Programmes and Investment Committee

Date: 1 March 2023

Title: Technology and Data 2023/24 and 2024/25

This paper will be considered in public

1   Summary

Table 1: Summary of Technology and Data programme authorities Figures in £m outturn values for 2021/22 to 2026/27				
Latest estimated final cost (EFC)**	**Previous estimated final cost (EFC)****	**Authorities**	**Financial Authority**	**Programme and Project Authority**
Gross cost*				
627	593	Existing	437.0	294.2
		Requested	44.9	168.7
		Total	**481.9**	**462.9**
		Future Submissions	145.5	164.5
Gross income				
29.4	8.3	Existing	5.3	4.0
		Requested	24.1	25.4
		Total	**29.4**	**29.4**
		Future Submissions	-	-
Net cost				
598.0	585.1	**Total**	**452.5**	**433.5**
		Future Submissions	145.5	164.5
*Gross cost is total TfL expenditure, including expenditure recovered from external parties and income from third-parties ***The Estimated Final Cost includes spend outside the current business plan period*				

1.1   We are seeking authority for the Technology and Data (T&D) Programme (the Programme) activities that are directly funded within the T&D budget. We have excluded activities where T&D is accountable for the technical strategies and delivery but where authorities are secured separately, for example in TfL Operations.

1.2   Our programme of works to expand pay as you go across the south east, which is funded by the Department for Transport (DfT), will be seeking authorities elsewhere on the agenda for this meeting.

1.3   A paper is included on Part 2 of the agenda which contains exempt supplementary information. The information is exempt by paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL and. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

2 Recommendations

2.1 The Committee is asked to note the paper and exempt supplementary information on Part 2 of the agenda and:

(a) approve in respect of the Technology and Data Programme an increase in Programme and Project Authority of £0.4m in financial year 2023/24 (increasing the total to £103.3m) and additional Programme and Project Authority of £100.7m in financial year 2024/25 resulting in total Programme and Project Authority increase of £101m (excluding the sums requested in paragraphs (b) and (c) below;

(b) in addition to the sums requested in paragraph (a) above, approve an extension to the Programme and Project Authority for Project Hina, as described in this paper, providing an additional £47.7m on top of the existing £53.76m Programme and Project Authority to cover the full five years available up until financial year 2026/27 plus approve £24.9m of unbudgeted Financial Authority for FY 2026/27 which is outside of the current Business Plan period;

(c) in addition to the sums requested in paragraph (a) above, approve £20m unbudgeted Financial Authority and Programme and Project Authority for the Barcodes Acceptance project, as described in this paper, for financial years 2023/24 and 2024/25. This project has not been budgeted because the project is new and funds will be provided by the Department for Transport;

(d) in addition to the sums requested in paragraph (a) above, approve Programme and Project Authority income of £25.4m and unbudgeted Financial Authority income of £24.1m for Barcodes Acceptance project (£20m) and other project income.

(e) note that the matters for which Programme and Project Authority is sought above include commitments that extend beyond the period of the Business Plan and Budget noted by the Board on 7 December 2022 and provision will, therefore, need to be made for those commitments in future Business Plans and Budgets; and

(f) note that Procurement Authority for the various projects in the Programme described in this paper will be sought at officer level in accordance with Standing Orders.

3 Background

3.1 This section describes what the Programme has delivered over the last 12 months, how we have addressed the ongoing challenges to delivery and how we have supported our colleagues across the business and TfL customers.

Technology and data underpin everything we do – they drive all aspects of our business.

3.2 The T&D team is charged with providing core IT services, operational systems, payments, contact centre and digital online services, under a single function. A significant proportion of our investment is committed to renewals, refreshing assets and infrastructure to maintain the availability, security, and quality of our services.

3.3 As part of our accountability, we provide the ability for customers to pay easily to travel across the city on all our services, while the underpinning technology allows us to collect the revenue from customer journeys. We provide the communication devices and network infrastructure - without which our transport network would halt - as well as providing the ability for service controllers to track their bus or train. For our staff, we provide the hardware, such as PCs, and software such as Windows 10 and SAP, which are the bare minimum for their roles. An overview of our programme structure can be found in our Technology Roadmap (T&D Technology Roadmap) which has been provided as evidence to TfL Assurance.

We have used last year's authority to deliver value to TfL and its customers.

3.4 Our strong track record of delivering significant benefits for TfL and its customers has been maintained throughout this year. Over the last year, we have delivered several high-value projects within our investment portfolio; these include improvements to our award-winning TfL Go App which now has over 3.1 million downloads, introducing new robust security measures to protect online payments and launching the Proteus procurement (re-tender of the Revenue Collection Contract). A detailed list of the projects delivered from within our investment portfolio has been provided as evidence.

We have delivered our projects against the backdrop of significant challenges and uncertainty.

3.5 Throughout the year, we have maintained our support of the business in its response and recovery following the coronavirus pandemic, despite the financial and planning uncertainty this has continued to cause:

(a) we have prioritised revenue generation activities, including changes to the rules for Oyster card charges and changes to our concessionary scheme, supporting the business as it moves towards financial sustainability;

(b) we assessed and reprioritised all delivery, considering the financial constraints the business was under, to ensure that the most critical projects could still be delivered. This unfortunately meant that some deliverables were paused or deferred and as a result, there is now a level of technical debt. Essential investment is required across many systems we provide; and

(c) we carried out multiple deliverability reviews for our 2023/24 investment plan to assess the delivery and forecasts of various portfolios. This provided an opportunity to challenge the spend, understand where potential delays could occur and drive consistency.

3.6　　To ensure that T&D is organised optimally to address future challenges and is well-aligned to the new pan-TfL organisational structure, we progressed with our operating model review, internally led and supported by Deloitte. A series of workshops have been completed, reviewing our current pain points and high-level aspirations. Alongside this, a second T&D director's position has been established. Our new Director of Information Technology is now in post.

We have also delivered value to the areas of the business outside of T&D and customers outside of TfL.

3.7　　It is recommended that technology investment across TfL is consolidated and managed by T&D to ensure the highest VfM technology projects are prioritised, by using the same assessment framework to rank all pipeline activity. This approach will allow us to boost output by better employing economies of scale, whilst avoiding duplication of effort.

3.8　　Although technology investment is not centralised, T&D operates as an integrated technology team because this approach has proven advantageous for effective programme delivery. Over the last 12 months, we have delivered several projects from within combined and hybrid delivery teams. For example, in partnership with BAI communications, we have increased access to high-speed 4G and 5G-ready connectivity on the underground. We also began preparatory work to deliver the expansion of contactless Pay As You Go beyond London, through the DfT's funded Project Oval. A detailed list of the projects we have delivered while operating within combined and hybrid delivery teams has been provided as evidence to TfL Assurance.

3.9　　In addition to our committed deliverables, T&D supported TfL through a range of ad hoc initiatives. For example, our Payments and Data and Analytics teams have worked with the Compliance, Policing, Operations and Security (CPOS) directorate to reduce the impact of fare evasion, ensuring we are able to maximise the revenue we collect. During Operation London Bridge, T&D provided significant support to the wider business, and London, playing a key role in implementing response plans. This included changing our payments systems due to the additional Bank Holiday, providing specialist customer information through the TfL Go app and creating tailored dashboards to provide insights on travel patterns to assist operational decisions and Press Office enquires.

3.10　T&D continues to support other areas of the business with technical solutions for politically significant pieces of work. This includes leading discussions on Road User Charging (RUC)_schemes, delivering the rollout of the Surface Asset Management Information Systems (SAMIS), consolidating all London Underground (LU) asset operations onto our LU Asset management system, Metro Maximo, funded by T&D LU, investing in our Enterprise Resource Planning state, delivering benefit to TfL and the Greater London Authority (GLA) and integrating the entire Elizabeth line onto our Trackernet system.

3.11   We are supporting TfL's move to hybrid working, enabling many of our colleagues to work more effectively, both in our offices and at home, using the full set of technology services they need. Throughout the year, our Digital Workplace team has delivered key initiatives, including the upgrade of meeting rooms across our hub offices to improve the hybrid experience, and equipping 70 operational meeting rooms with Microsoft Teams enabled audio visual equipment. From a software perspective, the team rolled out several new tools and features, including migrating 1,400 SharePoint sites to the more collaborative and secure SharePoint Online platform. A series of training sessions on hybrid and mobile working, and accessibility, were also delivered to upskill our colleagues.

3.12   For the first time in several years, we ran a two-day T&D Roadshow event, offering colleagues the chance to meet in person to share developments, highlight successes, watch presentations, and attend senior leader panel discussions. Further knowledge sharing activities have taken place, including October's Cyber Security Awareness month. This saw a significant increase in completion of the Cyber Security internal training course, helping to protect colleagues, both at work and in their personal lives, from increasing cyber threats.

4   Review of Delivery During 2022/23

4.1   This section highlights the Programme's delivery performance over the last 12 months, provides further detail on the challenges we have faced and how we have addressed them, as well as provide an overview of the progress made against last year's management recommendations.

We have conducted detailed analysis to evaluate our delivery performance.

4.2   In March 2022, the Committee granted Programme and Project Authority for the current programme. For the 2022/23 financial year, the authority was £107.2m. Overall, we expect to complete the year with a gross spend of £101.7m (£96m net of income). The difference of £5.5m is due to deferrals out of the time period.

4.3   We have delivered at pace across all our portfolios and are currently estimated to finish the year at £96m (net of income) against a Business Plan of £98.6m.

4.4   Against the committed deliverables in last year's submission to the Committee, a detailed analysis of our financial and forecasting performance has been conducted. This revealed a variance of £2.3m across 200+ projects with total forecast value of £106.4m. This was achieved by employing a prudent work bank management approach across our investment portfolio. The review has been provided to TfL Assurance as evidence. Additionally, we reviewed all project-level spend and reasons for any variances to last year's expected submission values, these are detailed in the related paper on Part 2 of the agenda.

4.5   Through this analysis, it has been identified that much of the slippage in projects has been due to resourcing challenges. Resourcing and retention have been a key challenge for the business, leading to significant pressures on our colleagues and constraining our ability to deliver. In response, we have launched several initiatives to address this issue (Further details can be found in Section 8.1 – 8.4).

We have performed well against our strategic milestones.

4.6   TfL judges its performance against milestones, some of which are published externally (known as Strategic Tier 1s). These Strategic Tier 1 milestones are selected from a broader pool of 'delivery Tier 1 milestones' which are nominated by each sub programme. These are supported by precursor milestones known as Tier 2s, which indicate our progress toward the Tier 1s. We submitted eight Tier 1 and 2 strategic milestones for the TfL Scorecard this year. Despite these milestones not formally featuring on the Scorecard, we treated them as though they did and provided the same level of rigor around change control.

4.7   Of our Tier 1 strategic milestones, one was delivered early, and one was delivered late due to a critical defect which emerged during late-stage testing. Of our Tier 2 strategic milestones, three were delivered early and four were delivered on time (albeit two used their float). A detailed assessment of our performance against milestones [T&D Milestones setting Tech Programmes Financial Year (FY) 2022 23] has been provided as evidence.

We have responded proactively to last year's management recommendations.

4.8   Following last year's submission, we closed out six of the eight management recommendations. The outstanding recommendations, from TfL Assurance and the Independent Investment Programme Advisory Group (IIPAG), are both focused on improving the consistent use of our project management tool, known as the T&D Project Management (TPM) tool, and its integration with Power BI to provide better, more timely management information.

4.9   To close these linked actions, we planned to invest in the system to improve its usability, however the investment prioritisation process resulted in the proposed project being stopped. In lieu of a capital project, the Project Controls Team (PCT) and volunteers have continued to improve the system. Based on these improvements we have tasked our senior managers with having their teams populate TPM and then use the data. To achieve this, we have built an objective into the team's Performance and Development objectives to more consistently use TPM.

4.10   The benefits are now being seen through the data provided on the dashboards being of higher quality and more complete, better highlighting areas of project performance which require management attention. We will continue to drive usage and update the Assurance team on progress against the recommendations.

5   Delivering value for money (VfM)

5.1   This section provides examples of some of the initiatives we have undertaken to ensure our investment portfolio delivers VfM.

5.2   We have continued to simplify and consolidate our services and core infrastructure. Operating cost has dropped from £362m in 2015/16 to £234m in 2020/21 to £232m in 2021/22, an overall reduction of 36 per cent. We continue to

drive savings in other areas of the organisation through targeted investment, better processes and use of technology.

5.3   We are in the process of developing Power BI tools to help streamline our annual business planning activity by automating periodic project and programme tracking as well as supporting programme level reporting. This will allow for effective performance tracking and give decision makers access to management information that will support tactical resource prioritisation for the projects that will deliver the most value to TfL.

5.4   We have conducted benchmarking analysis across various parts of the directorate to ensure that our spending is similar or more efficient than comparable organisations. For example, we conducted early market and Gartner engagement to determine the best approach for the upgrade of the Enforcement Compliance and Operating System used by CPOS Operational Officers to reduce risks from crime, protect revenue and improve behaviours on the network. After in-depth 'Make vs Buy' analysis, it was determined that it would be quicker, lower risk and more cost effective for an internal project team led by the Technology Development team to build the new solution.

5.5   T&D also employs benchmarking analysis to achieve savings with existing suppliers. For example, In December 2022, our hosting portfolio achieved a saving of around £100k by negotiating a more efficient Professional Services day rate from the winning bidder in a contract to replace our End-of-Life Data Centre Management tool. We have also conducted early analysis using benchmarking data from Gartner to negotiate favourable terms for our data centre leases.

5.6   Our business cases state why a particular initiative is worth delivering, outlining VfM by comparing benefits and disbenefits with the project cost. This year, T&D kicked off a workstream to improve the number of T&D projects that have a business case. We worked with the Investment Appraisal team to trial the launch of two 'lighter touch' business cases for lower value/risk projects. Alongside this, we provided a range of virtual training and drop-in sessions for employees across T&D, in addition to T&D-specific written guidance on business case development.

5.7   All T&D funded projects within our sub programme are required to have a business case baselined at a Gate 2 Review, where projects have defined their delivery approach. Through local business case assurance and working with the Investment Appraisal team, since our last submission we have progressed from having 31 per cent of projects with a business case, to 66 per cent. This improvement should be considered in the context of our programme's rapid growth, where we have had 61 new projects initiated since April 2022. A sharper increase would have been seen had our sub programme remained static. There remains a drive to improve our overall figure and we measure our progress on our local scorecard with the Senior Management team each period.

5.8   In addition, to the business case production and monitoring, we provide robust assurance on all our projects. This starts with a three phased initiation process where a wide range of stakeholders check that each initiative is feasible, sensible and aligns to our roadmaps and technologies. Where VfM is not evidenced sufficiently, submitters are asked to only return when they are able to provide a level of assurance that satisfy the panel of stakeholders. Once initiated, each

project is subject to periodic health checks and formalised change control for decision-making to ensure VfM is being achieved on all our projects.

5.9   In November 2022, T&D successfully accelerated the initiation of the LU Station Wi-Fi infrastructure refresh project to assist TfL budget underspend, bringing forward a £4.64m spend to exploit an opportunity for TfL to secure priority purchase and delivery of 2,500 of Cisco's latest Wireless Access Point devices. Installed in 2012 to support wireless connectivity for our customers during the Olympics, our LU Station Wi-Fi infrastructure has grown in its use and application, becoming critical in providing access to operational staff, enabling connectivity for our train condition monitoring, and generating revenue for TfL through the commercialisation of its generated data. The acceleration of this initiative will mitigate the extended delivery times and probable cost increases resulting from the global semi-conductor shortage.

5.10   Since the last submission to the Committee, we completed three Project Assurance Reviews (PARs), one PAR is currently underway and two further PARs are planned to be completed by the end of March 2023. Across the projects that have completed PARs, there are 24 open recommendations, which are not overdue, and 33 recommendations have been completed since the last sub-programme review.

6   Strategic case for new authority

6.1   Our Technology Roadmap outlines our contribution to the goals set out in the Mayors Transport Strategy (MTS) and TfL's strategic priorities; it outlines the delivery of technology that will ensure safe and reliable journeys whilst making our transport network more attractive to customers.

6.2   The Technology Roadmap provides a summary of the projects underway within T&D and demonstrates how both our customers and colleagues will benefit from the products and services we provide. We have developed personas to demonstrate how our technologies can improve customer journeys for a wide range of customer experiences, as well as personas to distinguish between the unique roles and needs of our colleagues.

6.3   Our Technology Roadmap includes T&D's five strategic objectives:

(a)   **future-proof TfL's customer experience** – Promoting the adoption of TfL's digital services, ensuring that our customers have an excellent experience when they plan, pay and travel through our transport network;

(b)   **maximise revenue and reduce operating costs** – maximising the value from IT investment and minimising the cost of collecting revenue to support TfL to meet its financial targets, by making savings and generating income where appropriate;

(c)   **enable a mobile digital workforce** – with the rise of hybrid working, we will ensure that TfL staff have the technology, training and support required to do their jobs at the front line, in head offices and from home. We will also focus on improving the digital maturity of our entire workforce;

(d) **strengthen our cyber defences** – we are driving significant improvements in cyber defence across TfL to meet known threats, regulatory requirements, and public sector cyber security strategy. We will also be refreshing, and delivering, the cyber security improvement roadmap; and

(e) **use sustainable technology to reduce harmful emissions** – we are reducing the environmental impact of TfL's technologies, in response to the Mayor's ambition for London to be carbon neutral by 2030. Our Technology roadmap will also support the MTS goal to ensure 80 per cent of trips in the capital are made using sustainable transport.

6.4 Beneath the Technology Roadmap sit our portfolio strategies which are refreshed annually. These documents describe how we invest in technology, set out the day-to-day provision of technology, and guide our ways of working.

How we contribute to TfL's Vision and Values

6.5 TfL's Vision and Values together with our five roadmaps effectively form TfL's internal business strategy, focused on how we set ourselves up and act as an organisation. The T&D Technology Roadmap demonstrates how, between 2022/23 and 2024/25, T&D will be delivering against our TfL roadmap, and in turn, supporting the Mayor of London's plans to create a fairer, greener, healthier, and more prosperous city as set out in the MTS.

7 What we will deliver with the requested authority

7.1 With the authority sought for financial years 2023/24 and 2024/25, if approved, T&D will continue to deliver high-value outcomes that will benefit both our colleagues and our customers, including:

(a) we will continue to make updates to the SAP estate across TfL. For example, SAP Ariba, our new supplier, and contract management system will be deployed, providing c.5,000 users with one common platform and dataset for Procurement and Commercial and improving the way purchases are executed. As well as the technology, this will introduce a clear management framework with improved ways of working, policies and procedures;

(b) we will transform our people processes and technology to deliver a great experience for all our colleagues by replacing our Core HR system with MyJourney (SuccessFactors Phase 2). This will involve updating multiple aging IT applications (many of which are heavily customised and have no / limited support arrangements in place);

(c) we will be updating Our Desktop Experience, providing a simplified, consistent, people-focused experience – optimised for hybrid working. This new platform will support continuous, iterative and rapid change, minimising business disruption and reducing the support/administration resource requirements for delivery and maintenance;

(d) we will deliver a range of upgrades to our TfL Go app. These will include the integration of live bus updates and routes, Oyster and contactless payments

and National Rail departures. This will make it even easier for members of the public to plan, make and pay for their journeys; and

(e) we will achieve a significant reduction in operational revenue collection costs by delivering a smooth transition to the future Revenue Collection Contract.

7.2 The Hina Project will re-develop our Card Reader hardware and software and replace the existing assets across our transport network. The Hina Reader (developed by Cubic) will be deployed on the Rail estate once transition to the next contract is completed. It will also be designed and installed on Buses, in readiness for the upgrades planned in the iBus2 project. Extension of Programme and Project Authority will enable us to place the contract with Cubic.

7.3 The Barcode Acceptance project will enable customers with barcode tickets (based on an established industry specification) to enter, exit and interchange at approximately 40 TfL stations in the future where National Rail services call. This would be achieved by presenting their barcode ticket to clearly identifiable barcode enabled infrastructure. The project is currently in the early stages, but funds (£20m) are being provided by the DfT via an agreement with Railway Delivery Group.

7.4 T&D will also support the delivery of externally funded projects, operating as part of an integrated technology delivery team:

(a) we will upgrade to the T&D surface-funded Surface Intelligent Transport System (SITS), introducing an integrated suite of new systems and tools to transform TfL's ability to understand and manage operations on the network. Harnessing new sources of data to prioritise sustainable travel and reduce network disruptions. This will enable TfL to respond quicker to unplanned incidents, reduce delays, but also allow customers and stakeholders to make informed and timely travel decisions. Above all, this will help TfL to ensure all those that work and travel on the network are safe;

(b) as part of TCP, we will deliver full LU 4G and 5G-ready coverage for customers of all four major mobile network operators, delivering significant ongoing revenues for TfL. The mobile network will also host the new Emergency Services Network – this will give first responders immediate access to life-saving data, images and information in live situations and emergencies on the frontline;

(c) we will refresh Wi-Fi Connectivity at LU Stations and Depots, future-proofing against potential 5G data constraints, which is split funded between T&D and LU. This will improve the productivity of our operational staff by providing more reliable connectivity while enabling the ability to dynamically control assets. In addition to the continuing replacement of legacy assets, this will facilitate more machine-to-machine communication, potentially resulting in more efficient asset usage; and

(d) we will complete the T&D Surface-funded SAMIS rollout to support new surface technology contracts and complete the consolidation of LU asset management systems into Metro Maximo (funded by T&D LU). This activity

will realise significant cost savings by eliminating the need to maintain and upgrade multiple asset management systems.

8   Risks

8.1   This section outlines the key risks T&D continues to face while delivering against our investment portfolio, and the steps we have taken to mitigate those risks.

We have launched several initiatives to improve attraction and retention of key resources

8.2   During our deliverability reviews, resourcing (for TfL and for our supply chain) was the biggest risk to delivery and accurate forecasting for the remainder of the year. It has been difficult to recruit and retain professionals with sufficient skills across the technology sector. We also faced a loss of knowledge through the retirement of subject matter experts and churn of employees. As a result of the additional pressures on remaining colleagues, morale has been negatively impacted and we are at risk of exhausting goodwill.

8.3   In June, we launched a Key Roles Allowance to help us attract and retain professionals with critical skills such as Solution Architects, Technical Leads and Cloud Infrastructure Engineers. Since the allowance was introduced, we have seen an increase in 82 additional headcounts, this can be partially attributed to the allowance with some notable success in attracting and retaining Senior Developers, although 59 per cent of this increase was Non-Permanent Labour (NPL). We have also stemmed the flow of leavers in this space, we expect this trend to continue and that we start to see more attraction success across other roles.

8.4   In October, T&D funded a media plan to advertise and promote some of our roles key to investment portfolio delivery, this involved posting our vacancies on specialist jobsites, use of LinkedIn and Social Media channels. We saw an increase in applications from candidates and although it may be too soon to understand where this approach has resulted in successful hires, we would expect to see some increases as a result of this media plan. Going forward we will continue to explore using funded media plans and a more targeted headhunting style approach for roles we continue to struggle to fill.

8.5   For RUC and Project Oval vacancies, we now have the additional option of using the Crown Commercial Services (CCS) framework. For RUC, we have already recruited one team and two individuals.

All T&D projects are prioritised to ensure we can respond quickly to unforeseen financial or delivery challenges.

8.6   Over the last few years, TfL has been in a challenging financial position. As a result, T&D has deferred non-essential spend in order to help the business meet its financial targets. Much of the spend in T&D is focussed on supporting essential business functions, including collecting revenue and keeping our systems running, as well as upgrading systems and processes to be compliant with legislation (e.g. General Data Protection Regulation). Due to historical deferral of

planned investment, T&D is now in a position where all Programme spend is considered essential.

8.7   Last year we asked all our portfolios to prioritise their projects from most to least critical. This provided a forced ranking which was then used to develop a narrative explaining the profile of risk that would occur should reductions to the T&D budget be made. This year we will continue to request that all T&D projects are prioritised using our scoring rubric to ensure we can respond quickly should there be any unforeseen challenges to the delivery of our critical programmes. A copy of the scoring rubric can be found in Appendix 2.

We have conducted analysis to assess our technical debt

8.8   Due to the funding uncertainty in recent years, T&D reduced costs by sweating assets beyond expected End of Life. As a result, asset refresh has become critical to avoiding ongoing degradation and failure. To address this, we have completed a 'Technology State of Health' assessment (provided as evidence to TfL Assurance) to help us prioritise the replacement of assets. We will continue to develop this this analysis to provide robust justification for our asset renewal strategy.

We continue to look for acceleration opportunities to mitigate against supply chain shortages

8.9   The global shortage in semi-conductors is having a significant impact on the electronics industry's ability to service demand. We continue to see supply chain challenges and long lead times for core infrastructure. Where possible we will accelerate hardware procurement activity to mitigate against these lead times and the impact of inflation.

9   Authorities sought

9.1   A summary of the T&D Business Plan and Investment Programme from FY 2021/22 to FY 2026/27 is shown in Figure 1, and summary of breakdown of total Programme and Project Authority by portfolio in Figure 2.

9.2   Authority granted by the Committee which relates to both the current funding period to 2023/24 and commitments outside of this period, may need to be revised as part of future budgets to be considered by the Board. Provision will also need to be made in future Budgets and Business Plans in respect of commitments made which extend beyond the period of the current Business Plan and Budget. If additional funding is not available, a prioritisation of the TfL Investment Programme will be required, and some programmes and projects will not be taken forward and revised authority will be sought as appropriate. All financial commitments related to this request will be overseen in accordance with TfL Business controls in respect of draw down.

9.3   Ongoing investment prioritisation exercises taking place across TfL, mean the figures and projects included in the Programme are subject to change.

9.4   This submission presents the case for the overall T&D Investment Programme. This authority table covers project spend of £239.4m and an estimated income of £22.8m totalling £262.2m of authority requested for financial years 2023/24 and

2024/25. The Programme will return annually to the Committee to renew and validate a rolling two-year approval. This ensures that approvals are aligned to financial years to complement the nature of this Programme.

10 Assurance

10.1 TfL Project Assurance conducted a Programme Assurance Review on the Programme on 9 and 10 January 2023.

10.2 Through the Programme Assurance Review, and IIPAG's report, 11 issues and recommendations were made. We responded to these on 27 January 2023, and we have started working on the actions outlined in our Management Response.

Figure 1: Summary of the T&D Investment Programme Costs and Funding

	Portfolio		Business Plan Year						Total
	Rounded to £m		21/22	22/23	23/24	24/25	25/26	26/27	
Cost	Base Gross Draft Forecast values	(E)	74.1	101.7	148.6	137.0	110.3	133.7	705.4
	Management adjustment to account for schedule optimism		0.0	0.0	(19.9)	(26.3)	(16.5)	(15.3)	(77.9)
	Investment Programme Total Gross	(A)	74.1	101.7	128.7	110.7	93.8	118.4	627.4
Funding	Financial Authority	(B)	74.1	106.7	121.9	112.1	116.3	-	531.1
Authority	Existing Project Authority	(C)	85.1	107.2	102.9	-	-	-	295.2
	Transfers	(D)	(1.0)	-	-	-	-	-	(1.0)
	Project Authority less Transfers	= C + D	84.1	107.2	102.9	-	-	-	294.2
	This Project Authority request	= A - C (G)	(10.0)	(5.4)	25.8	110.7	22.7	24.9	168.7
	Future Project Authority request	= A - C					71.1	93.5	164.5
Income	Investment Programme Income	(E)	1.4	5.3	11.8	11.0	-	-	29.4
Income	Financial Authority Income	(F)	1.4	4.2	0.2	0.2	(0.7)	-	5.3

(A) Gross Costs net of the management adjustment for overprogramming
(B) Financial Authority is based on the Business Plan up until FY25/26
(C) Based on the last PIC Paper that was approved in March 2022
(D) iBus2 project transferred to Surface in FY21/22
(E) Income value which requires Programme & Project Authority plus Financial Authority
(F) Financial Authority Income is based on the Business Plan up until FY25/26
(G) This project authority request for FY25/26 and FY26/27 is for the Hina project only

Figure 2: Summary of breakdown of Total Programme and Project Authority by T&D funded portfolios

Portfolio / Product Family	Estimated Final Cost (£k) (Note 1)			Valid Existing Authority (£k) (Note 2)			Additional Proposed Authority (£k) (Note 3)		
	2023/24	2024/25	2025/26 to 2026/27	2023/24 (incl prior year carryover)	2024/25	2025/26 to 2026/27	2023/24	2024/25	2025/26 to 2026/27
Payments	41,001	38,269	47,683	57,512	-	-	(16,511)	38,269	47,683
Payments - CUBIC Performance Assurance Fund	10,883	8,255		3,358	-	-	7,525	8,255	-
Networks	12,805	9,102		(1,384)	-	-	14,189	9,102	-
Hosting	10,733	14,816		10,921	-	-	(188)	14,816	-
Cyber Security (CSIRT)	6,797	10,144		17,359	-	-	- 10,562	10,144	-
Enterprise Resource Programme (ERP)	17,269	15,797		4,894	-	-	12,376	15,797	-
Digital Workplace	7,642	6,206		13,652	-	-	(6,011)	6,206	-
T&D LU	3,702	3,728		14,779	-	-	(11,077)	3,728	-
Digital	4,521	5,220		5,957	-	-	(1,437)	5,220	-
Data & Analytics	3,566	3,612		6,561	-	-	(2,995)	3,612	-
T&D Surface	2,334	6,503		3,715	-	-	(1,381)	6,503	-
Technical Service Operation (TSO)	3,341	1,308		1,026	-	-	2,315	1,308	-
Contact Centre Operations (CCO)	1,011	1,435		949	-	-	61	1,435	-
Telecoms	-	0		(69)	-	-	69	0	-
Telecoms Commercialisation	6,061	0		(1,855)	-	-	7,916	0	-
Barcodes Acceptance	10,000	10,000		-	-	-	10,000	10,000	-
Other Tech & Data (inc Tech Dev & Indexation)	3,675	2,578		18,820	-	-	(15,145)	2,578	-
Management adjustment	(14,495)	(26,320)		(35,695)	-	-	21,201	(26,320)	0
Total Authority Required	**130,846**	**110,653**	**47,683**	**120,500**	**-**	**-**	**10,346**	**110,653**	**47,683**

Note 1 - Estimated Final Cost for FY23/24 & FY24/25 are based on the Period 10 financials. Financial Years 25/26 to 27/28 just include values for Project Hina

Note 2 - Includes

- £102.9m authority for FY23/24 approved by the Committee in March 2022

- £17.6m of additional authority required from prior years carried over into FY23/24

Note 3 - Additional Proposed Authority requested for FY23/24 to FY27/28, Additional Authority for FY25/26 to FY27/28 is just for Project Hina

Note 4 – the fund is a mechanism in the Revenue Collection Contract which allows Cubic to draw-down on funds for refreshing life expired or obsolete components of the Revenue Collection system

List of appendices to this report:

Appendix 1: Technology and Data (T&D) Programme Summaries Financial Year 2022/23

Appendix 2: T&D Project Prioritisation Scoring Rubric

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

List of Background Papers:

Independent Investment Programme Advisory Group Report (TBC)

TfL Project Assurance Report (TBC)

Management Response to IIPAG and TfL Project Assurance Reports (TBC)

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