

## This paper will be considered in public

### 1 Summary

Integrated Stations Programme				
Existing Financial Authority	EFC	Existing Project Authority	Additional Authority Requested	Total Authority
£ 244.1m	£ 241.8m	£ 16.6m	£ 225.2m	£ 241.8m

**Authority Approval:** The Board is requested to approve an increase in budgeted project authority of £225.2m, increasing total project authority to £241.8m for the implementation of the Integrated Stations Programme.

**Outputs and Schedule:** This authority request is for Tranche 1 of the Integrated Stations Programme, which will improve asset condition, the built environment and energy efficiency at 26 high priority stations by 31 March 2020.

- 1.1 On 11 March 2015, the Finance and Policy Committee noted the paper and endorsed the recommendations in this paper. It commented on the use of the STAKE procurement model for this and other projects.

### 2 Recommendations

#### 2.1 The Board is asked to:

- (a) note the paper; and
- (b) approve budgeted Project Authority of £225.2m (outturn) for the Integrated Stations Programme, increasing the total Project Authority to £241.8m.

### 3 Background

#### Strategic Context

- 3.1 The Integrated Stations Programme (ISP) supersedes the Station Stabilisation Programme (SSP), which was a six year programme to undertake core asset stabilisation works at 74 stations that were not modernised or refurbished under the PPP. This programme commenced in 2013/14 and the first seven stations are on site and due for completion during 2015/16.

- 3.2 The objective of the SSP was to keep the stations safe, operable and maintainable and bring premises assets back to an acceptable condition that is fair for 10 years.
- 3.3 Throughout 2014, a number of workstreams relating to the London Underground (LU) station environment have matured. These include:
- (a) recent customer research showing the significant impact the built environment has on LU Customer Satisfaction Scores and reputation;
  - (b) the development of the 'Design Idiom', which informs the built environment strategy and ensures a consistent approach with respect to public facing areas at LU Stations;
  - (c) the new Station Operating Model, to be delivered through Fit for the Future-Stations (FftFS) which will see the repurposing of ticket office space and enhance the ticket hall environment through de-cluttering, use of standardised equipment and the creation of distinct zoned areas for customer information and retail;
  - (d) a more detailed set of requirements (some as a direct consequence of the FftFS programme), to utilise available space within the station environment for the purpose of exploiting commercial development opportunities; and
  - (e) opportunities to make small scale capacity improvements.
- 3.4 In addition to the items listed above, there has been the opportunity to review synergies with other programmes including Crossrail, the Lifts and Escalators programmes and Station Capacity and Commercial Development Projects.
- 3.5 Therefore the decision was taken to amalgamate these related workstreams into a newly created Integrated Stations Programme. This means being on site once only, which will deliver cost efficiencies, reduce disruption to operations and ensure customers see a notable improvement to the appearance of the station following the works. The programme will be working closely with Commercial Development to ensure optimum retail environments are created. The improved quality of the built environment will further increase revenue by attracting quality retailers to these stations.
- 3.6 The investment supports the objectives of the Mayor's Transport Strategy through improving public transport reliability, reducing operating costs, bringing and maintaining all assets to a state of good repair, improving public transport customer satisfaction and reducing air pollutant emissions from ground based transport, contributing to EU air quality targets.

#### **Deliverables to Date**

- 3.7 Project authority of £16.6m was approved on the 18 November 2014 by the Commissioner for detailed scoping and feasibility for the 26 Tranche 1 Stations, plus detailed design on the first nine stations.
- 3.8 Ten of the 26 stations have currently been through stage gate 1 (outcome definition) and are in feasibility, with the remaining 16 stations due to pass through stage gate 1 by the end of February 2015, ahead of the meeting of the Board on 26 March 2015. The ISP has also passed through the Pathway Gate A (Identify Options) at programme level.

## 4 Proposal

### Preferred Option

- 4.1 The ISP will implement a range of improvements that will remove safety and operational risks and bring the assets back to an acceptable condition in order to keep the stations safe, maintainable and operable.
- 4.2 Furthermore the ISP will deliver improvements to the appearance and condition of customer facing areas, including wall, ceilings and floors. The aim is to uplift the Mystery Shopper Survey (MSS) condition scores to a minimum value of 70 (out of 100), which has been demonstrated to have the most significant impact on both Customer Satisfaction Survey scores and reputation (overall perception of 'LU's care for its customers'.

### Station Prioritisation

- 4.3 All ISP stations have been prioritised according to the following criteria:
- (a) current asset condition and risk;
  - (b) customer satisfaction and Mystery Shopper rankings;
  - (c) station types ranked based on the Fit for the Future Station categories; and
  - (d) synergies with existing key programmes such as Crossrail, Capacity Schemes, Commercial Development and Lift and Escalators.
- 4.4 Based on these criteria, each station has been given a priority ranking which determines the scope of station finishes and lighting as determined through the Design Idiom. All interventions will take into consideration current condition and will be limited to locations that deliver greatest value for money in terms of ambience improvements. The ISP will be delivered in two tranches:
- (a) **Tranche 1:** In addition to core asset stabilisation scope, 26 high priority stations will have targeted interventions for premises and lighting, completed by 2019/20 (this authority request); and
  - (b) **Tranche 2:** In addition to core asset stabilisation scope, 18 medium priority stations will have targeted interventions to renew finishes and lighting, but on a smaller scale than high priority stations and 22 lower priority stations will have asset stabilisation works only, generally focusing on patch repairs, to be completed by 2023/24 (future authority request).
- 4.5 A detailed list of all stations that are included in Tranche 1 is shown at Appendix 1.
- 4.6 Condition surveys are being undertaken of the assets at the 40 stations that make up Tranche 2, in order to identify any issues and risks. These will be completed by March 2015 with any necessary interventions being carried out through the maintainer, who will address any immediate priorities which cannot wait for the commencement of the ISP Project. This is funded through a separately allocated Asset Resilience provision.
- 4.7 A decision tree has been developed to determine the intervention required for station finishes (floors, walls and ceilings). These rules are based on current asset condition, MSS scores and consistency of finishes across the station, ensuring

high performing areas are not undermined. Renewal of finishes will be limited to locations that deliver greatest value for money in terms of ambience improvements

- 4.8 The scope of work for each station is developed from detailed surveys and existing asset condition workbooks. A process is in place to review every scope item to ensure these are aligned to the Programme Requirements and deliver best value. Should costs exceed the available budget and there are no further efficiencies to be made, the Sponsor will identify the lowest priority items to be removed from the scope, thus ensuring the programme remains within its overall allocated budget.
- 4.9 A description of the high level scope items is given at Appendix 2.
- 4.10 Construction methods will generally be based on keeping the stations fully operational during the construction works, with minimal disruption to customers. However, station closures may be sought where this offers substantial efficiency savings and minimal disruption to the customer.
- 4.11 Synergy opportunities with existing closures will be sought, in order to maximise efficiency in terms of both programme and cost.

### **Benefits (and Value)**

- 4.12 This proposal is to implement ISP across 26 stations. This will deliver the following key financial and monetised benefits over the 14 year appraisal period to 2028/29 (all costs shown as Current Prices):
- (a) reduction in asset risk (performance and safety) – £33.7m;
  - (b) built environment ambience improvements – £15.7m;
  - (c) avoidance of additional maintenance costs – £36.7m;
  - (d) avoidance of increased future capital costs – £112m;
  - (e) reduction in electricity costs as a result of installation of energy efficient systems – £3m; and
  - (f) increased revenue as a result improved station ambience – £42.9m.
- 4.13 These will be measured by:
- (a) reduction in asset risk as measured by the annual Asset Condition Report (ACR);
  - (b) reduction in number of asset failures/faults and associated Lost Customer Hours;
  - (c) improvement in MSS ratings for asset condition;
  - (d) maintenance and project costs in line, or below budgets and targets; and
  - (e) reduction in electricity consumption, measured through station metering.
- 4.14 The ISP will also deliver the following non-monetised/non-quantifiable benefits:
- (a) improvement in premises asset condition, as measured by ACR (Relative Asset Value);
  - (b) delivery of minor capacity improvements, through realigning and/or extending gatelines to optimise space;

- (c) improved LU reputation and Stakeholder and Customer Satisfaction; and
- (d) synergies across workstreams, thereby minimising disruption to the customer and delivering efficiencies.

4.15 The financial and monetised benefits for 26 Stations demonstrate a Benefit Cost Ratio of 1.98, against 'do nothing' as the base case option.

Present Value Analysis of Options & Incremental Effect <sup>1</sup> (Cost)/ Revenue/ Benefits	Project Costs <sup>3</sup> £000's	Recover-able Costs £000's	Future Capital Costs £000's	Maint. & Operating Costs £000's	Revenue £000's	PV		Benefit/ Cost Ratio £000's
						Financial Effect £000's	Monetised Benefits £000's	
<b>Full Cost Analysis</b>								
1: Implement 26 ISP Stations	(201,060)	1,449	-	2,144	32,821	(164,645)	11,991	n/a
2: Do Nothing	(15,780)	-	(88,143)	(30,721)	(7,721)	(142,366)	(32,099)	n/a
<b>Incremental Effect<sup>2</sup></b>								
1: Implement 26 ISP Stations	(185,280)	1,449	88,143	32,865	40,543	(22,279)	44,089	1.98 : 1

<sup>1</sup>Figures stated in Present Value & include any prior submission costs if applicable; <sup>2</sup>Compares base option with the recommended option

<sup>3</sup>Includes Risk, Contingency and Project Working Capital Adjustments if applicable

### Delivery of Preferred Option

4.16 The ISP builds upon the principles and processes established under SSP and the progress already made under this programme. The ISP will be delivered through the existing STAKE procurement model, which utilises a construction management approach and puts LU closer to the workface by directly employing at the level of tier 3 and 4 suppliers. This collaborative approach has delivered improvements in productivity and efficiencies, which will continue as contractor knowledge increases as the programme progresses.

4.17 Tranche 1 will be completed by 31 March 2020, with the number of stations to be completed in each financial year shown below:

2016/17	2017/18	2018/19	2019/20	Total
5	7	10	4	26

4.18 It should be noted that the ISP is coordinated with other workstreams and any changes to these programmes has the potential to impact scope or timescales of the ISP Projects.

4.19 The table below shows the average number of personnel (full time equivalent) required each year to deliver the scope associated with this authority request, which will require recruitment of additional permanent and non-permanent labour resources.

Category	2015/16	2016/17	2017/18	2018/19	2019/20
Programme Manager	1	1	1	1	1
Senior Project Managers	3	3	3	3	2
Project Managers	12	14	13	12	4
Assistant Project Managers	22	25	22	19	8
Lead Construction Managers	3	3	3	2	1
Construction Managers/Supervisors	40	51	44	44	12
Lead Planner	3	3	2	2	1
Planners	16	20	18	18	5
Senior Commercial Manager	1	1	1	1	1

Category	2015/16	2016/17	2017/18	2018/19	2019/20
Commercial Manager	34	32	32	27	12
Project Engineers	12	11	9	2	2
Assistant Project Engineers	4	4	4	3	3
Design Engineers	36	30	20	5	5

4.20 Project and Construction Management will be delivered by in-house resources supplemented by an external Joint Delivery Partner (JDP) which has been appointed for the purpose of providing 'LU ready' resources, principally Project Engineers and Construction Managers.

4.21 Design work will generally be undertaken in-house, supplemented by two Principal Design Delivery Partners (DDPs). Jacobs and Capita have been appointed using the TfL Engineering and Project Management Framework Contract to provide a total design service for the larger stations. Secondary DDPs will be sourced if required for any specialised design works.

### Risk

4.22 The total risk value for the project included in the requested EFC is £38.3m (Outturn) at P50. Risk currently represents 20 per cent of the programme base cost, which is considered reasonable at the Outcome Definition Stage and is expected to decrease as the individual project scopes are firmed up through the feasibility and design stages.

4.23 The current top ISP projects risks are shown in below:

Risk No	Risk Description	Mitigation Actions
1	A change in market conditions due to economic factors will lead to greater competition for resources and an increase in labour rates.	<ul style="list-style-type: none"> <li>• Early award of long-term contracts to delivery partners to minimise exposure to changing market conditions</li> <li>• Consideration of how economies of scale influence better negotiation power</li> </ul>
2	Assets are in a worse condition than previously identified or they have deteriorated at a faster rate than envisaged.	<ul style="list-style-type: none"> <li>• Early review of asset condition records during feasibility and additional surveys and investigation.</li> <li>• Optimise the extent of intrusive surveys based on lessons learned.</li> <li>• Minimise time lag between investigations and commencement of works to reduce impact from asset deterioration.</li> </ul>
3	Project cost estimate increases in later stages of the project due to the emergence of new or better information than that used at feasibility stage	<ul style="list-style-type: none"> <li>• Review lessons learned from SSP projects</li> <li>• Ongoing Quantity Surveyor involvement to ensure thorough understanding of costs and scope</li> <li>• Use of latest estimating tools and databases to increase forecasting accuracy</li> </ul>
4	Handback to maintainer takes longer than planned	<ul style="list-style-type: none"> <li>• Involvement of stakeholders throughout the stages of projects</li> <li>• Planning resource level / competence to progress Maid consistently</li> <li>• Robust adherence to scoping/design process.</li> </ul>

Risk No	Risk Description	Mitigation Actions
5	There is limited float in the programme to conclude the Crossrail Stations, for the opening of Crossrail in 2018	<ul style="list-style-type: none"> <li>• Liaison with LU Crossrail Team to obtain updated programme information</li> <li>• Ensure Crossrail stations are given scheduling priority in programme</li> <li>• Thorough reviews of schedule of works and critical path</li> <li>• Use of Quantitative Schedule Risk Analysis so potential issues can be escalated early.</li> <li>• Phased design packages design to commence at sites at earliest opportunity.</li> </ul>

## 5 Financial Implications

### Cost Development and Benchmarking

- 5.1 This authority request is for the delivery of all 26 Tranche 1 stations and any change to the costs following completion of scoping and outcome definition will be reflected in the March 2015 paper to the Board. Further authority will be sought in 2017/18 to undertake scoping and feasibility for the Tranche 2 stations, which will inform the main Authority submission for Tranche 2 and provide continuity for programme resources and STAKE suppliers.
- 5.2 Unit costs and project on-costs (Project Management, construction management and design costs) for each station have been based on previous SSP project costs to date.
- 5.3 Estimates for each station have been developed during scoping using the Stations Cost and Estimating System, which has a cost breakdown structure that consolidates to 51 repeatable work items with standard descriptions. This provides a consistent methodology for the development of work scopes, enabling improved estimating and monitoring of unit rates for benchmarking purposes.
- 5.4 The costs are based on Engineering Hours working with an access efficiency of nine per cent included as an opportunity.
- 5.5 The cost breakdown and budget for this authority request is summarised below:

Costs and Funding, £k	Prior Years	2015/16	2016/17	2017/18	2018/19	2019/20	Total
<b>Costs (Out-turn)</b>							
Feasibility	3,305	8,397	1,382	400			13,484
Preliminary & Detailed Design Fees	-	4,873	13,065	464	20		18,422
Implementation (incl Delivery Management)		9,153	44,121	48,887	54,681	980	157,823
Project Close			45	42	74	29	190
Energy Efficiency Works		882	882	1,176			2,940
<b>Total Base Costs</b>	<b>3,305</b>	<b>23,305</b>	<b>59,496</b>	<b>50,969</b>	<b>54,775</b>	<b>1,009</b>	<b>192,859</b>
Risk		88.20	3,927.40	15,474.40	11,517.60	7,678.40	38,686
Stations Upgrade Overhead		2,636	2,643	2,564	2,065	340	10,248
<b>Total Cost</b>	<b>3,305</b>	<b>26,029</b>	<b>66,066</b>	<b>69,008</b>	<b>68,357</b>	<b>9,027</b>	<b>241,793</b>

<b>Investment Funding</b>							
SSP Authority Already Reauthorised for ISP	3,305	13,270	-	-	-	-	16,575
SSP Authority to be Reauthorised for ISP	-	9,367	30,434	3,814	5,385	6,765	55,765
S0000459 Stations Improvement Programme (Revenue)	-	4,094	34,662	63,900	65,340	535	168,532
UIP2259, Environmental Initiatives		970	970	1,294			3,234
<b>Total Budget</b>	<b>3,305</b>	<b>27,702</b>	<b>65,096</b>	<b>69,008</b>	<b>70,725</b>	<b>7,300</b>	<b>244,106</b>

- 5.6 A benchmarking study was completed in April 2014 which looked at external comparator organisations, including Network Rail and Westfield, to compare costs across the 51 repeatable work items (RWIs). As some of these organisations had only recently started capturing costs at this level, this initial study was limited to 19 RWIs with available external comparator data. The report concluded that 73 per cent of the RWI unit rates are within or below benchmarking comparators, with the STAKE procurement model showing an average reduction in unit costs of around 20 per cent. There will be a follow up study next year that should provide more comparable data, which will be considered as part of the annual review.
- 5.7 LU has engaged with external companies to compare project on-costs for the previous SSP. The external companies included Anglia Water, the Highways Agency, Environment Agency and the former British Airports Authority and utilise a variety of procurement strategies from Main Contracting to Construction Management. Project on-costs for the SSP were shown to be 26 per cent, which is comparable with these external organisations with ranges from 16 to 43 per cent with an average on-cost of 29 per cent.

### **Efficiency**

- 5.8 A 12 per cent efficiency saving as a result of the implementation of the STAKE delivery model (representing £30m of the original SSP Budget), has already been incorporated into the Business Plan and is taken into account in the cost estimates for the Project Authority requested in this paper. This is broken down as follows:
- (a) maximising productivity at the work-face – seven per cent;
  - (b) reducing defects – two per cent; and
  - (c) de-layering the supply chain – three per cent.
- 5.9 This saving benefit is profiled to increase progressively over the duration of the ISP as the supply chain is established and efficiencies developed and embedded.
- 5.10 An additional access efficiency of nine per cent has been included as an opportunity offset against programme costs, but is targeted at a minimum of 12.5 per cent.
- 5.11 By bringing together different workstreams into a single programme, it is estimated that the ISP will deliver efficiencies of £37m as a result of reduced project management costs and programme overheads.

### **Commercial**

- 5.12 The STAKE delivery and procurement model strategy previously implemented by SSP will continue to be used to deliver ISP. The STAKE model flattens the supply chain and provides LU with direct access to the tier 3 and 4 trade contractors (Small and Medium Enterprises). This delivers savings through avoiding costs associated with duplicated management functions, fees and long communication of sub-contracted supply chains.
- 5.13 The aim of the STAKE strategy is to secure a capable workforce that is engaged and incentivised through continuity of work, thereby maximising productivity leading to reduced unit costs.



- 5.14 Through the STAKE model, LU has direct contracts with delivery partners and suppliers who have the necessary technical skills and the correct approach and attitude to enable the business to enter into long terms collaborative arrangements.
- 5.15 LU has procured suppliers for the range of trades required to deliver the ISP scope of works. Those for which there is a regular demand over the whole life of the programme and to which LU can give continuity of work are classified as Key Trades. Other requirements will be secured from suppliers classified as Support Trades.
- 5.16 The commercial arrangements with the tier 3 and 4 suppliers are formalised using simplified forms of NEC3 contracts. Under these arrangements LU hold the majority of the delivery risk, as LU is generally best placed to manage this (e.g. access).

## **6 Assurance**

- 6.1 The TfL Programme Management Office (PMO) completed a Contract Award Integrated Assurance Review (IAR) of the ISP on 4 December 2014. An Independent Investment Programme Advisory Group (IIPAG) review was also undertaken in parallel. The review concluded that the programme was being delivered effectively and efficiently with no critical issues being identified and it recommended approval of the Project Authority requested.
- 6.2 An annual IAR of the Integrated Stations Programme will be carried out, which will be aligned with future authority requests.

## **7 Views of the Finance and Policy Committee**

- 7.1 On 11 March 2015, the Finance and Policy Committee noted the paper and endorsed the recommendations in this paper.
- 7.2 Members welcomed the initiative and the use of the STAKE procurement model, which utilised a construction management approach that put LU closer to the workface. It noted that this collaborative approach has delivered improvements in productivity and was expected to deliver a 12 per cent efficiency saving, which the IIPAG believed could be higher.
- 7.3 Members recommended that the use of the STAKE model be treated as a case study with a view to rolling it out to further parts of the business.

### **List of appendices to this paper:**

Appendix 1: List of Stations and Key Milestones

Appendix 2: High Level ISP Scope

### **List of background papers:**

Reports from the TfL Programme Management Office and the Independent Investment Programme Advisory Group and the management response to those reports.

Paper submitted to the Finance and Policy Committee 11 March 2015.

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**List of Stations and Key Milestones**

<b>Station</b>	<b>Start on Site</b>	<b>Finish on Site</b>
Vauxhall	05 May 2015	04 August 2016
High Street Kensington	01 June 2015	05 August 2016
Sloane Square	01 June 2015	30 August 2016
Stepney Green	01 June 2015	13 September 2016
Paddington	07 December 2015	22 February 2017
Holland Park	08 February 2016	03 May 2017
Barbican	19 October 2015	15 August 2017
Ealing Broadway	01 August 2016	11 October 2017
Whitechapel	01 August 2016	11 October 2017
South Kensington	03 April 2017	22 January 2018
Liverpool St	19 October 2015	01 February 2018
Moorgate	19 October 2015	01 February 2018
Charing Cross	4 January 2016	13 April 2018
Euston Square	03 January 2017	10 October 2018
Cannon Street	22 August 2017	01 November 2018
Seven Sisters	05 June 2017	07 November 2018
Highbury & Islington	26 July 2017	08 January 2019
Edgware Road	26 July 2017	08 January 2019
Tottenham Hale	30 October 2017	17 January 2019
Newbury Park	02 November 2017	22 January 2019
Marylebone	02 May 2017	26 February 2019
East Putney	29 March 2018	09 September 2019
Upton Park	25 May 2018	31 October 2019
West Harrow	13 August 2018	24 January 2020
Goldhawk Road	13 September 2018	25 February 2020

This programme takes account of synergies with other works programmes including Crossrail, the Lifts and Escalators programme and Station Capacity and Commercial Development Projects.

### High Level ISP Scope

- 1 Renewal of life expired system assets, including replacement of system assets, which become un-maintainable due to obsolescence related asset repair or replacement
- 2 A review of tactile, corduroys and stair treads (visual contrast) will be carried out at all stations and handrails will be replaced where existing handrails are removed for retiling. Other reasonable adjustments for compliance will be considered when carrying out improvement work.
- 3 Improve asset condition, so that all customer facing assets are in a minimum condition of 'Good for 10' years and back of house areas are in a Condition of 'Fair for 10' years. This requirement may be modified by the Sponsor where this does not represent good value for money, for example, where there is a significant cost difference between 'Good for 10' years and 'Good for 5' years. (Premises Condition States are described in the Business Case Narrative).
- 4 Protection of assets to arrest decline including, addressing water ingress issues, structural repairs, painting and patch repairs to achieve the condition states described in 3 above.
- 5 Stabilisation works to ensure that the risk of items falling into customer and staff areas is minimised.
- 6 Uplift MSS ratings for condition to a minimum score of 70. New finishes and lighting to be installed as required by current asset condition and where this delivers Value for Money in terms of the uplift achieved.
- 7 Station environment to be de-cluttered and zoned areas created in line with the Design Idiom principles.
- 8 Energy efficient systems and designs to be installed where these deliver least whole life cost, accounting for Enhanced Capital Allowances.
- 9 All projects to deliver the Fit for the Future end-state e.g. installation of new Passenger Operated Machines where required.
- 10 All Commercial Development scope is shell and core plus glazed frontages. Existing commercial outlets are to have a services survey to ascertain, water, power and drainage supplies (this will be delivered through the ISP but will be funded separately by Commercial Development).
- 11 Delivers minor improvements to capacity, where achievable within the existing Station footprint, generally by widening or repositioning the gateline.
- 12 Removal redundant equipment and materials, wherever reasonable practicable and subject to affordability.