

TfL

Independent Review

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FINAL REPORT
December 2020

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Executive Summary

In July 2020, the Mayor of London and the Board of Transport for London (TfL) set up an independent review to investigate options for providing TfL with long-term financial sustainability. We were asked to conduct this review. Our work was largely done in July to September. This report summarises the outputs of our work but acknowledges the outcome of the latest Government's agreement for emergency funding for TfL.

The scope of our work is set out in Section 1. We have focused on what it will take for TfL to reach financial stability in the medium- to long-term (i.e. from the mid-2020s onwards). We define this as having the funding required to cover costs as London's integrated transport authority; to manage its investments and expenditure; to assess and manage risk; to reduce debt and ultimately to build reserves which will protect it from future unforeseen external shocks. This section also sets out the criteria we use to consider options proposed in Section 5.

Section 2 outlines the context and history of TfL as London's integrated transport authority. TfL is responsible for managing a huge and complex transport network in one of the world's busiest cities. We support the purpose of TfL in having a wide remit as the strategic overseer of London's transport. This means that the organisation must have adequate funding to deliver its broad responsibilities.

Section 3 focuses on TfL's financial position up to 2019. TfL's finances have developed in the 20 years since it was created as an integrated transport authority. Major changes include the build-up of a considerable debt burden and the reduction and then withdrawal of its government grant. The cumulative impact of these changes means that, even before the COVID-19 pandemic, the organisation was facing a funding challenge which was forcing the deferral of some asset renewals and threatening TfL's ability to achieve its future objectives. TfL was showing a projected funding gap estimated at £0.5 billion to £1 billion pa from the mid-2020s onwards.

Section 4 discusses the impact of the COVID-19 pandemic on TfL and the latest work in determining the organisation's long-term funding gap. The pandemic has led to a crisis for TfL's immediate financial position; but with its effect on longer term travel demand in London, it could also impact the organisation's long-term finances and funding gap. A middle-ground assessment places the long-running demand reduction at 20% below previous forecasts. This would increase the long-term funding gap by £1 billion pa. This section also looks at the Long-Term Capital Plan (LTCP) for TfL, which was in development at the time of the review and which quantifies the long-term funding required to renew London's transport infrastructure and provide for key enhancements. The average annual investment is £2.2 billion.

Combining the pre-COVID-19 challenge, of £0.5 billion to £1.0 billion pa, with the potential medium-term COVID-19 impact of a loss of some £1.0 billion pa creates an annual funding gap around £1.5 billion to £2.0 billion for the mid case investment of £2.2 billion. We have assumed a £2.0 billion pa gap. This is partly because the mid case investment is close to the minimum case, and partly because the balance of the funding risks is downside.

Failing to address this gap will mean that both the condition of London's core transport network will deteriorate, and that TfL will be unable to deliver planned wider enhancements (for example to reduce carbon emissions, improve air quality and support housing delivery).

Section 5 of the report sets out the possible solutions for addressing this funding gap. We consider the full range of changes which would make a material difference. This includes addressing both the existing costs and revenue base of the organisation, as well as considering new potential sources of external funding. In this section we emphasise that TfL should continue to be rigorous in exploring ways to control costs and increase existing revenue sources but given the extent of efficiencies already delivered and planned, it is not prudent to rely on further efficiencies to be sufficient to bridge the funding gap.

TfL is much more reliant on passenger income than comparable transport authorities. The future funding settlement should address this disparity by seeking additional funding from three groups: residents, consumers and drivers, as well as direct government grant. We have proposed options around council tax, VAT and road user charging which satisfy our criteria and are sufficiently scalable to address the long-term funding gap, alongside some smaller measures. We set out a timescale over which these options could be introduced such that more sustainable sources could be in place by the mid-2020s. Before then grant funding will be needed for operations and investment in the existing asset base. Whilst grant funding for operations and maintenance should taper out it would still be needed in the medium to longer term for major enhancements to existing networks and new investments such as Crossrail 2 and the Bakerloo Line Extension (BLE).

Section 6 addresses the governance of TfL. We consider the existing governance model. Given our view that TfL should remain as an integrated authority under the Mayor we do not recommend radical change. We are in favour of transparency and independent public scrutiny of long-term plans. There could be an enhanced role for the Independent Investment Programme Advisory Group (IIPAG), a new statutory monitor or possibly for the Office of Road and Rail (ORR).

Our conclusions follow at the end in Section 7.

1. Scope of the review

In July 2020, the Mayor of London and the Board of Transport for London (TfL) set up an independent expert review to investigate options for providing TfL with long-term financial sustainability. The Board appointed us, TC Chew, Stephen Glaister, Bridget Rosewell and Jonathan Taylor. Our biographies are in Appendix 1. Between us, we have experience in public sector governance and finance, economic sustainability and transport infrastructure.

We did the bulk of our work in July – September 2020 based on the estimates available then. The Government and the Mayor had important negotiations in October which led to an agreement for the remainder of the 2020/21 financial year and some pointers for future years. TfL is currently doing further work and there will be further negotiations. Our work has focussed on the medium to longer term not the short-term agreements. Nevertheless, we have made some slight adjustments to reflect the longer-term points in the October agreement.

1.1 Scope

We were asked to undertake a full review of options to provide TfL with funding, financing and an operating model that will be sustainable and resilient to external shocks over the long term for:

- i.** the planning and delivery of integrated public transport, roads, walking, cycling
- ii.** whole life asset stewardship of infrastructure including maintenance, modernisation, renewal and development of existing and new transport needs
- iii.** and which reflects the transport needs of a major city like London

With the above in mind, we considered a wide range of objectives and have developed options for TfL's long-term future funding and financing models based on the need to:

- a)** deliver services to meet the changing demand patterns for transport in London, including operational continuity and the ability to adapt rapidly to changes in operational imperatives and passenger demand
- b)** fund and deliver an efficient whole-life asset stewardship plan that incorporates asset maintenance, modernisation, renewal and development for London's existing and new transport needs
- c)** invest in non-revenue generating infrastructure for walking and cycling and other green initiatives, including the acceleration of the decarbonisation of London's transport
- d)** identify land and assets that could be developed to support delivery of London's housing objective

- e) improve the overall cost and efficiencies and maintain robust internal processes for selection of capital and operating projects and a rigorous cost control regime and consideration of long-term cost efficiencies and the efficiency of governance models
- f) contribute to London’s wider development and sustainability
- g) utilise, where appropriate, new sources of finance and funding.

1.2 Definition of financial sustainability

We sought to identify options for TfL to reach a position of financial sustainability.

For the purpose of this report, we defined financial sustainability as the funding required to cover the costs of TfL’s accountabilities as London’s strategic transport authority: to manage its investments and expenditure strategically, assess and manage risk, reduce debt and ultimately build reserves which will protect it from future unforeseen external shocks.

Transport infrastructure, in particular rail, has long planning and replacement cycles, often 20 – 40 years and, therefore financial sustainability needs to be considered over that period. It is essential that TfL develops a long-term view of available funds to ensure that efficient and appropriate investment decisions are made to enable the ongoing smooth running of the network.

The numbers in the report concentrate on the 2025 – 2030 timescale; we explain why in Section 4.

1.3 Criteria options have been judged against

We have defined a set of criteria against which to consider the impact of various options for achieving financial sustainability. These are set out in Table 1.1 below.

TABLE 1.1: PANEL’S ASSESSMENT CRITERIA

Financial, Long term stable and secure funding	Reliable funding which enables current costs and capital investments to be met, assuring the objectives set out in other criteria, and robust against foreseeable risk.
Safety	A transport system which assures safety to the highest international standards that provides safe, integrated, efficient and economic transport facilities to, from and within Greater London.
Economic benefit of the system	A transport system which efficiently meets the needs of London, fully supports its continuing economic growth and contributes to London’s wider development and sustainability.
Social and environmental	A transport system which meets the needs not only of business but also of people living and working in all areas of London, and at all

levels of income. Encourages continuing modal shift towards positive environmental outcomes in line with the UK's aspirations and international commitments.

Transparent and efficient Funding mechanisms for a public service which are clear and understandable, which encourage accountability, and which maintain management efficiency.

2. TfL's Context

This section briefly outlines TfL's history over the last 20 years and its role as London's integrated transport authority.

2.1 Evolution of TfL's role as an integrated transport authority

History and establishment

TfL was created in 2000 together with the new London mayoralty within the Greater London Authority (GLA), which was given significant powers over transport. The main predecessor to TfL was London Regional Transport (LRT), established in 1984 which took over responsibility from the Greater London Council (GLC).

LRT was a nationalised group, running the London Underground (LU), trams, coaches and buses. It reported to the Secretary of State for Transport. Traffic and highways in London were separately managed through other organisations reporting to the Government. The LRT years saw important innovations like the Travelcard and the Jubilee Line Extension. LRT also contracted out the bus network against a tight gross cost contract.

Despite these positive developments, by 2000 it was widely accepted that the nationalised structure had presided over a lack of both renewal and enhancement investment. Given the sustained growth of the London economy and population from the late 1980s, there would need to be an increase in investment.

Initially, the Mayor was given powers over the underground, buses, the Docklands Light Railway (DLR), the Croydon Tramlink Public Private Partnership (PPP), traffic and congestion, road user charging, major highways inside London including the A13 PPP and taxi regulation, but not suburban rail or airports. The London boroughs remained responsible for local roads and parking.

The Government, however, kept two major controls over London's transport system. The first was the PPP structure for the underground (which had some advantages, notably in the focus on assets and on measures such as lost customer hours); and the second was that the subsidy for TfL would come in the form of transport grant, which the Mayor had to spend within the statutorily distinct TfL organisation.

2000-2009

The impact of the establishment of TfL should not be underestimated. A combined authority led to a transformation in the way that people moved around London, bought about by significant investment and resulting improvements to public transport infrastructure. Early Mayoral initiatives included the simplification and expansion of bus services, the introduction of integrated ticketing through the Oyster card, the successful introduction of the Congestion Charge, enhanced services to outer London boroughs

through improvements to London Overground, the beginning of the redevelopment of the Battersea Power station site and the successful planning (and eventual delivery) of the London 2012 Olympic and Paralympic Games. Arguably many of these initiatives would not have been achieved, or would have cost much more, through the previous fragmented system.

The period from 2007 to 2009 saw a reset of TfL's finances, negotiated by Mayors Ken Livingstone and Boris Johnson. The settlements with the Government picked up the programme for the London 2012 Olympic and Paralympic Games, the Crossrail 1 project and the end of the LU PPPs. Key points included:

- A 10-year settlement covering the Olympics, including investment in the Overground, and Crossrail 1 construction
- An investment programme including both Crossrail 1 and LU renewals
- Significant borrowing by both TfL and the GLA
- Agreement on two new hypothecated taxes, in the form of the Business Rates Supplement (BRS) and what became the Mayoral Community Infrastructure Levy (MCIL)

2010 onward

In 2010, the coalition Government reduced TfL's investment programme and the Crossrail 1 costs. It also implemented reductions in the operating grant. At the same time TfL's remaining operating and capital grants were swapped in three stages for allocations of London's rates under the Business Rates Retention (BRR) scheme.

The only major financial levers the Mayor could directly affect were the level of TfL fares and the level of the council tax precept (£6 million pa of which is currently spent on TfL). The Mayor's significant cash balances were monies received in advance for non-transport projects.

Crossrail 1 and the creation of the London Overground led to a certain amount of rail devolution where the Mayor picked up responsibility for running services on national rail infrastructure.

There was also devolution of some lines in North East London, but the bulk of the suburban railway in London has remained a DfT responsibility though with shared ticketing through Travelcard and Oyster.

2.2 Benefits of an integrated transport authority

The creation of the London mayoralty twenty years ago and the formation of an integrated TfL has brought socio-economic and environmental benefits to the city and its transport network. There are a number of reasons for this:

- An integrated authority has a clearer overview of the needs of a city than more fragmented arrangements. This enables it to take better account of wider needs beyond direct optimisation of transport operations
- An integrated authority has responsibility for the strategic planning of transport and land use alongside funding and operational control. This means that it can move efficiently and confidently between planning, investment and delivery. In London these planning powers are shared between the GLA and TfL
- The combined management of different public transport services and the road system allow an authority to work across different modes to balance demand and supply across the network, rather than each service trying to act in a silo
- Integrated authorities can provide a coherent service to the customer – including branding, journey planning tools, fares and ticketing. This provides the customer with a better experience
- Integrated authorities can use revenues from one mode to fund improvements to another that has less available funding sources. This creates flexibility in where improvements can be made.

In our view, TfL is superior to the previous nationalised industry model and the experiment of the LU PPP model. Retaining an integrated transport authority should be the starting point – there is no evidence for a better alternative.

3. TfL's financial position

TfL was making progress in recent years towards breaking even on day-to-day operational performance and was still planning to take further action to achieve this.

Achieving an operational balance would, however, still have left open how TfL's capital investment was to be funded. COVID-19 wiped out all the progress within a few months. In the short-term TfL is dependent on government funding to support both operations and investment.

We focus instead, in this section, on what the existing financial position tells us about the medium- to long-term financial requirements of TfL. To understand this, we look at the financial context of recent years for TfL, including the pre-COVID-19 funding gap that had not yet been resolved as of early 2020. This discussion then continues in Section 4, where we consider how TfL's financial position changed as a result of the pandemic.

We have kept our financial analysis broad brush, quite deliberately. We explain this in more detail in the next section.

3.1 TfL's cost base

The size of TfL's cost base is shaped by the responsibilities it has as the city's integrated transport authority. Table 3.1 below summarises TfL's operating and capital costs in 2019/20 along with the main drivers of these costs.

TABLE 3.1: OVERVIEW OF TFL'S COST BASE FROM 2019/20 BUDGET

Direct operating cost 2019/20: £5.8bn	This is the operating and maintenance cost associated with TfL's public transport and road services. In 2019/20, this cost covered the operation of nearly 600 million km of bus and rail services. It also covered the traffic signals on all of London's roads, as well as the direct ownership and maintenance of 580km of the most strategic roads. This operating cost also covers TfL's contribution to investment in borough roads as well the replacement of the bus fleet, which is managed through TfL's bus franchise contracts.
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The overall level of service provided by TfL is the most significant driver of costs. The service level is designed to provide a transport network that properly supports a city of London's size and density. There will always be the opportunity to review service levels at the margins, but the broad requirement to have an extensive, multi-modal public transport

	network is not in question.
Indirect operating cost: 2019/20: £0.6bn	Like all organisations, TfL incurs indirect costs – these cover corporate functions (legal, finance, human resource, communications, technology and data), as well as estates and facilities costs.
Financing costs 2019/20: £0.4bn	TfL’s debt reached £11.7billion at the end of 2019/20, which relates to borrowing undertaken to fund prior investment. Interest on this debt is an ongoing cost, and it rises with the total amount of debt.
Renewals¹ 2019/20: £0.5bn	TfL needs to renew its assets regularly to maintain condition, safety and performance. Assets include 1,000 trains, 750km of track, 580km of roads and 6,500 traffic signals. Financial pressures led to a recent two year pause in road renewals.
New capital investment: 2019/20: £1.1bn	TfL invests in the network to make improvements across the range of outcomes set out in the Mayor’s Transport Strategy. This includes investment in streets, public transport and homes. It is important to note that this includes the replacement of rolling stock and signalling.

3.2 Recent financial pressures on TfL

TfL’s financial position was relatively strong in its first decade, with low starting debt, strong revenue growth and affordable long-term plans. Since 2012, however, several factors have led to a weakening of its position. These are set out in Table 3.2 below:

TABLE 3.2: RECENT FINANCIAL PRESSURES ON TFL

Lower levels of revenue growth	Due to weaker underlying demand, largely driven by changes to travel patterns of young people and reduced international migration, but with some fares frozen from 2016 following an 8-year period of fares rises greater than wages.
Reduction in grant	Loss of approximately £800 million pa. Remainder replaced with BRR. Bus and Surface losses cross-subsidised from LU operating surplus.
Financial planning over	10-year planning period in 2007 agreed between Government

¹In TfL’s accounts, renewals are an operating cost, as are the payments to boroughs for investments and to bus operators to support new vehicles. But when TfL looks at investment spending, it adds back the renewals to the capital investment – but not the borough and bus payments. We have followed this approach; there is no difference to the number for the funding gap.

shorter timeframes	and Mayor; 1-year planning period in 2019, rates retention subject to Government reset, no agreed borrowing limits. Mismatch with a major multi-year investment programme.
Increasing number of unfunded investment schemes	TfL's 2019 plans contained a number of unfunded investment schemes.
Growing levels of debt	Combined with the use of debt to postpone addressing emerging issues, instead of increasing current funding.
Crossrail	Delays to opening, leading to lower revenues, and cost overruns.

3.3 Debt

TfL started with zero debt on its balance sheet but has used borrowing for most of its history to fund investment in the network. The borrowing level has risen every year since 2004/05.

TfL's latest Business Plan, published in December 2019, showed debt levels continuing to increase to £14 billion in 2022/23. In the remaining years of the plan TfL did not assume any further incremental borrowing as its revenues were not rising sufficiently to service higher debt levels.

FIGURE 3.1: TFL'S DEBT LEVELS 2000-2025



We consider any future borrowing decisions must be taken based on the ability to repay. Our principle is that further borrowing should only be undertaken for investment projects with a clear surplus to support servicing debt.

3.4 Funding issues pre-COVID

Since 2015 TfL has been working towards 'break-even'. This would mean that operating income (from passengers, commercial revenues, road charges and operating grants from the Mayor's share of business rates) covers operating costs, financing costs and renewals. The plans for achieving this target included increases in revenue and reductions in costs, as well as the opening of Crossrail 1 with the increase in revenue it was expected to generate. The target date for 'breaking even' was 2022/23.

Reaching the break-even target on the operating account would not solve TfL's funding requirements. This is because the break-even target did not include replacement investment in rolling stock and signalling and also potentially allocated insufficient funding to address the backlog of renewals work on London's roads. Additional money would be required to fund those investments.

TfL's published 2019 Capital Strategy looked at the funding required to maintain the condition of its assets and to enhance the network to achieve the ambitions of the Mayor's Transport Strategy (MTS) by 2041. There was a need for additional funding from 2025 onwards, of around £1 billion pa in constant prices, assuming that break-even was achieved and maintained from 2022/23 onwards. This funding gap excluded Crossrail 2 which would be subject to separate funding agreements.

The requirement for an additional £1 billion pa was driven by two main factors:

- The investment level assumed in the Capital Strategy was higher than recent historic levels. The Capital Strategy reversed recent under-investment in assets and delivered the investment required to meet the outcomes of the MTS.
- The ending of incremental borrowing in 2022/23.

This £1 billion annual gap pre-COVID-19 would probably have had to have been addressed, through further increasing revenues or securing new funding sources. Section 4 describes how this funding gap has further increased as a result of the COVID-19 pandemic.

3.5 International comparisons

TfL is unusual among transport authorities in major cities in being so reliant on fares income received from public transport passengers.

TfL's original budget for this year forecast that 72% of operating income would come from passenger revenue. International figures should be used with caution due to differences in reporting formats, but data shown to us by TfL put the equivalent figures at 38% for the New York Metropolitan Transportation Authority, 38% for Paris's Île-de-France Mobilités and 47% for Madrid's Consorcio Regional de Transportes de Madrid. Though all transport

operators have been subject to severe financial stress as a result of the pandemic, this reliance on fares has left TfL particularly vulnerable to a downturn in ridership.

We consider that future funding models should seek to deliver a more balanced funding package that does not rely so much on fares.

Figure 3.2 below shows the comparative numbers.

FIGURE 3.2: COMPARISON TO FUNDING MIX OF OTHER URBAN TRANSPORT AUTHORITIES

Source: TfL analysis

London

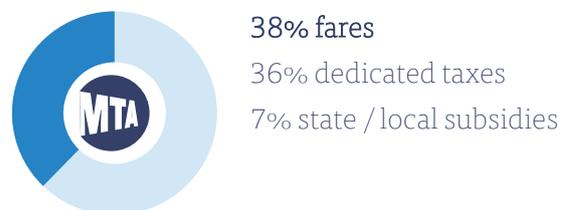
Transport for London (TfL)



In TfL, the removal of operating grant has been covered by a higher reliance on fares. Retained business rates are the second highest income source – although as growth in rates is not retained this is not full devolution.

New York

Metropolitan Transportation Authority (MTA)



MTA has a reasonably high reliance on fares, but crucially gets over a third of its income from a variety of dedicated taxation sources, including property taxes from within the city.

Hong Kong

Mass Transit Railway (MTR)

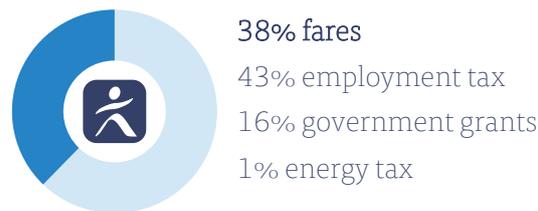


MTR's 'Rail & Property' model uses Government-granted development rights in exchange for land premiums created by MTR schemes. MTR reinvests development profits into transport.

Note: MTR's full revenues

Paris

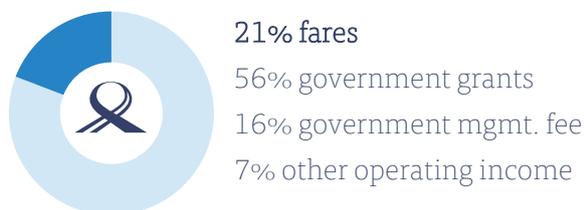
Île-de-France Mobilités (ÎDFM)



ÎDFM controls and coordinates public transport operators in the Paris-area. A significant proportion of public transport funding comes from a dedicated employment tax. *Note: funding covers some investment*

Singapore

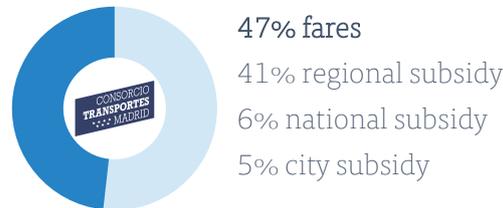
Land Transport Authority (LTA)



LTA plans, builds and maintains Singapore's transport infrastructure. The majority of funding comes from government grants / management fees. *Note: LTA use net cost rail contracts*

Madrid

Consortio Regional de Transportes de Madrid



CRTM is the public transport authority for Madrid Region, covering the provision of public transport services to the inhabitants of the entire Madrid Region and associated municipalities.

4. TfL's funding gap

This section considers the level of spending that is required to achieve safe, reliable and sustainable services (and so a reasonable spend on asset renewals and enhancements) and what funding will be available in future given the current funding model. The gap between these two figures is TfL's funding gap. Section 5 of the report then considers options for addressing the identified gap.

The precise size of the funding gap is highly uncertain given the difficulty, particularly at the current time, of forecasting future travel behaviour and revenue.

4.1 Estimating the funding gap

This section of the report sets out an estimate for the TfL funding gap. We have built up the funding gap by considering the investment levels assumed in the LTCP, (at the time of our review in August), and set these against estimates of the funding in a stable post-Covid-19 world.

This "broad brush", or high level, approach is a simplified one, based on the medium term, and one which averages out the peaks and troughs of investment. A more precise approach would add little given the scale of the uncertainties we address.

The price base is 2020 constant prices. The focus has been on proposing solutions to TfL's funding gap beyond the immediate term; that is after the end of the 2019 Business Plan and beyond any assumed funding agreement with the Mayor or the Government (so approximately 2025 onwards).²

While we were working, TfL was developing its LTCP and the Mayor was negotiating with the Government. The Government's October letter heralded further negotiations early in 2021. We note the April 2023 date in the Government letter for financial sustainability is earlier than our 2025 timeline. Our approach gives time for a 'new normal' to be understood post pandemic and for measures to be implemented; as we comment above this is unlikely to be by April 2023.

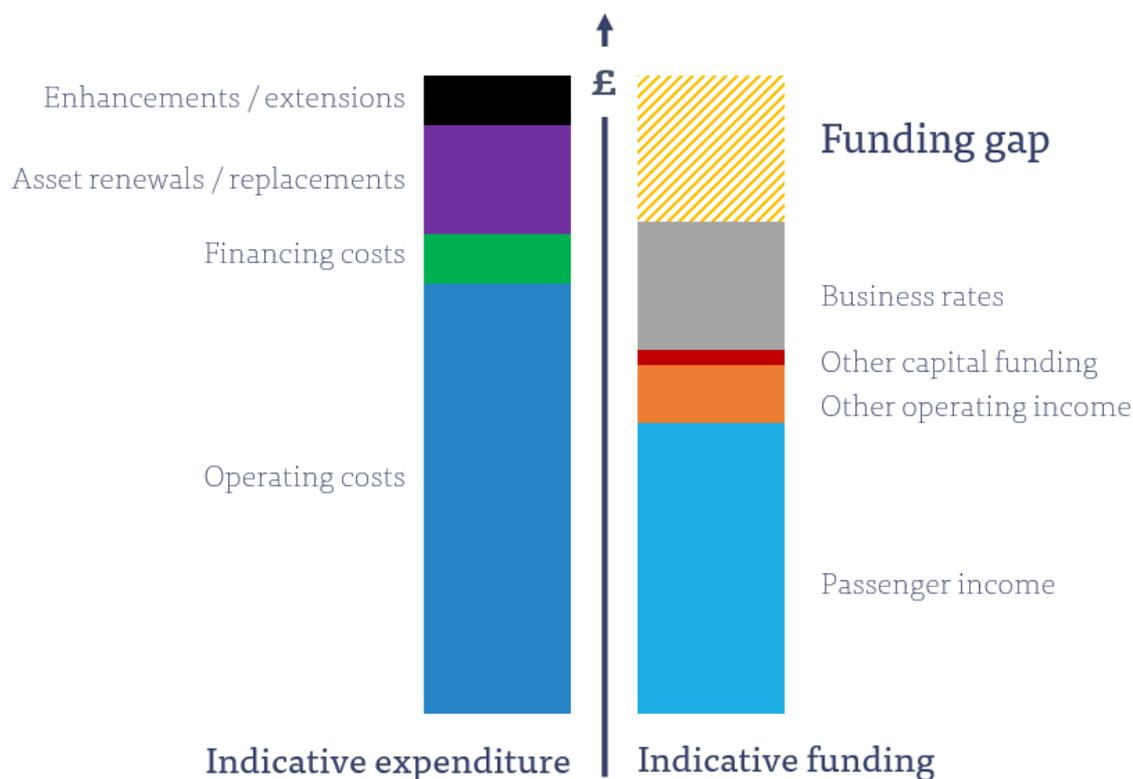
We have not seen any of the detailed work done by KPMG for the Government as part of the Government review of TfL so that is not considered here.

Towards the end of our work we compared our "broad-brush" numbers with the more detailed modelling done by TfL and found them not to be materially different.

²In this report we have used short term for the immediate crisis and recovery, medium term for period around 2025 and long term for beyond 2035.

The graph below illustrates the make-up of the funding gap, built up from both operating and capital numbers – a total expenditure or totex approach. Our numbers show a funding gap that is quite close to the level of planned capital expenditure, indicating that without further funding sources, there will be no investment.

FIGURE 4.1: EXPLANATION OF FUNDING GAP



4.2 Long-Term Capital Plan

In Section 3.4 we discussed the 2019 Capital Strategy and its link to the MTS. This is being replaced by the LTCP.

Previously, Capital Strategies at TfL were documents that fully embraced the ambitions of the MTS and did not either rationalise or prioritise capital investment requirements within it. They were not constrained by the affordability of the projects over time.

TfL’s approach to the LTCP is quite different. Projects are prioritised and can be included or excluded according to rankings and affordability. Projected spend is closer to historic spending. There has also been a more robust bottom-up estimate of investment costs.

The LTCP was shared with us in draft form – at the time of our work it was not yet approved by the TfL Board so any insights we drew from it were preliminary.

The investments within the LTCP can be broadly be split into three areas:

- **Asset investment:** traditional renewals as well as the replacement of life-expired rolling stock and signalling
- **Enhancements:** improvements to TfL’s existing network to serve a broad range of outcomes
- **Extensions:** additions to the TfL network to add capacity and connectivity

Table 4.1 gives the average run rate for each type of investment in the Capital Strategy as well as three scenarios from the LTCP.

TABLE 4.1: TFL ESTIMATES OF REQUIRED CAPITAL SPEND (£BN P.A. CONSTANT PRICES OVER 25 YEARS)

Category	2019 Capital Strategy (published)	Long-Term Capital Plan (internal draft August 2020)		
		Mid-case	Minimum	All options
Assets	1.4	1.5	1.3	1.5
Enhancements	0.7	0.7	0.2	1.6
Extensions	0.8	<0.1	<0.1	0.6
Total	2.8	2.2	1.5	3.7
	2019 Capital Strategy This strategy quantified the total investment contained with the MTS, except Crossrail 2.	LTCP: mid-case TfL’s core plan based on sustainable asset investment and a moderate ask on enhancements. Outcomes are not fully achieved.	LTCP: minimum This provides for minimum acceptable asset investment – but is not financially sustainable. Only committed enhancements are completed.	LTCP: all options All potential options to deliver the MTS, except Crossrail 2. Additional enhancements identified since 2019.

We used the draft mid-case LTCP as a planning assumption for estimating TfL's funding gap. This scenario has the following key elements:

- It maintains the asset base aiming for optimal timing of interventions based on asset management principles. A "Do Minimum" asset investment approach would save less than £200 million capital pa, which would be eroded by higher operating costs on maintenance and reduced revenue – as well as having significant impacts on reliability and performance.
- It allows for limited enhancements to achieve moderate improvements to capacity, efficient use of road space, environment (including bus electrification completed in the 2030s) and growth. Potential savings in this area in light of reduced demand for public transport are considered in Section 5.1.
- There is no provision for megaprojects (for example the BLE or Crossrail 2). It also only makes very limited provision for TfL funding of other extensions alongside third party funding, which is the largest difference to the 2019 Capital Strategy.

While we agreed with the principles of the approach to the LTCP (including its focus on sustainable asset investment), it was not in our scope or resources to validate the proposed levels of investment. We did note that capital renewal costs over the long-term will be high, particularly for maintaining TfL's underground and rail assets, where just as in Network Rail and other rail systems around the world, sustained investment has been shown to be necessary to maintain appropriate safety and performance standards. Additionally, TfL has over recent years already deferred investments to renew major assets. Further deferrals will increase the risk of declining performance.

Using this Mid-Level scenario means that the average funding level required for capital investment is around £2.2 billion pa in constant prices, with two thirds of this being spent on renewing assets and the remainder on improving the network

The LTCP also shows that TfL's investment needs are not flat over time. The need to address a backlog of renewals work (including the replacement of LU rolling stock) in the 2020s means proposed investment is higher in this period before dropping in the 2030s. We also noted that there are strong aspirations to deliver higher performance against several, primarily environmental, outcomes than allowance is made for in the Mid-Level scenario. This may create a need to deliver higher funding levels than the average figure considered here. The LTCP shows average investment £0.6 billion lower than the previous Capital Strategy. This is mainly from the removal of the extensions. The effect in the 2025 – 2030 is less, because the extensions happen in the 2030s. So, the net change on the funding gap is less than £0.6 billion.

4.3 Short to Medium term passenger revenue scenarios

Identifying the day-to-day operating surplus/deficit is an important step in assessing the funding that will be available for capital investment. We discussed operating costs in Section 3.1; but the largest area of variability in the operating account going forward is passenger revenue. This has been severely impacted by the COVID-19 pandemic, and its future trajectory is now highly uncertain. TfL has identified various scenarios that capture a wide range of outcomes in both the short and medium term. Our role is to look at the medium to long term, but we note the following issues impacting short-term revenue as well:

Immediate reduction	At the time of writing demand for buses is at around 50% of last year's, and the underground is around 30%. This is a large reduction and shows that demand is slow to return. This makes it more plausible that there will be a longer-term change.
Revenue impact	At the worst of the April demand reductions revenue loss was around £100 million per week. There is, as with Train Operating Companies, no alternative to emergency government support for this. We assume this continues during and after the pandemic until a new equilibrium of demand is reached.
Comparability	The reduction in demand experienced by TfL seems broadly comparable to that seen internationally and by other public transport providers in the UK.

TfL presented us with a set of medium-term scenarios for future demand. Noting that these are speculative and that there is no way to know how demand will evolve, these provide a useful basis for exploring possible futures.

TABLE 4.2 MEDIUM-TERM REVENUE SCENARIOS

Scenario	Description	Change from base revenue in 2030
Base	Extrapolated Business Plan 2019 as activity returns to normal	0%
London fends for itself	A lower growth London, having to cope with the fallout from the virus and a diminished status in the UK and the wider world	-35%

Low-carbon localism	A more sustainable London, which has been impacted significantly by the virus and become more local as a result	-15%
Remote revolution	A successful but quite different city, where technology has changed how people live, work and travel	-15%
Agglomeration plus	An expanding but still unequal London, where virus-related changes to the economy enhance its global competitive advantage	+30%

The final scenario assumes substantial new investment in transport which currently appears less likely – without this investment to grow capacity the increase in passenger revenue would not be achievable due to capacity constraints. Looking across the other scenarios, the range of outcomes varies between no change and a 35% reduction from previously forecast demand. We assume a level in the middle of this range of a roughly 20% reduction in demand. This is a credible and prudent assumption in the context of travel changes and economic weakness. It implies an underlying revenue loss of around £1 billion pa. The nature of medium-term forecasts is that it is unlikely 20% will be the correct number, in reality it could be higher or lower. There needs, however, to be a basis for planning and sufficient flexibility in the plan to take account of what happens.

4.4 Efficiencies

TfL must demonstrate its own efficiency before seeking external financial support. This requires that both operating costs and investment costs are managed properly.

We note that TfL has made significant efficiency improvements over the last 5 to 10 years. TfL explained to us that operating costs were £747 million lower in 2018/19 than in 2015/16. We note that this includes substantial cost reductions in the LU, buses and support/back-office functions. International benchmarking, provided to us by Imperial College, shows bus tendering works well and delivers competitive costs, while LU performs well relative to comparators in areas such as staff productivity and cost recovery.

The TfL Business Plan 2019 included around £700 million of further cost reductions. These savings are required to deliver the previous commitment for the operating account to break even by 2022/23. The majority of these come from LU. This is understandable given that the largest cost reductions to date have come from back office and support functions. Cost reductions in LU are likely to be more challenging to implement.

Further savings may be possible, but they must be grounded in realistic assumptions. Our experience in regulated industries makes us cautious of future targets, set in percentage

terms, which often prove unachievable. We do not believe further savings beyond those assumed in the 2019 Business Plan could be expected to make a large difference to the overall funding gap.

4.5 Megaprojects

TfL has in recent years developed Crossrail 2, with the DfT, and the BLE. These two major projects deliver large-scale new rail links that will improve connectivity, increase capacity for travel to central London and open up opportunity areas for housing.

The case for megaprojects depends on London’s growth and will need to be re-examined in due course. Megaprojects are outside the scope of this review, but our recommendations could be extended to address future funding of such schemes. We have avoided reusing funding sources already linked to the completion of Crossrail 1.

We note that there is a strong case for special government grant for megaprojects – for instance, Crossrail 2 is large enough to be treated separately by the National Infrastructure Commission, it crosses the London boundary and it helps to address capacity issues on existing National Rail lines.

Megaprojects often link to major new development and raise issues of Land Value Capture (LVC). The opportunities in London are less than in other cities such as Hong Kong but are still worth pursuing. LVC and mechanisms such as the MCIL are less relevant to the funding of the existing system, which is our priority.

4.6 Assessment of funding gap

The impact of COVID-19 has compounded the existing challenge outlined in Section 3.4, in particular by triggering a sharp reduction in demand for public transport. Given the continuing economic weakness expected for the next several years, and the probable changes to travel behaviour, the impact of this reduction in demand is likely to be long-lasting. Clearly there is great uncertainty here.

This will impact TfL funding sources in a number of ways, as outlined in Table 4.3.

TABLE 4.3: TFL INCOME SOURCES IMPACTED OVER COMING YEARS BY COVID-19

Income Source	Budget income (pre-COVID-19)	Impact of COVID-19
Passenger Income	£5bn	Weaker economy, desire to avoid crowding on transport and increased home working all reduce volume of public transport use. Some of these trends will

		continue for years to come.
Other Operating Income	£1bn	Lower demand means commercial income will also be lower, for example advertising. Road charges also impacted by reduced travel, though impact here is less predictable.
Business Rates Retention	£2bn	Rates are linked to commercial property occupancy. Lower economic output may lower income, though effect depends on Government reset.

As discussed in Section 4.3, a prudent assessment of the medium-term reduction in passenger journeys would be in the vicinity of 20%. Applying this reduction to passenger income alone leads to a reduction from previously forecast revenue of £1 billion pa. Factoring in the impacts on other income sources would take the impact of this 20% above £1 billion pa.

Section 3.4 identified a pre-COVID-19 annual funding gap of around £1 billion pa. The mid case LTCP outlined in Section 4.2 proposes a level of capital expenditure around £0.5 to £0.6 billion pa lower over the next 25 years than the 2019 Capital Strategy. It does, however, assume higher spend in the late 2020s than in other periods. This means the funding gap, before COVID-19 impact, could now be expected to be between £0.5 billion and £1 billion per year.

Combining the pre-COVID-19 challenge, of £0.5 billion to £1.0 billion pa, with the potential medium-term COVID-19 impact of a loss of £1.0 billion or slightly more pa creates an annual funding gap between £1.5 billion and over £2.0 billion for the mid case investment of £2.2 billion. We have assumed a £2.0 billion pa gap. This is partly because the mid case investment is close to the minimum acceptable, and partly because the balance of the funding risks is on the downside.

TfL will do further detailed modelling work on investment and on the funding gap. It is important that this is done, and that it is appropriately challenged by the Mayor and the Government. The work we have done convinces us that on a reasonable investment programme for the existing assets there is a gap, and one that does not go away under any reasonable revenue scenario.

Section 5 of this report considers the various options for measures that would make a material difference to reducing this funding gap.

5. Options to fill the gap

We set out in the previous two sections that TfL has a continuing funding shortfall. This existed before COVID-19 but will be worsened by the medium to long-term impact of the pandemic. Though the exact size of the gap is uncertain given ongoing instability, an initial estimate puts the figure in the vicinity of £2 billion pa.

Failing to address this funding gap would mean that the condition of London's transport infrastructure will decline, and aspirations to support higher levels of service, environmental objectives and other areas will not be achieved. This creates a strong case for identifying options that will close the funding gap – either through lowering costs or increasing revenue or external funding.

This section considers all major categories of options, including how TfL could do more from its existing operations (both in lowering costs and increasing its day-to-day revenue) and new sources of external funding that could broaden TfL's funding mix. We consider these options against the criteria outlined in Section 1.3, and where we have recommendations these are noted in call-out boxes.

We wanted all the options examined to be significant enough to make a difference, recognising that against a £2 billion target no single option was likely to be enough. We used a figure of £500 million pa as purely a guiding illustration for many options. Parameters could be changed to raise lower or greater amounts as needs be.

5.1 Operating costs: service reductions

The direct costs of running TfL's major public transport services accounted for £5.0 billion of the organisation's total £6.4 billion operating costs in 2019/20. The volume of service provided on these networks is a major driver of costs. TfL should look at services changes as a way of closing the funding gap given reduced demand once social distancing is no longer needed.

TABLE 5.1: COSTS AND REVENUE FOR TFL PUBLIC TRANSPORT SERVICES 2019/20

£m 19/20 actuals	Underground	Elizabeth line	Buses	Rail
Passenger income	2,729	118	1,431	414
Other operating income	33	10	9	22
Direct operating cost	(1,979)	(354)	(2,154)	(469)
Indirect operating cost	(344)	(9)	(25)	(20)
Net operating (deficit) / surplus	439	(216)	(768)	(53)

Any service changes need to consider several key factors:

- **Revenue impacts:** public transport services bring in passenger revenue. Service changes need to consider the net savings from any adjustment, which will be smaller than the gross cost saving.
- **Fixed costs:** The gross cost saving is also limited by fixed costs. In the shorter term, the proportion of fixed costs are higher. For example, the cost per train km of running the Underground is £28. However, the variable cost in the short term is only £7. This variable cost rises over time making longer-term changes more financially viable.
- **Social benefit:** Public transport services benefit both those who use them and those who do not – through decongestion and enabling economic growth. TfL assesses a service reduction on the social disbenefit it creates. This has to be balanced against the cost saving. TfL approaches this using a Disbenefit to Cost Saving Ratio. If the ratio for a change exceeds 2:1, then it is not taken forward.
- **Alignment with other recommendations:** Transport services act as a network. Making changes to one service impacts the others. This is true between public transport modes as well as with the road network. For example, reducing public transport (and especially bus) services would be incongruent with the policy aims of introducing new road user charging schemes

We requested analysis from TfL of how a £500 million pa net reduction in the cost of public transport services could be achieved. As discussed above, this was an indicative figure – it should not be taken as a target or assessment that this is an optimal sum. The table below shows the high-level outputs of this analysis.

TABLE 5.2: HIGH LEVEL ANALYSIS OF SERVICE REDUCTION OPTIONS (COST PA)

Description	Cost saving	Revenue impact	Net Financial Effect
LU train services Significant off-peak cuts and removal of Night Tube	£84m	(£50m)	£35m
LU station services Reduced gateline staffing, reduced platform duties, some stations unstaffed, 10 stations closed at weekends	£23m	(£5m)	£18m
Rail services Ticket office closures and gateline reductions, certain branches closed	£33m	(£7m)	£26m
Bus services Central London capacity reductions / restructuring, 150 lowest revenue routes removed (mostly in outer London)	£423m	(£122m)	£301m
Other service Removal of Cycle Hire, Woolwich Ferry*, River Services	£63m	(£15m)	£48m
Total	£563m	(£185m)	£427m

*Source: TfL analysis. The removal of the Woolwich Ferry would require legislation.

This analysis demonstrates that the bus network would probably have to contribute to the majority of any major service reductions package, due to its current subsidy level and the medium-term flexibility on costs. A restructuring in central London, including reduced frequencies, as well as the withdrawal of 150 routes with lower cost recovery (mostly in outer London) could contribute £300million. However, this would leave many Londoners and communities without accessible public transport. This would lead to an increase in car use and congestion in outer London.

In addition to these bus changes, a £500 million pa reduction package would include more limited LU and rail reductions as well as the removal of smaller services operated by TfL. The initial appraisal indicated that collectively these changes are on the cusp of acceptability in terms of Disbenefit to Cost Saving Ratio (1.8:1). However, this may be because the tools used are better suited to marginal changes to the network, rather than the widescale changes considered here. TfL has indicated that once the full impact and network effects are considered, this package would perform poorly against decision-making criteria.

- The accumulated network impacts would be worse than the totals in this pack, increasing social and economic impact and worsening the revenue
- Cost savings described here would be difficult to realise through existing rail concessions and bus contracts, delaying the funding benefit
- This scale of package would have negative economic impacts on supplier markets

- This package implies a significant reduction in workforce. Industrial relations issues would affect delivery. There would be knock on economic impacts in employment
- There would be adverse environmental impacts of 250 million fewer public transport trips shifting to private transport

The equality impact of such changes would also have to be considered. For example, the Equality Impact Assessment of TfL's 2019 changes to central London bus routes identified that the proposals had a disproportionate impact on older people, disabled people, mothers and pregnant women, and on BAME communities.

We do not recommend significant service reductions as part of the solution, as achieving net savings of the level required would necessitate cuts that are too deep. However, TfL should keep their service levels under review, especially in light of the uncertainty over how demand will return to the public transport, and whether there will be a return to previous growth projections. Smaller scale service reductions could be justifiable and provide a contribution to closing the funding gap.

We do not recommend significant service reductions as part of the solution, as achieving net savings of the level required cuts which are too deep. However, TfL should keep their service levels under review, especially in light of the uncertainty over how demand will return to the public transport, and whether there will be a return to previous growth projections. Smaller scale service reductions could be justifiable and provide a contribution to closing the funding gap.

5.2 Operating costs: further efficiencies

We note that TfL has made significant efficiencies in recent years, recording £750 million of annual savings in 2018/19 compared to 2015/16. The TfL Business Plan assumed a further £700 million of annual savings by 2025.

Pay

Staff costs are a significant part of TfL's cost base, totalling c.£2 billion pa. We have reviewed benchmarking information to assess whether there is a significant efficiency opportunity in reviewing the organisation's rates of pay.

- A benchmarking exercise with national Train Operator Companies in 2019 across 12 example roles showed TfL remuneration (cash plus allowances) is 9% over the benchmark average. This is within a +/-10% competitive range considering TfL is also a London employer and some of the participants are not.
- A separate benchmarking exercise in 2019 with rolling stock and maintenance organisations also found TfL was +9% over the benchmark average.

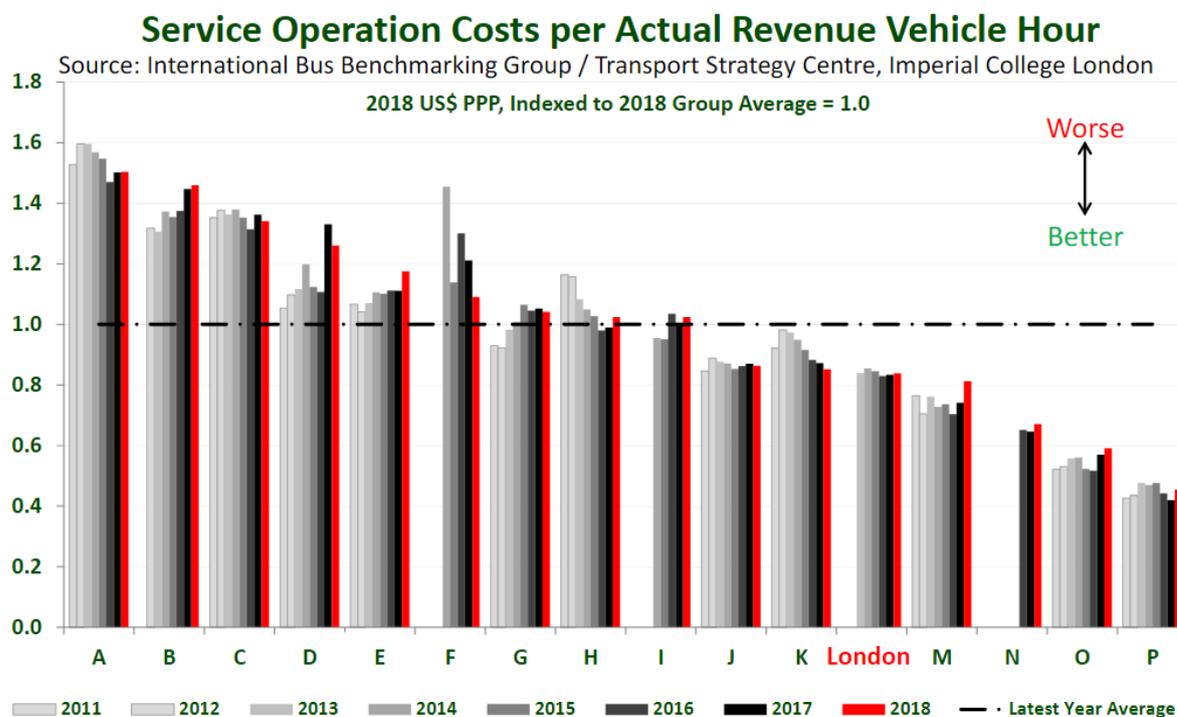
- A specific benchmarking exercise within Network Rail focused on asset-based roles revealed TfL was within 1% of Network Rail.
- As of 1st April 2020, TfL is positioned +1% above the median pay for Train Operators (£57,463), and at the market average (£57,785)
- Benchmarking of TfL’s senior managers shows that the total cash remuneration is 20% below the market position.

TfL also offers other benefits, including staff and nominee Oyster cards as well as access to private medical cover. TfL does not assign a financial value to these other benefits as there is a low cost to the employer and the take up is not universal.

Bus Contracts

Bus services are operated by private companies contracted to TfL. TfL keeps all revenue and pays a fee to the operators based on service quality. This model has been progressively developed since the 1980s, and evidence suggests it is offering good value for money. We reviewed benchmarking data that shows costs per hour of service are lower in London than the average of its international comparators, and that this figure has been relatively stable (in fact improving slightly) in recent years. Continuing efficiency is important in this area, but there do not appear to be large opportunities for savings here outside service level changes.

Figure 5.1 Benchmarked bus costs



Source: International Bus Benchmarking Group. Provided by Transport Strategy Centre, Imperial College.

Pensions

TfL's current pension model is expensive and unreformed. The scheme is generous to employees when benchmarked against the Network Rail and Civil Service schemes, which have been reformed.

The scheme is outdated. There are a range of changes that could be considered, including for example using a career average model rather than the current final salary scheme, using the Consumer Prices Index (CPI) as the scheme's inflation index rather than the Retail Prices Index (RPI) and closing the scheme to new entrants. It is not in our scope to evaluate these potential options – we recommend that a commission be established to undertake this review separately.

A second issue relating to TfL's pension scheme is how it is treated. It is classified as a private sector scheme, where TfL is responsible for past and future liabilities, which will grow. A government guarantee on these liabilities would reduce TfL's contributions to the scheme and save the public sector money, noting that this might require legislation. If this is not possible, then reform as has been implemented in the private sector will be essential.

Modernisation of the pensions model, with Government supporting liabilities could generate saving of £100 million pa, and cap future liabilities.

The pension model is outdated and must be reformed. A commission should be established to look in greater detail at the options for modernising the scheme and reducing TfL's costs. A Crown guarantee of historic liabilities could go with a reformed scheme. This could reduce the funding gap by £100 million pa as well as limit future liabilities for the public sector.

Further efficiencies

We consider that any new funding must be conditional on a continued drive for transparent efficiency. Given the level already assumed, however, and the increasing difficulty of further cost reductions, we do not consider it to be prudent to assume substantial new efficiencies beyond existing plans. A lesson from regulated industries is that undeliverable cost reduction requirements do not create long-term sustainable funding.

A continuous improvement approach to cost management can yield significant benefits as the savings compound over several years. There is no plan for this, beyond what is set out in the Business Plan, and it is beyond the scope of our work to develop one.

TfL should continue its focus on transparent efficiency. However, given the level of savings assumed in the next few years, we have not assumed that further efficiencies can significantly contribute to closing the funding gap.

5.3 Funding from transport users

Funding from transport users, primarily through fares for public transport services, but also the Congestion Charge and ULEZ, formed the majority of TfL's overall funding pre-COVID-19. This includes around £5 billion pa in passenger revenue and £300-400 million pa from charges on road users. (Road user charging will grow when the ULEZ is expanded in October 2021, but this is in the baseline of TfL's existing Business Plan).

User income has been hit particularly hard by the COVID-19 pandemic, with passenger income on the LU at one point reducing to less than 10% of previous levels. Over time this income source will recover, although an ongoing reduction is expected due to changed travel patterns as described in Section 4.

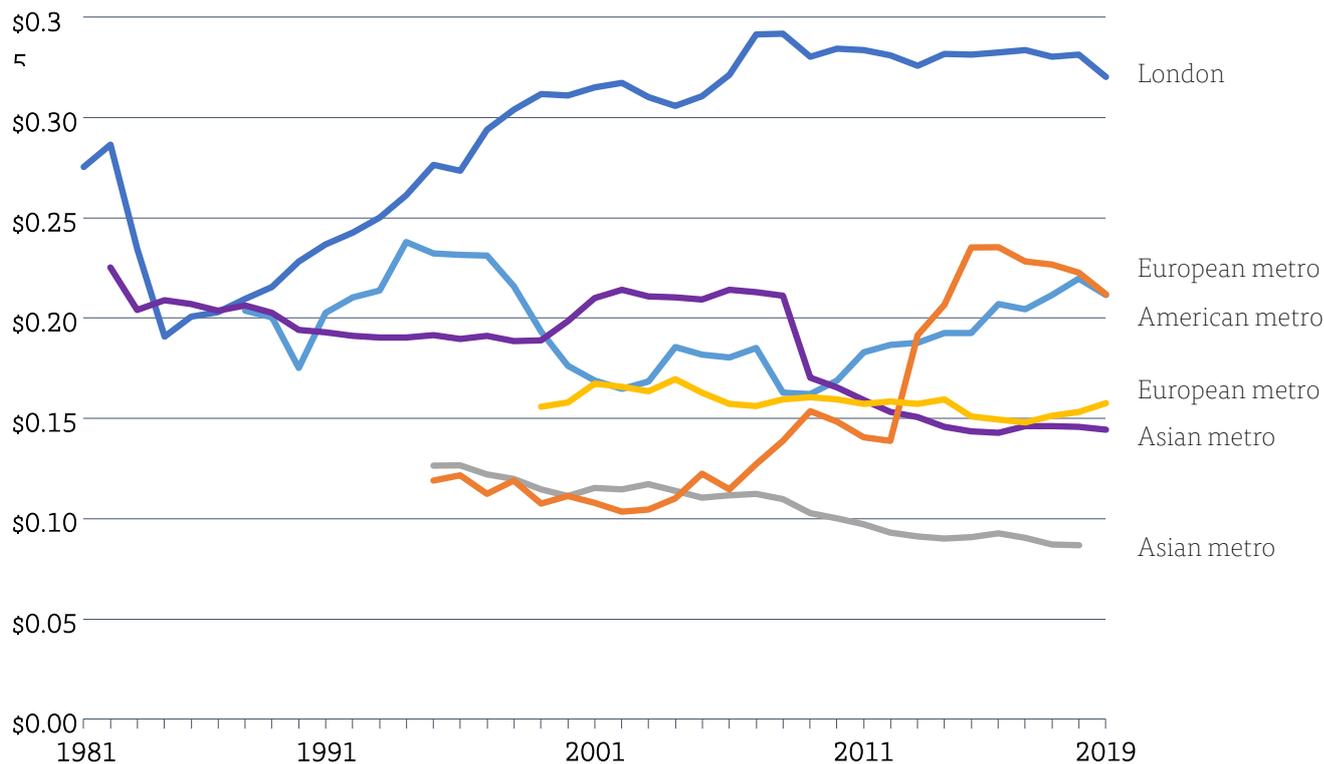
We consider here the possibility of changes in approach to funding from transport users that could address the overall TfL funding gap, both from raising more revenue from existing sources or new charges that would bring in new revenue.

Existing Fare Levels

As passenger revenue is TfL's largest source of existing income, it is important to assess whether fares are set at an appropriate level. Section 3.5 discussed how TfL is more dependent on passenger income than other comparable transport authorities. This pattern can also be seen by looking at fare levels for individual TfL services.

Fares for journeys on the LU (and other rail modes) in London are relatively high. Whereas in the late 1980s rail fares in London were comparable (in purchasing power terms) with Asian and North American comparators, they have risen substantially in London since then to be now 50-100% above the international standard.

FIGURE 5.2: LONG-TERM TRENDS IN FARE REVENUE PER PASSENGER KM FOR SELECTED METROS

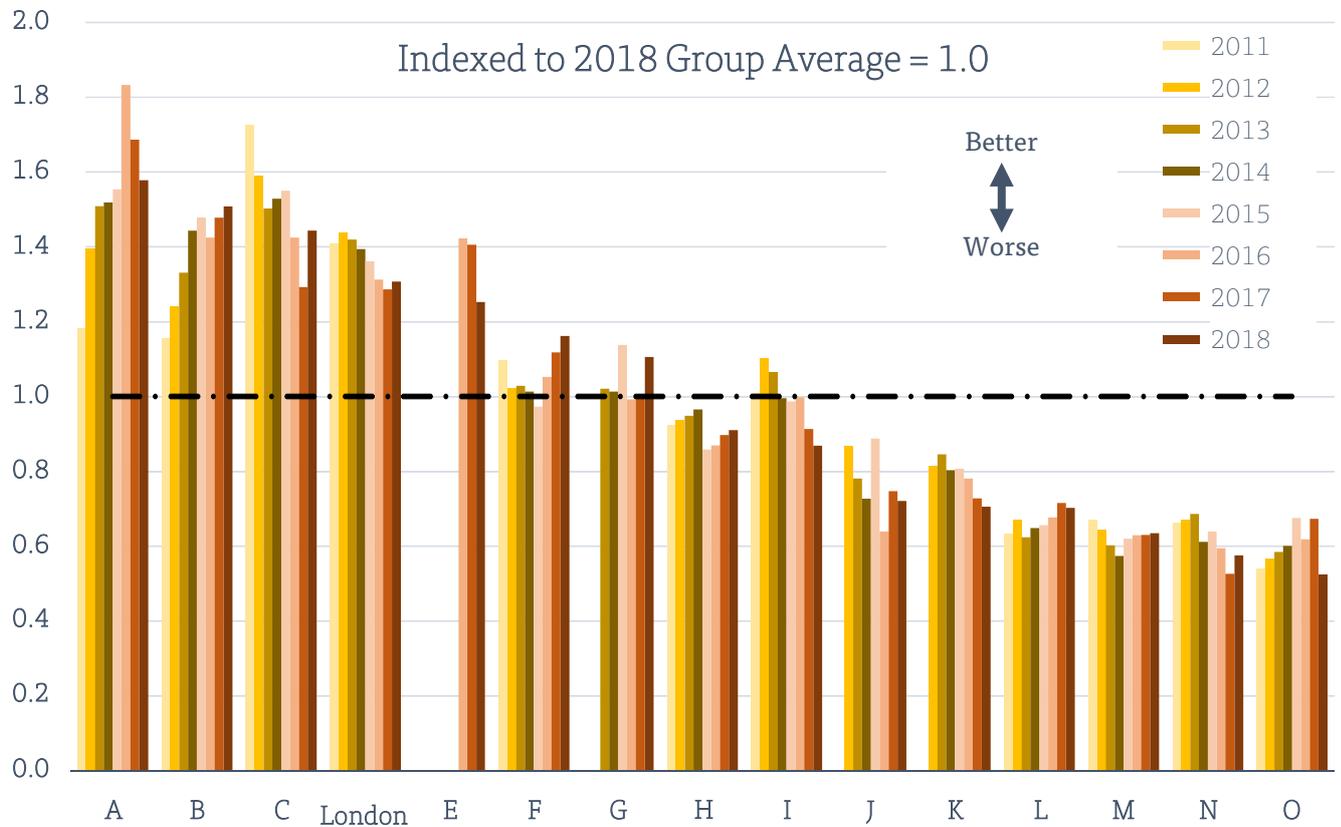


Source: Community of Metros. Provided by Transport Strategy Centre, Imperial College.

Bus fares in London are lower than rail fares; but bus passengers take shorter trips and have different socio-economic characteristics. Benchmarking shows that London has higher fares recovery (percentage of costs covered by revenue) for buses than most international comparators, though this has been declining in recent years as bus demand in London has reduced.

FIGURE 5.3: TOTAL FARE AND FARE COMPENSATION REVENUE PER TOTAL OPERATING COST (SOURCE: INTERNATIONAL BUS BENCHMARKING GROUP).

NOTE: CHART IS BENCHMARKED TO THE GROUP AVERAGE RATHER THAN TO REVENUE EQUALLING COST



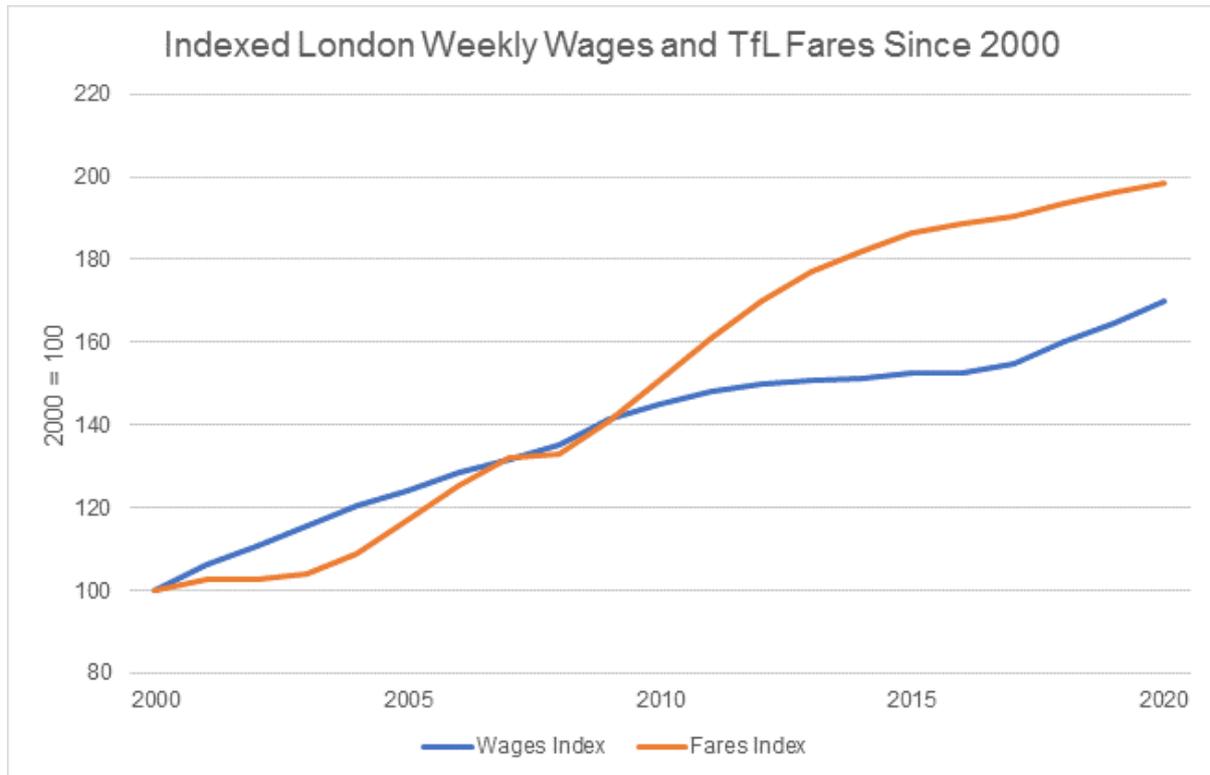
Source: International Bus Benchmarking Group. Provided by Transport Strategy Centre, Imperial College.

Looking at this benchmarking evidence across rail, buses and overall fares reliance (summarised in Figure 3.2 in Section 3.5), it is clear that TfL has unusually high reliance on fare revenues, with very low subsidy through government grant or other forms of taxation.

Looking historically, fares rose above inflation in London in the years before 2016. This led to political pressure to change this trend and is shown in Figure 5.4.

Users benefit from the system and should be expected to pay. Once there is an economic recovery, and a removal of social distancing, then there should be regular fare rises. A clear link to wages would be a reasonable and sustainable policy for the Mayor to adopt, though we do not support a rigid formula. Cooperation with National Rail on fares and ticketing remains important. TfL's current planning is based on RPI+1 and RPI increases; as RPI is an outdated index, a shift to a wages approach could be timely. There are several indices which could be used. On its own it would not raise additional funding.

FIGURE 5.4: AVERAGE LONDON WEEKLY EARNINGS AND TfL FARES, INDEXED TO 2000 (SOURCE: TfL AND GLA)



We considered whether a special increase in fares, in the medium term, above the level of wages would be an appropriate way to cover part of the funding gap. We looked first at buses. Affordable bus fares offer important socio-economic benefits. A bus fare increase would have a significant impact on groups who have much less disposable income and would not help to address the recent decline in bus patronage. We do not support a long-term increase in bus fares

It would, however, be possible to consider real increases in LU fares, in particular for peak journeys covering zone 1 where demand has been highest and (pre COVID) most in need of managing to reduce the requirement for very expensive investment in peak capacity. An indicative 25% increase for all fares which include zone 1 could generate up to £500 million pa.

Further work would be required after the crisis to assess the new relationship between fares changes and overall revenue levels, which may have altered as a result of changes in travel behaviour. A significant increase in LU fares will affect public transport usage and may have adverse social effects. We do not believe that a significant increase is appropriate at this time but maintaining real fare levels is appropriate once demand recovers.

In our view, once there is an economic recovery, there should be regular fare rises linked to wages. An additional increase for LU and rail fares, particularly for journeys to/through Zone 1, does need to be considered, and could generate up to £500 million pa, dependent on future demand levels, but our view is that a lower increase would be more deliverable and would be likely to meet our criteria better.

Concessions

All public transport operators offer concessions of some form to social groups less able to pay, often focused on the young, old and those with disabilities. Concessions provide a valuable and relatively low-cost benefit for some groups. It is fair to ask, though, whether the existing concessions on TfL services are correctly targeted and fair to all users.

Table 5.3 shows the major concessions TfL currently offers, and an estimate of the revenue forgone by each concession.

TABLE 5.3: EXISTING TFL FARE CONCESSIONS AND REVENUE IMPACT

Concession	Estimated revenue forgone (2019/20)
60+ Oyster	£131m
Zip Oyster for under 16s	£98m
16+ Zip Oyster	£78m
18+ Student and Apprentice Oyster	£33m
Bus and Tram Discount photocard	£29m
Freedom pass (peak use funded by TfL)	£25m
Jobcentre Plus	£3m
Other schemes	£1m

The revenue costs are likely to be lower if total revenues remain lower in the medium to long-term. The largest revenue costs come from the 60+ Oyster scheme and discounts for young people.

Discounts for young people allow children and young people to travel to and from school and further education. These discounts have been shown to have a real and long-term positive influence on travel behaviour. Due to their positive social impact we believe these concessions should be retained.

Data demonstrate that many people using the 60+ pass are travelling to and from work, particularly during the morning peak. It is likely, therefore, that this group has more ability to pay for such journeys than the users of other concessions. During the pandemic, the usage of 60+ and freedom passes during the morning peak has been temporarily suspended. This suspension could be made permanent.

Continuing the suspension of the Freedom Pass in the morning peak and removing the 60+ pass could enable a revenue increase of up to £156 million. This opportunity is substantial. Concessions for children and young people have a positive social impact and should be retained.

Vehicle Excise Duty

Vehicle Excise Duty (VED) is collected by central government and allocated to Highways England for investment in the nationwide strategic network. But in London, almost all major roads, such as the North and South Circulars, are a TfL responsibility, with Highways England only responsible for the motorway stubs. The major road network is key for the movement of freight as well as cars and buses.

Consequently, of the estimated £500 million VED paid by Londoners each year – based on the numbers of cars registered in London – only a small proportion has been invested back into maintaining London’s roads. In fact, London does not receive any grant for maintenance of London’s strategic road network while Highways England now receives England’s VED for motorways and trunk roads. This is despite 90% of the journeys of London car owners being entirely within Greater London, and in addition 25% of road journeys in the capital are made by people who live outside its boundaries – but no VED is being used to support maintenance of the bulk of major London roads.

The Government has indicated that TfL may receive some grant funding for major roads, but this would equate to less than £100 million a year and nothing has been received so far.

A slice of VED, or a new grant from government of an equivalent financial amount, to support TfL would be appropriate to help maintain the asset quality of London’s road network.

Road User Charging

Since the creation of TfL and the London mayoralty in 2000, road user charging has been introduced and expanded through the Congestion Charge, Low Emission Zone (LEZ) and the ULEZ. There are committed plans to expand ULEZ from central London to cover inner London (to the North and South Circular Roads) in October 2021.

The Mayor has powers to support the implementation of new road user charging schemes. This has a strong policy base. Road user charging can discourage private vehicle use and encourage public transport use, reducing congestion and improving air quality. Raising revenue is considered as a benefit as monies are spent on delivering the objectives of the MTS.

The 2019 TfL Business Plan assumed moderate increases in income from road user charging. Going beyond this would require the Mayor and TfL to design schemes carefully, with consultation and consideration of the full range of national and local road charges. There are a range of options that could be considered:

- Using existing/planned infrastructure to widen congestion charging to inner London (but at a lower rate than the existing central London charge) and with appropriate public transport provision.
- Using existing infrastructure (from the LEZ) around Greater London to introduce a boundary charge to support improved sustainable transport in outer London.
- And over time a distance-based scheme with new technology, across London, and – in cooperation with Government – a link to existing road taxation.

Enhancing the role of road user charging performs strongly against our criteria and should form part of a balanced package of interventions to address the sustainability of London's transport. It would not be right to increase charges on public transport users without also addressing income from road users; and good public transport provision is complementary to an effective road user charging scheme.

Getting road user charging schemes right takes time to develop proposals and consult carefully on them. They can otherwise provoke strong opposition. We are clear that the principle is right, but it is not our role to recommend a particular scheme.

As financial illustrations: an expansion of congestion charging to inner London, with a reduced £5 charge outside the central area, would equate to £500 million pa; a charge for crossing the GLA boundary could equate to a similar amount depending on the level of charge and discounts offered; and a more sophisticated distance based charging scheme potentially much more.

Over time expanding road user charging could address key policy issues as well as raise considerable revenue. Introducing a congestion charge in Inner London (at a lower rate than Central London) could raise £500 million pa. A boundary charge could raise a similar amount. A more sophisticated scheme which incorporates existing charges, potentially including those controlled by central government, could raise much more. The policy benefits of such options are likely to be substantial, and any decision to implement them would be on the basis of such benefits.

5.4 Asset sales and Property Development

This section looks at the commercial income opportunities open to TfL which could supplement passenger revenues and other funding sources. We reviewed three main areas:

- Property
- Advertising/Media and
- Infrastructure sale and leaseback.

Property

According to TfL it has a significant property portfolio which could generate circa £100 million pa of additional revenue and help meet housing targets, part of our scope. TfL needs £1.1 billion of investment to unlock this revenue stream and no funding is currently available. TfL is not able to borrow to raise the necessary funding because borrowing by TfL's property development subsidiary counts towards the overall TfL corporate borrowing levels. Without access to external funding, progress against these property development plans will be slow. A fire sale of undeveloped assets looks poor value for money in a depressed property market. In the medium-term we thought that property development could generate additional revenue and these opportunities should be pursued where possible; but it is clear that this would not generate incremental funding at scale necessary to plug TfL's funding gap.

Advertising/Media

These revenue streams are linked to fares. Medium-term contracts have caused difficulties for TfL in the past and while useful will not generate substantial additional revenues.

Infrastructure Sale and Leaseback

The sale and leaseback of infrastructure is similar to borrowing because the seller needs to pay future charges for access. The cost of future charges is greater than the upfront sale proceeds.

The most obvious piece of TfL's infrastructure for a sale and leaseback deal is the Crossrail 1 central section tunnel. It could raise a one-off receipt, but given TfL's structural funding gap, annual access charge payments would be unaffordable. Borrowing in this way would not help long term financial sustainability of the organisation.

Our approach to this review has been to concentrate on ways in which TfL could develop a sustainable annual funding position. While asset sales could present a one-off capital receipt, they do not provide a recurrent revenue stream and a £1 billion capital receipt would not on its own close the funding gap in a single year. Sales against future charges

worsen the annual funding gap and are similar to borrowing. Sale and leaseback could also present integration and operational challenges.

Asset sales are unlikely to make a useful contribution and a fire sale of assets looks a very poor option in the current climate. TfL's property portfolio is not going to deliver significant funding in the medium-term.

5.5 Reducing asset and capital investment

Asset Investment

In Section 4 we outlined TfL's approach to developing a LTCP, which identified a long-run average annual investment need of around £2.2 billion – split into £1.5 billion pa of asset replacement and £0.7 billion pa of enhancements (see Table 4.1 in Section 4.2). Reducing the total of this investment would help to reduce the overall size of the funding gap.

TfL maintains complex, long-life assets. Benchmarking suggests continued reinvestment funding is critical to future success, sustaining recent improvements in quality and avoiding future potential for 'death spirals'. Many key asset renewal programmes, including of rolling stock, signalling and major road structures have been deferred in recent years. There are always choices to make between schemes in the short term, but over a longer horizon the need to renew the asset base will always be present, so the envelope should be protected.

TfL's mid-level LTCP (mid-August draft) does not contain the level of enhancements required to meet the objectives of the MTS. It also only considers capital expenditure in the network owned by TfL so does not, for example, consider the required provision for investment in borough roads.

We note that the Government is now looking for scenarios with cuts of up to 30%. We think such scenarios are likely to be short sighted; investment deferrals lead to a backlog which has to be tackled later.

We do not believe that medium-term savings are possible on renewals and asset investment, if this activity is to be managed for long-term financial sustainability. Additional spending on signalling and maintenance of road infrastructure should be considered when possible. Short term savings in asset management will lead to longer term problems and are not recommended.

Enhancements

Sustainable asset investment – which TfL has identified requires a run rate of c. £1.5 billion pa, should be protected. However, there is greater flexibility in TfL's planned investment to enhance and extend its network.

This type of investment, which in TfL's mid-case plan has a £0.7 billion pa run rate, includes investment in station capacity, Healthy Streets, Growth Fund, accessibility and other areas. This pot of expenditure could be flexible given that some of it relates to improving the capacity and connectivity of the network, and the business case for this investment is weaker in scenarios of prolonged low demand.

However, a reduction of investment on this basis would further limit TfL's ability to deliver its intended outcomes – including public transport provision for all, improving air quality and the environment, and helping to ease London's housing crisis. The £0.7 billion pa figure already accepts that such outcomes will not be improved at the pace required according to the MTS, and further reductions would increase the shortfall.

Our assessment of the potential contribution of a reduction in enhancements spend is that a reduction of c. £250 million pa could be considered as part of a response to a funding gap caused by a structural demand reduction.

We consider TfL's LTCP mid case to be a low estimate of the capital infrastructure requirements. Therefore, a reduction in capital investment is not recommended. If there is significant, permanent reduction in demand then TfL should review its enhancement investment.

5.6 Taxation

We see good reasons why public transport should be funded in part through national or local taxation. The wider economic benefits associated with an efficient public transport system are well known (for example agglomeration, accessibility, reduced use of private car, environmental benefits). They align with key Government priorities and extend beyond benefits derived by public transport users.

All transport systems are paid for by users and non-users through fares and taxes. International research shows that some public transport authorities, similar in size and scale of operation to TfL, are funded in large part by dedicated local taxes. In comparison, the Mayor of London has very few tax raising powers, which means that, in the absence of central government grant, TfL relies heavily on funding through fares revenue.

The Mayor's main tax revenue source is the BRR. This currently generates c. £1.9 billion pa for TfL, as a form of grant replacement. Under the BRR, central government holds control over the tax rate, frequency of revaluations, the rules on revenue allocation and

any system resets (a reset is now imminent). The Mayor has no decision-making power over this nationally set tax.

The Mayor does have powers to raise two project-specific taxes – BRS and MCIL, but these taxes are currently allocated to Crossrail 1. They are discussed further in section 5.9.

The Mayor's only other significant tax receipt is from the council tax. This makes a small direct contribution to TfL's operations of £6 million pa. There is also a contribution by London boroughs to the Freedom Pass, part of which is raised from borough council tax. This is estimated at approximately £71 million pa³.

A lot of work has already been done to examine ways in which London could become more fiscally independent and pay for its own infrastructure investment needs. Following an early study under Mayor Johnson, the London Finance Commission was reconvened by the current Mayor in 2016 and recommended a number of fiscal devolution options⁴. We saw this work and also examined the long list of tax options reviewed for the Crossrail 2 project in 2018. This work introduced the concept of an 'equity map', under which all beneficiaries of transport investment are asked to contribute to its delivery. This approach makes sense and avoids overburdening a single beneficiary group.

TfL has also done extensive work on the topic of LVC, together with a government working party. This focused specifically on ways of extracting property value uplift along the line of route of new transport infrastructure. This zonal value capture approach has merits when looking at ways of paying for specific network extensions and TfL presented ways in which this could be made to work in their 2017 LVC report⁵. We considered this work but concluded that while LVC measures are appropriate to pay for specific pieces of new infrastructure, the TfL network as a whole should be funded based on a broader tax base, reflecting the widespread economic benefit that TfL generates for the whole of London.

³The total cost of Freedom Passes in 2019/20 was £318 million. In the absence of more granular data the working assumption was that 44% of Freedom Pass cost was funded by parking revenues, 22% by boroughs' council tax revenue and 34% by boroughs' other revenue sources (for example, Government grants and Business rates). Council tax share is representative of the average borough revenue coming from council tax, i.e. 40% of the 56% that is not funded from parking charges). See also previous analysis by London Councils that suggests 44% of the Freedom Pass is funded through parking charges:

<https://londoncouncils.gov.uk/node/34463/case-study-funding-freedom-pass-through-parking-revenue>

⁴Devolution: A Capital Idea, January 2017, London Finance Commission Report

https://www.london.gov.uk/sites/default/files/devolution_-_a_capital_idea_lfc_2017.pdf

⁵TfL Land Value Capture report, February 2017,

https://www.london.gov.uk/sites/default/files/land_value_capture_report_transport_for_london.pdf

Public transport funding should reflect the wider economic benefits generated by the public transport system. The benefits are spread over many beneficiary groups, not just public transport users. A way of raising a contribution from beneficiaries other than users is via taxes, through allocation of 'slices' or the raising of new 'increments'.

Fiscal devolution could be designed in several ways. London could be allowed to retain a 'slice' of specific amounts of national taxes raised in London, or the Mayor could be given powers to set 'increments' on existing taxes. We have already referenced a 'slice' in the discussion of VED above.

We developed a shortlist of fiscal devolution options for London that could be considered as part of the mix of measures to close TfL's funding gap. All options are based on existing collection mechanisms:

- Council tax
- Employment levy
- VAT or sales tax
- Increased business rates

Employment levy, VAT/sales tax and increased business rates could be adapted to either a 'slice' or an 'increment' approach, while the council tax option would work best under an 'increment' approach.

Fiscal devolution options should be considered against set criteria to determine suitability. Given that public transport beneficiaries could be classified in a number of ways we thought it important to establish robust criteria against which desirability of taxing each group could be assessed. We used criteria set out in Section 1.3 and found that:

- Beneficiaries of a public transport network extend beyond direct users and there is a need to consider contributions from residential property owners, all London residents and wider commerce
- While all four taxation measures could provide financially robust revenue streams, overburdening businesses with further taxes in the form of an employment levy or increased business rates would be economically unwise and would not achieve the most socially equitable distribution of the public transport network cost

We think that taxation measures should be based around administrative systems which already exist and should be simple to implement. We are also concerned that while attaching funding streams to specific schemes or investment is attractive, hypothecation

will not give TfL the flexibility it needs to manage its finances under the guidance of the Mayor and Board.

It is unlikely that any one fiscal lever would be suitable as a sole solution to the funding challenge. It is more likely that a combination of measures would be needed to achieve the most equitable and sustainable funding mix. Moreover, this has the advantage of addressing different beneficiary groups, by asking for a higher contribution from those households that benefit the most from a public transport system and whose disposable income will be less adversely affected by the economic impacts of the pandemic.⁶

The sections below set out shortlisted options in more detail. Numbers are provided for illustrative purposes only, to demonstrate more effectively what each option would mean in practice for taxpayers. It was not part of our scope to recommend to the Mayor on how much each tax option should raise.

Council tax

A council tax precept could raise revenue from residential properties. It could work within the existing council tax system without a system-wide reform. This is second best, however, as reform is urgently needed.

Rationale

Taxing residential properties is a logical option. There are clear links between property values in London and the benefits generated by the public transport network; some concessions are limited to residents; and other English regions make a larger council tax contribution.

Background

Council tax is paid by residential property occupiers. It was introduced in 1993 based on 1991 capital values, with all properties placed into one of 8 bands (Bands A-H). The ratio of tax paid from Band A to Band H is 1:3. The tax base was never revalued, and no substantial changes have been made to the system in England since its inception (although Wales held a tax base revaluation and introduced a new charging band).

⁶ Analysis suggests that households at the high end of the income distribution may actually be saving money as a result of the pandemic and be working in jobs that are at less risk in the future than households at the lower end of the income distribution (who may be dissaving and be working in higher risk jobs). A balanced funding package is therefore likely to be more equitable than, say, a package focussed on fare increases (particularly on bus trips).

Precedents

The Mayor raises a council tax precept which is largely spent on other key areas such as police and fire services rather than transport. There is a precedent for using a council tax increment to raise extra revenue - between 2006 and 2017 the GLA levied a precept in London to support funding of the London 2012 Olympic and Paralympic Games. The increment was £20 for a band D property and varied in line with the standard ratios for the other council tax bands. It raised a total of £625 million for the Games.

Table 5.4 compares council tax contribution to transport per household across different metropolitan areas of England⁷.

TABLE 5.4: COUNCIL TAX CONTRIBUTION TO TRANSPORT PER HOUSEHOLD

Council tax contribution to transport per household	
Metropolitan area	£
Merseyside	£146
Greater Manchester	£107
West Midlands	£98
Tyne & Wear	£94
West Yorkshire	£93
South Yorkshire	£89
Average	£104
London	£22

Both London Finance Commissions^{8, 9} and others have pointed out the difficulties with the current council tax system in London. The base set in 1991 deliberately compressed the bands, when market prices varied much more than this. There has been no revaluation since 1991, during nearly 30 years in which London house prices have both grown significantly in absolute terms, but more importantly have changed relatively as well.

There is some evidence that relative trends in property prices in London have favoured areas with good transport links. Boroughs with low values tend to be in outer London, in the east and south where there is a limited underground service.

⁷ The London number includes a contribution from the council tax to the Freedom Pass calculated as described previously. If we only count the mayoral precept, then the London figure would be £2. If we calculate the borough council tax on the basis that that the Freedom Pass was only paid for through parking charges and council tax, the London figure would be £53. The numbers for the other metropolitan areas assume that levies on districts are passed through to council taxpayers.

⁸ Devolution: A Capital Idea, January 2017, London Finance Commission Report

[https://www.london.gov.uk/sites/default/files/devolution - a capital idea lfc 2017.pdf](https://www.london.gov.uk/sites/default/files/devolution_-_a_capital_idea_lfc_2017.pdf)

⁹ Raising the Capital, May 2013, London Finance Commission Report

https://www.london.gov.uk/sites/default/files/gla_migrate_files_destination/Raising%20the%20capital_0.pdf

Options

A council tax precept could simply be based on the existing council tax system as this the current tax available to the Mayor.

We agree with the argument that a revaluation and changes to banding of the existing system would provide a fairer system, more related to current house values and rents. It would also be possible to develop an option for the mayoral precept which weighted the payments by boroughs and bands – and possibly also link the precept to proximity to the public transport network - as an alternative to a revaluation. This would require legislation.

The table below shows how a precept could raise £500 million pa. This assumes a £130 pa precept on a band D property.

A typical property (median) in the borough with the lowest house values (Barking and Dagenham) would pay less than this, £116; and a typical property in the borough with the highest values (Kensington and Chelsea) would pay more at £188.

			Under current council tax system		Weighted to property prices	
	Median Property Value (2017)	Median Property Council Tax Band (2020-21 excluding GLA precept)	Proposed council tax precept for median band	Council tax precept as % of median property value*	Proposed council tax precept for median band	Council tax precept as % of median property value*
Barking and Dagenham	£300,000	£1,142 (Band C)	£116	0.04%	£67	0.02%
Kensington and Chelsea	£1,315,000	£1,307 (Band F)	£188	0.01%	£253	0.02%

Under a weighted system, or a revaluation and rebanding, the Barking property could pay less at £67 and the Kensington property more at £253.

There is also the issue of the council tax referendum. Increases above a certain level set by Government each year trigger a referendum. This could be managed either by gradual phasing-in or by the Government changing the 2011 Localism Act thresholds that trigger the referendum.

We consider that, in the absence of revaluation, a precept of £130 pa (an average for a band D property) under the existing council tax system would be a reasonable contribution from London's residents. It could be phased in incrementally over time, with an agreement between the Mayor and the Government on the Localism Act. The London contribution would be slightly higher than other metropolitan regions. We think a changed system with a revaluation or a weighting system for the mayoral precept would produce a fairer result but is unfortunately probably for the longer term.

The October agreement links fare concessions, additional road user charging income and council tax with the Government suggesting that no referendum would be needed. There is a clear link between residents paying council tax and residents receiving concessions. Timings and amounts need further study.

Employment Levy

Precedents

An employment levy to raise funding for public transport is a new concept for the UK, but the apprenticeship levy does provide a proof of concept for this type of tax, having come into force for the first time in 2017/18.

Internationally, Paris' Versement Mobilité (VM) provides a long-standing example of a successful employment levy hypothecated to funding public transport. A levy is also used in New York.

Case Study – Paris' Versement mobilité

- Versement mobilité (VM) was first established in Paris and over time has spread to all regions with 10,000 residents
- Paris VM rates range from 1.4% to 2.6% of wage bill for companies with 11 or more employees and some discounts for newly eligible companies
- VM rates in the Paris region decline with distance to the centre, but extend relatively far (for example. some areas included are nearly 100km from the centre of Paris)

- For context, payroll taxes in France are more than double than the UK and UK payroll taxes are below the EU average (see below, “employer social security” includes payroll taxes and national insurance)

Tax rate as a proportion of average annual gross salary ¹⁰		
	Employee tax rate	Employer social security
UK	23.3	10.9
France	27.3	36.3

Rationale

The rationale for having employers pay the levy is:

- employers benefit from access to markets and labour the transport system provides, and
- the needs of businesses cause peaks in public transport demand and consequently the majority of investment in public transport designed to increase peak capacity is driven by the needs of businesses

¹⁰ Source: OECD

The levy would require primary legislation and would take time to put in place, although a 'slice' option based on an agreed allocation of current tax could be done quicker. Based on the example of the Apprenticeship Levy, legislative implementation could take around 2 years. There are however a number of disbenefits of the levy which make it a less attractive option:

- it is effectively a tax on London's success and ability to attract business and to create a strong commercial centre. Increasing the cost of labour could act as a disincentive to recruitment and slow economic growth
- there could be issues with home workers, who may be based outside the Greater London boundary and as a result not be covered by the levy

Options

Introduction of an employment levy set as a low % of the total salaries bill generated in London could raise significant revenue. Like the Apprenticeship Levy, the tax could be collected monthly via the Pay As You Earn (PAYE) system and could utilise the existing income tax and national insurance tax base. Basing the employment levy on the place of work, rather than residence would be important, given that 25% of Central London's workforce commute to the centre from beyond the Greater London boundary¹¹. This links the tax to the benefit derived by the ultimate public transport user.

To raise £500 million implies setting the levy at 0.4% of salaries, in businesses with payrolls of over £3 million. Either the employer or the employee could be charged, though in practice the cost would be shared. Exemptions could apply to the low paid and/or to small firms.

An employment levy could be set on businesses with a payroll bill in excess of certain value, but there would be significant disbenefits in implementing the levy, including requirement for legislative change. As such, it is not recommended

VAT supplement

Precedents

VAT supplements are new to the UK, but the tax base is robust and could be adapted to London's needs over time.

¹¹ ONS Annual Population Survey, 2018

Rationale

The rationale for an incremental VAT increase dedicated to public transport is that Londoners who benefit from the network pay, whether they use it or not, and people who consume in London are often visitors, tourists and commuters.

The ease with which the 'slice' approach could be implemented is also attractive - a contractual type arrangement could be achieved that assigns a proportion of revenue, without needing to implement legislation.

It is currently uncertain whether variation in VAT within the UK is legal due to EU laws. As with VAT devolution in Scotland, the power to raise and set VAT would likely remain with central government, who could change the VAT rate at short notice.

We also assessed previous work on a tourist tax but ruled this out as it could only make a limited contribution.

Options

A Mayoral supplement based on the VAT system would track the London economy and be more neutral to employment than an employment levy. It would be a tax on all sales transactions made in London.

Under the 'slice' approach the Mayor could agree with the Government that HM Treasury would provide an amount equal to 0.5% VAT in London to TfL on a continuing basis and agree the methodology to calculate this. This could be done immediately.

Under the 'increment' approach the Mayor would be permitted to increase VAT charged on all sales in London, including deliveries to London addresses. To raise £500 million pa 0.5% increase would be necessary. This would raise the VAT rate in London from 20% to 20.5%.

We consider that a 'slice' approach would be easier to implement in the short to medium-term. Overtime, London could migrate to an 'increment' position.

A VAT supplement, or a slice of the existing revenue, could capture value from sales generated in London. Further work with the Government should be undertaken to test viability.

Business Rates

Precedents

The BRR arrangements already exist and both the Government and the Mayor have shown flexibility in the past over the use and sharing of business rates. The BRS and the Enterprise Zone in Battersea, which permits retention of incremental business rates locally, are both examples of this.

Rationale

There is a clear benefit to businesses from public transport investment, especially in central London. However, business rates are already charged at a high tax rate (c. 50% of rateable values), so a further increment on top of the BRS may be difficult. Higher business rates bills may damage businesses' cashflow and may translate into higher prices for consumers. There was clear nation-wide pressure to reform the business rates system before COVID-19 and this can only intensify. The slow recovery of London's commercial centre suggests there could be better choices.

Options

Under the current BRR scheme local authorities retain 67% in business rates in 2020/2021. This is split 37% GLA / 30% London boroughs.

The share of business rates retained by the GLA and by the local councils has varied over the last 3/4 years and different pilot programs have been assessed to evaluate the "optimal" share of business rates that are locally retained

A 'slice' option for business rates would increase the Mayor's share of the London total, after applying the top up and tariff rules. A 5-point increase in share to 42% would be worth £500 million pa. No business would pay more. But this is income currently being spent by Government or other authorities in England.

Under an 'increment' option the average multiplier would increase to 52.4pence for small businesses (from 49.9p) and to 53.7p (from 51.2p) for large businesses. This would equally achieve £500 million pa. Multiplier rates would vary if only businesses in Inner London or in the Central Activity Zone were subject to the increase.

A specific London multiplier supplement for BRR could be introduced, but would further burden London's businesses, who are already paying comparatively high tax rates on property occupation. A fall in central London commercial property values could make an increase unpalatable. Legislative change would also be needed. We do not recommend this.

5.7 Government grant

Short-term grant support measures

TfL will receive approximately £1.6 billion of emergency grant in the first half of 2020/21, with a 'true up' if less grant is needed. TfL asked for a further £2 billion for the second half of the year and will receive at least £1 billion, with a small loan element, and a top up depending on revenues. As the Government assumption behind £1 billion is for 65% of pre-Covid ridership, there is likely to be a top up. According to TfL, there will need to be further grants in the next financial year (£2.9 billion) and potentially for a number of years

after that. There is also a separate negotiation on funding for Crossrail 1. Without grants in the short term, TfL would not survive.

As part of the emergency grant agreement the Government has appointed special representatives to the TfL Board and is reviewing TfL's finances, assisted by KPMG, as a condition of those grants.

Medium to long-term grant funding considerations

In our opinion a cash-based operational grant for TfL in the long-term blurs accountability and will lead to disputes. If TfL's costs or salaries are higher, Government pays more; if revenue is higher it pays less. Incentives on TfL management to operate efficiently would be weakened under this arrangement. These difficulties can be reduced but not removed if the grant is fixed on an annual or multi-year basis, with TfL taking some risk.

The current emergency grant support for operations should be tapered out and replaced by a financially sustainable long-term solution, based on taxes and charges transferred to, and preferably set by, the Mayor. This arrangement would ensure that the Mayor had long-term control over the level of funding that could be directed to transport operations. The tapering out of the grant could take a number of years and the Mayor would be justified in seeking support from the Government while TfL readjusts to its new financial reality.

We consider that there is a stronger case for Government providing TfL with an investment grant, based on an agreed investment programme. This may be a better approach as TfL's revenues recover. The Government appears to suggest such a long-term grant in the October letter to cover part of the cost of major rolling stock and signalling renewals. It is unclear what the percentage would be. But a simple assumption of 50% would lead to an average of just over £400 million pa.

If such a grant is available, it will reduce the funding gap in this report by a similar amount, and would allow lower levels of funding by users, residents and consumers. The Mayor and TfL will want to balance the benefit of a grant against the continuing Government involvement in the investment programme it will bring – and the risk of reductions at a future point.

As noted before, Government would certainly need to play a role in the funding of mega-projects, such as Crossrail 2, the BLE and projects that cross the Greater London boundary and/or come into contact with National Rail infrastructure (for example Metroisation). But these projects do not form part of current plans.

Grant has a part to play in both the immediate crisis and as an investment grant in the longer term. But TfL should not expect the national taxpayer to pick up all the gap. A diversity of funding would better reflect the beneficiaries of the transport system and give TfL more stability.

We consider that access to Government investment grants for major projects, especially cross border or involving the national rail system, would be essential, and the Government has raised the possibility of an investment grant for major renewals. We also consider that operational grant support should be tapered out as revenues recover and replaced by a financially sustainable solution over which the Mayor of London would have more direct accountability.

5.8 Debt measures

New borrowing

The international response to COVID-19 has been to borrow in order to get through the immediate crisis and there has been a stark increase in the levels of public sector debt since the start of the pandemic. Borrowing gives different levels of government (and transport authorities) time to work out what a more sustainable long-term funding solution would look like.

TfL's deal with the Government for the first half of the financial year included a debt element. TfL's borrowing is supported by its position in the public sector and its access to the Public Works Loan Board (PWLB), and the credit rating agencies are explicit about this link when reviewing TfL's ratings.

As noted earlier, TfL's borrowing is close to the maximum amount that is considered prudent and affordable, in accordance with the Chartered Institute of Public Finance and Accountancy (CIPFA) Prudential Code¹². Increasing borrowing levels further to fund investment could make debt servicing and repayment unsustainable. Use of borrowing to cover an operating deficit would violate the Prudential Code.

We would not recommend the option of further borrowing for TfL to cover its short-term operational deficit. The Government needs to cover this and then agree a sustainable long-term funding approach for TfL with the Mayor.

Dealing with existing debt

A full or partial write-off of TfL's current debt has been suggested as an option. In this scenario, the Government would take on the TfL bonds and European Investment Bank debt and cancel its own lending through the PWLB.

¹²Information on TfL's Treasury Management Strategy and Prudential Indicators
<https://tfl.gov.uk/info-for/investors/reports>

We consider that there were a number of disadvantages to this approach:

- It would destroy confidence in the existing devolved system, and could present issues for other local authorities
- It would create a ‘moral hazard’ encouraging future Mayors to borrow imprudently, in the expectation that debt would be written off should the Mayorality find itself unable to service and repay it. This was major problem with Network Rail before the re-nationalisation
- It would be hard to arrange a debt write-off in a way which was fair to TfL’s creditors and to the Government
- As debt service is currently £500 million pa, it would not solve the funding problem on its own

The special loan from the DfT for Crossrail 1 is a possible exception to this and there are arguments as to why it could be written-off. Gradual paying off of debt on maturity over time (rather than continued refinancing), perhaps using Government grant, would help to reduce the financing costs and the pressure on TfL’s operating account.

Borrowing remains an important tool for TfL in financing projects with high costs and long-term value. It is therefore possible that TfL may want to borrow in the future to pay for projects that show a monetised return sufficient to service the additional borrowing taken out. At a corporate level, TfL needs to reach a position of an operating surplus to be able to service debt in the medium-term.

5.9 Other funding – project specific

There are other funding streams currently received by the Mayor, namely BRS and MCIL. They are however committed to the Crossrail 1 project, which makes them less practical or useful funding options for TfL as a whole when compared to others discussed in this chapter. BRS is statutorily hypothecated to the project; the Mayor can use MCIL to support transport investments, but not operating losses, and has decided to use it for Crossrail 1.

BRS raises c£270 million pa for Crossrail 1 and MCIL raises c £125 million pa. (pre-COVID-19). Following the August 2018 announcement of the project’s cost increase it was made public that both BRS and MCIL would be called upon to meet the shortfall. A further capital cost increase was announced in August 2020 and it is likely that funding from BRS and MCIL will be called upon again.

Like all taxes BRS and MCIL operate within an uncertain environment. The former is sensitive to changes in the national business rates system, for example from tax reliefs introduced by the Government to assist businesses through the COVID-19 pandemic. The latter (alongside other developer contributions) is a one-off charge applicable to new

development only and is currently under a government review. MCIL could see significant reform soon¹³.

In addition to funding infrastructure including transport, developer contributions are also key to funding affordable housing. With an uncertain economic outlook on the new development market, the case for additional developer contributions to fund delivery of transport enhancements is weaker.

5.10 Summary

We reviewed a long list of possible options to bridge the funding gap. We considered them in relation to the criteria we established as being important in making our recommendations on funding (as set out in Section 1.3). We considered safety as a primary consideration and this leads directly to the need for sufficient funding streams to maintain the system in a modern and efficient state. Maintenance of an efficient system requires stable and secure funding, and this leads to providing mechanisms to secure this. However, alongside this, we balanced consideration of the purpose and benefits of a transport system, both in economic, social and environmental terms. Cost efficiency, scale and the distribution of costs are all relevant here and affected our thinking on several of our recommendations. Finally, transparency is an overarching criterion both to ensure efficiency can be demonstrated but that governance continues over time to be related back to the criteria for having a transport system for London.

The criteria provided a framework for our discussions and for making judgements about the importance of different funding streams and their relative scale of use. Each was important in all of our judgements which are also based on our individual expertise in coming to a balance of these various considerations.

On the basis of these considerations the options that we thought to be most feasible are set out in table 5.5 below. The table sets out two different sizes of potential options. The larger options have an indicative impact of up to £500 million pa, while the smaller options have an indicative impact of between £100 million and £200 million pa. These are the sums which we considered to be feasible, however they should not be treated as recommendations of how much each option should raise in practice. All options, both larger and smaller are scalable. The Mayor and the Government will need to decide on the appropriate balance of solutions based on their own criteria.

¹³ Planning for the Future White Paper consultation, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/907647/MHCLG-Planning-Consultation.pdf

TABLE 5.5 RECOMMENDED FUNDING OPTIONS FOR FURTHER INVESTIGATION

Wider road user charging	~ £1.5bn pa.
A council tax 'precept'	
A VAT supplement/slice*	
Government grant for major renewals and specific projects	
Review fare concessions – mainly for 60 Plus	~ £0.5bn pa+
Commission to reform pension scheme*	
Service changes and efficiencies	
Small fare increases	
Slice of VED	

Large value option
Small value option

* May require legislation

Table 5.6 below summarises other funding options and gives the reasons we are not recommending them at this stage.

TABLE 5.6: LONGER TERM/LESS LIKELY FUNDING OPTIONS

Second choice options	A 25% increase in LU fares covering Zone 1 (this would undermine the economy)
	A more ambitious road user charging package (this could be considered later)
	A council tax precept* (requiring a more fundamental review of the system)
Longer term options	More debt, or a debt write off (any future borrowing decisions must be taken based on the ability to repay)
	Property development (development requires capital injection, unlikely to raise significant funding)
Options to avoid	A significant reduction in service levels (as this would impact mainly buses)
	An employment levy or uplift on business rates* (this would impact the economy)
	Asset sales/leasebacks (increase operating costs, reduce flexibility)

*May require legislation

It is evident that if other funding options are not pursued service level or fares changes may be needed to balance TfL's available funding with the required level of expenditure.

Table 5.7 below illustrates a timeline over which the funding options we recommend for further investigation could be implemented. The timeline also highlights that a ‘slice’ approach to taxation measures could be implemented more quickly than an ‘increment’ approach. A move to ‘increment’ in the long term is desirable to give Mayor more fiscal autonomy and accountability. Whilst council tax reform is more desirable it is likely to take longer to achieve, so a precept on the existing base in the medium term is proposed.

TABLE 5.7: TIMELINE FOR IMPLEMENTATION OF RECOMMENDED FUNDING OPTIONS

Area	Short-term	Medium-term (2025)	After 2025
Pensions	Commission	Reform scheme	
Fares policy	Removal of certain concessions	Possible rises above RPI+1	
Road income	CC zone changes	Wider road user charging	Distance-based charging
		Sustainable asset spend	Reinstate higher spend
Council tax	-----	Precept on current base	Precept on adjusted base
VAT		Slice of VAT	VAT supplement
Cash reserves	Maintain cash	Rebuild cash	Limited borrowing
Government grant	Emergency grant	Taper out operational grant	Grant for investment only
Smaller options	Slice of VED		

6. Governance

6.1 Overview of TfL's governance

TfL is overseen by a number of different bodies:

- The Mayor is the Chair of the TfL Board, and appoints the Board and the Commissioner, and sets the Transport Strategy
- The Assembly hold the Mayor to account
- The Board of TfL and its committees oversee the operation of the executive, and TfL's duty to reflect the policies of the elected Mayor and Assembly
- The IIPAG provide assurance and advice to the Mayor on TfL's investment programme at a scheme level.

The end of the PPPs and the move from grant to retained business rates has made the role of Government much less clear. Ensuring adequate governance of TfL and GLA activities and visible stewardship of its assets over a long horizon is at the heart of our financial recommendations. It will also be key to persuading the Government and the Mayor to provide the necessary funding mechanisms.

6.2 Enhancing TfL's existing governance

Our proposals are based on an integrated system under the Mayor. The current crisis is a good moment to review governance; no criticism is meant of any individual or body.

Governance starts with effective management. TfL management, under the Commissioner and the Executive Committee but in reality, at all levels, should be doing sensible long-term planning, testing value for money, and conducting appropriate internal challenge. The Board, or another external body, are not there to cover what management should already have done.

Transparency and clear long-term plans, with funding, are vital.

There is a potential case for independent public scrutiny of TfL's long-term investment plans, prioritisation within those and funding and financing proposals for them. This goes beyond the current IIPAG remit of looking at value for money, normally in the context of specific projects.

One option is to build on IIPAG as well as increase Board-level scrutiny. A strengthened IIPAG could have more independent resources, provide public reports, and link more clearly to the Board and Assembly. It could consider asset quality and funding as well as

act as a gatekeeper for particular projects. It could do this using multi-year control periods with an affordability link.

An alternative approach could be to have a relationship similar to that between the ORR and Highways England and establish a statutory monitor. This could link to a more formal public process around the TfL investment programme with defined roles for the Mayor and the Government, and a control period structure. Changes to the investment programme would still need to be possible but would have to be justified. The Mayor and Government would need to be confident that a new organisation and more formality would add value.

We had a number of discussions with Board members. The Board makes formal decisions for TfL but only at the end of the process. It could be involved earlier to give guidance to executives before business and capital plans are effectively fixed.

There is a tension between transparency and the effective role of non-executive directors in a complex business. One option could be to scrutinise more in private, but then publish conclusions and commentary.

A more effective and transparent system is necessary to show that costs are being controlled and investments necessary. Both IIPAG and other scrutiny processes should be strengthened. The LTCP is key to showing that there is a funding plan alongside the MTS.

7. Conclusions

Our task has been to propose options that will ensure a viable, safe and secure transport system for London. To that end, a first consideration is what is meant by London's transport system. We have concluded that an effective system needs to consider all modes of transport – underground, trams, rail, and roads and active travel - and to plan these in relation to the economic plan. Thus, a transport strategy and the London Plan must be related. Of course, the management of the resulting system could be split between different entities, but we have seen no evidence that this would improve the effectiveness of the system's management. Indeed, the experience of different regimes does not suggest that splitting up TfL would improve it. And it would certainly undermine consideration of trade-offs between modes and the potential for cross-subsidisation. **Our first conclusion, therefore, is that TfL as an entity is worthwhile and should be preserved.**

The second question is whether its financial needs have been well enough identified and well enough controlled. There are several aspects to this. First, we have examined international benchmarking across the various modes managed by TfL. This comparison suggests that TfL, in general, compares well with other transport system managers. Second, we note that its funding situation varies significantly from those of other city transport systems in being much more reliant on fare revenues and with a narrow range of funding streams. Third, we note that significant costs have been cut and more are planned. Finally, our focus has been on the long-term sustainability of the system. Other reports have been looking at the short term (two to three years) while **our focus has been on the funding requirement to maintain a cost effective, safe and modern system across all the modes of travel.**

The biggest element in the spending required to achieve this is on the underground system, but other modes will also require investment over the next decades to maintain effectiveness. Renewals are a necessary part of running a safe and modern system. As equipment ages, it must be renewed and replaced with modern kit which is being supported and updated. Rolling stock on the Bakerloo and Piccadilly lines is nearly half a century old and maintenance and refurbishment can only extend its life for so long. We have therefore focused on understanding and challenging the LTCP and how it has been produced and managed. We believed (at the time of our work) that there is still some way to go to tie down all the details, but it is clear a substantial annual spend is required to renew and maintain London's system. This includes signalling for both road and rail, rolling stock, structures, earthworks, track, buses, road repairs and improvements. **A good central estimate, erring on caution was that £2.2 billion pa of capital spend is necessary.**

This estimate came from work presented to us in September and will no doubt be refined in due course. It should be remembered that we have looked at funding the existing system, not the management or financing of major enhancements. Maintenance and renewal will involve enhancement as modern systems replace aging and less efficient ones. But this is not the same as, for example, the BLE or Crossrail 2, which will require their own substantive arrangements, both for forward finance and to assure payback mechanisms.

While we are convinced that an annual spend of about this level is necessary, such spending needs continuous challenge. An enhanced system of review, with independent input, is essential to ensure that TfL is not marking its own homework. There are a variety of ways this could be achieved, and transparency is important. A core possibility is to enhance the role of IIPAG or to establish a statutory monitor or enlist the ORR. As well as assuring the work on the capital plan, by peer group and audit processes, **TfL needs to show that cost control is at the forefront of the organisation.** There is a plan to remove another £700 million of costs over the coming decade, and this needs to be continuously challenged to ensure that new opportunities are brought to the table and that excellent cost discipline is in place.

The need for £2.2 billion pa of capital spend comes on top of the operating expenses, and at present TfL is dependent on two major sources of income: fares and an earmarked part of business rates. **We conclude that a wider variety of income sources is needed, not only to give diversity of funding streams but also to ensure that all beneficiaries of the system make a contribution.**

The capital spend is of course only one aspect of TfL's funding requirement and we note particularly that although TfL looks after the major road network in London, it does not have any contribution from VED, unlike Highways England which is responsible for the rest of the network. Moreover, there is likely to be a continuing reduction in fares revenue for some time to come as the impact of COVID-19 continues to reverberate through the economy. Having reviewed the demand scenarios developed by TfL, **we have taken a view that a 20% drop in revenue is a reasonable planning assumption, which creates approximately a £1 billion loss of revenue.** Balancing these estimates against operating costs shows a need for an extra £2 billion pa that will be needed to fill a funding gap and provide for a stable and secure stream of funds to enable TfL to plan an efficient maintenance and renewals regime and continue modernisation of the organisation and the system. We support the cost cutting plans that TfL have proposed and additionally believe that it will be necessary to address the burden of the pension plan. A commission should be set up to investigate suitable approaches to this.

In our view £2 billion pa is a reasonable central estimate of the funding gap. We note that this is an average. There will be years of higher and lower spend, and equally years of higher and lower revenue. TfL needs to have the capacity to build reserves against lean years and to plan well ahead to ensure efficiency and an effective supply chain. The capital plan needs further and ongoing challenge. There could be further recovery of revenues, but equally it could be slower. In any scenario, some additional funds will be necessary, and we have focused on identifying funding streams which are capable of making a significant contribution to revenues, as well as some smaller ones. We have highlighted options that we would not recommend.

We have discounted cutting capital spend back. Our focus is on long term sustainability which would be undermined by such a proposition and would land us back in the problems of the 'Misery' lines. We would not recommend additional burdens on business. There is already a contribution from business rates and of course the BRS is being used to support Crossrail 1. Consideration was given to an employment levy but this too is an additional burden to business. We would avoid increasing debt or raising funds from asset sales. The debt burden is already putting the ratings at risk and increasing debt without a clear route to paying it down would be irresponsible. Similarly, asset sales undermine the integration of the system and would fail to support continuing income. While there is scope for some additional income from property development, and this should be pursued where possible, it does not have the scope to make more than a small contribution. We would also avoid significant cuts in services or rises in fares.

Significant cuts in service would lose as much revenue as they saved, since fixed costs are high. The exception is if bus services were cut but we do not believe that this is appropriate. A significant fare increase would also undermine recovery in revenue at least at present, although a return to fares keeping pace with earnings will be appropriate in the medium term. Some rationalisation of services is however possible and should be implemented. **We have therefore focused on three groups to provide additional funding: residents, consumers, and drivers. These could provide scalable contributions, which alongside grant and smaller interventions (for example, a slice of VED) could plug the funding gap.**

Both the Congestion Charge and the ULEZ schemes have been successful in changing driver behaviour and we support consideration of wider road user charging. A simple scheme would be to build on technology for the planned ULEZ expansion (which widens the ULEZ to inside the north and south circulars) and enable the introduction of a congestion charge (at a lower charge than the central area). We have seen estimates that this could raise around £500 million pa and could be the basis for further development and consultation. A GLA boundary scheme could raise similar amounts. A pan-London distance-based scheme could have wider income raising power and reduce congestion

further but this would also need further public transport and so could be considered in the longer term.

A contribution from consumers could be collected via the VAT system which taxes all spending in London, including that from visitors and tourists. It would be appropriate to take a slice of the current VAT take – 0.5% represents about £500 million pa.

Alternatively, a VAT supplement could be charged where the rate would be under the control of the Mayor. Such a proposal will require legislation and can be considered for the longer term.

Finally, residents. The council tax system is not fit for purpose, but it is the only resident-based tax that we have. Ideally, a proper reform would provide a tax base which would be fairer, following the various recommendations of the London Finance Commissions. However, in the absence of such a reform, we propose that a council tax precept should be implemented. One possible design option, presented in this report, would be based on the current tax system and would see a rise of £130 in a Band D precept. This could raise roughly £500 million pa. A typical property in the borough with the lowest house values would pay less and a typical property in the borough with the highest values would pay more. A precept would still leave the level of residents' contribution to their transport system broadly in line with that of the residents of other UK cities, particularly if we consider the unique costs incurred in London on the underground.

In conclusion, TfL needs a wider variety of funding sources, based on the beneficiaries of the system to support its activities. This would improve robustness and give some powers to respond to changing circumstances. At present TfL is over reliant on the farebox and it is inappropriate to expect users of the underground system to underwrite the whole system. None of the proposals involve a direct operating grant from central government, and they could work without a direct investment grant. Whilst TfL will require government grant in the short term for operational and investment purposes, we believe such grant should taper out as TfL's funding becomes more sustainable. However, grant contributions will be needed for major enhancements to the network, including major renewals. Equally, there is a strong case for ensuring that a slice of monies raised in London can be used to fund its transport system. This is already the case in business rates, we propose extending that to VAT, with an additional power to vary the VAT rate.

Extensions of road user charging, a contribution from VAT and an additional council tax precept are all options that should be developed in more detail. Some service cuts and rationalisation of the pension plan plus exploitation of property assets and a slice of VED will also help. Government grant for major enhancements will also be appropriate.

None of this can happen unless TfL is properly organised for delivery. Professional cost control of different asset classes and management of the services are crucial. The organisation needs to show that it has excellent asset data and strong independent review of its assessments. The internal audit function should be suitably staffed and either the existing IIPAG, a new statutory monitor or possibly the ORR could add further assurance. The **Board must ensure that it has oversight** of these processes and the ability to challenge such oversight as the detail which is at the heart of service and asset management will need to be assessed by many different people.

Appendix 1: Panel members



Bridget Rosewell

CBE, MA, MPhil, FICE, FACSS, FSPE

Bridget Rosewell is an experienced director, policy maker and economist, with a track record in advising public and private sector clients on key strategic issues. She is Chair of Atom Bank and of the M6 Toll company, a Commissioner for the National Infrastructure Commission, and a founder and Senior Adviser to Volterra Partners. She has recently finished as Senior Independent Director of Network Rail and Chair of the Driver and Vehicle Standards Agency. She was Chief Economic Adviser to the Greater London Authority from 2002 to 2012, responsible for all transport and economic impact analysis. Her book, 'Reinventing London' was published in 2014.

She was appointed CBE in December 2018 and is also a Fellow of the Institution of Civil Engineers, the Academy of Social Science and the Society of Professional Economists. She writes on risk and uncertainty as well as infrastructure and modelling validation.

She has worked extensively on cities, infrastructure and finance, advising on projects in road and rail and on major property developments and regeneration. She has given expert evidence in many planning inquiries and has just chaired a review of the operation of these inquiries for MHCLG. She has been a member of a number of Commissions looking at the future of public services, local government finance and city and regional economies.



Sir Jonathan Taylor

KCMG

Sir Jonathan Taylor was Vice President of the European Investment Bank from 2013 to 2019. In that capacity he had lead oversight of the Bank's work on all areas of environmental and climate action, including major transport projects across the world. He also oversaw the Bank's work in all areas of its activity in the UK. He was previously Director General of Financial Services and Stability at HM Treasury, and has held a wide range of other jobs in the public and private sectors. He has a keen interest in environmental issues. He is a graduate of the University of Oxford.



Stephen Glaister
CBE FICE FTRF FCG

Stephen Glaister CBE FICE FTRF FCGI was Chair of the Office of Rail and Road 2016 –18 and remains on the Board. He is Emeritus Professor of Transport and Infrastructure at Imperial College London and an Associate of the London School of Economics.

He was Director of the RAC Foundation, a member of the Board of Transport for London 2000 to 2008 and a non-executive director of London Regional Transport from 1984 until 1993.

He was a member of the Steering Group for the Department for Transport's 2004 National Road Pricing Feasibility Study, a member of the "Friends" group advising Sir Rod Eddington on his 2006 Transport Study and a member of the 2019 Oakervee Review of HS2.

He was a member of the Government's first Advisory Committee on Trunk Road Assessment and he has been Specialist Advisor to the Parliamentary Select Committee on Transport and an advisor to the Commission for Integrated Transport.

He has published widely on transport policy and also on regulation in the telecommunications, water and gas industries.



T C Chew

T C Chew is a Chartered Engineer and a fellow of the Royal Academy of Engineering, UK. He is also fellow of several UK professional institutions.

He has been involved with the railway and construction industries globally for over 40 years. In January 2018, TC joined Arup London as leader of the Global Rail Business. Prior to joining Arup, TC was President, Global Business & Operations for Samsung C&T Corporation based in Singapore. Between May 2009 to October 2015, he was the Projects Director with Hong Kong MTR Corporation, overseeing all railway projects in Hong Kong as well as the MTR overseas ventures.

Previously, he was a Divisional President for Bombardier Transportation on the London Underground modernisation public-private partnership programme. Up until 2003, he spent eight years with Singapore Land Transport Authority as their Senior Director for

Projects and Engineering, overseeing all the Singapore railway and road projects. TC also had the privilege to work on the London Underground Jubilee Line Extension project. He graduated from Manchester University and holds a Bachelor and Master's degree.

Appendix 2: Panel discussion and attendees

Key topics discussed by the Panel

Week 1	Terms of Reference Scenario Planning	Long-Term Capital Plan Short/ medium revenue forecasts
Week 2	Report structure	Road user charging
Week 3	Financial sustainability Property options	International funding comparison
Week 4	Financial modelling	Structures and asset sales
Week 5	International benchmarking Service reductions	Borrowing controls Long-Term Capital Plan
Week 6	Pay and pensions LU Modernisation	Fares and revenue Assets and Capital Delivery
Week 7	Bus electrification Service reductions	Financial modelling Long-Term Capital Plan
Week 8	Governance	

TfL attendees to Panel discussions

Andy Byford	Commissioner
Simon Kilonback	Chief Financial Officer
Michele Dix	Managing Director, Crossrail 2
Andy Lord	Managing Director, London Underground
Gareth Powell	Managing Director, Surface Transport
Jo Hawkes	Director of Corporate Finance
Shashi Verma	Director of Strategy & Chief Technology Officer
Stuart Harvey	Director of Major Projects
Alex Williams	Director of City Planning
Graeme Craig	Director of Commercial Development
Andrea Clarke	Director of Legal
Caroline Sheridan	Director of Engineering Delivery
Fiona Brunksill	Director of Business Partnering and Employee Relations
Tanya Coff	Director of Finance, London Underground
Ken Youngman	Finance Director, Commercial Development

Geoff Hobbs	Director of Public Transport Service Planning
Julian Ware	Head of Corporate Finance
Christina Calderato	Head of Transport Strategy and Planning
Stephen Dadswell	Head of Corporate Finance
Nicola Cox	Head of Corporate Finance
Justine Curry	Head of Commercial Law
Paul Mason	Group Treasurer
Catherine Taylor	Head of Change Design and Delivery, London Underground
Garry Sterritt	Head of Asset Investment
Theo Haughton	Head of Bus Electrification Strategy
Amanda Hopkins	Head of Business Strategy, London Underground
Martin Taylor	Head of TfL Business Strategy
Charles Baker	Bus Network Development Manager
Anna Hart	Corporate Finance Senior Manager
Andy Baldock	Business Strategy Manager
Solape Odunsi	Business Strategy Manager
Christopher Kingston	Business Strategy Manager
Harry Collins	Corporate Finance Analyst

Other attendees to Panel discussions

TfL Board	Ron Kalifa
	Greg Clark

Evercore, Financial Advisers to TfL

Ben Catt
Yunos Siddiqui
Cillin Horgan
James Byrne
Thomas Fraberger

NERA Economics Consulting, Economics Advisers to TfL

Daniel Hanson

Matteo Gatti

Shamai Cohen

Tuba Delibasi

Transport Strategy Centre, Imperial College

Alex Barron

Mark Trompet

Secretariat

Meetpal Singh

Sarah Kinnear

Clare Bradley