

TfL BUSINESS PLAN 2020/21 TO 2024/25

by John Hawkins

The 2019 business plan points to a lack of funding certainty beyond 2021, and makes the case for additional funding. The average annual cost to meet baseline requirements is £1.4bn through the 2020s and 30s, and “covers larger programmes, such as replacing trains across six Tube lines and upgrading signalling systems”. This must include all tube lines other than the Victoria Line. The average annual cost to deliver improvements is £4.4bn, e.g. proposed upgrades to Holborn and Camden Town stations (these schemes aimed to meet demand from service upgrades, but with those postponed apart from 27tph on the Piccadilly Line, any urgency has gone).

Tube and rail trains last around 40 years (less for trams and DLR) which requires a new train every two weeks on average. The Victoria Line is the most reliable fleet, travelling more than 50,000km on average between faults. The least reliable fleets are on the DLR and the Central and Waterloo & City lines, which travel less than 10,000km between faults.

The Plan will replace the Piccadilly Line fleet as well as the oldest DLR trains and Trams, and complete the rollout of new trains on the London Overground and Elizabeth Line. In the longer term, funding is sought to replace the Bakerloo Line fleet, the oldest trains operating on the UK mainland, and the 1992 Tube Stock on the Central and Waterloo & City lines. The Plan includes overhaul of bogies, doors and couplers on the Metropolitan Line, and doors on the Victoria Line, together with investment in engineering vehicles.

Lift and escalator assets will grow 35% by 2026 due to the opening of the Elizabeth Line and completion of station upgrades. Each escalator runs an average 46 days between failures, and each lift around 25 days. Escalator availability has risen to 99.5% in recent years, with lift availability reaching 98.5%. Escalators need refurbishing every 20 years and replacing every 40 years. TfL partially refurbish lifts every five years and completely replace them every 10 to 20 years, depending upon type (compare this with the original Otis machines!). This means TfL need to fully replace around one escalator and two lifts every month, which will increase as the number of assets grows. During this plan, works include escalators at South Kensington and Marylebone, lifts at Borough and Holloway Road, and midlife refurbishment of all escalators on the Jubilee Line extension, which opened in 1999.

Electricity usage will grow with frequency upgrades, air conditioning on more trains, etc. Most of this power is distributed via the high-voltage power network from six major and two minor high-voltage bulk supply points, and 230 buildings housing substations, switch houses and transformer rooms. There is also local low-voltage distribution networks and the emergency generating station at Greenwich. Power upgrades on the DLR and Piccadilly Line will prepare for new trains, and TfL are also considering the best approach to enable electric charging across London’s bus garages. Improving energy and cooling assets will be critical as TfL respond to the climate emergency declared by the Mayor, and solar generation will increase to 1.1MW, whilst LED lights are installed across the network. TfL will improve cooling on the Central Line by replacing fans at Lancaster Gate, and on the Northern Line by replacing a ventilation shaft and substation at Euston, to be delivered by HS2 Limited.

November 2019 saw the busiest day in the history of the Underground, with more than five million journeys taking place, but contemporary and future technology-driven trends, including increased flexible working, have implications for travel demand patterns. Preparing for the effects of a changing climate means working hard to maintain operations in increasingly challenging conditions. London will experience warmer, wetter winters and hotter, drier summers, together with more frequent and intense severe weather events. Assessing the impact of current severe weather events on the transport system, to help understand the scale and frequency of future impacts, will inform planning to make the network more resilient. A recent research project found differences in Underground lines’ resilience to high temperatures, which was likely linked to different asset types on different lines, and will have implications on decisions for asset renewals.

London Overground and TfL Rail are claimed as examples of how TfL can significantly improve customer service when commuter rail services are devolved. Since taking over, TfL have increased train frequency, increased station staff, reduced delays, improved accessibility and brought affordable, seamless travel into and around the Capital. TfL are working with the DfT to consider how additional rail services, such as Great Northern, could be transferred so that TfL can improve them and support new jobs, homes and economic growth.

TfL support the delivery of step-free stations on the London Overground through the Government's Access for All programme, as well as using third-party funding. Through this programme, lifts were installed at West Hampstead station, and other stations that will potentially benefit include Brondesbury, Hackney Downs, Queen's Park and Seven Sisters. Third-party funding should provide step-free access at Surrey Quays station as part of plans to deliver 14,000 new homes in the local area by 2031. Arnos Grove will see 150 rental homes on the car park site, with Cockfosters car park next in line for similar development.