Programmes and Investment Committee

Date: 13 October 2021

Item: Surface Technology Programme

This paper will be considered in public

1 Summary

Surface Technology Programme					
Latest EFC 2021/22 – 2025/26	**Previous EFC 2021/22 – 2025/26**		**Financial Authority 2021/22 – 2022/23**	**Programme and Project Authority (to 2027/28)**	**Procurement Authority**
£447.0m	£434.9m	Existing (incl transfers)	£135.0m	£109.9m	
		Requested	Nil	£30.1m	Nil
		Total	£135.0m	£140.0m	
		Future Submissions		£307.0m	

1.1 This paper is the third submission of the Surface Technology Programme (the Programme) to the Committee, detailing the request for additional Programme and Project Authority covering commitments planned prior to the next annual submission in March 2022.

1.2 This paper summarises recent progress in the Programme, and requests £30.1m additional Programme and Project Authority to accommodate improved delivery, of which £1.6m is budgeted using third-party funding.

1.3 Increased delivery confidence reduces risk to TfL's operations and improves delivery of benefits. Renewals (three quarters of the expenditure in the Programme) are required for systems approaching life expiry, which are often operationally-critical. Improved delivery in renewals projects reduces the risk of interim measures to extend system life. Enhancements (one quarter of expenditure in the Programme) deliver benefits including efficiencies which benefit TfL's operating account; improved delivery in these projects secures delivery of benefits and reduces pressure on TfL's operating expenditure.

1.4 The increased pace of delivery is fully budgeted, as £22.3m of Programme and Project Authority is attributable to commitments beyond the latest budget (to 2022/23).

1.5 The outputs and schedule for this Programme are:

(a) the continued renewal of existing technology systems used across Surface Transport, including Enforcement and Compliance Operational Systems and iBus2; and

(b) the delivery of new systems in priority areas, including staff safety and road safety.

1.6 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. Any discussion of that exempt information must take place after the press and public have been excluded from the meeting.

2   Recommendations

2.1   The Chair, following consultation with the Committee, is asked to note the paper and exempt supplemental information in the paper on Part 2 of the agenda and:

(a) approve an additional £30.1m budgeted Programme and Project Authority for the Surface Technology Programme, taking the total Programme and Project Authority to £140.0m;

(b) note that the matters for which Authorities are sought above include commitments that extend beyond the period of the Business Plan and Budget. Appropriate provision will, therefore, need to be made for those commitments in future Business Plans and Budgets; and

(c) note that Procurement Authority for the various initiatives will be sought at officer level in accordance with Standing Orders.

3   Background

3.1 The Mayor's Transport Strategy (MTS) sets out a vision that TfL "will work to ensure its information systems and payment platforms take account of technological advances and evolve to remain fit for purpose" (Proposal 102). TfL's response to the MTS sets six priorities, including: "to exploit technology to produce better and faster results".

3.2 The Programme provides a robust structure to support investment in technology which enables operational continuity and pillars of the MTS including Healthy Streets, Vision Zero and enhancing customer experience.

4 Investment Plan 2021/22 – 2022/23

4.1 The current funding agreement with Government, dated 1 June 2021, expires on 11 December 2021 but recognises that TfL will need to enter into new financial commitments that extend beyond 11 December 2021. It is anticipated that the financial commitments that this paper describes will be addressed in a subsequent funding agreement.

4.2 The Programme is responsible for projects delivering outcomes for Surface Transport using technology, Roads Technology, Compliance, Enforcement and Safety Technology and Public Transport Technology. Appendix 1 sets out scope and key activities. Historically, levels of investment in technology across Surface Transport were insufficient to keep pace with developments in technology, or to avoid technical debt across silo-based systems.

4.3 To ensure operational continuity and value for money, initiatives are identified using Product Roadmaps for each operational area of Surface Transport. These identify technology products requiring renewal, as well as targeted enhancements required to deliver outcomes in line with the Mayor's Transport Strategy and other policies. These initiatives are then prioritised in line with criteria agreed in the Long Term Capital Plan, ensuring funding is available to initiatives which are Critical and/or Central.

4.4 Table 1 below demonstrates the improvements that investment is making to the health of technology systems within Surface Transport. The health of the Surface Technology estate depends on technology systems and their components being supported (resource is available to fix issues as they arise to agreed service levels) and within contract where supplied externally. The estate is classed as:

(a) **red** systems are exposed to technical risks and/or most components are out of support/contract;

(b) **amber** systems have one or more component is out of support and/or contract; and

(c) **green** systems have all components supported and an agreed technology roadmap is in place.

4.5 The estate is weighted by system criticality, size and complexity. With current levels of investment, the Programme is on track to deliver benefits in line with the Long Term Capital Plan, ensuring technology systems within Surface Transport are in reasonable health.

	2019: Weighted Estate	2021: Weighted Estate	2023: Weighted Estate
Red	29%	19%	12%
Amber	29%	31%	11%
Green	42%	50%	77%

Table 1: Indicative health of Surface Technology estate

Surface Technology Programme Progress Update

4.6   Since the Programme was reviewed by the Committee in March 2021, projects have achieved key milestones which have increased confidence in areas including:

(a)   finalising contracts with key suppliers for delivery of Cycle Hire (Santander Cycles) modernisation initiatives, including ordering 500 electric bikes (e-bikes) on 28 May 2021. This programme aims to broaden and increase Santander Cycles usage, drive revenue, ensure operating costs deliver value for money and adapt to the latest applicable regulations;

Figure 1: 500 e-bikes will be introduced into Santander Cycles in summer 2022

(b)   commencing development of Enforcement and Compliance Operational Systems (ECOS) systems using in-house teams on 12 August 2021. Each year, our Compliance, Policing, Operations and Security (CPOS) directorate carries out almost nine million inspections on street, and is set to undertake over 80,000 investigations supported by ECOS systems. This project will renew the digital capability which underpins these operations, enabling officers to record contraventions through mobile devices on street. It will also deliver a case management solution for enforcement and prosecution of offences that integrates with the court system. Developing these systems internally represents best value for money and ensures operational continuity, and requires a faster rate of spend than planned; and

(c)   awarding the contract for Deployable Enforcement Cameras (DECs) on 26 July 2021. Each year more than 4,000 people are killed or seriously injured in collisions on London's roads. Seventy-six per cent of collisions happen at junctions – many of which involve moving vehicles contravening road traffic rules. Driving in bus lanes or waiting in yellow box junctions also negatively impacts bus reliability. DECs, which monitor civil moving traffic contraventions, can be flexibly deployed to improve enforcement coverage, reduce collisions and support bus reliability.

Figure 2: 50 deployable enforcement cameras will be deployed by spring 2022

4.7 Since the previous submission, the Programme has reported £1.5m efficiency savings, through lower supplier costs on DECs than predicted and reduced use of risk allocation on other projects. The programme is targeting a further £0.5m efficiencies in 2021/22, continuing to drive value for money on all projects.

Financial Performance

4.8 An over-programming allowance of 32 per cent was assumed in the request for spend in 2021/22 to reflect Programme immaturity. As the Programme has matured, delivery confidence is now higher. Recent performance indicates optimism bias is less prevalent in projects which are later in the life cycle, typically after the feasibility stage.

4.9 The following assumptions have been used to calculate a revised overprogramming percentage to account for slippage in 2021/22:

Project lifecycle stage	% spend to go assumed as slippage	EFC Spend 2021-22 (£m)	Reduction: slippage assumed on spend to go from P6 (£m)	Reduction: efficiencies (£m)	Net spend (£m)
Feasibility	15%	9.3	(1.2)	(0.2)	8.0
Design / Procurement	10%	9.6	(0.8)	(0.2)	8.6
Delivery / Close	5%	33.9	(1.1)	(0.2)	32.1
Total		52.8	(3.1)	(0.5)	49.2

Table 2: Revised 2021/22 overprogramming percentage

4.10 Table 3 sets out the history of the forecast spend across focus areas since the previous submission for 2021/22 – 2022/23.

	Forecast spend March 2021 Submission (£m)		Forecast spend Current Submission (£m)		Change (£m)	Change rationale
	2021/22	2022/23	2021/22	2022/23		
Roads Technology	44.8		41.7		-3.1	Deferral into future years
	20.0	24.8	15.6	26.1		
Compliance, Enforcement and Safety Technology	53.3		57.1		+3.8	Acceleration of ECOS
	15.7	37.6	14.4	42.6		
Public Transport Technology	82.3		63.5		-18.8	Deferral into future years
	26.9	55.4	22.8	40.7		
Overprogramming / Efficiencies	(-33.2)		(-30.3)		+2.9	Revised methodology to reflect maturity
	(-21.9)	(-11.3)	(-3.6)	(-26.7)		
Total	**147.2**		**131.3**		**-15.9**	
	40.7	**106.5**	**49.2**	**82.6**		

Table 3: Forecast spend history

4.11 This increased 2021/22 EFC was reflected in the budget approved by TfL Board on 28 July 2021. This ensures Financial Authority is in place for the increase in Programme and Project Authority requested to 2022/23. Of the £30.1m requested, £8.5m is attributable to spend in 2021/22. Spend is required in 2021/22 to renew systems approaching life expiry and deliver enhancements to generate revenue and deliver efficiencies where financial impacts are reflected in TfL's operating account. Slower delivery risks unbudgeted interim measures to extend the life of existing systems, and pressure on TfL's operating expenditure due to slower realisation of enhancements.

4.12 Furthermore, delegated decisions are planned to be taken on ECOS in late December 2021, before the Programme returns to the Committee in March 2022. This is earlier than originally planned, and is the optimal timing to ensure best value for money and continuity of critical compliance and enforcement operations through in-house development. The remaining £21.6m of the £30.1m requested is attributable to spend on ECOS in later years.

4.13 £117.8m of the £140.0m new authority would fund activities planned for 2021/22 – 2022/23, within the £135.0m budget for these years. The remaining £22.3m would be spent on planned or future commitments in 2023/24 and beyond. This extends beyond the period of the Business Plan and Budget. Appropriate provision will, therefore, need to be made for those commitments in future Business Plans and Budgets. This spend will be subject to future funding settlements with central Government and re-prioritisation within the available funding envelope.

4.14 £1.6m of this spend is budgeted using third-party funding, including contributions to Cycle Hire (Santander Cycles) Expansion, Rapid Deployable Cameras and Surface Intelligent Transport Systems Common Operational View Incident Management System. Funding bodies include the Lane Rental fund, London Boroughs and the European Climate, Environment and Infrastructure Executive Agency.

Costs and Funding (£m)	Current year 21/22	yr+1 22/23	yr+2 23/24	yr+3 24/25	yr+4 25/26	Future Years	Total all years
Financial Authority	**53.1**	**82.0**	-	-	-	-	**135.0**
Existing Authority	40.7	49.8	15.6	2.0	0.8	1.0	109.9
Previous Committee Submission - £109.9m	40.7	49.8	15.6	2.0	0.8	1.0	109.9
Current Submission - £138.9m	49.2	68.6	15.7	3.6	2.1	1.0	140.1
This Authority Request	**8.5**	**18.8**	**0.0**	**1.6**	**1.2**	**-**	**30.2**
• Roads Technology	(4.4)	3.7	(1.2)	1.5	1.2	-	0.8
• Compliance, Enforcement and Safety Technology	(1.4)	19.7	1.4	0.1	-	-	19.8
• Public Transport Technology	(4.1)	(4.7)	(0.1)	-	-	-	(8.9)
• 21/22 Forecast – Reduced Overprogramming	16.7	-	-	-	-	-	16.7
• 21/22 Forecast – Efficiency	1.6	-	-	-	-	-	1.6
Total Programme and Project Authority	**49.2**	**68.6**	**15.7**	**3.6**	**2.1**	**1.0**	**140.0**
Future Authority Requests	0.0	14.1	89.9	110.5	93.4	1.0	308.0
Total EFC (Gross) - P6 Forecast	**49.2**	**82.6**	**105.6**	**114.1**	**95.5**	**1.0**	**447.0**

Table 4: Phased and Project breakdown (all figures in £m outturn values)

5 Proposal

Delivery Plan

5.1 The increased pace of delivery requires additional staff resources to be assigned to the Programme. Where feasible, these have been re-assigned from other programmes; however, required specialisms and natural turnover means resources are currently being sought outside of TfL as well. Delays in securing required resources have previously contributed to delays in delivery schedules; detailed consideration is given to a resourcing strategy.

5.2 Measures to address optimism bias include enhanced support from the Project Management Office in areas including risk and schedules. Greater focus is applied to projects in earlier life cycle stages. Measures include assuring that a deliverable next stage plan with resources assigned is in place prior to initiating projects, through a Stage Gate 0 review.

6 Crime and Disorder Implications

6.1 The Programme will be delivered in accordance with the Crime and Disorder Act 1998. Where relevant, projects complete penetration testing to ensure new systems are cyber-secure.

7 Equalities Implications

7.1 The Programme will be delivered in accordance with the Equality Act 2010 and the Public Sector Equality Duty. Consideration is given to the need for an Equality Impact Assessment for each project.

8 Assurance

8.1 TfL Project Assurance conducted an Integrated Assurance Review (IAR) on the proposed Surface Technology Programme in September 2020 and a Targeted Assurance Review in January 2021.

8.2 First-line assurance continues to be carried out on the Programme and its constituent projects along with continuous second-line assurance. The next IAR will be in January 2022 before the annual submission to the Committee in March 2022.

8.3 TfL Project Assurance and Independent Investment Programme Advisory Group) were briefed on this authority submission on 8 September 2021 and support this request.

List of appendices to this report:

Appendix 1: Surface Technology Programme 2021/22 – 2022/23 Overview

A paper containing exempt supplemental information is included on Part 2 of the agenda.

List of Background Papers:

TfL Project Assurance Report

Management Response to the TfL Project Assurance Report, September 2020

Papers relating to Surface Technology Programme 2021/22 – 2022/23, submitted to the Committee in March 2021

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