MAYOR OF LONDON

TRANSPORT FOR LONDON
EVERY JOURNEY MATTERS

Agenda

Meeting: Finance Committee

Date: Wednesday 18 December 2019

Time: 9.00am

Place: Conference Rooms 1 and 2, Ground Floor, Palestra, 197 Blackfriars Road, London, SE1 8NJ

Members

Ron Kalifa OBE (Chair)
Ben Story (Vice-Chair)
Heidi Alexander
Prof Greg Clark CBE
Anne McMeel
Dr Nina Skorupska CBE

In accordance with section 100(B)(4) of the Local Government Act 1972, the Chairman has agreed to accept the following as an item of urgent business on the grounds that not all information required for the content of the Business Plan was available until after the papers for this meeting were published.

Copies of the papers and any attachments are available on tfl.gov.uk How We Are Governed.

This meeting will be open to the public, except for where exempt information is being discussed as noted on the agenda. There is access for disabled people and induction loops are available. A guide for the press and public on attending and reporting meetings of local government bodies, including the use of film, photography, social media and other means is available on www.london.gov.uk/sites/default/files/Openness-in-Meetings.pdf.

Further Information

If you have questions, would like further information about the meeting or require special facilities please contact: Jackie Gavigan, Secretariat Manager; Telephone: 020 7084 2954; email: v_JackieGavigan@tfl.gov.uk.

For media enquiries please contact the TfL Press Office; telephone: 0845 604 4141; email: PressOffice@tfl.gov.uk

Howard Carter, General Counsel
Monday 16 December 2019

Agenda
Finance Committee
Wednesday 18 December 2019

8 TfL Capital Strategy (Pages 1 - 24)

Chief Finance Officer

The Committee is asked to note the paper and, under the authority delegated by the Board, approve the Capital Strategy.

Finance Committee

Date: **18 December 2019**

Item: **TfL Capital Strategy 2019**

This paper was published with less than five clear working days' public notice in accordance with Standing Order 33. The Committee Chair has agreed, in accordance with Section 100B(4)(b) of the Local Government Act 1972, that this item be accepted as a late paper as not all information required for the content of the Capital Strategy was available until after the papers for this meeting were published.

This paper will be considered in public

1 Summary

1.1 The Prudential Code 2017 issued by the Chartered Institute of Public Finance and Accountancy (CIPFA) requires local authorities to prepare and publish a "Capital Strategy". This 2019 Capital Strategy updates TfL's first Capital Strategy approved by the Board on 27 March 2019.

1.2 The purpose of the Capital Strategy is to set out the longer term investment required to deliver service objectives. For TfL, these service objectives include delivery of the Mayor's Transport Strategy (MTS). As well as the longer term investment requirements, the Capital Strategy also identifies future anticipated funding, and the shortfall between investment required and funding identified.

1.3 This paper seeks the approval of the TfL Capital Strategy 2019.

1.4 The content of the Capital Strategy was reviewed by members of the Finance Committee on 9 October 2019.

1.5 The approval of the Capital Strategy is a matter reserved to the Board. On 20 November 2019, the Board delegated to the Finance Committee authority to approve those matters reserved to the Board in relation to the approval of the Capital Strategy.

2 Recommendations

The Committee is asked to note the paper and, in accordance with the delegation granted by the Board on 20 November 2019, to:

(a) approve the TfL Capital Strategy 2019; and

(b) delegate to the Chief Finance Officer the authority to make any editorial or other minor changes he considers necessary prior to its publication.

3 Background

3.1 This strategy builds on the 2018 Capital Strategy, which was approved by the Board in March 2019. That strategy was based on work for the development of the MTS and the National Infrastructure Commission's National Infrastructure Assessment, and set out our view of the capital costs necessary to deliver the current MTS through the 2020s and 2030s.

3.2 This year's strategy is an evolution of last year's. It continues with the same objectives to progress the Mayor's vision for a growing and healthier city. A significant focus for this year has been building a more granular understanding of our 'baseline' level of investment. This is defined as the investment required to maintain our current level of performance in terms of safety, reliability, capacity and asset condition.

3.3 It is vital that we have a thorough understanding of our baseline so we can evaluate our ongoing financial requirements and, therefore, assess the affordability of enhancements and additions to our network that support growth beyond maintaining today's performance.

3.4 In last year's Capital Strategy, baseline costs were split between categories for renewals and line upgrades. This year we have separated line upgrades into their baseline element – replacing life-expired rolling stock and signalling assets – and true upgrade elements that improve on existing levels of capacity. We have assessed our baseline requirements across all elements of our business, and estimate that it will require an average of around £2.2bn per year in outturn prices of investment beyond our business plan (£1.4bn in constant 2019/20 prices).

3.5 TfL remains committed to covering the cost of renewals through operating revenue from 2022/23 onwards, and over the 15 years beyond our business plan of this strategy we estimate that baseline renewals will average £1.3bn per year in outturn prices (£0.8bn in constant 2019/20 prices).

3.6 The remaining baseline on top of this (for replacement of rolling stock and signalling) will average £0.9bn per year in outturn prices (£0.6bn in constant 2019/20 prices) and requires separate funding to maintain today's level of performance, before any investment to improve and grow the network is possible.

3.7 As well as our articulation of our baseline this year, other significant updates since the 2018 Capital Strategy include updating costs and timelines to reflect current project and programme estimates, including the latest cost forecast for Crossrail 2 and recent decisions on the scope of the Rotherhithe to Canary Wharf crossing. Forecasts of future inflation as well as risk allowances have been updated. Funding assumptions have been validated and have changed relatively little in the past year. However, these funding assumptions are subject to outcomes of future Spending Reviews following the one-year funding settlement announced in September 2019, and remain an area of particular uncertainty.

List of appendices to this report:

Appendix 1: Draft TfL Capital Strategy 2019

List of Background Papers:

None

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Draft TfL Capital Strategy 2019

December 2019

MAYOR OF LONDON

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TfL Capital Strategy

Intention

1.0 The Prudential Code 2017 requires all local authorities including TfL to prepare and publish a Capital Strategy. This 2019 Capital Strategy updates TfL's first Capital Strategy produced last year.

1.1 The Capital Strategy is produced in the financial context described in TfL's draft 2019 Business Plan. It remains important that, while we address our immediate priorities to generate an operating surplus and complete Crossrail, we continue to look ahead and identify what investment is needed to renew and improve the transport network to support the growth of London and the UK – and how that investment can be funded.

1.2 Our Capital Strategy sets out the steady and sustained investment required to ensure London remains a competitive global city by unleashing capacity, connectivity and cleaner air quality, as set out in the Mayor's Transport Strategy (MTS). The MTS, published in 2018, aims to reduce Londoners' dependency on cars in favour of active, efficient and sustainable modes of travel, with the central aim for 80 per cent of all trips in London to be made on foot, by cycle or using public transport by 2041. This Capital Strategy covers the majority of this period.

1.3 We continue to make the case to Government for confirmed capital funding to support the level of investment described here. We are unable to commit to long term projects without long term certainty of funding, which we do not currently have. This has meant we have had to discontinue procurement for large-scale investment programmes such as replacing the Piccadilly line's life-expired signalling system.

1.4 The Capital Strategy forms part of TfL's business planning process and is based on a number of assumptions including the likely cost of the future capital programme and expectations in terms of funding. As estimates continue to evolve these assumptions will be refined and the Capital Strategy will be reviewed and developed year on year.

Benefits

2.0 Our Capital Strategy enables clearer and more transparent long-term decisions to be made on the investment needs of London. Many transport schemes take a long time to develop and deliver: for example Crossrail was first proposed in the 1970s, but is only now nearing its final delivery. A long term view is critical to ensure enhancements to London's transport network are delivered when they are needed.

2.1 Our Capital Strategy sets out a pipeline of investment for 20 years. Giving clear sight of our investment aspirations over this period, subject to funding, is useful for a variety of audiences, including customers, London's businesses and our supply chain, who will be able to resource accordingly to meet the demand for construction in London.

2.2 Investment in transport infrastructure benefits many different groups, and it is appropriate that the funding packages for these investments reflect these various beneficiaries. These beneficiaries range from central government, through increased taxation on economic activity and property, all the way to local businesses and residents, who most directly benefit from improved transport links. Formulating full funding packages for large schemes is complex and takes time, as was the case with Crossrail, the Northern line extension and the Barking Riverside extension. This Capital Strategy identifies schemes that require such funding packages and discusses some options for funding them. Developing this work further will help to ensure such schemes are funded in a fair and sustainable way.

2.3 It is not possible to commit to long-term projects unless and until there is long-term funding available to ensure they can be completed. Therefore a lack of certainty of funding can delay the commencement of essential improvements. A key benefit of the Capital Strategy is that it enables these funding requirements to be identified in sufficient time for them to be addressed.

Approach and Updates in 2019

3.0 Our Capital Strategy reflects the MTS and the Mayor's policy priorities including the need to run services safely and reliably.

3.1 This strategy builds on the 2018 Capital Strategy, which was approved by the TfL Board in March 2019. That strategy was based on work for the development of the MTS and the National Infrastructure Commission's National Infrastructure Assessment, and set out our view of the capital costs necessary to deliver the current MTS through the 2020s and 2030s.

3.3. This year's strategy is an evolution of last year's. It continues with the same objectives to progress the Mayor's vision for a growing and healthier city. A significant focus for this year has been building a more granular understanding of our 'baseline' level of investment. This is defined as the investment required to maintain our current level of performance in terms of safety, reliability, capacity and asset condition.

3.4 It is vital that we have a thorough understanding of our baseline so we can evaluate our ongoing financial requirements, and therefore assess the affordability of enhancements and additions to our network that support growth beyond maintaining today's performance.

3.5 In last year's Capital Strategy, baseline costs were split between categories for renewals and line upgrades. This year we have separated line upgrades into their baseline element – replacing life-expired rolling stock and signalling assets – and true upgrade elements that improve on existing levels of capacity. We have assessed our baseline requirements across all elements of our business, and estimate that it will require an average of around £2.2bn per year in outturn prices of investment beyond our business plan (£1.4bn in constant 2019/20 prices).

3.6 TfL remains committed to covering the cost of renewals through operating revenue from 2022/23 onwards, and over the 15 years beyond our business plan of this strategy we estimate that baseline renewals will average £1.3bn per year in outturn prices (£0.8bn in constant 2019/20 prices).

3.7 The remaining baseline on top of this (for replacement of rolling stock and signalling) will average £0.9bn per year in outturn prices (£0.6bn in constant 2019/20 prices) and requires separate funding to maintain today's level of performance, before any investment to improve and grow the network is possible.

3.8 As well as our articulation of our baseline this year, other significant updates since the 2018 Strategy include updating costs and timelines to reflect current project and programme estimates, including the latest cost forecast for Crossrail 2 and recent decisions on the scope of the Rotherhithe to Canary Wharf crossing. Forecasts of future inflation as well as risk allowances have been updated. Funding assumptions have been validated and have changed relatively little in the past year. However, these funding assumptions are subject to outcomes of future Spending Reviews following the one-year funding settlement announced in September 2019, and remain an area of particular uncertainty.

Influences

4.0 Our Capital Strategy is directly influenced by:

- our near-term delivery plans and financial position, as set out in our Business Plan
- the condition and lifecycle of our asset base
- underlying travel trends in London, as analysed in documents such as our annual Travel in London report
- the Mayor's statutory policies for London, including the MTS, the draft London Plan and the London Environment Strategy
- the UK's infrastructure requirements, as set out in the National Infrastructure Assessment

4.1 Our Capital Strategy will be directly or indirectly influenced over time by:

- central government policy, in areas such as direct infrastructure funding and devolution
- external events with the potential to impact on the national economy, London's growth and/or our financial position, such as the UK's exit from the European Union
- the Mayor's future decisions on allocation of devolved business rates to functional bodies of the Greater London Authority

Policies

5.0 Our Capital Strategy is fully aligned to the Mayor's policies, as are the MTS and Business Plan on which the Capital Strategy is based.

5.1 We acknowledge that any activity in delivering the Capital Strategy will be executed within the parameters of statutory frameworks and Board approved policies. The most important of these policies and frameworks are outlined here.

5.2 In adherence with the Prudential Code for Capital Finance in Local Authorities (the 'Prudential Code') issued by CIPFA and last updated in 2017, the Capital Strategy references key principles underpinning our approval and governance processes for capital expenditure, commercial activity (including long term liabilities) and treasury management. For detailed aspects, the documents referenced below and TfL Standing Orders are published on our website.

5.3 Capital spend on transport infrastructure and commercial/investment activity is budgeted for and included in the TfL Group Budget and TfL Business Plan, both of which are produced annually and approved by the Board (or, under delegation, the Finance Committee). The TfL Business Plan outlines the medium-term plan that aligns to delivery of the overall MTS, whereas the TfL Group Budget sets out the more detailed, near-term target.

5.4 TfL's Business Plan is a balanced plan, integrating capital spend inclusive of commercial activity and investment strategies with the financing strategy for planned expenditure. The approved TfL Business Plan encompasses a complete forecasted balance sheet including reserve positions, demonstrating that the capital and financing strategy is prudent and affordable – principles advocated within the Prudential Code.

5.5 TfL's Group Budget and TfL's Business Plan are produced reflecting the Treasury Management Strategy (TMS), which is updated at least annually and considered by the Finance Committee prior to submission to the Board for final approval.

5.6 TfL's treasury management is directed and governed by the TMS comprising the Investment Strategy, Borrowing Strategy, Liquidity Strategy, Risk Management Strategy and Counterparty Exposure Limits. The TMS is implemented, operated and administered in accordance with the Board approved Treasury Management Policies and the TfL Group Policy Relating to the Use of Derivative Investments.

5.7 Within year, unbudgeted activity is monitored by various means and is explicitly captured through monitoring of the Prudential Indicators which are aligned to the TfL Group Budget and TfL Business Plan, and define an operational boundary and authorisation limit of external borrowings including long-term liabilities for the following year. The Prudential Indicators set an expected estimate of capital financing costs and capital expenditure for the following year. The Prudential Indicators are considered by the Finance Committee prior to submission to the Board for final approval annually.

5.8 Financial guarantees granted by TfL are subject to approval by the Chief Finance Officer or higher authority according to the approvals matrix set out in TfL Standing Orders. Under section 161 of the Greater London Authority Act 1999, details of all financial guarantees so granted are disclosed annually in TfL's Annual Report and Financial Statements.

5.9 Outturn performance against the Board approved Prudential Indicators is presented to the Finance Committee who also monitor treasury management, by verifying the TMS has been implemented and administered appropriately, and are responsible for regular in-year monitoring of outturn performance against the TfL Budget and Business Plan.

Financial Investment Strategy

6.0 TfL maintains a low risk appetite consistent with the good stewardship of public funds, the overriding principle being the prioritisation of security before liquidity and liquidity before yield.

6.1 TfL considers the risk of its overall portfolio as well as individual investments, seeking to diversify its investments and has regard to the exposure to any one counterparty, country, industry, investment type, and credit. TfL targets allocating a portion of the portfolio across sovereign exposures, government agencies, financial institutions, and corporate instruments, subject to investments available at the time.

6.2 TfL has regard to expected cash flow requirements and maintains an investment portfolio with a range of maturities (an investment can have a maximum tenor of one year).

6.3 TfL seeks to achieve year-to-date returns greater than the year-to-date average benchmark of the seven day London Interbank Bid Rate (LIBID), which is widely regarded as the appropriate benchmark for short-term cash investments and is used by professional investors such as Money Market Funds.

Borrowing Strategy

7.0 TfL's objective is to manage its borrowing in a manner that is affordable, sustainable and prudent, combining flexibility, security of access to funds, diversity of funding sources and value for money.

7.1 TfL's annual borrowing requirement is driven by the financing requirement of its capital investment programme, the refinancing of its maturing debt and its overall financial position. TfL plans to raise incremental borrowing in each year to 2022/23, supported by increases in the operating surplus. In future years, additional borrowing is only an option where the capital spend results in an increase in future operating surplus that can service the operating and financing costs, as discussed in the Ambition Gap section below.

7.2 In addition to the Public Works Loan Board (or any future body replacing it) being a readily available source to raise funds, TfL seeks to achieve its borrowing objectives by maintaining access to capital markets and complementing this with loans and other facilities from financial institutions where appropriate.

7.3 The annual increase in total outstanding borrowing is within incremental borrowing limits agreed with central government up to 2020/21. Borrowing beyond this is yet to be agreed. The total value of outstanding borrowing and other long-term liabilities is maintained within an Authorised Limit agreed by the Mayor and approved annually by the Board (as required by the Local Government Act 2003) through a separate Prudential Indicators document.

7.4 The TMS sets a limit on the level of variable debt exposure acceptable to TfL. As debt service represents a relatively significant part of TfL's annual expenditure, a high level of certainty over the interest payment amounts is desirable to meet the balanced budget requirement.

7.5 Recent revisions to accounting rules may impact on the Capital Strategy by changing how leases are accounted for. The implementation of IFRS 16 will require recognition of a "right-of-use asset" and a related liability in respect of assets leased under operating leases. This is expected to result in the recognition of additional assets and financing liabilities as at 31 March 2020 of c.£2-£2.5bn. It is possible that TfL may take responsibility for additional National Rail services in the future, and it is likely that rolling stock on these lines would also be leased. We have not made allowance here for any balance sheet impact of potential future leases such as these, and any such change would be subject to negotiations relating to the devolution of rail services.

20-Year Capital Ambition

8.0 Our Capital Ambition is to meet our baseline requirement – maintaining our current level of performance – while also investing to improve London's transport and meet the ambitious goals of the MTS.

8.1 We estimate that to meet our baseline would require an average spend of £2.2bn per year in outturn prices (£1.4bn in constant 2019/20 prices), which is nearly half of the total capital requirement, excluding Crossrail 2, of on average £4.5bn per year in outturn prices (£2.8bn in constant 2019/20 prices) to support London's growth and achieve the outcomes in the MTS. This £4.5bn per year in outturn prices (£2.8bn in constant 2019/20 prices), of new capital investment is more than double our current level of expenditure, although part of this difference is attributable to inflation.

8.2 This assessment of the investment need of London's transport infrastructure is based on the same logic as our 2018 submission to the National Infrastructure Commission's (NIC's) National Infrastructure Assessment (NIA). The NIC supported our vision for the future of London's transport and re-emphasised the need for steady and sustained investment in the capital. The investment activity and financial requirement in the 2020s outlined here is comparable to that proposed for TfL in the published NIA, updated for latest assumptions.

Our forecast of required capital investment is made up of the following sections:

Baseline Renewals: £1.3bn per year in outturn prices (£0.8bn in constant 2019/20 prices)

9.0 Capital renewals cover our ongoing investment in our existing asset base to maintain its condition and performance. This covers assets ranging from London Underground track to highways structures and technology systems. Importantly, it does not include replacement of our rolling stock and signalling systems, as these are more discrete, long-term investments that we categorise separately.

9.1 We continually assess asset condition to ensure we can maintain safe and reliable services. The level of renewals planned over the period of the Capital Strategy is higher than the average of our five-year draft Business Plan, reflecting a growing asset base, a return to proactive road renewals and the inclusion of spend to maintain our desired higher levels of asset condition and reliability.

9.2 Investing in maintaining the condition of our assets is crucial to the long-term sustainability of London's transport network. It supports the high standards of safety and reliability that we must deliver, as well as enabling the best whole-life cost for maintaining assets to be achieved. Failing to renew assets in an efficient way leads to more maintenance and higher costs in the long-term for emergency works and sub-optimal repairs.

Line Upgrades: £1.2bn per year in outturn prices (£0.7bn in constant 2019/20 prices)

9.3 This year we have separated line upgrades into their baseline element – replacing life-expired rolling stock and signalling assets – and true upgrade elements that improve on existing levels of capacity.

Baseline - Replacement of Rolling Stock and Signalling: £0.9bn per year in outturn prices (£0.6bn in constant 2019/20 prices)

9.4 Across our rail services, TfL owns more than 800 trains, as well as signalling systems across each service and line. Trains have a design life of between 30 and 40 years after which replacement is needed, although in some cases it is possible to extend this life depending on asset condition. Like trains, signalling systems also degrade over time and require replacing when the costs of maintaining them are no longer efficient compared to the costs and benefits of replacing them.

9.5 Investment in replacing rolling stock and signalling is a necessity for TfL to maintain today's level of performance. We have therefore separated out this new baseline category this year to make clear what our ongoing investment need is to maintain the service that we operate today, before the investments required to improve the service that are outlined in the MTS.

9.6 When TfL replaces life-expired assets, the new rolling stock and signalling typically provide much greater functionality than the older assets being replaced. This category assumes that we replace our assets with modern equivalents – which would be expected to perform at a higher level than the assets they are replacing, some of which date back to the 1970s or earlier.

9.7 Included in this category are costs for replacement of all current rolling stock on the Piccadilly, Bakerloo, Central and Waterloo & City lines. We also include costs for the beginning of fleet replacements on the Jubilee and Northern lines, although we expect these programmes to continue beyond the 20-year period covered here. Costs are also included for replacement of all current rolling stock on the DLR and London Trams. Rolling stock for London Overground and the Elizabeth line is leased and not owned by TfL, and is not expected to require replacing within the next 20 years, so is not included here.

9.8 Enabling costs that will be necessary to accommodate new trains on our network, for example work on depots, track, power supply, cooling networks and stations, are also included in this category, as without such interventions it will not be possible to replace ageing fleets with modern equivalent rolling stock.

9.9 For signalling, costs are included for replacement systems on the Piccadilly and Central lines. The Piccadilly line signalling is life-expired and is our next priority in our upgrade programme. However, the lack of long-term certainty of funding means we are currently unable to commit to long-term and large-scale investment programmes such as these. Costs for a new signalling system on the Bakerloo line, which would be required to support the proposed extension of that line, are included in the Bakerloo line extension project (see Line extensions).

Line Upgrades – Capacity Improvements: £0.2bn per year in outturn prices (£0.1bn in constant 2019/20 prices)

9.10 This section includes the costs of line upgrades over and above the costs for direct replacements captured above. This includes the incremental cost of increasing fleet size when an old fleet is replaced.

9.11 Line upgrades included in this section relate to most of the fleet replacements described in the previous section, including on the Piccadilly, Central, Jubilee and Northern lines. In addition, costs are included to increase the frequency of Elizabeth line services as demand increases over time.

Enhancements: £0.9bn per year in outturn prices (£0.6bn in constant 2019/20 prices)

9.12 As well as maintaining the service performance we provide today, we need to improve London's transport network to support future housing and jobs growth, and ensure its continued competitiveness as a world-leading city for living, working and visiting. The Enhancements category includes hundreds of investment priorities that are required to deliver the range of improvements set out in the MTS. This includes progressing towards London's ambitious goal of mode shift to walking, cycling and public transport; our Vision Zero ambition to eliminate death and serious injury from London's roads and our aim to make London's transport network zero-carbon by 2050.

9.13 Progressing towards these goals over the next 20 years will require extensive enhancements to our network. This includes increasing capacity and providing step-free access at London Underground stations; upgrades that would provide a modern, metro-style service across London's suburban rail network; continuing high levels of capital investment on London's streets to enable more walking and cycling and deliver new bus priority schemes; and a comprehensive programme of environmental and air quality initiatives to build on the Ultra Low Emission Zone to support the transition to cleaner vehicles across London. Improving the transport network will also require investment in our technology to increase productivity and meet customer expectations.

9.14 As well as the capital investment included in this section, it is expected that TfL will continue to contribute to improvements on London's street network through its operating account, which funds work on borough roads through the Local Implementation Plans. As TfL cannot capitalise such costs due to them occurring on non-TfL assets, these sums are not included here. It is important that a fair funding model for such streets improvements is identified to enable TfL to continue to support such improvements.

Line Extensions: £1.1bn per year in outturn prices (£0.8bn in constant 2019/20 prices)

9.15 This category covers new-build rail schemes to extend existing lines or build completely new routes. We are developing several such schemes that will relieve crowding on the existing network and stimulate development in opportunity areas.

9.16 The schemes included here are the Northern line extension to Battersea Power Station, the Bakerloo line extension to Lewisham and potentially beyond, a DLR extension to Thamesmead, a new Tram route in Sutton and Overground extensions to Barking Riverside and as a West London Orbital.

9.17 Many of these schemes would be likely to be delivered in cooperation with other organisations such as the London boroughs, but we have included the full estimated capital cost of each scheme at this stage. The capital strategy contains our best estimate of TfL's capital contribution to such schemes but figures may vary when these schemes proceed to delivery.

Crossrail 2: £2.7bn per year in outturn prices (£1.6bn in constant 2019/20 prices)

9.18 Crossrail 2 is a new railway that would link national services in Surrey and Hertfordshire with the Underground network via a tunnel under central London. It would transform capacity and connectivity across London and the South East, thereby relieving overcrowded lines and stations and opening up more opportunities to people. It would support hundreds of thousands of new jobs and homes and boost the national economy.

9.19 We include in this Capital Strategy the costs of the scheme as identified in its most recent Strategic Outline Business Case.

20-Year Capital Investment Plan

All projects included in the Capital Ambition are included within the Capital Investment Plan.

9.20 While the MTS deliverables are clear, it is not always possible to be precise about the exact schemes being undertaken, particularly towards the later years of the Capital Strategy. Where specific projects and cost estimates are not available, costs have been included based on appropriate comparator projects. This means the costs outlined in this Capital Investment Plan are not precise and will be expected to change over time.

9.21 Work is underway to identify funding packages for the line extension schemes included here. If and when funding is identified, it may be possible to spend more on these schemes in the next five years than is currently identified in our draft Business Plan. The figures in this Capital Strategy beyond the first five years assume that projects proceed to their current aspirational dates – but this will in some cases require these funding packages to be agreed and additional enabling money spent within the Business Plan period. If this is not the case, project timelines may have to change.

20-Year Capital Funding Plan

Funding Baseline Renewals:

10.0 From 2022/23 we will break even on our operating account, including capital renewals, subject to continuing levels of retained business rates or equivalent funding. Operating revenue will therefore fund our renewals. We plan to continue this every year following the end of our current five-year Business Plan.

Funding Baseline Replacement of Rolling Stock and Signalling, Line Upgrades and Enhancements:

10.1 This tranche of our investment programme contains the largest number of schemes, including all Healthy Streets investment and much of our London Underground and Rail investment. It includes the replacement of life-expired rolling stock and signalling assets – part of our baseline requirement to maintain our current performance levels.

10.2 The main funding source for these enhancements is the capital element of retained business rates (formerly paid as an Investment Grant direct from central government). This is insufficient to cover all investment included here, particularly given the need to replace rolling stock on the Bakerloo, Central, Waterloo & City, Jubilee and Northern lines rolling stock dating back to the 1970s and signalling in some cases even older. Delivering all of the investments London needs to replace and upgrade its existing infrastructure will require further funding beyond that currently identified.

Possible funding sources to meet this requirement are considered in the next section.

Funding Line Extensions and New Routes:

10.3 New routes and line extensions not only improve transport but also stimulate a step change in development in the areas they run through, and they are of particular strategic importance to the future of London and the wider South East. Due to their size, complexity and expense, they require bespoke funding and delivery plans, as was the case for Crossrail 1 and the Northern line extension.

10.4 Sources of funding for these projects could range from central government investment grant through to devolved income streams, contributions from developers and other forms of land value capture. Elements of some projects would be expected to be delivered by bodies other than TfL, including Network Rail.

10.5 Given the early stages of development of these schemes, it is natural that their funding packages have not yet been fully agreed. This Capital Strategy includes funding where sources have already been identified and are reasonably certain. Possible funding sources for additional funding requirements are considered in the next section.

10.6 We are not including any provision for borrowing in this Capital Funding Plan beyond the first five years. Our assumption at this stage is that all existing borrowing will be able to be refinanced, but no further incremental borrowing is included. This issue is discussed further in the next section.

The combined Capital Investment Plan and Capital Funding Plan are presented in Table 1.

Table 1: Capital Investment and Funding (in outturn prices)

TfL Capital Strategy	Budget 2019/20 to 2023/24 £bn	Plan 2024/25 to 2028/29 £bn	Plan 2029/30 to 2033/34 £bn	Plan 2034/35 to 2038/39 £bn	Total Yrs 6-20 £bn
Capital investment					
Extensions to Network:	**(2.3)**	**(7.3)**	**(8.4)**	**(1.1)**	**(16.7)**
Crossrail 1	(1.7)	-	-	-	-
Line extensions	(0.5)	(7.3)	(8.4)	(1.1)	(16.7)
Enhancements	**(3.3)**	**(4.3)**	**(4.4)**	**(5.2)**	**(13.8)**
Line Upgrades	**(2.5)**	**(5.6)**	**(4.7)**	**(7.3)**	**(17.6)**
Renewals	**(3.1)**	**(5.0)**	**(6.7)**	**(7.6)**	**(19.4)**
Total capital expenditure	(11.2)	(22.2)	(24.2)	(21.2)	(67.5)
Funding					
Capital Receipts	0.9	0.2	-	-	0.2
Retained Business Rates	4.8	5.7	6.3	6.9	18.9
Revenue Contributions	2.1	5.0	6.8	7.8	19.7
Borrowing	2.2	0.0	-	-	0.0
Working Capital and Reserve movements	(0.9)	-	-	-	-
Capital Grants	0.4	0.0	-	-	0.0
Crossrail 1 Loan	0.5	(0.4)	(0.2)	-	(0.6)
Crossrail 1 Funding Sources	1.3	0.1	-	-	0.1
Total funding	11.2	10.6	12.9	14.7	38.3
Overall additional funding required	-	(11.6)	(11.2)	(6.5)	(29.3)
Total Crossrail 2 Capital Expenditure	-	(2.9)	(18.1)	(20.3)	(41.2)
Grant - CR2 (50% DfT contribution)	-	*1.4*	*10.1*	*9.4*	*20.9*
Potential devolved and third party funding sources	-	-	*0.8*	*1.1*	*1.9*
Total CR funding	-	1.4	10.9	10.5	22.8
Overall additional CR2 funding required	-	(1.4)	(7.2)	(9.8)	(18.4)

Ambition Gap

11.0 Our draft Business Plan is fully balanced in the first five years, reflecting the greater certainty of funding over this period and the difficult decisions we have taken to defer important investments.

11.1 Our total estimated capital spend requirement for the fifteen years from 2024/25 is £108.7bn, of which Crossrail 2 costs are £41.2bn. This represents an average spending need of £7.2bn every year from 2024/25 onwards, of which £2.7bn for Crossrail 2.

11.2 The total shortfall between the spending need and the likely level of resources is £47.7bn, an average of £3.2bn per annum from 2024/25 onwards, of which £1.2bn per annum relates to Crossrail 2.

11.3 TfL's main funding source for investment is the capital element of retained business rates (formerly paid as an Investment Grant direct from central government). This is insufficient to cover all investment included here, particularly given the need to meet our baseline investment need on the investment in new rolling stock and signaling while also investing to improve and expand our network. Delivering all of the investments London needs (except for Crossrail 2) to replace and upgrade its infrastructure will require on average a further £2bn per annum.

11.4 Various mechanisms exist for raising this additional funding, including:

- **Further government support beyond the current business rates arrangements:** This could include a larger allocation to London, reflecting its contribution to the national economy, and/or a longer-term settlement enabling us to plan with more certainty for investments that will take many years to deliver. We continue to make the case to Government for confirmed capital funding to support the investment described in this strategy.

- **Devolution of financial powers to London (and other cities):** London controls relatively little of the tax raised within it. Devolving powers over taxes such as stamp duty and vehicle excise duty could allow the cities of the UK to better manage their own growth.

- **Generating a larger than expected operating surplus and devoting this to investment:** We are making extensive savings as part of our draft Business Plan to enable a small operating surplus to be delivered by 2022/23. The operating account beyond the end of the Business Plan period is not modelled here.

- **Generating new commercial income:** Our draft Business Plan includes growth in the income we raise from property development, management of our media and advertising estate, and leveraging our expertise and intellectual property in markets in the UK and overseas. Any new commercial income (beyond that already planned) could be reinvested in capital investment.

- **Funding from new income sources:** This could include addressing the unsophisticated way in which road use is paid for in London, and developing new methods of land value capture where specific projects can generate benefits for local landowners.

- **Bidding for targeted support from central government:** This could come from existing sources such as the Housing Infrastructure Fund and Major Road Network funding, or from new sources.

- **Private financing on a case-by-case basis where it delivers value for money:** Such financing would generally have to be paid back over time through the operating account, so this option should only be considered as a short-term financing solution where circumstances justify it.

- **Borrowing:** We have not included any provision for incremental borrowing beyond the first five years of this strategy. If our operating revenues increase sufficiently, it may be possible in future to use borrowing to close short-term financing gaps, but this would only be appropriate to fund projects that will in the long run generate sufficient operating surpluses to service the interest on this borrowing. Borrowing could take place against revenues/funding sources that continue or begin beyond the 20-year period covered by this Capital Strategy.

- **Funding contributions from developers and other third parties including boroughs:** We seek such funding for all appropriate projects.

11.5 Renewals are funded out of our operating revenue, which is not modelled here but is expected to cover the cost of renewals from 2022/23 onwards, subject to continuing allocation of business rates (or equivalent funding) to our operating account. Commercial Development activities will be self-financing, with investment funded by commercial income, which may rise over time.

Risks to the Capital Investment Plan

12.0 TfL manages an identified set of strategic risks through a defined framework. Some particular risks relevant to the capital account over a 20-year horizon are noted here.

12.1 Lack of long-term certainty of funding: It is not possible to enter into long-term contracts for major projects until funding is determined, so delay in agreement of long-term funding can result in a delay in projects commencing. This risk can be best managed by early identification and sharing of funding requirements with stakeholders.

12.2 Approvals and consents risk: Most projects require cooperation including approvals from other parties which may or may not be forthcoming. This includes devolution of rail services as well as Transport and Works Act 1992 powers / hybrid bills for many projects.

12.3 Delivery Risk: Delivery of a significant capital programme is not without risks, particularly where cost estimates are being made many years in advance of when projects would commence and in some cases with little detail available on which to base an estimate. Developments in the construction industry could lead to increases or decreases in the ease of delivering projects included here.

12.4 Risk of estimating future costs: It is very difficult to predict cost inflation over 20 years, and TfL faces both general inflation and differential construction cost inflation. As an illustration, if the rate of inflation is one per cent higher every year than we forecast here, it would increase our total costs over the 20 years by £10bn in outturn prices, or around 10 per cent of the overall costs in outturn prices projected here.

12.5 Risk that pressures on TfL's operating account require funding to be diverted away from capital expenditure. This could include for issues such as funding investment on non-TfL assets (including borough roads) or higher operating costs for necessary staffing and maintenance levels.

12.6 Risk related to asset condition: We have estimated the baseline costs to maintain the condition of our assets at their current performance levels. This is based on current assessment of condition and likely asset life expiry, but these could change over time leading to revised levels of investment being required.

12.7 Commercial risk: the value of TfL's commercial properties is exposed to market volatility as are property purchase costs within large projects. Over time, market conditions could make such transactions better or worse than expected, creating a source of uncertainty. A property-specific governance arrangement is being established to manage our property programme. This includes recruiting property specialist skills, sector experienced staff and non-executives providing independent challenge and oversight of management, backed up by a dedicated property risk management function.

12.8 Different future scenarios: The MTS sets out a programme of investment to support a growing London. It is possible that changes in society and the economy could set the city on a different path, which would require different investment from the schemes set out in this Capital Strategy. We use scenario planning to address this risk and consider our strategies and investments in a range of future scenarios to ensure there are still beneficial even if our core expectation of the future changes

12.9 A PESTLE analysis of the Capital Strategy identifies a number of risks listed below. Many of these could impact on TfL either positively or negatively:

- Political Risk: Over 20 years, politics at every level can impact on the availability of funding and support for TfL capital projects
- Economic Risk: Over 20 years many economic conditions and factors could change demand for TfL services, and hence indirectly funding available and the need to invest
- TfL's revenues are particularly closely linked to the size of the London economy

- Social Risks: Known risks include reductions in the requirement for travel such as increases in home working, internet shopping and alternatives to conventional public transport such as private hire apps, ride sharing, car clubs and dockless cycle hire. Such trends if accelerated could require a reprioritisation of the strategy
- Technology Risks: Known risks include cyber security, the impacts of Artificial Intelligence and autonomous vehicle technology – but there may be others yet to be invented. These could have favourable or unfavourable impacts on TfL and might conceivably challenge today's public transport model
- Legal Risk: TfL may be compelled to undertake new activity as a result of changes in law, which may increase costs of projects or require additional ones. Legal challenges may delay TfL activity
- Environmental Risk: Climate change, including rising sea levels, could have a significant impact on our infrastructure, much of which is low lying. Changes in temperature could impact our requirement to invest in cooling our infrastructure. Attempts to reduce the impact of climate change will require us to invest in decarbonising our services, which we are already including in this Capital Strategy, but the specific requirements of this could change

Appraisal

13.0 The standard business planning process involves input from TfL's Executive Committee, the Finance Committee and TfL Board at numerous points from the initial plan conception in July. The process includes the production of an Equality Impact Assessment, and projects included in the draft Business Plan have been appraised against safety, maintenance and operations requirements; "fit" with the MTS and other Mayoral strategies; and affordability.

13.1 Similarly the MTS underwent a thorough review and approval process. This included substantial stakeholder engagement during its development followed by a fifteen-week public consultation in the summer of 2017. An Integrated Impact Assessment and substantial evidence base were also developed and published alongside the strategy. Following incorporation of many comments received during this consultation, the final MTS was approved by the Mayor in February 2018, then reviewed and noted by the London Assembly in March 2018.

13.2 The Capital Strategy has been developed from the 2018 Capital Strategy that was published for consultation as part of the Mayor's Consolidated 2019-20 Budget, and approved by the TfL Board in March 2019. Its' development has been undertaken in consultation with the TfL Executive Committee and the TfL Board.

13.3 The TfL project and programme management methodology "Pathway" allows for key governance intervention points to ensure effective governance oversight and control throughout the project lifecycle. This includes our three-line assurance system, part of which involves monitoring and advice from the Independent Investment Programme Advisory

Group. At a strategic level, monitoring and evaluation are in place across the MTS to ensure that the desired outcomes are delivered.

Statutory Chief Finance Officer sign off

14.0 The affordability of the Capital Strategy beyond the five year draft Business Plan is dependent on TfL obtaining significant additional funding which cannot be considered certain at this point in time. The characteristics of the funding source(s) could influence the timing, cost and capitalisation of projects within the Capital Strategy. The nature of these large projects is such that they require a certainty of funding over a number of years prior to commencement. The risks noted above are a comprehensive but not exhaustive list. Significant known risks have been listed, however, it is possible that unpredictable future events and opportunities would result in an amendment to the TfL Capital Strategy. Readers of the Capital Strategy should note the considerable risk in estimating costs up to 20 years into the future, especially for novel projects.

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