2022/23 Annual Capital Efficiencies Report Appendix 1

Introduction

This is the second annual report of the TfL Capital Efficiency Plan (CEP), covering the financial year 2022/23. It sets out how we have progressed and delivered on targeted initiatives and milestones, together with the efficiencies realised during the year.

As well as being TfL's annual report, this report also satisfies the requirement set out in the August 2022 funding agreement letter: "We expect TfL to continue delivering its 2021 Capital Efficiency Plan (CEP) and pursue all opportunities to make efficiencies. To this end, TfL will continue to present DfT with its annual efficiencies report on this topic as set out in the CEP, including a summary of efficiency delivery against target; commentary on delivery; case studies; supporting metrics; and a forward look."

The objectives of the CEP are to:

- allow us to deliver better outcomes within a given financial envelope, getting us closer to delivering the objectives in the Mayor's Transport Strategy;
- demonstrate to industry and our supply chain that we are serious about working together to improve how we deliver and how we work together;
- provide transparency in our capital delivery performance to stakeholders.

Our CEP annual reporting includes:

1. Confirmation of the efficiency target and whether anything has happened that should result in a change to that target (for example, if Government found it necessary to change the level of funding available to TfL from the original indications during the original five year CEP period (2021/22 to 2025/26) this could impact on TfL's ability to deliver efficiencies)
2. Details of each "banked" and "evidenced" efficiency with the total value of efficiencies achieved to date
3. The value of "claimed" efficiencies that have not yet completed validation (if any are outstanding at the time of the report)
4. Case studies and other supporting metrics
5. Commentary on milestones, actions and initiatives that have been delivered
6. Details of "efficiency to be found" targets embedded in the latest Budget and Business Plan
7. It will also include a forward look of the level of efficiencies that the workstreams are working towards achieving and the level of business-as-usual efficiencies, together with an indication of the status of the plans.

These are set out below:

1. Efficiency target range

In our original Capital Efficiency Plan, we targeted a five-year efficiency profile from 2021/22 to 2025/26. Recognising that initiatives will take time to impact on costs, the profile ramps up with a target range in each year.

This ambition was informed by benchmarking against other asset intensive organisations in the UK that have similar regulatory frameworks, similar supply chains, and operate in a similar macroeconomic context. These ranges are based on existing embedded efficiencies combined with the impact of our initiatives, as well as ambitious value engineering and risk-release challenges. A range better represents the uncertainties in our future planning and assumptions.

During the first part of 2022/23, TfL continued to be subject to funding uncertainty, which in turn creates significant risk to achieving efficiencies in two main ways:

- **Long term planning:** It is recognised that certainty in planning and funding creates an environment conducive to efficient investment. The DfT's 2013 paper 'Action on Roads' stated, "Certainty will enable savings of up to 20% on maintenance and improvement work", while 2018 research by the Railways Industry Association stated that 'boom & bust' work profiles cause a 30 per cent increase in the cost of infrastructure. The Government has acknowledged that the funding certainty afforded to other transport infrastructure operators such as Network Rail and National Highways can enable savings of some 10 to 15 per cent on maintenance and improvement work.
- **Impact of project / scope reductions**: If TfL has to reduce its forecast capital expenditure then it will limit how much efficiency can be delivered. In the simplest terms, the same percentage efficiency will deliver a lower financial saving if the capital programme is smaller. However, the impact is likely to be greater than that. Efficiencies will disproportionately target expenditure that is less committed or at an early stage of the lifecycle, as this is where the opportunity lies. However, these are also the areas of the capital programme that are more likely to be removed or de-scoped due an overall reduction in capital funding.

The August 2022 funding agreement with government provided TfL with funding certainty to March 2024. While welcome, this is still significantly less that the five year funding certainty envisaged in the original CEP report. In addition, the level of funding set out in the August 2022 agreement, while more than the "Managed Decline" scenario, remained significantly less than envisaged in the original CEP report.

The Capital Efficiency Target for 22/23 is based on planned spend as set out TfL's 2023 revised Budget, excluding any project where any cost reduction arising from achievement of an efficiency would be passed back to a third party and not save TfL money.

2. Total value of efficiencies evidenced

"Evidenced" efficiencies are those TfL has achieved and can substantiate. During 2022/23 TfL has been able to evidence £52.2m of efficiencies, exceeding the top end of the Efficiency target range for 22/23 of £24m - £40m.

The breakdown of the "Evidenced" efficiencies by Chief Officer is below.

Chief Capital Officer	£31.4m
Chief Operating Officer	£17.2m
Chief Customer and Strategy Officer	£3.6m
Total	**£52.2m**

3. Total value of claimed efficiencies

"Claimed" efficiencies are those that are unable to be evidenced in time for inclusion in this report. TfL's definition of efficiency requires projects to complete before risk release can be evidenced as an efficiency – as unforeseen risks may subsequently arise resulting in an increase in risk budget. All efficiencies achieved in 2022/23 were able to be evidenced and so the number of "claimed" efficiencies is nil.

4. Progress commentary

TfL seeks to deliver efficiencies from CEP workstreams, business as usual activities and change improvement programmes. As shown in the table below some workstreams will deliver cashable efficiencies directly, others will improve efficiency indirectly.

Categories		
Project controls	Workstreams aligned to efficiency initiatives	Indirect
Investment Planning	Workstreams aligned to efficiency initiatives	Indirect and Direct
Benchmarking	Workstreams aligned to efficiency initiatives	Indirect and Direct
Accountabilities and Governance	Workstreams aligned to efficiency initiatives	Indirect
Commercial	Workstreams aligned to efficiency initiatives	Direct
Engineering	Workstreams aligned to efficiency initiatives	Direct and Indirect
Access	Workstreams aligned to efficiency initiatives	Direct
Value engineering	Aligned to business as usual efficiency activities	Direct
Process improvement	Aligned to business as usual efficiency activities	Indirect and Direct
Risk management	Aligned to business as usual efficiency activities	Direct
Internal resourcing	Aligned to business as usual efficiency activities	Direct

- some workstreams will provide a greater cashable contribution than others, a number of the initiatives are expected to lead to efficiencies being realised by both other workstreams and for 'Business as Usual' (BAU) activities, rather than direct cashable efficiencies.
- the workstreams with likely lower (or nil) cashable savings are still critical to our improvement because they create the right conditions and environment for success but are considered less likely to result in directly attributable savings. For example, the Benchmarking workstream will highlight efficiency opportunities, but those opportunities will likely be enabled through other workstreams e.g. commercial, access, risk.
- furthermore, many of the workstreams will only impact on projects not yet in delivery. For example, to meet efficiency targets, projects in their early stage will likely have to deliver greater percentage saving against their forecast that projects already in construction will need to deliver.
- some activities originating from CEP will be delivered through the Our TfL Programme (OTP) change programme and will continue to be reported in the annual CEP reports.

5.1 Project Controls

5.1.1 Overview

TfL has mature processes for controlling projects (Pathway) but there is a recognition that universal adoption across the business is increasing over time. This workstream's intent is to improve the scrutiny and focus on project decisions at each stage of the lifecycle, particularly those in the early stages, by delivering the initiatives as set out below.

How will this make us more efficient? Having poorly controlled projects may lead to unnecessary costs – with projects not being stopped (or paused) where and when appropriate, or scope not being adequately controlled.

5.1.2 Initiatives - in year progress

Development of Risk Improvement Programme (in progress)

Efficiencies are being sought through a change programme which will enhance TfL's approach to risk and opportunity management across all projects and programmes within the investment programme. More than 45 initiatives are planned which will promote enhanced risk supported decision making, increase the maturity of time and cost risk assessments and provide stronger assurance and transparency of risks across the project lifecycle.

The full programme of improvements is expected to be embedded into the business by winter 2024. The first tranche of improvements include; new tools to enhance the transparency of Quantitative Risk Assessments to support decision making, intelligent risk reporting via Active Risk Manager and Power BI, the ability to interrogate and further mitigate against risks related to strategic milestones, avoided duplication of prolongation related risks, advanced early stage risk assessments on larger projects and a self-serve tool to support delivery led risk management on smaller projects.

Change control automation and reporting (in progress)

The initial aim of this initiative is to implement a standardised change control process across capital delivery and an automated tool to capture all changes. This tool will enable the development of reporting and the ability to present any significant changes to the Executive team and will be deployed in phases across all TfL directorates and embedded as part of business as usual. In parallel we will develop the new reports at project, programme, portfolio and executive levels.

Pathway Improvements (in progress - collaboration with the Engineering and Asset Strategy Workstream)

Pathway is the delivery process mandated to all TfL projects. TfL Engineering own 184 of the Pathway products, of which 174 have not been updated in the last 5 years. Most present a productivity risk by either providing erroneous instruction leading to errors or non-standardised ways of working leading to the need for excessive work. The aim is to update **and improve all remaining 174 products within 3 years**, removing those that are not needed. This will result in reduced workload and error rate across all active projects.

5.1.3 Look Ahead

Reporting improvement programme and automation (winter 2023)

The introduction of consistent collation of project data and progress through automation will enable the clean rolling up of project performance information to inform timely decision making and project interventions. The initial focus is on the TfL Investment Group Report and has now been expanded to deliver periodic reports for project, programme and portfolio levels. This will reduce the amount of manual data handling primarily for the Programme Management Office and Finance teams who collate the data into periodic reporting packs allow them focus on value-add activity such as reviewing and streamlining processes and data quality processes and improving data quality. It will also enable a consistent way for project and sponsorship teams to interact and utilise the new suite of reports.

The first tranche will be focussed on streamlining and automating Executive Committee level reporting.

Systems and data – build out improvements plan (winter 2023)

The systems improvements, which are currently in the planning and design stage, will increase the overall delivery resilience, support the strategic direction, and make better use of our data. The systems digital strategy underpins all the other sub workstreams, most notably the reporting and application of an integrated baseline. The considerable work undertaken to date, including data quality improvements, data taxonomies and frameworks provides a solid foundation for the embedding of future improvements. It is aligned to the TfL Tech and Data strategy and is based on industry best practice. This will provide an absolute version of the truth, integrating disparate data sets to interrogate them for patterns that will support organisational learning, and more robust management decisions.

Implement performance measurement baseline for capital project and programmes (spring 2024)

This initiative has matured in its focus and will be narrowed to define the key metrics of project performance, in parallel with the development of our single repository of project information (for example the central project list), ensuring consistent application of the work breakdown structure. The aim is to implement the required process steps and tools to work towards an integrated baseline of scope, cost and schedule. This in will allow us to assess progress more accurately, give greater visibility to the cost and time performance indicators based on integrated data.

5.2 Investment Planning

5.2.1 Overview

The initiatives in this workstream will improve efficiency and were designed to ensure that we start the right projects and consider all available scope and delivery options at the outset. There are improvements to be made around ensuring that projects not only optimise value but are fit for our needs and outcomes and that we have a clear pipeline of schemes for each outcome / portfolio.

Furthermore, we are working to continually improve the feedback loop on lessons learnt from projects we have delivered, to ensure that we fully understand their benefits and effectiveness. This information is crucial in guiding the next generation of interventions.

5.2.2 Initiatives – in year progress

Updated appraisal guidance and tools to enhance Value for Money evidence (in progress)

Recent refinement of the guidance and tools used to conduct value for money analysis has enhanced clarity around the ‘how to’, and the sharing of worked examples. This has included following a ‘golden thread’ through initiative documentation; expectations at options identification and assessment stages; the development of new impacts calculators such as ones for carbon emissions ‘costs’ and potential savings, and ambience benefits; and the adoption of the Department for Transport’s Active Mode Appraisal Toolkit. These changes and associated guidance were delivered in March and April 2023, with development support planned throughout 2023/24.

Embedding the Strategic Outcome Framework (SOF) (in progress)

The intent of this initiative was to develop single set of strategic project outcomes against which the potential order of magnitude contribution of any initiative could be identified. The outcomes span economic, social and environmental effects. The SOF can be used to both identify the relative cost-effectiveness of different types of initiative against specific outcomes, and the absolute contribution of project and programmes – individually and in combination – to strategic objectives as outlined in the Long-Term Capital Plan and Mayor's Transport Strategy. Successfully launched in 2021 it was a key input to the enhancement prioritisation work for the 23/24 budget, and all new projects are being scored at Gate 0 using the SOF framework to help inform forward prioritisation. The process will continue to be developed and applied as part of the 24/25 business planning process.

Implementing recommended changes to Programme Structures (winter 2023)

A review of the programme structure within the remit of the Programmes and Investment Committee has been completed. Changes proposed from this review seek to simplify and reduce the number of Programmes within the remit of the Committee and better reflect TfL's new operating model. Going forward these changes are expected to deliver more efficient governance, enhance investment prioritisation, and support improved assessment of initiatives against strategic outcomes. The changes were approved at the meeting of the Programmes and Investment Committee on 17 May 2023, with a roll-out plan to be developed to support implementation of recommendations being taken forward.

5.2.2 Look ahead

Embedding Pathway Stage 7 to enhance benefits monitoring (spring 2024)

A formal post-project stage has been added to TfL's project lifecycle process, to confirm completion of agreed benefits realisation and lessons learnt activities. This change will fortify the planning, conduct, and reporting of benefits management activities throughout the lifecycle by clarifying accountability and responsibility for post-project delivery work. It will also enhance the consistency and visibility of monitoring and evaluation products across the investment programme and help identify which initiatives are the highest priority for ongoing analysis after the traditional project 'close'. These changes were approved in February 2023 and are now being rolled out throughout this financial year across each investment programme, with an initial focus on the highest value / complexity / innovative schemes to help inform future investment planning priorities.

5.3 Benchmarking Workstream

5.3.1 Overview

Together with the TfL Innovation Strategy and the TfL Capital Delivery Innovation Strategy, this Benchmarking workstream will identify the key focus areas of improvements, according to spend and appetite from the business, and develop the internal capabilities to meet these requirements.

Effective benchmarking will compare our activities, performance, or processes to internal and / or external comparators, using the outputs to prompt questions, helping provide answers and ideas as to how we might improve and provide evidence to support decisions. It will also provide confidence to TfL management and external parties that TfL realistically compares itself with the best in class and makes effective improvements as a result. Benchmarking will be conducted where the results can be valuable to us and have practical application. It is not an end in its own right; it must have value.

How will this make us more efficient? Benchmarking will be conducted where the results can be valuable to us and have practical application. It is not an end in its own right; it must have value and then be utilised by the various teams involved in the development, delivery of a project and the realisation of its benefits.

5.3.2 Initiatives – in year progress

Development of the TfL Benchmarking Strategy (in progress)

Reacting to the introduction of the TfL Value Chain and the formation of Chief Capital Office (CCO), a draft Benchmarking Strategy has been developed, is undergoing internal review and will be presented to the Capital Strategy Delivery Group (CSDG) meeting for endorsement. Benchmarking has been aligned with the TfL Innovation Strategy and the TfL Capital Delivery Innovation Strategy. The outcome of this collaboration is the TfL Challenges document that sets the strategic direction focusing on six key areas: 1. Mechanisation; 2. Materials; 3. Plant & Equipment; 4. Data; 5. Signalling; 6. Training & Testing.

The draft CCO Benchmarking Strategy has been strongly linked to the output and best practise identified from the Transport Industry Efficiency Strategy (TIES) and proposes the embedment of Communities of Practice in TfL. This will significantly improve industry wide benchmarking supporting the TIES long term goals.

Leveraging lessons from Crossrail (in progress)

To enhance our learning and incorporate recently acquired experience into our thinking, the TfL Benchmarking team has worked very closely with the Crossrail Legacy team to ensure Knowledge and Lessons are transferred to TfL. This has been challenging due to the focus required from the Crossrail team to successfully open the Elizabeth Line as well as the consistent loss of resource from the closing down programme. Therefore, in 2023, with the support from the Value and Continuous Improvement (VCI) Team, Crossrail will facilitate a series of workshops to allow TfL to engage with Crossrail to discuss the legacy documentation already transferred. The output from these sessions will capture key lessons and will be implemented by the TfL accountable owner (CSDG will identify functional owners to lead the embedment of these lessons). The VCI Team will track and record progress to ensure the completion of the knowledge transfer to TfL.

5.3.3 Look Ahead

Development of the Quality Strategy (spring 2024)

With the establishment of the Chief Capital Office and focus on aligning project delivery across the organisation, there is the opportunity to develop a Quality Strategy that reflects the new organisation and to establish a Quality Policy and explore options for implementation approach.

On most of our major programmes quality is being managed by the supplier, with varying requirements in our contracts, preventing a primary and consistent view for TfL to measure internal quality and develop improvement plans. We have the opportunity to explore standardised contract works information and understand how this can be supported by a stronger Quality and Assurance team. This could potentially realise efficiencies across the entire Capital Programme, for example industry data shows that rework costs resulting from poor quality is approximately 20 per cent of total cost.

Embedment of the Benchmarking Strategy (spring 2024)

Upon adoption of the Benchmarking Strategy the focus will be on embedding the proposed best practises into the business. This will also need to include a review of the current processes, organisation design, tools and systems to enable the strategy.

While works can and will progress to support the TfL Challenge six priorities, the long-term goals of effective benchmarking must remain a focus of the organisation to enable enhanced future benefits to TfL and across all Investment Projects and Programmes.

As with many other of the initiatives throughout this document, there is a close inter-relation in their application and realisation of their full benefits. The CEP Benchmarking and Project Control workstreams are no exception and must continue to align to ensure success. For example, the requirements of benchmarking workstream interface and are heavily dependent on many of the programme controls improvements such as, but not limited to: The Data and Systems project; the introduction of performance baselines and the reporting improvement project.

5.4 Accountabilities and Investment Governance

5.4.1 Overview

This workstream has advanced from its initial position of exploring multiple focus areas towards focusing on a narrower scope around the review of TfL's investment governance framework and practices. It is essential to continue to make TfL's investment governance simpler and more effective to aid better decision making, ensuring that we invest our resources in the right projects, with the right delivery options and aligned to our needs and outcomes. Having an efficient decision-making process is therefore fundamental to these aims.

How will this make us more efficient? The introduction of a new executive structure in February 2022 prompted a holistic review of TfL's governance, including investment governance, business rhythm reporting and delegated authority, alongside other governance forums such as performance and operations. This workstream will explore how TfL will align investment governance to the new structure and value chain, focusing on decision-making, accountabilities and responsibilities, allowing TfL to speed up our processes and ensure that the right people are involved at the right time throughout each phase of the project.

5.4.2 Year in Progress

Consolidating Financial Forums (achieved)

Following 2022 review it was determined that there was the opportunity to move project approvals from the Financial Commitment Oversight Group (FCOG) to the Investment Group (IG) which centralised project decision making into one forum which was implemented in July 2022. In January 2023, following the funding agreement and the introduction of systemised controls through SAP Ariba, FCOG was disbanded.

Project decision changes (achieved)

This opportunity focused on the delegation of certain approvals from Chief Officers at Investment Group level to Directors at local review groups for certain values, with visibility of decisions taken below Investment Group captured in a new central tracker and using new streamlined templates. In January 2023, three improvements were introduced. These can be summarised as increased thresholds for items requiring Investment Group approval, simplified documentation requirements for risk drawdowns, Programme and Project Authority drawdowns and project initiation and new reporting of pipelines of papers and decisions. The ability to delegate was supported by improvements to reporting which provide Investment Group with visibility of the Commercial Assurance Meeting pipeline and outcomes.

5.4.3 Look Ahead

Conduct 'As is' review and develop high-level design (spring 2023)

The main focus over this new financial year will be to conduct a 'as is' review of the governance processes by which we ensure that we invest our resources in the right projects and assets to move London forward safely, inclusively and sustainably. The aim is to improve investment governance by creating an empowered culture with efficient decision-making, facilitated by standard and simple processes to ensure that the right decisions are made at the right time.

To achieve this, four areas of focus have been identified.

1. Prioritisation and Portfolio Management - *review of a process for the prioritisation funding by year within a portfolio and how this is managed*
2. Change Management and Authority Review - *creation of a governance process which is proportionate to the project concerned for approvals below the levels specified in Standing Orders*
3. Secretariat and Engagement - *standardised and streamlined meetings and clear communication of our investment governance process*
4. Identifying and Managing our Investment Decision Data - *review of the information we require, how we obtain it and how we use it to make decisions*

We are currently entering a high-level design phase whereby we will explore the problems in greater detail, identify appropriate solutions and optimising implementation plans to inform the milestones for delivery going forward.

5.5 Procurement and Commercial

5.5.1 Overview

The Procurement and Commercial workstream captures all the benefits achieved by procurement and commercial activity. These include items like "cost avoided" which do not count as efficiencies. However, there is potential for efficiencies delivered by this workstream to be claimed by BAU teams. Therefore, to avoid double counting, values stated against this workstream may understate its contribution.

Commercial activity spans the full project lifecycle from initiation to project close. We aim to maximise the value we get out of our supply chain partners and have the right market, procurement, contracting, and relationship strategies to drive business outcomes and create the right commercial environment for efficient delivery.

The initiatives in this workstream will review all elements of our commercial lifecycle approach and how they interact with other CEP workstreams to ensure we are delivering the best value for money.

How will this make us more efficient? The vast majority of our capital expenditure is delivered through the supply chain, via frameworks and therefore the workstream is recognised as a key impact opportunity area for increasing our direct efficiencies.

5.5.2 In year progress

This year has seen significant changes for the Procurement and Commercial (P&C) team. Under Chief Capital Office leadership, the development and improvement of several Capital focussed P&C workstreams were approved to commence activity. P&C has now transferred to Chief Finance Office leadership, but importantly the deliverables within the P&C Capital Improvement plan, remain the same.

An external support partner was determined to be the best way to provide this support, however, following an unsuccessful tender exercise (failure to deliver value for money) the work is now being self-delivered, primarily by TfL leads, with limited support from the supply chain. This work started in February 2023; a progress update will be provided in the 2024 annual report.

Resourcing Benchmark Review (in progress)

The P&C Capital function's resource levels fluctuate due to the temporary nature of projects, this initiative looks to review and ascertain optimal resource levels (and therefore direct project costs) during the life cycle of projects, incorporating learnings and recommendations from previous benchmarking exercises. We aim to establish benchmark models from recently completed / current projects in the Capital portfolio and undertake a study into the size of equivalent P&C functions in comparable organisations, working in a regulated environment. This review will be foundation to developing a model that determines the optimal P&C resources to apply to future pipeline activity.

Pipeline and Supply Chain Engagement (in progress))

TfL has experienced high volatility in its investment programme and procurement pipeline over recent years which has impacted our ability to plan strategic procurement and also market appetite and confidence. This initiative focuses on a rebuild of our long term pipeline, aligned to the Business Plan, Long Term Plan and Capital Strategy, grow market appetite and informing our portfolio procurement strategy. We will identify current best practice in infrastructure market engagement and set a structured approach to managing key market segments, using our pipeline to secure early contractor input to delivery models and testing appetite for our procurement and contracting strategies.

All Staff Commercial Training (in progress))

Capital delivery utilise multiple options of the NEC form of contract, utilising a wide number of functional groups required to successfully deliver our projects. It has been observed that there are varying degrees of contract knowledge and expertise within the teams and there is an opportunity for improvement in upskilling / refreshing all layers of the team for general commercial awareness, helping to avoid, mitigate and manage costly disputes and better manage the cost of change. Therefore, the focus of this initiative is to (1) undertake a review of the existing P&C Capital training material for NEC Contracts (2) update consistent set of training materials for NEC and (3) roll out all staff commercial training in NEC from May 2023. This would cover beginner, intermediate and advanced levels.

5.5.3 Look Ahead

Building a consistent approach to Cost Management (autumn 2023)

The purpose of this initiative is to map existing cost management delivery across P&C Capital, including review of resource capability and identifying best practice. The desired outcome is to understand requirements for standardised processes and products for Cost Management across

P&C Capital, and establish the interfaces with other functions (PMO, Cost Intelligence, Finance), aiming to reduce our current over reliance on NPL and Consultant resource needs.

'Estimating Improvements' exploratory review (spring 2024)

This initiative focuses on developing a comprehensive *estimating work-bank* linked to P&C pipeline, to support early engagement and better alignment of resources to projects. Estimating the forward workload is unclear and the boundary of estimating work needs exploration and review. The findings and recommendations will be foundational to designing new processes and procedures around estimating, progressing us towards building improved and efficient ways of working in this space.

5.6 Engineering and Asset Strategy

5.6.1 Overview

The key aim of this workstream is to help us reduce or identify potential reductions in the cost of projects through pragmatic application of requirements, such as through standards, collaboration with the supply chain and timely handover of assets into operational use. The TfL Engineering & Asset Strategy team (E&AS) has a crucial role in creating pan TfL coherence and alignment and unblocking wider business benefits and savings. Key outputs will also filter into understanding and outlining the future size and shape of the E&AS organisation and using asset digitisation to drive pan TfL plans and savings.

How will this make us more efficient? This work will help us reduce the cost of projects through pragmatic application of requirements and standards, collaboration with the supply chain and timely handover over of assets into operational use. Digital engineering will give us better data and insight to make the right decisions faster. This can particularly impact costs through challenging requirements and value engineering; and increased digitalisation will enable further efficiencies in future years.

5.6.2 Year in Progress

Blueprint developed for Digitising Asset Management (achieved)

This workstream passed stage Gate 0 in January 23 and has undertaken extensive market engagement with consultants, system providers and peer organisations, including Network Rail and National Highways. The next stage is procurement of a Strategic Business Partner (SBP) for Digital Asset Management to support the shaping and organising the digital programme, set the strategic direction, support the change process and embed in the business. The intention is to go to market in winter 2023 and have the SBP in place by summer 2024. This will enable us to quantify the benefits of Digital Asset Management, those benefits are expected to be an increase (or maintain) in performance of current assets, savings generated through predictive maintenance, as well has having an accurate understanding of current assets before capital business and investment decisions are made.

Trial of National Highways' CARS system (in progress)

Trial of National Highways' CARS system has demonstrated feasibility of application for TfL. A business case has been assessed based on National Highways' approach but is not currently yielding a fast enough payback time to win TfL support in preference to other initiatives. An alternative 'vertical slice' implementation approach of digitising standards and technical specifications for one asset area at a time is now being explored, and it is planned to undertake a 'proof of concept' trial of this approach. Outcomes will be shared in the next annual report.

TfL Standards Improvement Programme (in progress)

An agreed approach to development of common standards across UK transport clients has been developed by the Transport Industry Efficiency Strategy (TIES) Standards Steering Group (chaired by TfL) and was positively received by an audience of senior transport industry figures at the TIES Living Lab Exploitation event on 13th July; a supporting Information Paper has been published on the TIES Living Lab website. A series of workshops have been held to develop the principles of the supporting governance arrangements, and £30k of TIES Living Lab funding has been secured for the Railway Safety Standards Board to translate the output of these workshops into a suite of governance processes for consultation.

A four-weekly Capital Standards Surgery has been established in order to encourage engineers, internal engineering customers and suppliers to raise 'pain points' related to standards. This is proving fruitful in identifying a pipeline of initiatives for consideration.

5.6.3 Lookahead

Knowledge Sharing - Reference Designs (summer 2023)

Reference Designs are designs which are reusable either in their 'vanilla' form or with relatively minor adaptation. Such approaches have been commonly used within individual teams/programmes; however we are establishing a systematic approach for the management of Reference Designs at a pan-TfL level such that the designs developed by one programme can be captured and preserved for the benefit of future projects. An information structure and user interface has been developed so that related elements e.g. drawings, calculations, specifications are linked and are easily searchable. The approach has been proven for the new retail kiosk design which has been installed at Shoreditch, leading to a significant reduction in the tenant onboarding process.

Repeated use of design elements implicitly reduces the design timescale and creates economies of scale in manufacturing/implementation; the inherent standardisation facilitates continuous improvement, improved sustainability and greater use of modular/off-site construction. We are planning a knowledge-sharing session for June 2023 with the hope of agreeing a common approach to management of Reference Designs with other TIES partners.

Programme Design Management Group (Piccadilly Line Upgrade works 23/24)

The Programme Design Management Group (PDMG) is intended to be the programme level equivalent of the CDM Principal Designer role and is applicable to programmes and major projects with more than one Principal Designer or where there are significant elements of the design not covered by a Principal Designer (e.g. vehicles, software) that need to be co-ordinated with other elements, in order to design out risk for the programme/project as a whole. The PDMG comprises the key decision-makers on the programme and has the remit to design out risk for complex programmes/major projects, while at the same time respecting the design accountabilities which have been contractually assigned (including but not limited to Principal Designers). Without over-arching design management it is likely that sub-optimal decisions will be made, integration gaps will arise and optimisation opportunities to maximise value will be missed. It is hoped that the PDMG approach will enable the pro-active resolution of systems integration issues.

The approach has been successfully trialled on the Docklands Light Railway Rolling Stock Replacement Programme and will be extended to Piccadilly Line Upgrade during 23/24.

Procurement of Product Information Register (autumn 2023)

A new Product Information Register tool will be procured for LU; collaboration with Network Rail is ongoing with a view to adapting their product acceptance application for TfL's needs. The new tool will support future integration with other digital systems. In conjunction with the rewritten Category 1 LUL Standard S1011 titled 'Product Acceptance and Registration', the new Product

Information Register tool will improve business efficiency and reduce safety risk by ensuring that all product information within the register is of clear provenance, with the specific application for which a product is authorised and any conditions being clearly defined. Clear distinction will be drawn between those products which are required to be 'authorised for use' versus those which are only being assessed for fire compliance. The tool will also address cybersecurity, General Data Protection Regulation and obsolescence issues with the existing tool.

Continuous Improvement Engineering Standards (autumn 2023)

A ‘proof of concept’ trial of Component Content Management System is planned in the rolling stock engineering area. Continued collaboration with Network Rail and National Highways via the TIES Standards Steering Group will take place in order to share knowledge and adopt common approaches where appropriate. It is anticipated that this trial will generate the data to underpin the business case for further investment.

Further to this, in support of standards digitisation, a market sounding questionnaire has been issued to suppliers of component content management systems; responses from nine potential suppliers are being evaluated and may inform new efficiency ideas and initiatives to explore and pilot in the future.

Project Engineering Productivity

Project Engineering capability is a key driver of productivity in projects. Trained and accredited project engineers will reduce demand. Target to reduce demand by **increasing productivity by 20 per cent over three years**. This task will carry on the current capability improvement tasks:

- Establish training strategy and implement it
- Re-establish accreditation scheme
- Establish Mentoring/Coaching network
- Maintain and improve Engineering Handbook

Note, this excludes secondary positive effects to the projects of increased productivity resulting in reduced delays and improved right first time.

5.7 Access

5.7.1 Overview

The workstream was separated into Roads and Rail elements, as access for each is controlled differently with bespoke nuances to manage effectively and appropriately. It is expected to deliver cashable efficiencies directly through reducing costs of delivering project outcomes.

The Roads Access workstream have completed their work via a software tool which is enabling multiple works to be combined saving “lane access charges” and other costs, which are now capable of being separately identified and reported. Efficiencies have started to flow from the start of 2022/23. The value of direct efficiencies achievable depends both on the level of project spend on roads projects and the extent to which it is possible to combine works.

The Rail Access workstream has focussed on two areas; maximising the volume of work completed during engineering hours (typically at night) and reviewing the use of planned railway closures to allow work to be delivered more efficiently and effectively during these longer access opportunities. We intend to deliver improvements in how we book, schedule, and manage access to our network for all capital and maintenance activity. We can leverage efficiencies by exploring the use of longer closures that combine multi-discipline works, as well as making better use of our limited engineering hours through improved intervention planning and control.

How will this make us more efficient? Access to the road and track network is one of the most important commodities on a transport project, but we may not use this resource in the most productive way possible, therefore adding cost to delivery.

5.7.2 Rail Initiatives - in year progress

Access and Planning Operating Model Review (in progress)

We continued to conduct an in-depth review of our approach to access and closure planning and undertook detailed operating model design based on this review; this work delivered conclusions and a proposed roadmap in September 2022.

Our findings included that Rail systems, particularly those within London Underground, are inspected, maintained, renewed and enhanced by a large number of separate departments and contractors. The work to be done is determined by our engineering standards, prescribed maintenance regimes and our investment objectives. Many of these activities demand access and space to work on and around our railway infrastructure which is largely successfully managed on a transactional basis by our access management and coordination practitioners.

Requirements gathering and the design of improved capability with our access practitioners yielded a number of proposed solutions to improve the efficiency of delivery where railway access or closure is required:

- Rationalisation and development of planning processes across the organisation
- Introduction of a medium to long term access coordination capability with a remit across all TfL rail infrastructure.
- Encouraging and mandating integration of access requirements earlier in the intervention generation and planning processes in use.

Rationalisation and development of our planning processes is an important first step to enable savings from the rail access workstream.

Network Rail Planning and Access Knowledge Share 2022 (achieved)

During the requirements gathering phase of the project, we met counterparts from Network Rail to understand how they plan for Access on the national network.

Network Rail's approach to planning of Access differs from TfL's. The time horizons they work to are much longer than our own. They are often planning two to three years in advance of the delivery of the work on the network. This allows for sufficient time to plan, deconflict bookings and to optimise plans.

Our counterparts saw the early and detailed engagement with their project and maintenance colleagues as key to the success of their process. They can demonstrate the success of their current processes and approaches, over the last five years, they have saved around 1,000 days of disruptive access due to being able to deliver more work in engineering hours.

The outcome of the meeting was to confirm to the TfL project team that we are proceeding in the right direction with this project and the recommendations resulting from it.

Having established the requirements for a future operating approach we concluded that significant changes are required to the way we initiate, plan and deliver work in TfL for any new ways of working or capability to successfully deliver efficiency and reduce capital cost as we aim.

5.7.3 Look Ahead

Capability Model and Business Case Review (summer 2023)

In April 2023 TfL onboarded a framework delivery partner to conduct a series of review sprints, exploring all layers of our planning and access operating model across all modes of the organisation. The purpose of Sprint 1 is to establish current planning models and processes each function uses for planning their interventions, Sprint 2 is to provide feasibility and analysis of our 'current state' challenges, leading to Sprint 3, a business case proposal for high level design. This 16 week project is due to complete in summer 2023 and will inform a long-term programme of improvement and efficiency changes.

5.7.4 Road initiatives - in year progress

Enhancement of the Playbook Tool (in progress)

Enhancement opportunities have been explored for more effective use of the Playbook tool, with the focus being around project delivery coordination and planning. Additional headcount has been approved and we are currently recruiting for a resource to assist on the creation of additional map layers containing projects from other programmes. We aim to replicate the approach take for Healthy Streets projects with third party signal and bus infrastructure interventions, as this simple improvement of the accuracy of the data (for existing map layers) allowed the achievement of numerous milestones for Asset Delivery Programmes, effectively coordinating multiple projects within some road network corridors, enabling more efficient planning and delivery.

5.7.5 Look Ahead

Bus Data Pilot (summer 2023)

Capital schemes have the potential to incur bus mitigation and lane rental costs due to the impact on the road network, but these are usually identified late in the programming. The bus mitigation costs can often be inflated by other, nearby conflicting schemes, whilst also incurring operational costs to the business (long term revenue loss etc). This pilot develops a bus network map which can be utilised at scheme conception to avoid undue capital and operational bus costs. It will also provide an early indicator of potential lane rental costs, so high-risk schemes could be flagged for delivery through an existing pathway option to Capital/ Network Management and Resilience (NMR) to improve overall coordination, whilst reducing cost. Any savings could be delivered through other bus positive schemes.

The draft map is currently being finalised based on NMR and Bus Operations data. Once ready it will be circulated for a sense check with relevant internal and external stakeholders.

6. "Savings to be found" targets in TfL's latest Budget

TfL's 2023/24 Budget includes efficiencies relating to the CEP programme in a range of £32m to £51m.

As a result of the uncertain funding and consequential limited of delivery from those CEP workstreams with long lead times such as the Rail Access workstream, TfL has adjusted its CEP target for 2023/24 to reflect a delay in step up of long lead time efficiencies by a year.

As TfL does not have complete funding certainty beyond 2023/24 and no targets are confirmed beyond this year.

Impact of inflation: In 2023/24 TfL effectively has its capital spending constrained by the Funding Agreement. Inflationary increases can therefore mean delivery of fewer project for the same spend, with a potential consequential impact on delivery of efficiencies. In addition where inflation is higher than Budget assumptions, this makes it harder to deliver cashable procurement related efficiencies as market price rises can offset management actions.

7. Forward look

TfL has exceeded its targets in each of 2021/22 and 2022/23, but in both cases almost entirely through Business as usual efficiencies. Many of the improvements envisaged by CEP, such as those made by combining closures, are dependent on longer term (5year+) funding certainty, due to the length of the planning horizon required.

While TfL has started 2023/24 with near funding certainty for this financial year, the 2022/23 Business Plan assumes continued Government support for Major Asset Replacements from 2024/25 onwards which has yet to be confirmed. For 2024/25 in particular, the consequences of not receiving expected funding could result in inefficiencies greater than efficiency targets, including deferrals of schemes expected to contribute to achievement of efficiencies. Late confirmation of funding decisions may accelerate or delay efficiencies from one year to another with insufficient time to identify alternatives.

Without long term funding certainty and the ability to plan works, it will be difficult for TfL to deliver much beyond the level of ‘Business as Usual’ efficiencies.