

Programmes and Investment Committee



Date: 28 June 2017

Item: London Underground Stations

This paper will be considered in public.

1 Summary

London Underground Stations				
Existing Financial Authority	Estimated Final Cost (EFC)	Existing Programme and Project Authority	Additional Authority Requested	Total Programme and Project Authority
£862.4m (net)	£1,681.3m (net)	£522.0m (net)	£178.8m	£700.8m

- 1.1 A paper is included on Part 2 of the agenda, which contains exempt supplementary information. The information is exempt by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL.

2 Recommendation

- 2.1 **The Committee is asked to note the paper and the supplemental paper on Part 2 of the agenda; and;**
- (a) **approve additional Programme and Project Authority of £178.8m (outturn including risk) for the London Underground Stations sub-programme in order to progress a number of projects that will improve station accessibility, upgrade station capacity and enable a number of collaborative projects with third parties and developers**

3 Background

- 3.1 In 'A City for all Londoners' (October 2016), the Mayor stated his intent to improve the transport system to ensure a world-class experience. The London Underground (LU) Stations Accessibility and Enhancements Programme has been established to effectively address common issues and deliver enhancements to stations assets in order to:
- improve customer accessibility, including a significant increase in stations that provide step-free access;
 - targeted renewal of existing station, civils and premises assets to maintain resilience through improved safety, to improve reliability and ambience;
 - plan and deliver new station enhancements that will reduce congestion and improve customer journey times; and

d) plan and deliver station enhancements that optimise opportunities to work with other TfL sub-programmes and third parties in order to deliver benefits, minimise cost to TfL, generate revenue and enable growth opportunities in line with TfL and London Plan objectives.

- 3.2 The LU Stations sub-programme brings together projects that, although they may have some differing strategic objectives, share common resource requirements within LU's Renewals and Enhancements Directorate which is responsible for the delivery of the programme and has the project management and engineering competencies required to ensure the work is completed successfully.
- 3.3 The TfL Business Plan accommodates the latest estimated costs for the projects that will be delivered within the. Several projects within this sub-programme will be substantially or fully funded from third party sources.
- 3.4 The Accessibility element of the programme will require its Estimated Final Cost (EFC) to be reduced before Project and Programme Authority is fully committed; a plan to achieve this is detailed in this proposal. The balancing and phasing of the London Underground five year plan will be managed through the 2017/18 Business Planning process.
- 3.5 Future investment in stations will be required as requirements change (e.g. to meet growing customer demand), as new opportunities including third party opportunities arise and as existing assets age. The annual business planning process will provide the Financial Authority to meet these requirements and new projects will be initiated within the Programme. Additional Programme and Project Authority and Procurement Authority will be sought as appropriate in accordance with TfL's Standing Orders.

4 Strategic Case

- 4.1 The individual projects in the Stations sub-programme contribute towards one or more of the Programme's objectives. A number of these projects satisfy mandatory requirements or deliver essential renewals and upgrades to ensure the safety of customers and improve asset performance. Other projects are discretionary but are aligned with the Programme and wider TfL objectives.
- 4.2 The table below presents the programme's objectives and the specific policy goal from the Mayor's Transport Strategy (MTS), currently the subject of consultation that they support.

Current MTS Policy Goals	Stations Programme Objectives
More people will travel on an expanded public transport network	1. Increased capacity
Journeys by public transport will be fast, comfortable and reliable	2. Reduced journey times 3. Improved reliability 4. Improved customer satisfaction

Current MTS Policy Goals	Stations Programme Objectives
Public transport will be affordable and accessible to all	5. Maintain and improve accessibility across the LU network 6. Reduced operating costs 7. Improved customer safety
Integrated transport and land use planning will deliver 'good growth'	8. Improved access to growth areas 9. Enable housing at transport hubs
London's streets will be clean and green	10. Energy efficiency in design

4.3 The sub-programme comprises a number of project initiatives or work streams that contribute towards the overall objectives. These groups of projects or initiatives are described below, and in more detail in the relevant Appendix.

Accessibility and Step-free Access

4.4 Whilst the level of accessibility across the LU network is increasing as new rolling stock, new lines and extensions are added, significant legacy issues remain. Until the 1990s, stations were designed with little consideration for providing good accessibility and by then only 15 per cent of LU stations had step-free access. Whilst more recent investment has increased this to 27 per cent of LU stations, the majority of the network remains difficult to access for a significant proportion of potential customers, thus depriving many of quick access to jobs and services.

4.5 The Mayor has made a clear commitment to improve accessibility to the transport network for all Londoners. A new approach to improving accessibility was announced as part of the launch of the TfL Business Plan in December 2016, with a significant increase in funding for London Underground accessibility to £197.0m to March 2022.

4.6 Key objectives and scope for Accessibility includes:

- a) reducing physical barriers to using the Tube, most significantly through providing step-free access (SFA) at at least 30 additional stations in addition to the six already planned, which will achieve SFA at 40 per cent of LU stations by 2022;
- b) making it easier to use our existing network and interchange to and from other modes, for example by improving accessibility information in order to make it easier to use existing station facilities; and
- c) delivering great customer service to all our customers by improving the journey experience for example through Disability Equality training and improving journey assistance.

Station and civils asset renewals

4.7 This element of the sub-programme will plan, develop and deliver targeted renewals of existing station and civils assets to improve safety, reliability, and the customer environment, whilst reducing whole life costs.

4.8 Key objectives for stations and civils renewals projects include:

- a) ensuring that stations and civils assets remain in a safe, legal and operable condition;

- b) reducing asset whole life costs by planning renewal interventions at the optimum time in the asset lifecycle and standardisation of products across the network; and
- c) improving the station environment for customers through targeted interventions including minor accessibility works, for example platform level access humps.

Station Capacity and Camden Town station upgrade

- 4.9 As London continues to grow, so will the demand for travel. Whilst new lines and upgraded train services will provide additional capacity to meet this demand, it is important that stations and interchanges are also able to accommodate this growth.
- 4.10 This element of the sub-programme will plan, develop and deliver prioritised capacity enhancements for LU stations that will mitigate critical congestion and improve customer journey times and service resilience at key points in the network.
- 4.11 Key objectives and scope for station capacity include:
- a) analysing current and forecast capacity constraints at stations across the LU network and, through a greater understanding of drivers and opportunities, to prioritise and develop LU's requirements for feasibility development of a portfolio of station capacity and accessibility upgrades in order to plan and safeguard a medium to long term plan for future upgrades;
 - b) developing further the scope of the Camden Town capacity and accessibility upgrade prior to a Transport & Works Act (TWA) order application in 2018, leading to delivery and completion by 2024; and
 - c) developing further specific proposals for a major capacity and accessibility upgrade at Holborn Station leading to delivery and completion by 2026.

Collaborative Enhancements including Third Party

- 4.12 Improvements to LU stations can be critical enablers to local growth, for example in order to provide adequate capacity and access to serve commercial and housing developments. A wide range of small to medium scale projects are in stages of development and delivery to respond to these growth and development schemes.
- 4.13 All of these projects require collaborative engagement with third parties such as local authorities and developers. The aim of these projects will be to promote and enable 'good growth' providing new homes and jobs with good access to the public transport network. Funding for these projects can, depending on opportunities and drivers, be in part from the LU Plan, TfL Growth Fund, and additional revenue through TfL Commercial Development or through agreement with local authorities and developers. Details of specific project funding mechanisms are provided in Appendix 6.
- 4.14 These projects can also be enablers to generate revenue for TfL which can off-set cost to TfL by optimising opportunities to integrate commercial, growth and operational objectives to deliver benefit to TfL and our customers at lower cost.
- 4.15 This element of the sub-programme will plan, develop and enable TfL and third party projects that fall into three broad categories, namely:

- a) a series of station upgrade projects, primarily funded from the TfL Business Plan and with TfL leading on programme and delivery. Typically, there will be significant third party engagement in order to achieve customer benefits;
- b) projects that involve TfL working with third parties, who will lead the programme and delivery, but typically with TfL engagement and funding contribution in order to optimise and enable customer benefits; and
- c) third party led and funded projects that enable development at or close to TfL property or stations which can range from simply enabling development in exchange for financial returns, through to projects that will deliver substantially or entirely third party funded station enhancements.

5 Proposal

5.1 The LU Stations Sub-Programme comprises the following projects (all figures £m including risk and inflation):

Project Description	Previous Years	Current Business Plan	Estimated Final Cost (EFC)	Existing Programme and Project Authority	This Authority Request	Total Programme and Project Authority	Future Requests Current Plan	Next Business Plan	Total Authority Requests
Accessibility incl. Step-Free Access - Appendix 1	3.0	194.0	218.8	42.8	102.8	145.6	51.4	-	197.0
Station Stabilisation Programme - Appendix 2	91.3	-	91.3	91.3	-	91.3	-	-	91.3
Integrated Stations Programme - Appendix 2	55.9	28.8	109.6	241.8	-	241.8	-	-	241.8
Asset Resilience Delivery Portfolio - Appendix 2	-	210.0	210.0	-	-	-	210.0	-	210.0
Rail Vehicle Accessibility Regulations (RVAR) – Appendix 2	0.4	7.4	6.8	3.2	3.6	6.8	-	-	6.8
Civils (Bridges & Structures/Deep Tube Tunnels) – Appendix 3	26.3	53.3	97.3	36.4	-	36.4	39.2	21.7	97.3
Future Stations Capacity plan including Holborn – Appendix 4	7.4	101.0	450.7	12.3	1.2	13.5	56.9	380.3	450.7
Camden Station Upgrade - Appendix 5	3.7	108.4	256.7	5.2	35.2	40.4	74.4	141.9	256.7
Collaborative Enhancement and Third Party – Appendix 6	42.9	147.5	224.9	79.4	30.5	109.9	58.2	61.8	229.9
Elephant & Castle new Northern Line entrance	3.5	93.9	128.5	3.5	5.0	8.5	58.2	61.8	128.5
South Kensington Capacity Upgrade	2.0	13.6	21.7	3.4	18.3	21.7	-	-	21.7
Finsbury Park SFA and new entrance	30.1	18.3	47.1	41.6	7.2	48.9	-	-	48.9
Finsbury Park SFA gross cost	30.1	18.3	48.9	41.6	7.2	48.9	-	-	48.9
Finsbury Park Recoveries	-	-	(1.8)	-	-	-	-	-	-
Tottenham Hale capacity upgrade	7.2	21.7	27.7	30.8	-	30.8	-	-	30.8
Third Party Projects – Appendix 6	-	-	-	-	-	-	-	-	-
Various (Waterloo South Bank entrance, White City/Wood Lane etc.)	-	10.3	10.3	10.3	-	10.3	-	-	10.3
Earls Ct Development & Lille Bridge depot	-	26.0	26.0	26.0	-	26.0	-	-	26.0
Third Party Recoveries	-	(36.4)	(36.4)	(36.4)	-	(36.4)	-	-	(36.4)
Crossrail (LU works incl lifts, Wifi, & TVMs) – Appendix 6	2.4	12.0	15.1	9.7	5.5	15.1	-	-	15.1
Total Stations Sub Programme	233.2	862.4	1,681.3	522.0	178.8	700.8	490.1	605.7	1,796.6

6 Authorities sought

- 6.1 This paper is seeking additional Programme and Project Authority of £178.8m comprising £102.8m for accessibility; £3.6m for the Rail Vehicle Accessibility Regulations (RVAR) project; £1.2m for capacity scheme development; £35.2m to take forward Camden Town; and, £30.5m to implement various station enhancements. These authority requests are summarised below and described in more detail in the relevant Appendix.

Accessibility and step-free access (Appendix 1)

- 6.2 For accessibility, Programme and Project Authority of £102.8m is sought.
- 6.3 The EFC for the Programme is currently estimated at £218.8m. In line with the proposal described in Appendix 1, we are taking advantage of the increased funding for accessibility to transform our approach to delivering step-free access by focusing on innovation, value and competitive engagement with our suppliers. Our aim is to deliver the full scope of the programme within the Financial Authority of £197.0m. Good progress with this transformation will be confirmed before we seek authority to commit to the full programme, within Financial Authority, as part of the next request to the Committee in June 2018.

Maintain resilience of existing station and civils assets (Appendices 2 and 3)

- 6.4 For the Rail Vehicle Accessibility Regulations (RVAR) project, Programme and Project Authority of £3.6m is requested for delivery of accessibility works on the Bakerloo line platforms.
- 6.5 For stations and Civils projects, changes to the business plan, as well as savings and efficiencies of some projects in the delivery stage, have enabled the project EFC to be below the authorised project and programme authorities. It is requested that Project and Programme Authorities for the Integrated Stations Programme be realigned to £109.6m. The Integrated Stations Programme funding allocation for 2017/18 has been agreed as part of the annual budget process. The future years allocation will be resolved as part of 2017/18 business planning.

Station Capacity and Camden Town (Appendices 4 and 5)

- 6.6 Programme and Project Authority of £1.2m will be sought to progress early development of a prioritised selection of station capacity upgrades across the network (e.g. Stratford) and to continue development of the Holborn station upgrade through value enhancement of the developed Concept design.
- 6.7 For Camden Town, Programme and Project Authority of £35.2m is sought to take forward the next stage of detailed design and delivery, including progress towards a TWA. Submission of a TWA Order will be subject to later Board approval and consent of the Mayor.

Collaborative enhancements including Third Party (Appendix 6)

- 6.8 Programme and Project Authority of £36.0m is sought to continue station upgrade design development for Elephant & Castle; the completion of Finsbury Park; lift installations at Whitechapel and Moorgate; delivery of Wifi for staff and customers across the central section of the Elizabeth line; and the implementation of a capacity upgrade at South Kensington.

Equality Issues

- 6.9 The Programme will be delivered in accordance with the Equality Act 2010. Equality Impact Assessments are considered on all strategies, policies, business plans, change programmes or projects, with regard to our obligations under the public sector equality duty in section 149 throughout the delivery of the Programme.
- 6.10 As projects progress through feasibility and design, consideration will be given to the need for an Equality Impact Assessment for each one. Possible effects on people with protected characteristics under the Equality Act 2010 (such as age, race, sex, and, often of particular relevance, disability), and mitigations of and countervailing considerations in respect of any adverse effects, will be considered and recorded.

Financial implications and governance

- 6.11 Summary of the Programme costs and funding to 31 March 2024:

Costs and Funding (£m)	Prior Years	2017/18	2018/19	2019/20	2020/21	2021/22	Future Years	Total
<i>Estimated Final Cost (Net):</i>	233.2	98.6	153.7	158.2	215.7	210.4	611.4	1,681.3
Gross Costs	233.2	100.4	153.7	158.2	215.7	210.4	611.4	1,683.0
Recoveries	-	(1.8)	-	-	-	-	-	(1.8)
Funding:	234.9	127.0	88.3	145.2	222.4	281.5	536.5	1,635.8
Forecast Budget/Plan	234.9	125.2	88.3	145.2	222.4	281.5	536.5	1,634.0
Third Party Recoveries	-	1.8	-	-	-	-	-	50.7
Net Plan Surplus/(Shortfall)	1.7	26.6	(65.4)	(13.0)	6.7	71.2	(74.9)	(47.2)
Existing Authority	512.8	9.2	-	-	-	-	-	522.0
This Authority Request	-	158.3	6.1	14.4	-	-	-	178.8
Future Requests	-	-	43.9	132.3	136.2	177.8	578.4	1,130.3

- 6.12 The Stations Sub-Programme funding allocation for 2017/18 has been agreed as part of the annual budget process. The future years allocation will be resolved as part of 2017/18 business planning.

7 Assurance

- 7.1 A TfL Project Assurance (PA) and Independent Investment Programme Advisory Group (IIPAG) Assurance Review of the Programme. No critical issues were identified in either review and the recommendations made are being addressed.
- 7.2 An Integrated Assurance Plan for the Programme has been agreed with TfL Project Assurance and this plan details the project-level reviews that will take place over the course of the year.

7.3 Assurance Reviews of the Accessibility programme, Elephant & Castle, South Kensington, and Finsbury Park will be conducted in support of the respective authority submissions.

List of appendices to this paper:

- Appendix 1 Accessibility and step-free access
- Appendix 2 Station Stabilisation Programme, Integrated Stations Programme and Asset Resilience Delivery Portfolio
- Appendix 3 Civils (Bridges & Structures and Deep Tube Tunnels)
- Appendix 4 Station Capacity
- Appendix 5 Camden Town
- Appendix 6 Stations Major Enhancements and Third Party projects

List of background papers:

IIPAG and Project Assurance Reports

Management response to IIPAG and Project Assurance Reports

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Appendix 1 - Accessibility

1 Background

- 1.1 The Mayor has made a clear commitment to improve accessibility to the transport network for all Londoners. A new approach to improving accessibility was announced as part of the launch of the TfL Business Plan in December 2016, with a significant increase in funding for London Underground accessibility to £197.0m to March 2022.
- 1.2 Currently over 70 per cent of LU stations are not accessible. Recent investment in accessibility and step-free access has concentrated on a smaller number of locations, often as part of the scope of major capacity enhancements for example at Tottenham Court Road and Vauxhall, or where third party opportunities have emerged, for example Tower Hill. Under this approach, six additional step-free schemes will be delivered at LU stations by 2022 as part of the wider Stations sub-programme. This includes Bank, Bond St, Bromley-by-Bow, Elephant & Castle, Finsbury Park and Victoria.
- 1.3 To date there has been no specific focus on improving accessibility across the wider network, in particular outside central London. In the previous TfL Plan a 'Partnership' Step-Free Access (SFA) programme was established to expand accessibility. With limited funding, the scope and pace of the programme was led by the need to seek third party 'match-funding' which would have seen only two additional schemes progressed by 2020.
- 1.4 The most recent TfL Plan has subsumed the Partnership programme into a new, better funded approach to expand step-free access as part of a wider programme of initiatives to improve accessibility network-wide. With a more focused drive to improve accessibility, the aim will be to increase value and make efficiencies in our delivery through a co-ordinated programme approach. This will enable a more ambitious target to make at least 30 additional stations, around 40 per cent of all stations, step-free within the business plan to 2022.
- 1.5 To help decide which stations to select for SFA, a set of prioritisation criteria has been developed which includes the Mayor's Transport Strategy 'strategic importance' prioritisation tool. Other selection criteria include deliverability, cost and benefits. A map of 53 potential SFA candidate schemes, along with those already committed in the Business Plan is included at the end of this appendix.
- 1.6 Additional authority of £5.6m to continue programme development and mobilisation was approved by in March. This took the total authority to £9.7m to undertake:
 - a. design development for SFA at Harrow-on-the-Hill and Newbury Park;
 - b. initial design studies for 20 new SFA schemes to inform the process of reducing the long list of 53 potential SFA schemes to a defined list of 30 schemes to be taken forward; and
 - c. a package of wider accessibility improvements in the first year of the programme, totalling around £0.82m delivering early benefits across the network. This will be a series of priority and high impact initiatives that will improve accessibility and the travel experience for our disabled customers.
- 1.7 To deliver 30 SFA schemes, it has been assumed that LU will achieve 40 per cent savings on the cost of delivery when compared with SFA schemes previously

delivered by LU. The authority includes a 'Programme Development' workstream to investigate how the savings may be achieved. It is believed efficiencies can be achieved through greater innovation, challenging the interpretation and application of standards, economies of scale, more efficient delivery and concentrating scope on core outputs. This will demand a root and branch challenge of behaviours and approach to the delivery of SFA schemes.

2 Proposal

- 2.1 Since authority was approved in March, a more ambitious programme has been developed which seeks to bring forward delivery of SFA schemes into the earlier years to better balance the expenditure and delivery across the Business Plan.
- 2.2 Programme and Project Authority for the whole Accessibility Programme is sought to deliver 15 SFA stations by May 2020 and 30 SFA stations by March 2022. The following scope will be delivered initially:
 - a. on site at Newbury Park in August 2017 with a targeted delivery into service of the two lifts by June 2018 as opposed to April 2019 as previously planned;
 - b. bring forward early enabling works at Harrow-on-the-Hill to September 2017, in addition to moving the Signal Equipment Room which is already approved;
 - c. advance by 12 months two relatively simple ramp schemes plus four other 'prototype' schemes;
 - d. commence feasibility studies for 16 SFA schemes in financial year 2017/18;
 - e. commence concept design for 16 SFA schemes in financial year 2017/18 to allow start on site some twelve months earlier than originally planned;
 - f. undertake a programme-wide series of surveys including topographical, ground and power supplies; and
 - g. continue to undertake the wider accessibility improvements in the first year of the programme.
- 2.3 Eight 'prototype' schemes, including the procurement of 12 lifts will be delivered initially. It is proposed delegated Procurement Authority for the remaining step-free schemes will be sought in accordance with Standing Orders, including the long lead procurement of all remaining lifts based on a new "low-cost" lift specification being developed for the programme. Good progress with this transformation in delivery approach will be confirmed before we commit to delivering the full programme, as part of the authority request to the Committee planned for June 2018.
- 2.4 The current EFC of the Accessibility Programme is net £218.8m (gross £267.8m taking into account estimated third party contributions of £48.9m for various schemes across the Programme) which exceeds the Financial Authority of £197.0m. The aim is to seek more efficient delivery through a new SFA Proof of Concept and through incentivising innovation from the supply chain to drive down costs as part of a multi-faceted procurement strategy. Work streams to support this include challenging and standardising requirements, value engineering, benchmarking, creating new delivery models, and value incentivised procurement with greater competition.
- 2.5 The estimate will be refined as design work and tenders received from suppliers reflect the new Proof of Concept. Scope management and prioritisation of the work will ensure that the EFC remains within the £197.0m Financial Authority.

Benefits (and value)

- 2.6 An outline business case assessment was undertaken for a notional package of 30 SFA stations. A summary of the Programme key benefits is as follows:
- a. Aggregated SFA social benefits of £18.8m p.a.
 - b. Revenue due to new demand of £3.4m p.a.
 - c. Ambience benefits of £350k p.a.
 - d. Safety benefits of £2.9m p.a.
- 2.7 The Benefit: Cost Ratio is estimated at 9:1 which demonstrates a very strong case and that investment in step-free access and wider accessibility is good value for money. The business case assessment will be regularly reviewed to ensure the viability of the programme is maintained and sensitivity tests can also be undertaken for different station 'mixes' and funding scenarios. The business case assessment includes potential additional staffing costs and ongoing maintenance costs as a result of installing an additional 56 new lifts.

Summary of Economic Appraisal

Economic Impact	
Estimated Final Cost, £k (at outturn prices)	(267,746)
Net Present Values ,£k	
Discounted NPV EFC	(229,730)
Project Optimism Bias	(58,571)
Maintenance, Opex & Renewal	(74,282)
Revenue Change	31,068
Private Sector Contributions	17,450
Net Financial Effect (to public purse)	(135,210)
Passenger Benefits	1,009,073
Private Sector Contributions	(17,450)
Net Social Benefits	991,585
BCR (with private sector contribution)	BCR = 7:1
Sensitivity - Impact on TfL	
Public Sector Contributions	23,580
NFE (to TfL)	(111,634)
BCR (with public and private contributions)	BCR = 9:1

- 2.8 Associated benefits such as improvements in capacity and other wider economic benefits will be assessed at a later stage of the programme. There are other qualitative benefits from improved accessibility such as health and lifestyle benefits through access to amenities, health and leisure facilities, for the whole range of SFA users.
- 2.9 As projects progress through feasibility and design, consideration will be given to the need for an Equality Impact Assessment for each one. Possible effects on people with protected characteristics under the Equality Act 2010 (such as age, race, sex, and, often of particular relevance, disability), and mitigations of and countervailing considerations in respect of any adverse effects, will be considered and recorded.

Delivery

2.10 The Programme delivers significant benefits but will also introduce additional maintenance and staffing costs year on year. The aim will be to minimise the exposure and more detailed on-costs will be assessed during the next design stage and agreed with LU Finance.

2.11 Key milestones for the Programme are:

Milestones for the next stage	Target Date
Newbury Park start on-site	August 2017
Harrow-on-the-Hill start on-site	September 2017
Announcement on the 30 chosen SFA stations	November 2017
Deliver first 15 SFA stations	May 2020
Deliver a total of 30 SFA stations	March 2022

2.12 Top Programme risks/opportunities are:

No	Risk Description	Mitigation Actions
1	Finding suitable staff due to the accelerated nature of the new SFA programme.	The programme will focus on a resource allocation plan, exploring opportunities of obtaining experienced staff from within the business, including other programmes nearing completion.
2	It may not be possible to achieve 40 per cent cost reductions across the programme, leading to fewer schemes being completed in five years.	Complete a number of work streams: Reviews of operational concept and engineering, including value engineering (VE); implementation of recommendations from the benchmarking study; focus on off-site build opportunities and off-the-shelf products, and ensure an effective procurement strategy is in place.
3	Proposed changes to the interpretation and application of standards and streamlined process for surface stations may not be supported by some stakeholders.	Early engagement with stakeholders and continual challenge of existing ways of project delivery. Encourage innovation from the business and supply chain. A SFA launch event took place on 21 February as part of a series of workshops to engage stakeholders..
4	Opportunity: Provide programme and resource support to challenge current application of standards and investigate Value Engineering aspects of surface station lift schemes to make them more affordable.	

2.13 There is no risk allowance allocated in 2017/18 but a sum of £23.5m (excluding Colindale and Knightsbridge) has been allocated to the SFA Programme based on a quantified risk assessment.

3 Financial implications

3.1 The gross EFC of the overall SFA Programme (i.e. the delivery of 30 stations and the wider accessibility scope) is £267.8m; however, with contributions of £48.9m from third parties over the Business Plan period, the net EFC is reduced to £218.8m for 30 stations, subject to the outcome of the initial design studies.

3.2 The majority of the forecasted £48.9m contributions will be towards Colindale (£14.1m), Knightsbridge (£20.0m) and West Brompton (£6.3m) which have third party agreements in place or they will be entered into imminently. The confidence level for securing the recoveries is therefore high.

3.3 Programme and Project Authority of £43.3m (gross) has already been drawn from the SFA Programme for a one-off validation of the Newbury Park scheme (now complete) and to take forward Knightsbridge and Colindale separately under the Collaborative Enhancements programme (Appendix 6). The EFC for the rest of the SFA Programme without Knightsbridge and Colindale is £218.4m (gross).

3.4 The EFC assumes a 35 per cent reduction is embedded within the costs with the intention to further drive down costs to achieve further reduction of 10 per cent to achieve 30 scheme deliveries within budgeted Financial Authority.

3.5 Summary of the costs and funding:

Costs and Funding (£m)	Prior Years	2017/18	2018/19	2019/20	2020/21	2021/22	Total
Estimated Final Cost (Net)	3.0	8.9	47.0	48.9	78.6	32.6	218.9
Forecast Budget/Plan	3.0	4.0	20.0	40.0	60.0	70.0	197.0
Net Plan Surplus/(Shortfall)	-	(4.9)	(27.0)	(8.9)	(18.6)	37.5	(21.9)
This Authority Request	42.8	102.8	-	-	-	-	145.6
Future Requests	-	-	-	51.4	-	-	51.4
Total Authority Request	42.8	102.8	-	51.4	-	-	197.0

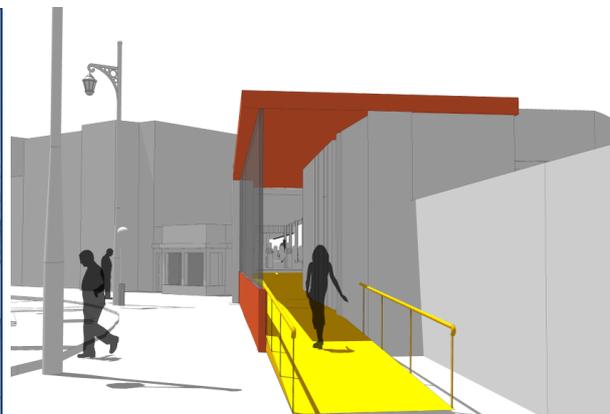
Illustrations of example schemes



Newbury Park station - Proposed location of new lifts constructed off rear of existing over bridge



Harrow-on-the-Hill – lifts to island platforms from new overbridge



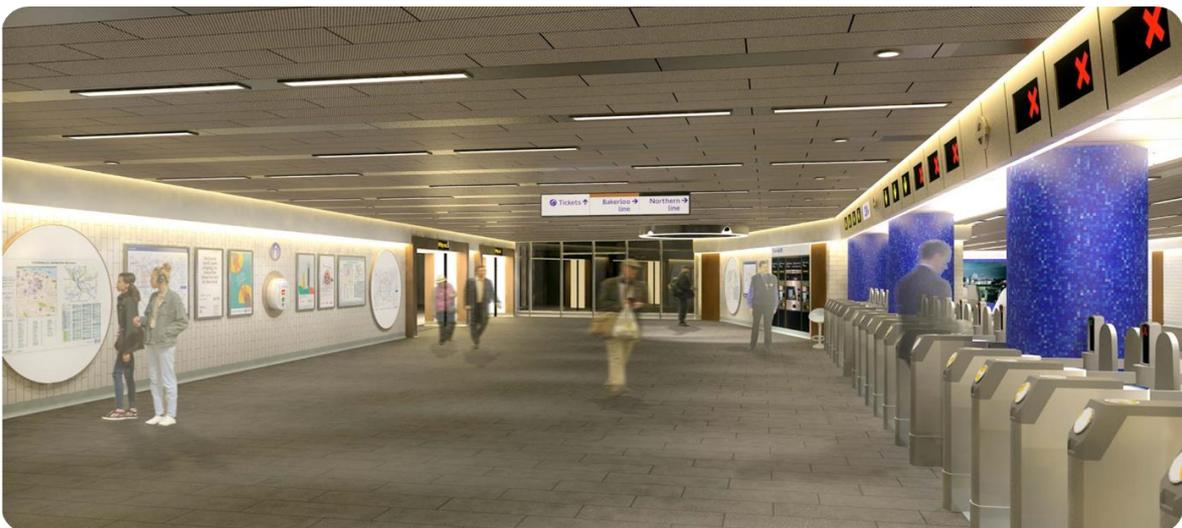
South Woodford – proposed ramp to westbound platform

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Appendix 2 – Station Stabilisation Programme, Integrated Stations Programme and Asset Resilience Delivery Portfolio

1 Background

- 1.1 London Underground's 270 stations are comprised of a range of asset groups including: civils, communications, electrical, mechanical, fire and premises. The asset renewals works main objective is to ensure these station assets remain in a safe, legal and operable condition whilst reducing whole life costs and improving the customer environment.
- 1.2 Following the end of the Public Private Partnership (PPP), the strategy for stations renewals has been to utilise a 'station-led' approach, which focuses on maximising asset renewals within a single intervention at a station. The prioritisation targeted stations not upgraded under the PPP. There are currently two stations programmes which are delivering works under this strategic approach.
- a) Station Stabilisation Programme 2013-2017: nine stations completed.
 - b) Integrated Stations Programme 2015-2019: nine currently progressing onsite.



Charing Cross Ticket Hall Design Proposals

- 1.3 As our asset management maturity develops, it has become evident that 'station-led' single-intervention renewals programmes can result in assets being repaired or replaced at a non-optimum time in their lifecycle. For example, wall tiling may last 60 years, while a mechanical cooling unit may last only seven. Aligning all asset renewals within a single intervention at a station can divert investment from assets at other stations where it is the right time in the asset lifecycle to renew.
- 1.4 A new delivery model is therefore being developed that adheres to an 'asset-led' approach. This will maximise renewals investment by focusing projects at the asset level (i.e. to replace a lighting system only within a station). This will result in more assets being repaired or replaced at the optimal time in their lifecycle (e.g. when maintenance costs to retain performance start to outweigh renewal activity costs). The new model, the Asset Resilience Delivery Portfolio (ARPD) will commence in 2018.

2 Proposal

Integrated Stations Programme (ISP)

2.1 The ISP received Project Authority of £241.6m from March 2015 to address its first tranche of stations. We recently realigned the programme to reflect our latest Business Plan and a change in asset strategy to re-prioritise station works across the network under an Asset Resilience Delivery Portfolio. The ISP programme approved Financial Authority until 2019 will now be £109.6m. As part of this paper, the Committee is asked to align the Project Authority to this revised lower figure.

2.2 The ISP will deliver the following benefits:

- a) reduce asset safety and performance risk;
- b) improve the premises asset condition and built environment ambience; and reduce the tidemark between LU stations and the new Elizabeth line areas;
- c) avoid additional maintenance costs and increased future capital costs;
- d) reduce energy costs (through installation of energy efficient systems); and
- e) increase revenue as a result of improved station ambience and deliver minor capacity improvements.

Asset Resilience Delivery Portfolio

2.3 The new Asset Resilience Delivery Portfolio (ARDP) model will invest £210.0m between 2018/19 and 2021/22 for which an authority request will be submitted as part of the next annual LU Stations sub-programme submission in June 2018.

2.4 We will initiate the ARDP to deliver the 'asset-led' approach noted in paragraph 1.4. The ARDP will mitigate the risk of enhanced asset degradation following the closeout of the ISP, at a lower capital cost. It will achieve this through a delivery model composed of three constituent elements:

- a) **Targeted:** an annual workbank of projects to resolve priority safe, legal and operable asset risks and issues (such as falling objects or failing critical assets). An emerging risk process will manage any in-year events that alter the relative prioritisation of these risks and issues.
- b) **Scheduled:** a scheduled workbank of system renewals projects to proactively and significantly reduce whole life asset costs at the network level (such as installation of new LED lighting across multiple sites).
- c) **Environment:** an opportunity workbank of operational and customer requirements (such as staff welfare or ticket hall painting works) that will complement a Targeted or Scheduled asset intervention.

2.5 We will align the ARDP stations workbank wherever possible with other interventions, for example, a planned station closure for a lift or escalator replacement, or a large Civils project. This will highlight opportunities to achieve further efficiencies in the delivery of any or all of the above elements.

2.6 The current cooling and ventilation CAPEX programme will end in 2021 and it is planned that for the next business plan period, the ARDP will include renewal of ventilation asset as part of this programme of works. Beyond 2021, any new cooling schemes will be included as part of Major Programmes.

Other station projects

2.7 The Rail Vehicle Accessibility Regulations (RVAR) projects aim to ensure LU complies with the requirements of RVAR. This includes projects to enable level access at key platforms through provision of platform humps and manual boarding ramps on the Jubilee and Bakerloo lines with work on the Central line delivered through the Central line Improvement Programme. This will align with the location of wheelchair bays on their corresponding fleets.

3 Financial Implications

Description	Previous Years	Financial Authority (Business)	Estimated Final Cost (EFC)	Existing Project Authority	This Authority Request	Future Requests	Next Business Plan
Station Stabilisation Programme (SSP)	91.3	-	91.3	91.3	-	-	-
Integrated Stations Programme (ISP)	55.9	24.8	109.6	241.8	-	-	-
Asset Resilience Delivery Portfolio (ARDP)	-	210.0	210.0	-	-	210.0	-
RVAR	0.4	7.4	6.8	3.2	3.6	-	-
Total	147.6	242.2	417.7	336.3	3.6	210.0	-

3.1 For stations and Civils projects changes during the business plan, as well as savings and efficiencies of some projects in the delivery stage, have enabled the project EFC to be below the authorised Project and Programme Authorities. It is requested that Project and Programme Authorities for the Integrated Stations Programme be realigned to £109.6m. The ISP funding allocation for 2017/18 has been agreed as part of the annual budget process, the future years allocation will be resolved as part of 2017/18 business planning.

4 Delivery

4.1 The SSP and ISP are being delivered by the Stations Renewals team within London Underground.

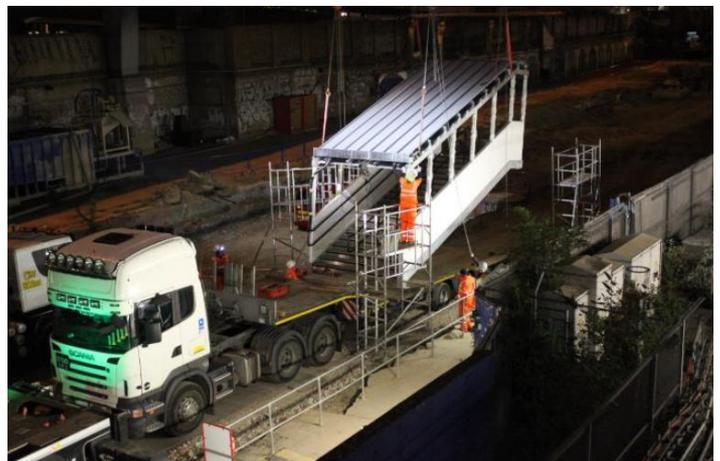
4.2 The delivery proposal for the ARDP will be presented within the 2018 project authority request. All options will be reviewed, including the use of maintenance contractors for certain works, such as non-complex asset interventions.

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Appendix 3 – Civils (Bridges & Structures and Deep Tube Tunnels)

1 Background

- 1.1 Bridges and Structures and Deep Tube Tunnels (Civils (B&S/DTT)) consist of 30,000 assets with a relative asset value of £13.7bn. These assets are split into 79 asset types, including bridges, tunnels, subways, platforms, retaining walls, canopies, lighting masts and floodgates.
- 1.2 The primary purpose of Civils (B&S/DTT) assets is to provide structural support and stability to other assets. Effective and robust Civils assets are therefore critical to the safe and reliable operation of the railway.
- 1.3 The other Civils asset groups of Earthworks and Track Drainage, while performing the same primary purpose, form part of the LU Track sub-programme and so do not feature within this LU Stations sub-programme paper.
- 1.4 The Civils maintenance team keep the assets in good condition through regular inspections and maintenance. However, there are occasions when larger works are required that are beyond their capability and budget. Therefore, as set out in the Asset Management Strategy, an on-going asset renewals programme undertakes prioritised capital projects.
- 1.5 Typical projects within this Civils programme include: strengthening works to staircases; refurbishment works to several large bridges; installation of vehicle protection measures at priority locations; and development of a system to direct future flood remediation interventions.



2 Proposal

- 2.1 The Civils programme has been realigned to reflect our latest Business Plan, to accommodate recent resource changes and to maximise integration opportunities with other projects. The 2016 authority of works is now expected to complete by June 2019.
- 2.2 A four-year programme authority for Civils (B&S/DTT) will be submitted as part of the next annual Programme Investment submission in June 2018. A longer

authority period will ensure project continuity and will enable the full lifecycle of a project to be delivered within a single authority.

2.3 The Civils (B&S/DTT) programme delivers the following benefits:

- a) reduce (and avoid an increase in) asset safety and performance risk;
- b) avoid increased maintenance costs by preventing asset failures;
- c) avoid increased future capital costs through proactive interventions; and
- d) avoid load or speed restrictions, which affect passenger service.

3 Financial Implications

3.1 Summary of the Civils finances:

Description	Previous Years	Financial Authority (Business Plan)	Estimated Final Cost (EFC)	Existing Project Authority	This Authority Request	Future Requests	Next Business Plan
Civils (B&S/DTT)							
2012-2016 Legacy Civils	23.9	0.1	24.0	25.1	-	-	-
2016-2019 authority	2.5	8.7	11.2	11.2	-	-	-
2018-2022+ authority	-	44.5	62.1	-	-	39.2	22.9
Total	26.4	53.3	97.3	36.4	-	39.2	22.9

4 Delivery

4.1 The Civils (B&S/DTT) 2016 programme and the prior authorities are being delivered by the Stations Renewals team within London Underground.

4.2 The delivery proposal for the Civils (B&S/DTT) 2018 programme will be presented within the 2018 Project Authority request. All options will be reviewed, including the use of maintenance contractors for non-complex projects.

Appendix 4 – Station Capacity

1 Background

1.1 The Future Station Capacity Programme (FSCP) was established to respond to rising passenger demand and forecasted congestion at key stations across the LU network. FSCP seeks to prioritise and develop early Outcome Definition, Feasibility and Concept Designs for a programme of station capacity upgrades along with an understanding of the business case.

1.2 The strategic objectives of the FSCP are to:

- a) support growth in demand whilst reducing in-station journey time;
- b) reduce on-train times to safeguard/enhance line upgrade benefits;
- c) improve interchange and accessibility including step-free access (SFA);
- d) optimise integration with other works programmes e.g. Line Upgrades;
- e) optimise third party engagement and opportunity for funding; and
- f) ensure our stations support strategic growth, employment and new homes.

1.3 Since 2012 there have been three authority requests for FSCP with a total project authority of £14.3m. A total of thirteen stations have been taken through the programme to various design stages from Outcome Definition (Oxford Circus) to full Concept Design (Camden and Holborn). A summary of the stations and status of progress is summarised below:

FSCP Station Feasibility	Current status
Camden Town and Holborn	Under further development for transfer to Major Programme Delivery
Elephant & Castle, Paddington and South Kensington	Under further development for delivery as part of a collaborative or third party enhancement.
Edgware Road	Output informing TfL Commercial Development viability study.
Old Street, Walthamstow	Output informing active engagement with local authorities and third party developers
Victoria (District & Circle)	Output informing Crossrail 2
Oxford Circus, Moorgate, Embankment and Kennington,	Output on-hand to inform local authority, third party engagement or future business plan

2 Proposal

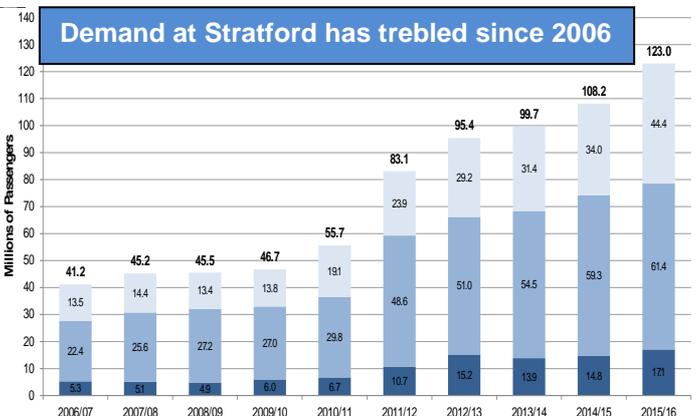
2.1 This paper requests an increase in Programme and Project authority of:

- a) £0.5m to continue the FSCP programme to focus on the most strategic priorities and best opportunities; and

- b) £0.7m to develop specific proposals for a critical capacity and accessibility upgrade at Holborn Station prior to a TWA Order application in 2018/19, leading to delivery in 2026.

Future Stations Capacity Programme

- 2.2 A change in approach to the delivery of FSCP is proposed to enable essential business outcomes but at a reduced cost. This approach was trailed successfully for Oxford Circus and this has been used as the bench mark for Outcome Definition studies going forward.
- 2.3 The approach will build on experience to date, which will tailor Outcome Definition studies to optimise use of in-house expertise and establish key requirements and options for the stations identified in paragraph 2.5. This will rely on highly collaborative engagement across a wide range of third party stakeholders such as Network Rail.
- 2.4 To assist in prioritising candidates for Outcome Definition, a study ‘The future Station Plan’ has been completed which has reviewed demand growth and modelling results on all the stations on the network and to score the results on strategic needs.
- 2.5 The prioritised work streams proposed in this submission are to:
 - a) investigate stations impacted by the Northern line train service upgrade (£100k funding provided by NLU2). Including Warren Street and London Bridge;
 - b) investigate Piccadilly line ‘west end’ corridor stations critical to the long term performance of the deep tube lines (including Green Park, Piccadilly Circus and Leicester Square);
 - c) work with third parties on development impacts on Canada Water station;
 - d) collaborate with Network Rail on capacity plans at Liverpool Street and Waterloo;
 - e) complete an Outcome Definition study for Stratford station: and
 - f) undertake stakeholder consultation and Value Enhancement on Holborn Station Capacity Upgrade.



Holborn Station Capacity Upgrade

- 2.6 Holborn station is a key interchange on the Central and Piccadilly lines and suffers from serious congestion in both peaks with the PM peak having a more detrimental impact on the surrounding area outside the station. This manifests itself in lengthy queues to enter the station occurring. Demand forecasting indicates that more severe controls will be required in future to safely manage this congestion.
- 2.7 When complete in 2026, the upgrade would reduce journey times, improve accessibility and relieve congestion such that operational controls are not required at the station during normal operations. The proposed upgrade includes a new station entrance and enhanced access and interchange including step free access to all platforms.
- 2.8 The next stage of development will be to undertake stakeholder engagement and consultation regarding the design which will be coupled with a Value Enhancement review process and an update of the business case.
- 2.9 The value enhancement review will use a value model similar to that used on the Bank Station Capacity Upgrade and the Bakerloo line link. This will target a minimum of 15 per cent value improvement and 15 per cent financial saving over the current estimate final cost of £450.7m.



Benefits (and Value)

- 2.10 FSCP's associated benefits such as improvements in capacity and other wider economic benefits have not been quantified but will be assessed on a project by project basis a later stage of the programme.

Holborn Station Capacity Upgrade

- 2.11 At this stage (Concept Design), The Single Preferred Option provides a sensible and robust solution to the problems currently experienced and forecast to occur at Holborn based on the latest demand forecasts which see an increase in demand of 20 per cent and 29 per cent in the morning and evening peaks (respectively). The scheme provides a benefit to cost ratio of 3.4:1 which is summarised below:

Holborn Economic Appraisal	
Estimated Final Cost, £k (at outturn prices)	(365,079)
Net Present Values ,£k	
Discounted NPV EFC	(296,835)
Maintenance, Opex & Renewal	(17,673)
Revenue (secondary revenue)	22,479
Developer's contribution (PV)	-
Net Financial Effect without developer's contribution	(292,029)
Net Financial effect with developer's contribution	
	n/a
Payback Period	-
Annual Passenger Benefits	28,389
Impacts during Implementation	-
Total Benefit, £k	
Benefit : Cost Ratio (BCR)	3.4:1

Options Analysis

2.12 Throughout the design development for Holborn station the project worked through a number of options to arrive at its preferred scheme. The deliverables of each option was benchmarked and reviewed against the project objectives including value for money and deliverability. This approach will also be used on FSCP.

Key milestones

2.13 The following are the provisional milestone dates for this phase of works:

Milestone	Proposed Date
Complete Outcome Definition Study Stratford	August 2017
Model and define requirements for stations impacted by the Northern line train service upgrade	October 2017
Model and define requirements for stations impacted by Piccadilly line corridor including Green Park, Piccadilly Circus and Leicester Square	January 2017
Stakeholder consultation and Value Enhancement on Holborn SCU	March 2018

Risk Summary

2.14 The table below summaries the current top five programme level risks:

Risk	Mitigation
1) There is a risk that LU will not be able to purchase or acquire the properties required to construct the schemes.	Early discussions with Third Parties/local authorities required during feasibility stage to obtain agreements in principle for property purchases.
2) There is a risk that LU will not obtain the necessary TWA/other consents approval.	Early engagement with stakeholders during Feasibility stage and increased engagement and consultation as designs progress.
3) There is a risk that the station designs are unbuildable due to unsuitable site or ground conditions.	Early intrusive or laser surveys.

Risk	Mitigation
4) There is a risk that funding may not be secured for part of the programme.	Presentations to key stakeholders and departments to gain their support for the programme.
5) There is a risk that requirements will change (i.e. design modifications will be required) as a result of interfaces with other projects – Crossrail/NLE/TfL Surface etc.	Early consultation with other projects. Produce interface control agreements between both parties to establish roles/ responsibilities and dependencies.

3 Financial Implications

Costs and Funding (£m)	Prior Years	2017/18	2018/19	2019/20	2020/21	2021/22	Future Years	Total
Estimated Final Cost (Net)	7.4	1.3	5.0	7.4	14.6	30.0	385.1	450.7
Forecast Budget/Plan	7.4	0.7	5.0	13.3	32.1	49.9	342.3	450.7
Net Plan Surplus/(Shortfall)	-	(0.6)	0.0	5.9	17.6	19.9	(42.8)	-
<hr/>								
This Authority Request	12.3	1.2						13.5
Future Requests			5.0	7.4	14.6	30.0	385.1	442.0
Total Authority Request	12.3	1.2	5.0	7.4	14.6	30.0	380.3	450.7

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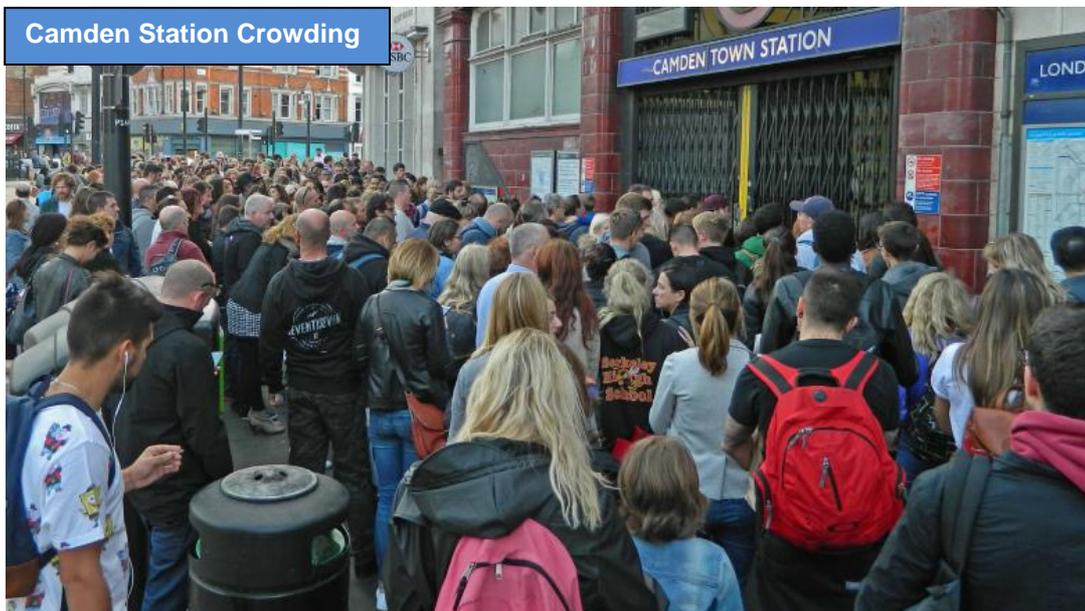
Appendix 5 – Camden Town station capacity upgrade

1. Background

- 1.1 Camden Town is a key interchange that serves both branches of the Northern line and approximately 29.6 million passenger journeys each year. Weekday passenger demand has risen by 45 per cent over the last ten years and is expected to grow by a further 40 per cent by 2021. The station currently employs severe operational controls for over 100 days a year with customers accessing LU diverted to neighbouring stations.
- 1.2 Over the past three years, a station capacity upgrade design has been developed that proposes to deliver a new, accessible, station entrance at a site to the north of the existing station. By 2024, this upgrade will deliver: additional access capacity via three additional escalators; two new lifts; additional platform connections; and an expanded interchange concourse that links through to the existing station entrance. The existing entrance will remain open during and following the station upgrade.
- 1.3 In January 2016 additional authority of £3.2m was requested to undertake a Value Enhancement of the concept design, with a focus on enhancing passenger benefits, securing efficiencies, reducing programme and EFC, currently forecasted at £256.7m. Targeted savings and an improvement of value by 15 per cent is expected.

2. Proposal

- 1.1 This paper seeks additional project and programme authority of £35.2m.



- 1.2 The summary of the economic appraisal and benefits for the preferred scheme design current base scheme, and does not yet reflect the additional value and savings identified during the current Value Enhancement phase.

Phase 1 Economic Appraisal	
Estimated Final Cost, £k (at outturn prices)	(256,432)
Net Present Values ,£k	
Discounted NPV EFC	(199,200)
Maintenance, Opex & Renewal per year	(2,007)
Revenue (secondary revenue) per year	1,262
Developer's contribution (PV)	n/a
Net Financial Effect	(221,977)
Payback Period	n/a
Annual Passenger Benefits	4,200
Impacts during Implementation	(2,918)
Total Benefit, £k	
Benefit : Cost Ratio (BCR)	3.6:1

1.3 The main benefits that the project will deliver are summarised in the table below:

Title	Description	Expected benefits
Increase Capacity	Attracting new users to the LU network	Value of forecast Increased Revenue
Minimise passenger journey time and congestion	Delivery of increased circulation space, additional ticket hall and new passageways	Monetised journey time benefits through reduced congestion and journey times during AM, PM, weekend peak – removing operational controls currently in place
Improve quality of access, interchange, step-free access and ambience	Delivery of lifts enabling step free access from street to train, on all four platforms	Increase social benefit and revenue from additional accessible journeys through the station
Secondary revenue	Enabling provision of advertising and other commercial opportunities	Increase revenue streams for TfL to invest in future services and improvements
Staff accomodation	Provision of additional accommodation and repurposing existing rooms	Improved station operation and improvements to ambience and associated customer satisfactor scores

2 Delivery

3.1 The current Value Enhancement (VE) exercises is targeting a minimum of 15 per cent value improvement and a minimum 15 per cent saving in cost, currently estimated at £256.7m. During detailed design Value Enhancement will continue to ensure best value is achieved in all aspects of the scheme through design and delivery.

3.2 Key milestones for the project are:

Milestone	Target Date
Outline concept design completion	July 2017
Commencement of TWA Order preparation including detailed design	August 2017
Planning Approval for Over Station Development	Feb 2018
Submission of TWA Order application	July 2018
Public Inquiry	March 2019
Approval of TWA Order	April 2020
Site establishment and enabling	June 2020
Main works commence	April 2021
Deliver new assets into service	April 2025

Financial implications

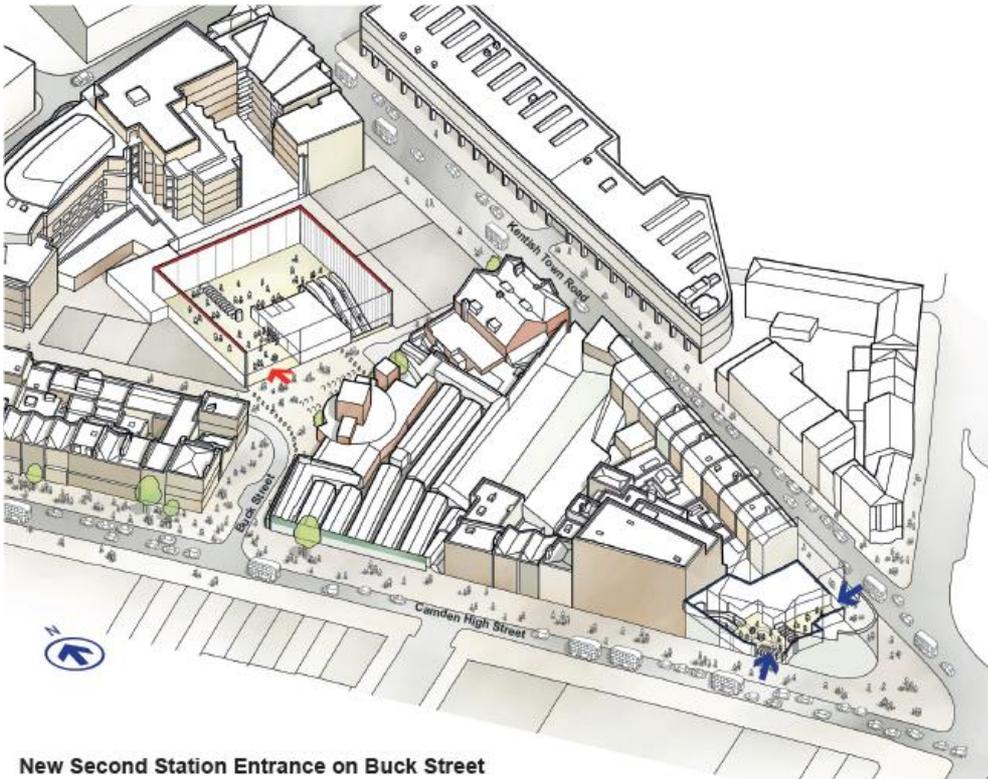
3.3 The project EFC is £256.7m, but it should be noted that the net project cost is £242.7m, less residual land value of the worksite. The EFC will be revised downwards following the completion of the value engineering phase.

3.4 The following table summarise the project costs, available funding, and authority profile:

Costs and Funding (£m)	Prior Years	2017/18	2018/19	2019/20	2020/21	2021/22	Future Years	Total
Estimated Final Cost (Net)	3.7	14.7	6.1	14.4	28.5	45.9	143.4	256.7
Forecast Budget/Plan	3.3	20.5	0.7	10.9	28.6	47.7	145.0	256.7
Net Plan Surplus/(Shortfall)	(0.4)	5.8	(5.4)	(3.5)	0.1	1.8	1.6	-
This Authority Request	5.2	14.7	6.1	14.4				40.3
Future Requests					28.5	45.9	143.4	217.8
Total Authority Request	5.2	14.7	6.1	14.4	28.5	45.9	143.4	258.2

3.5 This authority request includes funds to enable the planning application for the proposed Over Station Development at the proposed new Camden Town Station entrance. This development will include: 60-70 new homes including affordable homes, commercial space for small business at the lower levels; and retail space adjacent to the station entrance.

Camden public consultation image of new station entrance on Buck Street

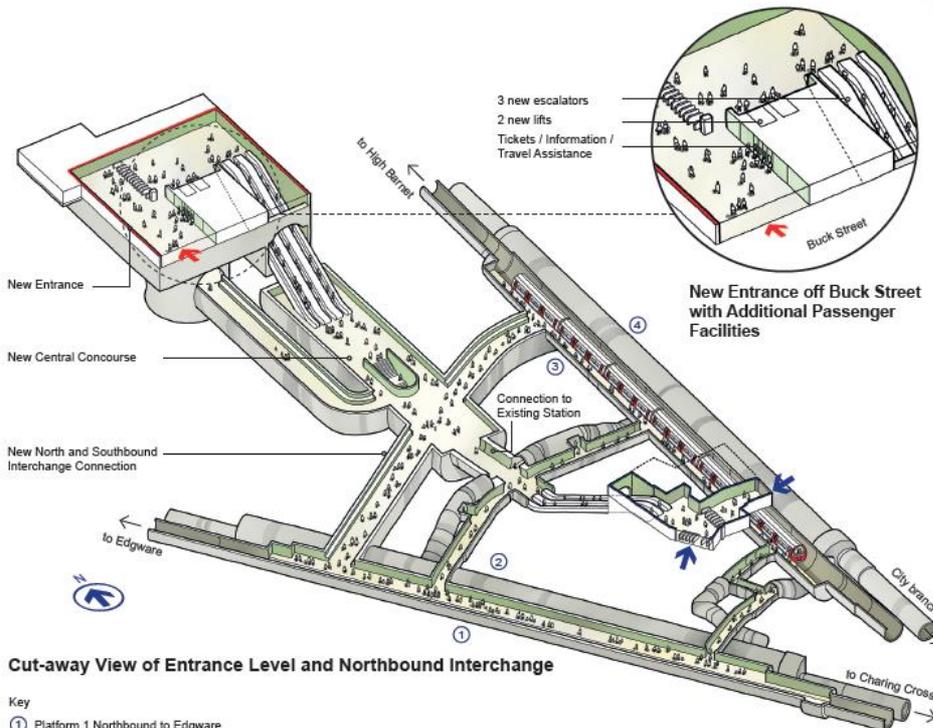


New Second Station Entrance on Buck Street

-  Existing Station Entrance
-  New Second Station Entrance



Camden public Consultation image of new station entrance and interchange



Cut-away View of Entrance Level and Northbound Interchange

- Key
- ① Platform 1 Northbound to Edgware
 - ② Platform 2 Southbound to Charing Cross
 - ③ Platform 3 Northbound to High Barnet
 - ④ Platform 4 Southbound City Branch
 -  Existing Station Entrance
 -  New Second Station Entrance



Appendix 6 – Collaborative Enhancements and Third Party Projects

1 Background

- 1.1 This element of the Stations sub-programme does not operate as a portfolio, but brings together a range of projects which undergo individual governance and assurance. By working with third party developers and local authorities we seek to deliver significant capacity and accessibility improvements with the combined aim of enabling growth opportunities in line with strategic TfL and London Plan objectives and lower cost to TfL.
- 1.2 The projects fall within four categories:
- a) Major station upgrades primarily funded from the TfL Investment Plan, with TfL leading on programme and delivery. Typically there is significant third party engagement or drivers such as a related development or in support of growth in the area served by the station. Projects include Bromley-by-Bow (complete 2017), Tottenham Hale (complete 2018) and Finsbury Park (complete 2019)
 - b) Third party led programmes and delivery, but typically requiring full TfL engagement and with some TfL funding contributions to enable accessibility, increased capacity and better integration with the changing urban environment. Projects include Elephant & Castle and Knightsbridge (complete 2022), South Kensington (phased delivery to complete mid 2020s), and Paddington Bakerloo (delivery TBC)
 - c) Developments of TfL property largely at or close to LU stations, these projects can originate from third parties or be led by TfL Commercial Development. Ranging from simply enabling development by 'protecting' LU assets in exchange for financial contributions, through to projects that will deliver largely or entirely third party funded station enhancements, these proposals are 'speculative' and subject to development viability, planning consent and commercial acceptability to TfL. Projects include Notting Hill Gate (SFA enabling), White City/Wood Lane (enabling and revenue), Earls Court Development (enabling, revenue and station enhancements), Walthamstow Central (SFA and capacity safeguarding), Old Street (SFA and capacity safeguarding) and Colindale (delivery TBC)
 - d) LU funded works for the Elizabeth line which complement the main project works which are being delivered by Crossrail. Projects include enhancing step free capacity to the London Underground platforms at Whitechapel and to the Hammersmith & City line at Moorgate, providing customer and staff WiFi at Elizabeth line central section stations, and installing TfL TVMs in the existing ticket halls of Elizabeth line interchange stations operated by LU

2 Proposal

- 2.1 Programme and Project Authority of £36.3m is sought to continue design development for Elephant & Castle, the completion of Finsbury Park, the implementation of a capacity upgrade at South Kensington and LU-funded Crossrail works.

- 2.2 In addition, LU will continue to support TfL Commercial Development, in particular, their Property Development programme. This includes enabling the programme by managing the operational interface and seeking the optimum balance between TfL’s revenue generating and operational requirements. Currently LU is supporting projects at Southwark, North Greenwich, Earl’s Court and Edgware Road.
- 2.3 LU will also support the development of third party projects in order to safeguard and secure optimum outputs for TfL operational and revenue benefits.
- 2.4 At Paddington, LU has been working collaboratively with Sellar Property Group (SPG) who has received planning consent, subject to entering into a Section 106 Agreement with TfL, for their development known as ‘the Cube’. As part of the consent SPG has agreed to build the box for a new Bakerloo line ticket hall, including escalator and lift access to the platforms, and to contribute £8.5m towards the entrance fit-out.
- 2.5 The table below summaries the current programme level risks:

No	Risk Description	Mitigation Actions
1	TfL and/or the developer will not be able to obtain the necessary planning or other consents required.	Early engagement with stakeholders during Feasibility stage and increased engagement and consultation as designs progress.
2	The TfL and/or the developer cannot secure funding for the redevelopment or station element.	Continuing review will be undertaken to both firm up costs, construction programme interface to ensure phasing is optimal to enable funding to be secured.
3	The station designs are unachievable due to unsuitable ground conditions or a credible fire strategy cannot be agreed with the LFEPA	Undertake early topographical and ground surveys to understand conditions and potential mitigations. Consider with fire engineers early and continue discussions with internal engineers and the LFEPA to ensure buy-in and guidance as the design develops
4	The developer’s works may have adverse impact on LU infrastructure	LU Infrastructure Protection team will be engaged early during feasibility to agree appropriate design and mitigation measures to protect LU assets.
5	Opportunity: Where possible secure agreement for developer to construct station infrastructure and ticket hall box, affording construction and risk savings over a stand-alone scheme	

Elephant & Castle Northern line Upgrade

- 2.6 Further development of the Elephant & Castle (E&C) Northern line station Capacity and Accessibility upgrade including a request for additional Project and Programme Authority to enter a Development Agreement with a third party developer (Delancey) to take forward detailed design.
- 2.7 E&C is currently in concept design and we are working with the developer to co-ordinate the civils box design, tunnelling and fit-out design. This work is looking at defining a value enhanced scope of works that will enable TfL to enter into a Development Agreement for the station box construction. The Bakerloo line station at E&C is outside the scope of this project.
- 2.8 Substantial third party contributions are associated with this scheme. In addition to this the shopping centre developer will construct the new station box as part of

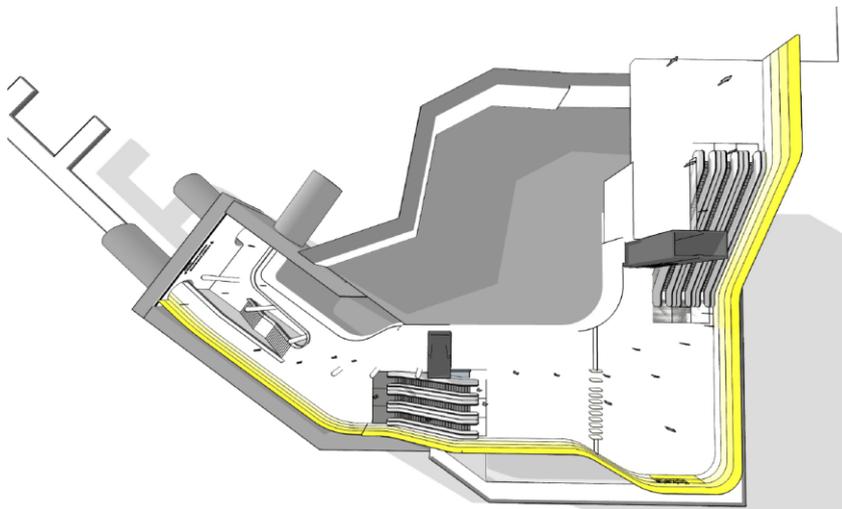
their development at substantially less than if LU were to construct as a standalone scheme.

Delivery

2.9 The station box will be delivered by the developer who is rebuilding the E&C shopping centre. The tunnels, connections and box fit-out will be delivered by the LU Renewals and Enhancements programme team.

2.10 Key Project Milestones:

Milestones for the next stage	Target Date
Concept Design Complete	December 2017
Detailed Design Complete	December 2019
Start On Site	January 2020
Finish On site	December 2024



E&C proposed layout of new entrance

Finsbury Park Station Upgrade

2.11 Finsbury Park Upgrade project comprises of three phases: the first phase, completed in June 2015, increased interchange capacity with NR services through the reinstatement of two disused spiral staircases. The second phase will deliver step-free access to LU’s Piccadilly and Victoria line platforms. Scheme construction is well underway and the excavation works for new lifts is almost complete. The LU lift scheme will be integrated with Network Rail (NR) who are also installing lifts to their platforms which will ensure a fully accessible interchange between all rail services.

2.12 Phase three will see a new western station entrance (WSE) delivered to replace the former Wells Terrace entrance. Detailed design for all fit-out works has been completed although further value enhancement reviews for all fit-out will be undertaken prior to commencing work.

2.13 The remaining Programme and Project Authority is now being requested in order to undertake fit-out works for the new Western station entrance (WSE), planned for opening in 2019, which is being delivered in partnership with a developer (City North). The new station entrance box will be delivered by City North. Delivery of the fit-out works will be managed by Stations Renewals & Enhancements.

2.14 Project Key milestones:

Milestones for the next stage	Target Date
Award fit-out contract	October 2017
SFA scheme complete	November 2018
WSE opened (subject to developer works)	April 2019
Project Close	July 2019

2.15 The top risk for the fit-out works is delay in handing over the new ticket hall ‘box’ could result in the late opening of the western station entrance. Regular meeting with the developer team will keep abreast of timescale. There is also a risk that delay in delivery of step-free access to NR platforms. Close liaison with NR, the DfT and LB Islington is being kept to manage expectations.

South Kensington Station Upgrade

2.16 Project and Programme Authority is requested to undertake the delivery of the first phase of a wider upgrade of the station. When complete South Kensington will be fully upgraded to provide a level of capacity and accessibility necessary for the key gateway to the cultural hub.

2.17 This ‘phase-one’ of the station upgrade will provide additional capacity required to enable the non-stopping of the Piccadilly line services, without the need to implement disruptive station closures during escalator replacement works planned for 2019. This will be achieved by providing a new eastbound District and Circle line platform and reconfiguring the ticket hall, including an enhanced gate line.

2.18 The subsequent phases of the upgrade, which will include step-free access from street to all platforms, will be coordinated with TfL Commercial Development proposals for an around the station development, and with the Deep Tube upgrade programme.



South Kensington station – congestion in ticket hall (left) and on stairs from platform (right)

Delivery

2.19 The delivery of Phase One is being managed by Stations Renewals & Enhancements. The preferred procurement strategy for Phase One, is to procure external construction management support and to identify appropriate packages of work that will be procured and managed directly by TfL. The aim will be to realise programme savings (circa six months) and cost savings by overlapping package delivery and procuring packages when the design is at a suitable level of maturity. Procurement Authority will be sought in accordance with standing orders in September 2017.

2.20 Key milestones for the Programme are:

Milestones for the next stage	Target Date
Listed Building application submitted	July 2017
Full project authority request to LU Board	September 2017
Complete detailed design and start enabling works	May 2018
Bring new platform into passenger use	May 2019
Complete phase one works	February 2020

Risk

2.21 The top risk specific to the South Kensington Upgrade relates to the interface with the installation of the new automatic signalling for which any delay could have major ramifications for the Four Line Modernisation (4LM) programme. This will be mitigated by procuring an external construction manager to oversee the programme and use of package approach to delivery to ensure a coordinated delivery plans for both projects.

2.22 In addition, there are programme risks around the interface with the TfL CD station development. Delay in phase one completion could have impacts upon the ability of the Property Partner to deliver their development and step-free access.

Overall Benefits (and value)

2.23 The benefits and value of the first three schemes for which authority is being sought as part of this submission are summarised in the table below:

Economic Appraisal	Elephant & Castle	Finsbury Park	South Kensington
Estimated Final Cost, £k (at outturn prices)	(164,750)	(48,863)	(47,737)
Net Present Values, £k			
Project Optimism Bias			(15,761)
Discounted NPV EFC	(131,950)	(42,584)	(39,404)
Maintenance, Opex & Renewal per year	(51,639)	(2,519)	(21,785)
Revenue (secondary revenue) per year	0	16,409	36,607
Developer's contribution (PV)	43,984	1,180	None
Net Financial Effect	(119,211)	(29,366)	(40,344)
Annual Passenger Benefits	822,000	88,931	157,995
Impacts during Implementation	None	(1,394)	(6,653)
Total Benefit, £k	822,000	87,537	151,343
Benefit : Cost Ratio (BCR)	11.1	2.9:1	3.8:1

- 2.24 The current E&C scheme has a business case of 11:1 based on a conservative approach. This assumes an EFC of £164.8m and does not consider current value enhancement proposals which are targeting a cost reduction of £35.0m.
- 2.25 Finsbury Park is one of the key strategic interchanges outside Central London. Making the station step-free will fill a key gap in accessible travel on the London Underground network.
- 2.26 The economic appraisal for the South Kensington reflects quicker journeys and greater accessibility and an improved station environment. The BCR of 3.8:1 reflects the overall scheme including later phases. Phase 1 alone would deliver a BCR of 2.1:1.

LU-Funded Crossrail Works

- 2.27 **Whitechapel Lift:** Further Project and Programme Authority of £1.2m is requested to enable completion of the works; this includes an allowance for likely prolongation of Crossrail works resulting from the inclusion of this lift in their programme. When complete this lift will add step free capacity between the station concourse and the Hammersmith & City/District line platforms catering for the high volume of step free traffic at Whitechapel. This is in line with commitments made to the London Borough of Tower Hamlets.
- 2.28 The lift installation has been incorporated into the Crossrail works at Whitechapel to take advantage of Crossrail contractors being on site already. This approach minimises any future disruption to passengers, or staff, through retrofitting at a later date. Incorporating the lift into the stair and canopy design minimises future design costs and space allocation issues.
- 2.29 As Crossrail are delivering the lift, assurance of the lift is managed through the Development Agreement between LU and Crossrail, governing assurance requirements for all of Crossrail's LU interface works. This means the lift will be handed over to LU as part of the new station as a whole.
- 2.30 Crossrail are required to evidence prolongation costs as a direct result of the addition of the lift works. As work is ongoing, the estimate of this cost is reducing as the project progresses.
- 2.31 **Moorgate lift:** This project is authorised and progressing on site. Delivery is by Stations Works Improvement Programmes, in close collaboration with both Crossrail Limited on the connection in the new ticket hall Crossrail are building, and with LU's ISP at Circle line platform level where ISP are refurbishing the station. Delivery will be in line with Crossrail completion and bringing in to use.
- 2.32 **Ticket Vending Machines (TVMs):** The new TfL standard TVMs are to be installed across the Elizabeth line. Budget and authority have previously been granted to change the existing passenger operated machines in the LU interchange stations to the new TfL TVM, to ensure a unified customer experience across the LU operated station complexes. This also supports Fit for the Future Stations related ticketing capacity enhancements on the network by releasing the old machines for use elsewhere. Delivery will be in line with bringing in to use of the Elizabeth line

2.33 **In-station Wi-Fi:** In order to support the Fit for the Future operating model at Elizabeth line/LU interchange stations, integrate the customer offering of LU with the Elizabeth line, and support maintenance activities by both LU and Rail for London, WiFi is required in addition to the 4G network which is being delivered by Crossrail Limited.

2.34 TfL Tech and Data will deliver and assure the WiFi installation in time for revenue service on the Elizabeth line. The team are currently developing a detailed design that will confirm expected cost and programme to delivery. Future procurement authority will be sought against the budget already allocated for this scheme once the cost is confirmed.

3 Financial implications

3.1 At programme level the current financial implications are summarised in the table below for the four workstreams which are seeking Programme and Project Authority in this paper are summarised in table 5.1 of the main paper.

3.2 The phasing of expenditure is summarised in the tables below:

Elephant and Castle

Costs and Funding (£m)	Prior Years	2017/18	2018/19	2019/20	2020/21	2021/22	Future Years	Total
Estimated Final Cost (Net)	3.5	2.0	4.8	7.5	22.8	27.9	60.0	128.5
Forecast Budget/Plan	3.5	2.0	5.4	15.0	31.7	39.9	31.0	128.5
Net Plan Surplus/(Shortfall)	-	0.0	0.6	7.5	8.9	12.0	(29.0)	-
This Authority Request								
This Authority Request	3.5	5.0						8.5
Future Requests			-	7.5	22.8	27.9	60.0	118.2
Total Authority Request	3.5	5.0	-	7.5	22.8	27.9	60.0	126.7

South Kensington

Costs and Funding (£m)	Prior Years	2017/18	2018/19	2019/20	2020/21	2021/22	Future Years	Total
Estimated Final Cost (Net)	2.0	2.7	9.7	7.0	0.2	-	-	21.7
Forecast Budget/Plan	1.9	9.6	4.1	-	-	-	-	15.6
Net Plan Surplus/(Shortfall)	(0.1)	6.9	(5.6)	(7.0)	(0.2)	-	-	(6.1)
This Authority Request								
This Authority Request	3.4	-	-	-	-	-	-	3.4
Future Requests	-	18.3	-	-	-	-	-	18.3
Total Authority Request	3.4	18.3	-	-	-	-	-	21.7

Finsbury Park

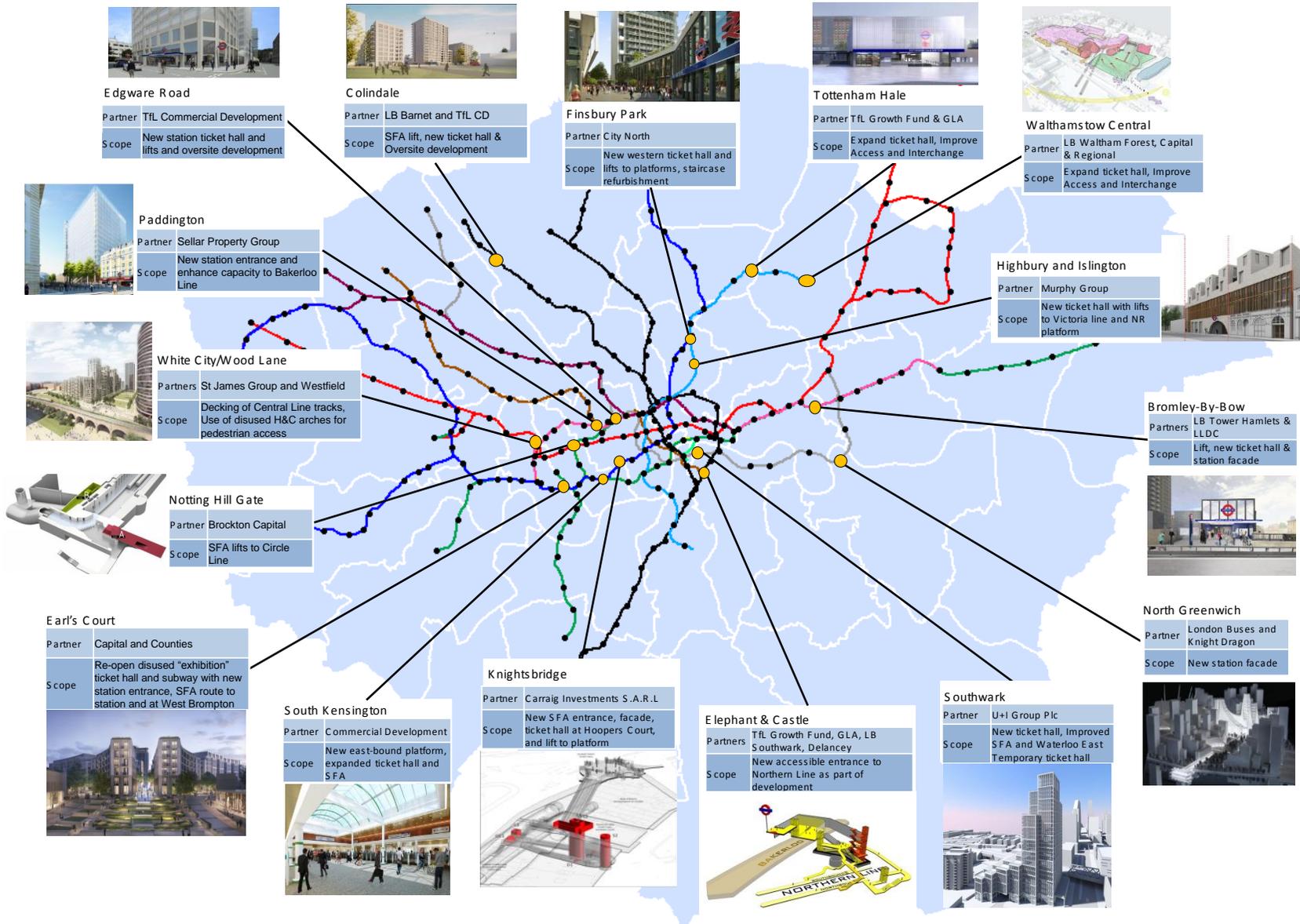
Costs and Funding (£m)	Prior Years	2017/18	2018/19	2019/20	2020/21	2021/22	Future Years	Total
<i>Estimated Final Cost (Net):</i>	30.1	11.3	5.5	0.2	-	-	-	47.1
Gross Costs	30.1	11.3	7.3	0.2	-	-	-	48.9
Recoveries	-	-	(1.8)	-	-	-	-	(1.8)
Funding:	30.1	18.3	-	-	-	-	-	48.4
Forecast Budget/Plan	30.1	16.5	-	-	-	-	-	46.6
Third Party Recoveries	-	1.8	-	-	-	-	-	1.8
Net Plan Surplus/(Shortfall)	(0.0)	7.0	(7.3)	(0.2)	-	-	-	(0.5)
Previous Authority								
Previous Authority	32.4	9.2						41.6
This Authority Request	-	7.2	-					7.2
Total Authority	32.4	16.4	-	-	-	-	-	48.8

Elizabeth Line projects

Costs and Funding (£m)	Prior	2017/18	2018/19	2019/20	2020/21	2021/22	Future	Total
Estimated Final Cost (Net)	2.4	6.1	6.5	-	-	-	-	15.1
Whitechapel Lift	1.3	0.6	2.3	-	-	-	-	4.3
Moorgate Lift	0.5	2.6	0.1	-	-	-	-	3.2
Wifi	0.3	0.6	3.5	-	-	-	-	4.5
Ticket Vending Machines	0.3	2.3	0.5	-	-	-	-	3.1
Forecast Budget/Plan	4.6	9.5	2.5	-	-	-	-	16.6
Whitechapel Lift	1.9	2.4	-	-	-	-	-	4.3
Moorgate Lift	1.6	2.7	-	-	-	-	-	4.3
Wifi	0.4	2.5	2.1	-	-	-	-	5.0
Ticket Vending Machines	0.7	1.9	0.4	-	-	-	-	3.0
Net Plan Surplus/(Shortfall)	2.2	3.4	(4.0)	-	-	-	-	1.5
This Authority Request	9.7	5.5	-	-	-	-	-	15.2
Whitechapel Lift	3.1	1.2	-	-	-	-	-	4.3
Moorgate Lift	3.0	0.2	-	-	-	-	-	3.2
Wifi	0.4	4.1	-	-	-	-	-	4.5
Ticket Vending Machines	3.1	-	-	-	-	-	-	3.1
Future Requests	-	-	-	-	-	-	-	-
Total Authority Request	9.7	5.5	-	-	-	-	-	15.2

- 3.3 E&C funds have been transferred from TfL Growth fund and include local authority contributions which are underwritten by the Greater London Authority (GLA). This was agreed via a TfL funding agreement with London Borough of Southwark and the GLA. The total amount included with the plan period is £93.9m and the project completion date is estimated at 2024, but could change depending on the developer programme. Therefore £31.0m sits outside the current plan. The current project forecast is less than the current plan budget allocation but the final position will be subject to confirmation when the agreement with the developer is formalised
- 3.4 For Finsbury Park a delay to the developer's works has had a knock-on effect on the project spend profile, similarly Tottenham Hale has been affected by Network Rail delays to the Greater Anglia upgrades.
- 3.5 For South Kensington the current estimated final cost is £21.7m which exceeds the budget which was set before the scope of works were understood. Recognising that the estimated cost exceeds the budget, opportunities for savings are being investigated and are expected to be identified during the completion of the concept design and after the construction management team is appointed. The cost will, however, exceed budget by around £5m.

Examples of Collaborative and Third Party Enhancement schemes across the LU network



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