone that applies to heavy vehicles. The emissions standards for lorries, vans and other specialist HGVs of more than 3.5 tonnes, as well as buses, minibuses and coaches more than five tonnes, will change from Euro IV to the more stringent Euro VI. Owners of vehicles that do not meet the tougher emissions standards will need to pay a daily charge to drive within the LEZ.

In order to support businesses in their recovery from the impacts of the coronavirus pandemic, and to allow them more time to prepare, the start date for the enforcement of the new standards has been revised from October 2020 to March 2021 with the current LEZ charges and standards operating until then. This was to support the freight industry during the coronavirus pandemic and its recovery.

To ensure a successful launch, the business and enforcement systems, as well as the website, will be updated. These process changes will be supported by a comprehensive communications campaign.

Fleet compliance

To help meet the Mayor's air quality objectives in 2020, we are upgrading the entire bus fleet to meet Euro VI emissions. This includes retrofits of more than 4,000 midlife buses, of which more than 3,850 have already been completed.

Responding to the coronavirus pandemic, the Retrofit programme came to a Safe Stop in March. Work restarted in July with appropriate safety measures in place and is on track to complete by the end of 2020.

Ultra-low emission vehicles – rapid charging infrastructure

To support the growing number of zero emission capable taxis and the wider take-up of electric vehicles, we are spending £18m and working with the London boroughs and others to build a network of rapid charge points across London.

In response to the coronavirus pandemic, the Rapid Charging Infrastructure project came to a Safe Stop in March. Work restarted in July with appropriate safety measures in place and is on track against a revised schedule to achieve our target of 300 rapid charge points installed by the end of December 2020.

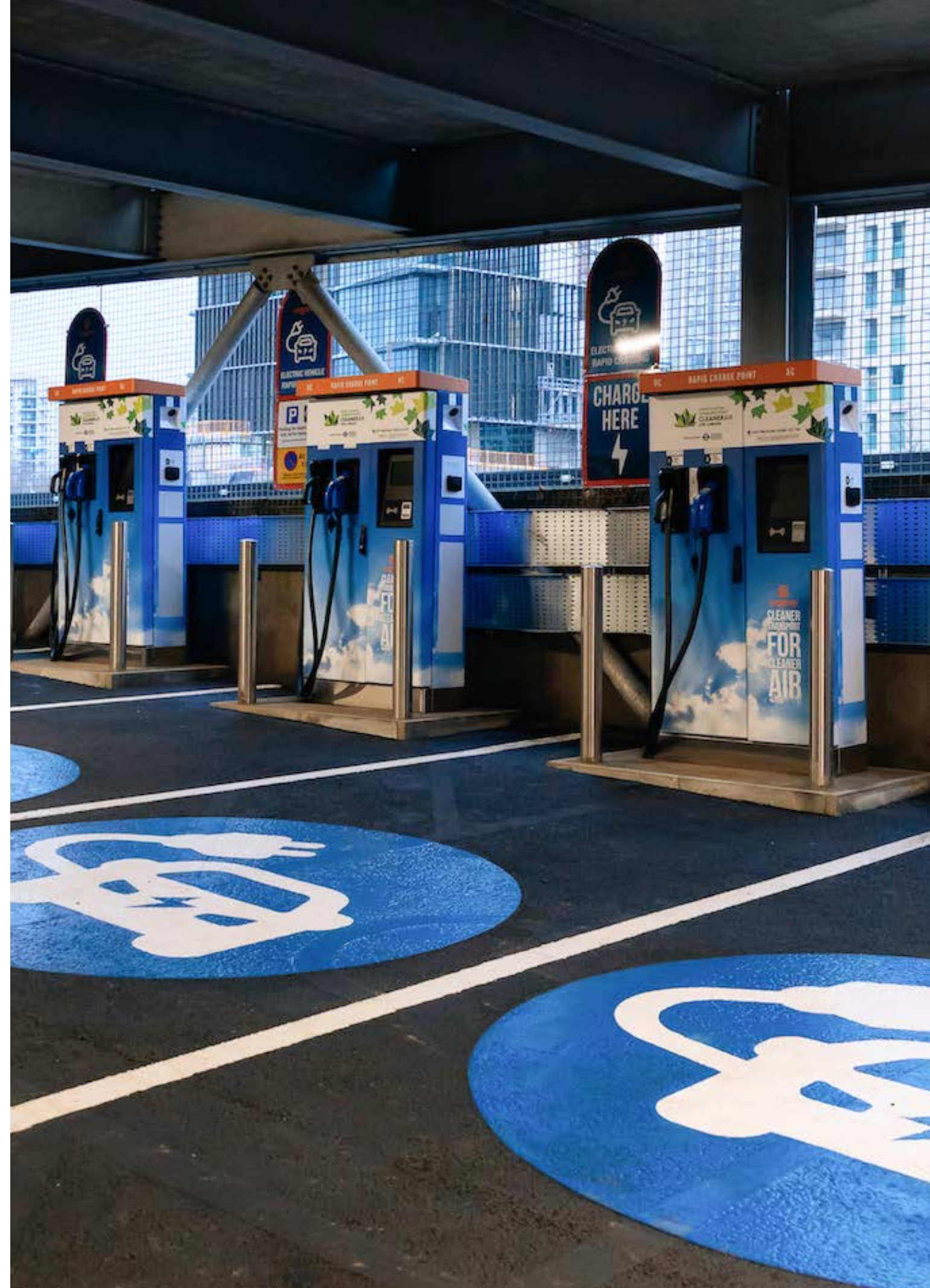
Mayor's Air Quality Fund

The Mayor's Air Quality Fund is providing £22m of investment over 10 years to support London Borough projects to improve air quality. The fund has supported innovative Low Emission Neighbourhoods, which are providing a targeted package of measures in nine pollution hotspots across London. The Low Emission Neighbourhood in Shoreditch contributed to an estimated 16 per cent reduction of NO₂ in the area. Other highlights from the fund include the provision of more than 20 new clean air routes, 300 electric vehicle chargers, two kilometres of new or improved cycle routes, and the delivery of innovative projects to cut construction machinery pollution and supporting more than 250 car free schemes and events.

Go Ultra Low City Scheme

The Go Ultra Low City Scheme (GULCS) is a joint venture with the GLA and boroughs project aiming to deliver more than 2,150 on-street electric charge points for London's residents and car club vehicles. In response to the coronavirus pandemic, installation works came to a Safe Stop in April. Work has now restarted, with the delivery deadline extended from December 2020 to the end of the current financial year.

Additionally, a joint bid for the London boroughs has been submitted to OLEV for a new On-street Residential Chargepoint Scheme – where further residential charging infrastructure can be delivered to encourage and support the growing demand for electric vehicles. Subject to the outcome of the bid, boroughs would combine any On-street Residential Chargepoint Scheme funding with their GULCS allocations, to ensure the procurement and delivery process is as efficient as possible.



We are expanding the number of rapid charge points available

Asset investment

Forecast completion year	Spend to date (£m)	Spend authority (£m)
2021/22	341	618

2020/21 strategic milestone RAG

We replace, refurbish or reconstruct our surface assets to keep them in a safe condition through prioritised and planned works. This programme maintains and lengthens the working life of a wide range of assets, including carriageway, footway, lighting, drainage, bridges, tunnels, traffic signals, bus stations and river assets.

At the time of the coronavirus lockdown the Assets portfolio was working hard to complete its annualised programme of smaller Asset Capital Programme (ACP) on various asset groups such as carriageways and bus stations. At the same time, it was also progressing site works on key larger schemes such as the fire systems upgrade to the Victoria Coach Station (VCS) and the works at Hammersmith Bridge in conjunction with Hammersmith and Fulham council. Additionally, design and planning works were progressing on a range of schemes such as the Major Asset Renewal Programme A40 Westway expansion joints replacement project and the Major Asset Renewal Programme Vauxhall Bridge topside works.

EFC (£m)	EFC movement post plan (£m)
646	(33)

The EFC covers 2021/22 to provide a direct comparison to the programme as originally approved in 2017/18.

The majority of the increase in EFC compared to the plan is £24m additional funding for Hammersmith Bridge to start work on stabilisation work and construct a temporary walking and cycling bridge. This is included as a funding request to Government to allow the London Borough of Hammersmith and Fulham to start this work but, as with all our major asset renewals, longer-term Government funding is required to let the required contracts and complete the work.

The Safe Stop of our capital schemes due to the coronavirus pandemic meant that the two-year pause of proactive capital renewals was effectively extended by four months. We have continued to prioritise critical renewals and have increased investment in 2021/22 to improve the state of good repair of our assets which has deteriorated during this pause.

As part of the Safe Stop review it was agreed to stop the ACP works on site but continue high priority safety critical projects to maintain network safety and resilience. Projects that continued included the site works at VCS and Hammersmith Bridge. The methods of working on these schemes were changed, however, to ensure that the risks to the operatives of contracting COVID-19 were minimised. The preparatory works for the A40 Westway project also continued and a tender for its concept design was completed over the summer. Design work also continued on other high priority projects including Rotherhithe Tunnel and Hostile Vehicle Mitigation measures on Thames river bridges.

Due to funding constraints, some work schemes have been scaled back. However, by working closely with the supply chain works are making good progress and the schemes set out in the revised budget for the first half of the year, will be delivered as planned.

For the larger schemes such as VCS fire systems progress on site has been good over the summer despite the imposition of coronavirus safety restrictions on working practices and this project is on track to complete ahead of the December deadline imposed by the required to meet the London Fire Brigade enforcement notice. Works on Hammersmith Bridge, which is owned by the London Borough of Hammersmith and Fulham, also continued successfully through the summer and the removal of the cast iron casings to two of the pedestals completed as planned. The tender for the A40 Westway scheme was successfully completed and the winning contractor has begun concept design work. Similarly, the build phase of the Vauxhall Bridge contract was agreed, and the works started on site in August as planned. Feasibility work to replace the Hostile Vehicle Mitigation on the Thames River Bridges has been completed and single options discussed with key stakeholders. For the ACP works the revised programmes have been agreed and works are currently on track with carriageway and structures schemes accounting for the bulk of the revised budget for the first half of the year.

Public transport

Forecast completion year	Spend to date (£m)	Spend authority (£m)
2022/23	278	387

2020/21 strategic milestone RAG On Track

The public transport programme oversees London Buses, London Overground, the DLR, London Trams, Emirates Air Line, Santander Cycles and London River Services.

London Overground

The start of Quarter I saw all the enhancement works on London Overground brought to a Safe Stop in accordance with government guidance and several project staff being placed on furlough.

At White Hart Lane works to progress handover documentation continued while the construction activities were brought to a Safe Stop. Works were safely restarted in late June to complete the second phase of works mainly involving completion of urban realm, telecoms and safe strip out of the former station building. The pause to works has pushed the completion of site works from May until September 2020.

Works at West Hampstead were safely restarted in early July. The only site works remaining were minor snagging works which have been completed.

Design work for an increase of services to 18 trains per hour on this part of the London Overground was completed, however, this project has been deferred as a result of the revised budget. The completion of this work will be reconsidered in Quarter 2 2021/22.

EFC (£m)	EFC movement post plan (£m)
382	5

The EFC decrease is due to the impact of the coronavirus pandemic reflected in the revised budget. Delivery has been deferred for projects reducing spend for Trams, including the Croydon capacity upgrade and Trams overhauls. The next stages for Bus Safety Standards, will be reviewed in the next Business Plan.

Lower passengers journeys on the DLR between April and July, reduced our liability for the City Greenwich Lewisham Rail Link by £11m, in addition to savings across the portfolio. Reduced spend is offset by activity to help recovery from the coronavirus pandemic including Custom House station and increasing Cycle Hire docking stations.

The reduced spend has been offset by the inclusion of DfT funded accelerated customer enhancement schemes (£2m) included for Hackney Central and Imperial Wharf. The EFC reflects the revised budget up to 2022/23.

We have entered into a Grant Determination Agreement with the Ministry of Housing, Communities and Local Government and the GLA to deliver infrastructure improvements that support housing growth along this part of the London Overground. The schemes delivered as part of this agreement will be a redevelopment of Surrey Quays station, a new station at Surrey Canal Road and infrastructure changes to allow 20 trains per hour to run. These projects will be completed by late 2024. The procurement of the next stage of design has now completed, however, has suffered some delay due to key staff being on furlough.

We are continuing to scope up the next phase of works at Seven Sisters for an Access for All scheme. This is funded from the DfT's Access for All programme in conjunction with Network Rail.

We are currently procuring a framework for the delivery of future works. Supplier selection questionnaires have been received and at present time are under review. The market has shown a healthy interest in bidding to be on the framework.

The roll out of the class 710 units on the West Anglia route has continued despite the restrictions caused by the coronavirus pandemic. Twenty-two new units are now in passenger service.

DLR

The start of Quarter I saw the majority of DLR Renewals portfolio brought to a Safe Stop to align with the Government request to lockdown. Active sites were stopped and secured. The construction team then started weekly tours of the sites to make sure they remained safe and secure.

Mid Quarter I, most of the team was placed on furlough and those who remained worked on projects deemed as safety critical. If these projects stopped, they would have impacted the operational safety of the railway.

Measures were put in place before critical site works could restart. Our contractors re-evaluated their safety assessments to incorporate measures to mitigate against the coronavirus pandemic. Only when these revised mitigations were peer reviewed and approved was work allowed to resume.

Signalling upgrades of the Vehicle Control Centre Borders and the installation of signalling hardware saw key designs being approved and physical works started during the last week of June.

The key High Voltage Project replacement of the East Route Ring Main was sent out to tender, with limited access to the railway we undertook virtual site tours to provide details to the tenderers. Other associated projects (Replacement Vacuum Medium Switchgear and Hawker Sidley Nuclear Power Circuit Breakers) were made ready to be sent out to tender in Quarter 2.

Station works at Custom House continued throughout the lockdown period, using a COVID-19 Safe System of work. We and the Government saw maintaining access to this station, as the main access to NHS Nightingale Hospital London, as critical to support the movement of critical key workers.

Several high priority projects also restarted back on site during our East Route Closure on 20-22 June). Depot Conductor Rail and Re-Railing at Canning Town were completed successfully.

The Re-Rail site saw the introduction of innovative technology which assisted staff in maintaining 2m safe distancing. The Personal Distance System used at hospitals, made sure staff wearing an alarm belt were warned (with a bleep), if they were closer than 2m from other colleagues. The technology has moved on with the system now small enough to sit inside a normal-sized pocket.

The GLA funded Royal Docks Stations Programme was unaffected by the coronavirus pandemic because the six stations were in the early design phase. The programme is on track to meet the milestones of completing concept design and entering the construction phase for the first two stations in 2021.

London Trams

As part of our commitment to making the tram network safer following the tragedy at Sandilands in 2016, we continue to address the recommendations from the Rail Accident Investigation Branch. We have completed several initiatives including a new emergency lighting system on each tram and are currently in the final delivery phases of the physical prevention of over-speeding automatic braking system.

Our renewals programme of works continues across seven asset groups including fleet, power, civils, systems and permanent way infrastructure.

Planning has progressed for the Reeves Corner and Love Lane track renewals planned to begin in August 2020.

The Oaks Road switchgear replacement works has been completed and the substation has been commissioned.

The Systems Integration Project has been completed brought in to use, and the handover file is being finalised.

A contract has been awarded for the CR4000 Cab Cooling works with the fitment of the first-in-class installation planned for August 2020. A revised proposal was received for the blind-spot CCTV workstream on the Stadler Equipment Overhaul project and contract award is now planned for August 2020.



We are improving the capacity on the DLR

Surface technology

Forecast completion year	Spend to date (£m)	Spend authority (£m)
2023/24	15	79

2020/21 strategic milestone RAG On Track

This is a new programme responsible for overseeing strategically important technology projects within our five-year business plan and, from April 2019, to provide a structure for all future technology projects being delivered by surface transport.

Surface Intelligent Transport Systems (SITS)

We are leading the way in delivering innovative new road traffic management systems to make journeys on foot, bike and bus, as well as essential emergency services and freight trips, as efficient as possible. Delivery of elements of the SITS programme where we have contractual commitments has continued without negative impact from the coronavirus pandemic, with development teams able to work remotely without significant disruption. These elements include the Real Time Optimiser system which will help us better manage the flow of people on London's road network by controlling the phasing of traffic signals using pre-planned timetables, manual interventions and optimisation techniques. In Quarter I, we agreed a plan to complete this work with Siemens following a detailed review of requirements. Following this, in August, we completed formal witness testing of the current phase of Real Time Optimiser system development.

EFC (£m)	EFC movement post plan (£m)
124	10

The EFC is broadly in line with the 2019 Business Plan. The EFC change since Quarter 4 is mainly over programming driven – a higher percentage has been applied.

Surface technology is a relatively new portfolio and its first paper was submitted to the Programmes and Investment

Committee in March 2019. The Programme and Project Authority is therefore below EFC as the portfolio is only part authorised.

Our work with Sopra Steria to design, develop and implement a new incident management system has also continued. This will enable us to increase the speed at which we detect and respond to incidents on the road network.

These enhanced systems require better data than is currently available, and an improved data storage hub. In August 2020, we awarded a contract to supply vehicle journey time data to INRIX and completed a tactical roadmap to set out our plan to fulfil SITS data requirements, including the use of video analytics to better understand vehicle and cyclist movements in real-time. Improvements to our data storage hub have supported continuation of our highways modelling activities following the coronavirus pandemic. Previously, it was not possible to access historic traffic signal data older than three months, but in February 2020, the first version of the new storage hub removed this constraint. This data has proven essential for validating traffic models of road conditions before the coronavirus pandemic, ensuring new proposals can be assessed against the conditions as they were before the pandemic.

Work on the predictive element of SITS was paused, as there are currently no contractual commitments for this.

Operational safety and compliance

We are consolidating our approach to compliance and enforcement so we can support a more versatile compliance, policing and on-street services operation. This will help people feel safe and secure when travelling in London, supporting reliable journeys and generating efficiency savings.

This area includes procuring systems and services to support our licensing of taxi and private hire vehicles, drivers and operators. We will ensure business continuity is maintained, protecting customers and ensuring vehicles are safe, accessible and meet strict environmental standards.

The new system aims to provide a more efficient service to our Taxi and Private Hire customers. We have continued the procurement process to secure a supplier for this operationally critical system, with minimal negative impact due to the coronavirus pandemic. In July, we selected suppliers to proceed to the next dialogue-based stage, with the project on track to award the contract in Spring 2021.

This programme also includes proposals to introduce body worn video cameras for more colleagues in front line roles. A successful technical test of key infrastructure was carried out at Stratford, which has informed key areas such as back office technical design for the camera system and uniform design. Footage captured during this trial has already been used to support successful prosecution of those who act aggressively towards our people.

Public transport technology

We are maintaining and developing technology to operate our public transport networks and improve customer experience. This includes upgrading the technology systems that underpin the bus network such as improving the iBus system which is used to provide real-time information on bus locations. It also includes improvements to communications technology used on the Emirates Air Line, as well as enhancing the booking and scheduling system for Dial-a-Ride. This will allow us to book and deliver trips more efficiently.

Some projects in the area were paused for two to three months while an emergency budget was negotiated and have since remobilised. This resulted in a delay to delivery, while slowing down the rate of spend in this area. Activities following remobilisation have largely focused on re-planning; key progress highlights include progress towards finalising tender documentation to re-procure an upgraded booking and scheduling system for Dial-a-Ride and undertaking options analysis to improve connectivity to Emirates Air Line cabins to support passenger communications systems.



Body-worn cameras are being introduced for front-line staff on our network

Other

Technology and data

Forecast completion year	Spend to date (£m)	Spend authority (£m)
2020/21	137	275

2020/21 strategic milestone RAG 

The Technology and data programme provide the core infrastructure, services and technology that enable us to achieve our strategic priorities.

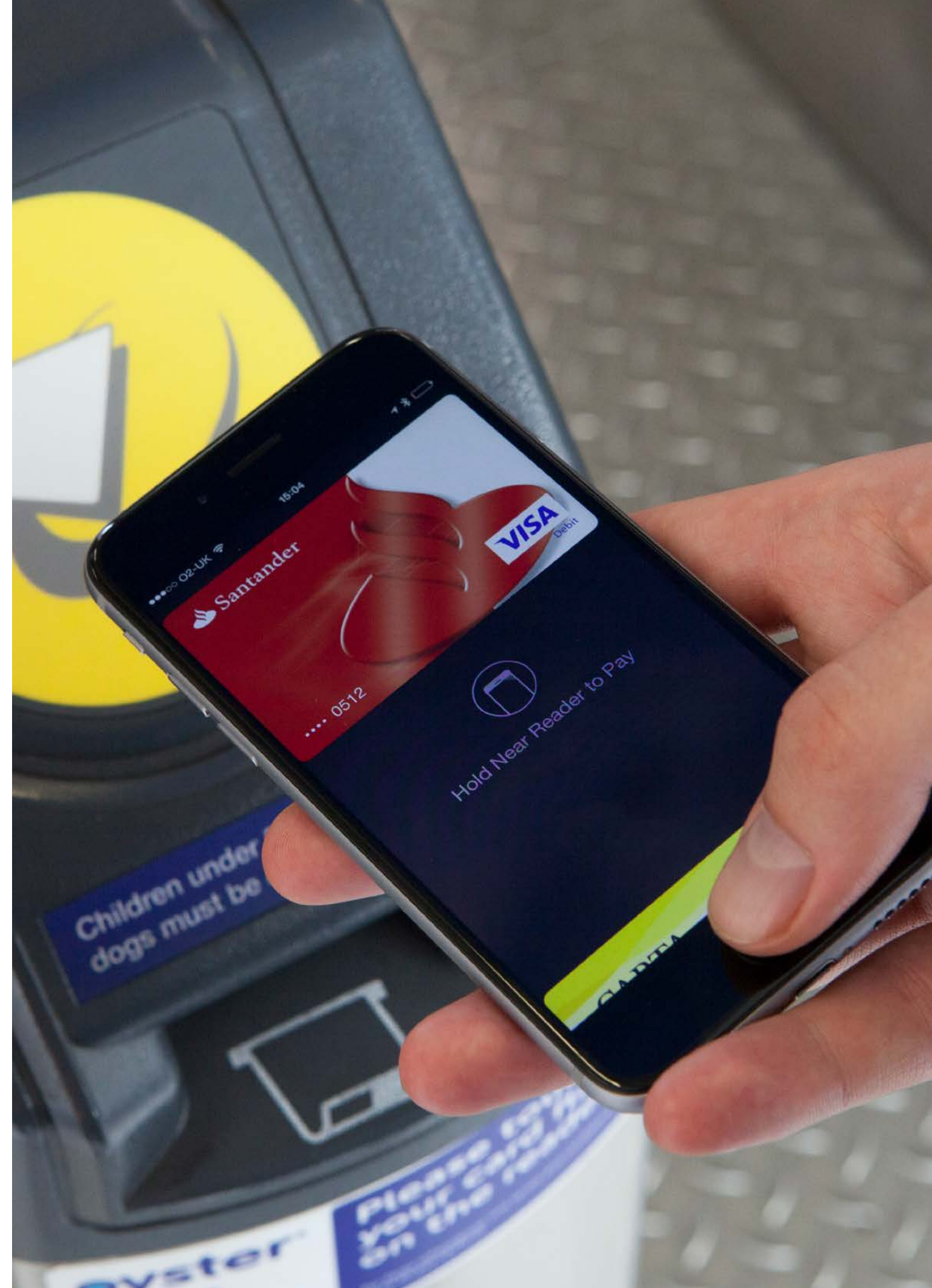
Payments

On 20 April, we introduced daily and weekly capping for customers using contactless pay as you go on train services to Reading, Luton Airport Parkway and Welwyn Garden City. This has been a complex project involving changes to how contactless fares are calculated and significant changes to the systems which support revenue allocation. The complexity of the requirements from the Train Operating Companies, meant that it was not possible to deliver this at the same time as pay as you go was introduced in January. However, in the interim, our Data and Analytics team has been providing refunds to customers who spent more than the daily cap.

On 17 May we successfully delivered the fares revision while maintaining safe working practices as a result of the coronavirus pandemic movement restrictions. This meant a reduced scope of the fares revision by removing non-critical items. The main changes introduced were in support of new operational arrangements at Paddington station introduced by Great Western and Heathrow Express.

EFC (£m)	EFC movement post plan (£m)
281	(6)

Values shown are for Tech and data funded projects only and exclude Emergency Service Network, Public Cellular Network, Telecoms Commercialisation Project and telecomms projects. Authority and EFC shown are for financial years 2018/19 to 2021/22. Spend Authority includes additional Programme and Project Authority approved by the Programmes and Investment Committee on 6 March 2020.



Contactless payment options are being introduced on more services

As part of the funding settlement with Government and to reduce demand from non-essential travel, on 15 June, we introduced changes to the 60+ and Freedom Pass concessions to prevent their use before 09.00 on weekdays.

Evergreen Programme

The Evergreen Programme is aimed at renewing more than 80 per cent of our desktop PCs and moving all users to Windows 10/Office 365. By the end of July 2020 30,000 of 32,700 users had been moved to Windows 10 /Office 365 and 40,000 of 44,000 email boxes to Exchange Online providing a richer user experience with access from any device at any location. Migrations are expected to be completed by September 2020

The Smart Working Programme closed at the end of March, having achieved all its objectives including allowing remote working for a large part of our non-operational workforce.

The achievements of the Evergreen and Smart Working Programmes proved to be critical enablers for us to successfully move up to 15,000 staff to work from home in just a few days at the start of the coronavirus pandemic lockdown period.

Content and collaboration

Microsoft SharePoint is one of our main departmental file sharing applications. However, three older versions exist that need to be consolidated into a single up to date version, SharePoint Online, which is part of the Office 365 suite. Only the six most complicated 2010 sites remain, with migration planning currently under way.

Livelihood is a key enterprise document management tool, largely used for engineering documentation. The current version is not supported and needs to be upgraded to run under Windows 10. Final testing of the new application is underway and implementation is planned to align with the next Windows 10 rollout.

The new Intranet portal called Platform was successfully launched at the start of July 2020. This consolidates three legacy intranets into one modern solution.

Hosting Data Centre Rationalisation and Cloud Migration

Hosting continues to develop a hybrid operating model in which we have extended our data centre capabilities into the public cloud through Amazon Web Services and Azure. The expanded capabilities to deliver stronger governance, operational controls and cost transparency to yield additional efficiencies has been delivered in Azure and 98 per cent complete in Amazon Web Services.

Forty per cent of the Compute hosting platforms have now been refreshed and data migrated off legacy storage platforms which have now been decommissioned. This has mitigated some of our security vulnerabilities and ensure we are operating on supported platforms.

Decommissioning of the Ashfield House data centre is underway, all apart from one service has now been migrated into our strategic data centre. A new Universal Licence Agreement was negotiated for our Virtualisation services and went live in June. This delivered £1.2m operational savings.

Networks

Following the introduction of Safe Stop, all works on the delivery of the London Underground Connect radio system upgrade ceased until an exemption was approved in June. Work has now restarted and the new core site equipment has been fully commissioned. Activity continues to deploy new control room dispatchers and re-configure the base stations prior to the system software being updated.

We have continued to deliver infrastructure to support the Home Office's new national Emergency Service Network communications system and have installed 380km of tunnel fibre (90 per cent), pulled 395km of the tunnel leaky feeder (95 per cent), and fixed 263km of this leaky feeder (62 per cent) into its final position. We have completed about 40 per cent of the required station cabling works, focusing on 59 stations (of 127).

Following the successful launch of the 4G Pilot on the Jubilee line in March, we have engaged Capita to design an extension to the Pilot to add five additional Jubilee line stations and associated tunnel sections – this will provide passengers with 4G connectivity throughout the entire Jubilee line (both in tunnels and on platform areas).

Subject to available funding the additional sections would be energised by the end of Quarter 2 2021. In addition to this, funding has been requested for further enabling works for the wider Public Cellular Network service across the estate including a second leaky feeder on the Jubilee and Victoria lines, enabling works in six stations and 30 station designs. The investment will largely be recoverable via the telecoms concession at the point that commercial mobile services are established.

Our project to secure a partner to commercialise our telecoms assets continues. Updated tender documentation was issued on 3 June and two updated tender responses were received on 1 July. These responses are now being evaluated.

Technical Refresh and technical service operation

In June 2020 the core support service contracted out to Computacenter for IT Service Desk and Support went live.

The contract for providing best-value off-the-shelf IT hardware and software was awarded to Computacenter in April 2020 following a tender process. The contract went live in May 2020.

Enterprise resource planning

The SAP Enterprise Resource Planning team successfully provided improvements to transactional processing in Accounts Payable. These optimisations have been prioritised as they supported home working during the recent challenges caused by the coronavirus pandemic.

The SAP Hosting Project has completed the design phase and initial migration of the Development environment to Cloud has started. This project will migrate SAP on to the Amazon Public Cloud to increase SAP performance.

We have implemented the anonymised CV service, so that when shortlisting candidates during recruitment campaigns, we are actively minimising the impact of any unconscious bias.

Contact Centre Operation

During this period, the focus has been on the retendering of the contact handling work for Oyster.

The new contract with Eckoh to provide telephony services for our customer helplines went live in July.

Data Analytics

During Quarter I and with the impact of the coronavirus pandemic, there has been a significant increase in demand, internally and externally, for accurate information to help understand customer demand and insight into journeys being made across our network.

To support this, we have brought forward the Journeys and Demand initiative, which in Quarter I has seen the development of London Underground customer demand reports for use by the wider business, some of which automate previously manual processes to improve efficiency and consistency.

Alongside this need for customer demand information, we are modernising the 'Origin Destination Interchange' product: this is a complex tool that infers bus alighting and passenger loads, and enables crucial activities across transport planning, payments, and analytical teams. The project completed the proof of concept phase and moved into development.

New enhanced 'Artificial Intelligence' sensors have been installed across Central London which count the flow of traffic/pedestrians/bikes through junctions. We are loading live data from these.

Finally, we have continued to deliver the next increments to the Wi-Fi product which has given the following enhancements:

Passenger Route Choice – Which went live with our second feature for our advertising partner (Global) which will help them to understand what routes could have been taken between any given stations, on a given day and helps improve their advertising campaign reach.

Growth Fund

Forecast completion year	Spend to date (£m)	Spend authority (£m)	EFC (£m)	EFC movement post plan (£m)
2024/25	0	157	157	(1)

2020/21 strategic milestone RAG

This programme is dedicated to the third pillar of the Mayor’s Transport Strategy on using transport to unlock new jobs and homes. The programme allocates funding to support multi-modal and cross-portfolio transport schemes where there is a specific transport constraint that is holding back economic and residential development and supports regeneration opportunities in some of London’s key growth areas.

Existing Growth Fund Programme

The Growth Fund contributes to 16 schemes that will support more than 30,500 new homes and approximately 24,700 new jobs. Recently completed schemes include the transformation of the northern roundabout at Elephant and Castle and Ilford station.

The construction and development of most Growth Fund schemes has been paused over the last financial quarter due to the coronavirus pandemic and lockdown restrictions. Progress has been made in developing scheme details and negotiating third party funding for several schemes in the programme which are in the feasibility and design stages. Our investment in the transport infrastructure continues to be supported by financial contributions from developers as well as other sources, including the GLA with the programme unlocking more than £122m of third-party funding.

Progression has been made in upgrading and developing stations such as supporting the submission of a planning application for the Walthamstow Central scheme, and further development of Woolwich (Elizabeth line) and Tottenham Hale stations with all of these improvements supporting and unlocking new housing developments and aiding local economic recovery. Our investment in the transport infrastructure has been supported by financial contributions from developers as well as other sources, including the GLA.

Our latest budget classifies all Growth Fund schemes as ‘contingent on additional funding’. This means that, although all the following projects already have a strong commitment and a significant degree of third-party funding has been secured for their delivery, a further commitment by Government or other sources is needed to complete the funding package for each of them.

These are:

- An upgrade at Colindale station in the first phase of a development programme to bring 10,000 new homes to the area. The scheme now has confirmation that the Secretary of State has accepted the CPO and delegated the decision making to an Inspector with a Public Inquiry expected to be held later this year
- An upgrade at Walthamstow Central station, with improved entrances and step-free access, to provide additional capacity to support 2,000 new homes and 1,000 new jobs in Walthamstow town centre. A new planning application has been submitted and the project team is now planning out activities for the next stage, including negotiations and design completion
- Pontoon Dock – station enhancement works to improve vertical circulation and directly unlocks 5,000 homes with £7.6m of developer contributions. The scheme is currently being redesigned and a new planning application will be submitted by the developer, this has caused changes to the original programme and the funding profile is likely to change as a result
- Tolworth – Highway enhancements to improve capacity and unlock the delivery of more than 2,500 new homes
- Catford – the scheme proposes the removal of Catford gyratory and road-space relocation to enhance town centre place and travel conditions and maximise new housing delivery and associated growth (3,000 new homes and 1,000 new local jobs supported)
- Erith – This scheme proposes significant improvements to public realm in Erith Town Centre and improved pedestrian access to Erith station. There are plans to develop at least 1,000 new homes in the town centre which will be supported by the improvements
- Thameside West DLR station – A new DLR station, Thames Wharf, to support the Thameside West development, which is set to deliver around 7,000 new homes

We are currently working with the GLA, DfT and Ministry of Housing, Communities and Local Government to obtain funding certainty for some of the current Growth Fund schemes and to explore other funding options.

Other Growth Fund schemes: [Sutton Link](#)

This scheme entails the extension of the London Trams network from Wimbledon to Sutton town centre, via Morden and Rosehill. A detailed option selection process, including a public consultation on a shortlist of choices has been completed thus far. This project has been paused.



Stations on the Elizabeth line will be step free by design

Elizabeth line

On-network stations improvement programme

Forecast completion year	Spend to date (£m)	Spend authority (£m)	EFC (£m)	EFC movement post plan (£m)
2020	90	94	95	0

2020/21 strategic milestone RAG

This programme focuses on 22 existing stations, ensuring improved customer experience and step-free access, and a consistent station environment across the Elizabeth line.

Work on Great Eastern step-free schemes at Maryland, Manor Park and Seven Kings was completed in February 2019. A long-term dispute between the main contractor and subcontractor has delayed the formal handover of these assets to Rail for London Infrastructure. However, the dispute now looks to have been resolved and works on handover will restart with a view to completing in October 2020.

On the Great Western section, lift schemes at Hanwell, Iver, Langley and Taplow were completed between December 2019 and March 2020 – just ahead of the Safe Stop. Therefore the coronavirus pandemic’s impact on the project has been minimal as all that remains are minor outstanding works and snags.

Since March attention has been on completing the paperwork required to hand the new assets to the asset manager Network Rail which will assume long-term responsibility in line with other station

assets on the Great Western section with all project teams working remotely. The remaining snags/outstanding works are being completed with site teams adhering to social distancing guidelines.

MTR Elizabeth line’s station refurbishment programme also came to a Safe Stop in March. The two active projects at Langley and Hanwell were paused for approximately six weeks and work has now restarted in line with social distancing guidelines. When complete these projects will provide significant improvements to the customer experience at the stations, with Langley also receiving automatic ticket barriers that will help with protecting revenue and deterring antisocial behaviour. Completion for these schemes, which was scheduled for August/September, is now likely to be December the delay being a combination of the Safe Stop and less productive socially distanced work after the restart.



Rolling stock

Forecast completion year	Spend to date (£m)	Spend authority (£m)	EFC (£m)	EFC movement post plan (£m)
2020	968	1,149	1,006	0

2020/21 strategic milestone RAG

We are in producing the new Elizabeth line train fleet in phases and have built a depot to provide train maintenance facilities.

Quarter I saw the planned continuation of integration testing of the train and Automatic Train Operation signalling in the central section tunnels of the Elizabeth line, including transitions to the Network Rail mainline routes to the east and west and running multiple trains in the same tunnel under the full control of the Automatic Train Operation system.

Authorisation from the Office of Rail and Road to operate European Train Control System (ETCS) fitted Elizabeth line trains in passenger service on ETCS infrastructure was obtained and a significant milestone was reached when the first nine-car train was introduced into passenger service to Heathrow under full ETCS signalling control on 30 July 2020.

Central operating section

Testing of the baseline class 345 train and lineside-signalling software versions that will be safety-assured for use in the next

phase (Trial Running in the central section under UK 'Rail and Other Guided Systems safety legislation) completed in Quarter I, and the Crossrail safety body started the safety-assurance process. Testing of the next iteration of signalling software that will be used to further enhance the system functionality in time for Trial Running starts in September 2020.

Reading and Heathrow

The class 345 passenger services between Paddington and Reading reverted to seven-car trains following identification of a safety related defect in the nine-car variant which was withdrawn from service as a precaution. The safety related defect was subsequently resolved. Reintroduction of nine-car trains is being prioritised on the Paddington to Heathrow route.

Stratford to Shenfield

Class 345, seven-car trains continue to operate this passenger service.



A new depot will provide train maintenance for the new Elizabeth line trains

Crossrail

Forecast completion year	Spend to date (£m)	Spend authority (£bn)	EFC (£m)	EFC movement post plan (£m)
2022	*	17.6	*	*



Crossrail Ltd has continued to work on a plan to drive the Crossrail project to completion.

Although some details are still to be finalised, has provided us with an initial proposal that indicates the central section of the Elizabeth line opening during the first half of 2022.

Crossrail’s proposal is not a confirmed opening window and remains subject to review and validation. While Crossrail Ltd is reaching the final phases of the project to safely complete and deliver the Elizabeth line, it is clear that some challenges remain.

The leadership team at Crossrail Ltd is working hard to understand the financial and delivery implications of the coronavirus pandemic on the programme.

TfL Rail services continue to deliver very high performance and service levels have now reached those operated before lockdown.

Nine-car trains have been operating on services out of Paddington and have started to be operate to Heathrow.

* This information is withheld for reasons of commercial sensitivity



Custom House has now been handed over to us

Appendix

2020/21 strategic milestone performance

Our 2019/20 strategic milestones for the projects or programmes covered in this report are listed below. The RAG status indicates delivery forecast against the current plan date in line with the following key:

- On time or early
- Up to 89 days late
- 90 or more days late

Commentary is provided on milestones that are forecast to be delivered significantly (more than 90 days) late. These milestones also indicate the history of forecast date movements by showing the RAG status and variance (the number of days difference) between the plan date and the forecast date at each quarter end. Programme impact and mitigations are also detailed.

Milestone description	Plan date	Actual/forecast date	Status
Major Projects			
Four Lines Modernisation ■			
Completion of foundation for train maintenance access platform at Neasden depot	26-Aug-20	16-Jul-20	■
Piccadilly Line Upgrade programme ■			
OPO CCTV (Design & Build) Approved by TfL for Contract Award	14-Jul-20	14-Jul-20	Complete ■
Network extensions			
Northern Line Extension ■			
Completion of 22kv Installation, necessary for providing full traction power for the new extension to Battersea	01-Sep-20	01-Sep-20	■
Silvertown Tunnel ■			
Completion of pump test boreholes and all geotechnical surveys for the north site of the Silvertown tunnel	15-Sep-20	15-Sep-20	■
Barking Riverside Extension ■			
Completion of Thames Water works to divert sludge main at Pier I4	23-Jul-20	22-Aug-20	■
Major stations ■			
Bank station – Completion of the tunnel primary lining for the new DLR triple escalator	01-Sep-20	07-Sep-20	■

Milestone description	Plan date	Actual/forecast date	Status
London Underground			
Station renewals and enhancements ■			
52-hour possession on the Piccadilly line to re-rail track between Heathrow Terminals 2 & 3 and Hatton Cross on the Eastbound tunnel	06-Jul-20	06-Jul-20	■
Restart of construction activities at twelve sites (Amersham, Harrow-on-the-Hill, Osterley, Cockfosters, Mill Hill East, Debden, Ickenham, Wimbledon Park, Tottenham Hale, Acton Train Maintenance Shed, Bromley by Bow and Finsbury Park)	31-Jul-20	22-Jul-20	■
Air quality and environment ■			
Congestion Charge Changes – go live	22-Jun-20	18-Jun-20	Complete ■
Assets ■			
Victoria Coach Station infrastructure: Complete Fire System works on site	17-Oct-20	24-Sep-20	■
Public transport ■			
Reeves Corner: embedded rail track renewal. Section I – complete	14-Sep-20	14-Sep-20	Complete ■

About Transport for London (TfL)

Part of the Greater London Authority family led by Mayor of London Sadiq Khan, we are the integrated transport authority responsible for delivering the Mayor's aims for transport.

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

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

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

During the coronavirus pandemic we have taken a huge range of measures to ensure the safety of the public. This includes enhanced cleaning using hospital-grade cleaning substances that kill viruses and bacteria on contact, alongside regular cleaning of touch points, such as poles and doors, and introducing more than 1,000 hand sanitiser points across the public transport network.

Working with London's boroughs we have also introduced Streetspace for London, a temporary infrastructure programme providing wider pavements and cycle lanes so people can walk and cycle safely and maintain social distancing.

At the same time, we are constructing many of London's most significant infrastructure projects, using transport to unlock much needed economic growth. We are working with partners on major projects like the extension of the Northern line to Battersea, Barking Riverside and the Bank station upgrade.

Working with Government, we are in the final phases of completing the Elizabeth line which, when open, will add 10 per cent to central London's rail capacity. Supporting the delivery of high-density, mixed-use developments that are planned around active and sustainable travel will ensure that London's growth is good growth. We also use our own land to provide thousands of new affordable homes and our own supply chain creates tens of thousands of jobs and apprenticeships across the country.

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

We are constantly working to improve the city for everyone. This means using data and technology to make services intuitive and easy to use and doing all we can to make streets and transport services accessible to all. We reinvest every penny of our income to continually improve transport networks for the people who use them every day. None of this would be possible without the support of boroughs, communities and other partners who we work with to improve our services.

By working together, we can create a better city as London recovers from the pandemic and moves forward.

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