

Highways England Efficiency Report

July 2021



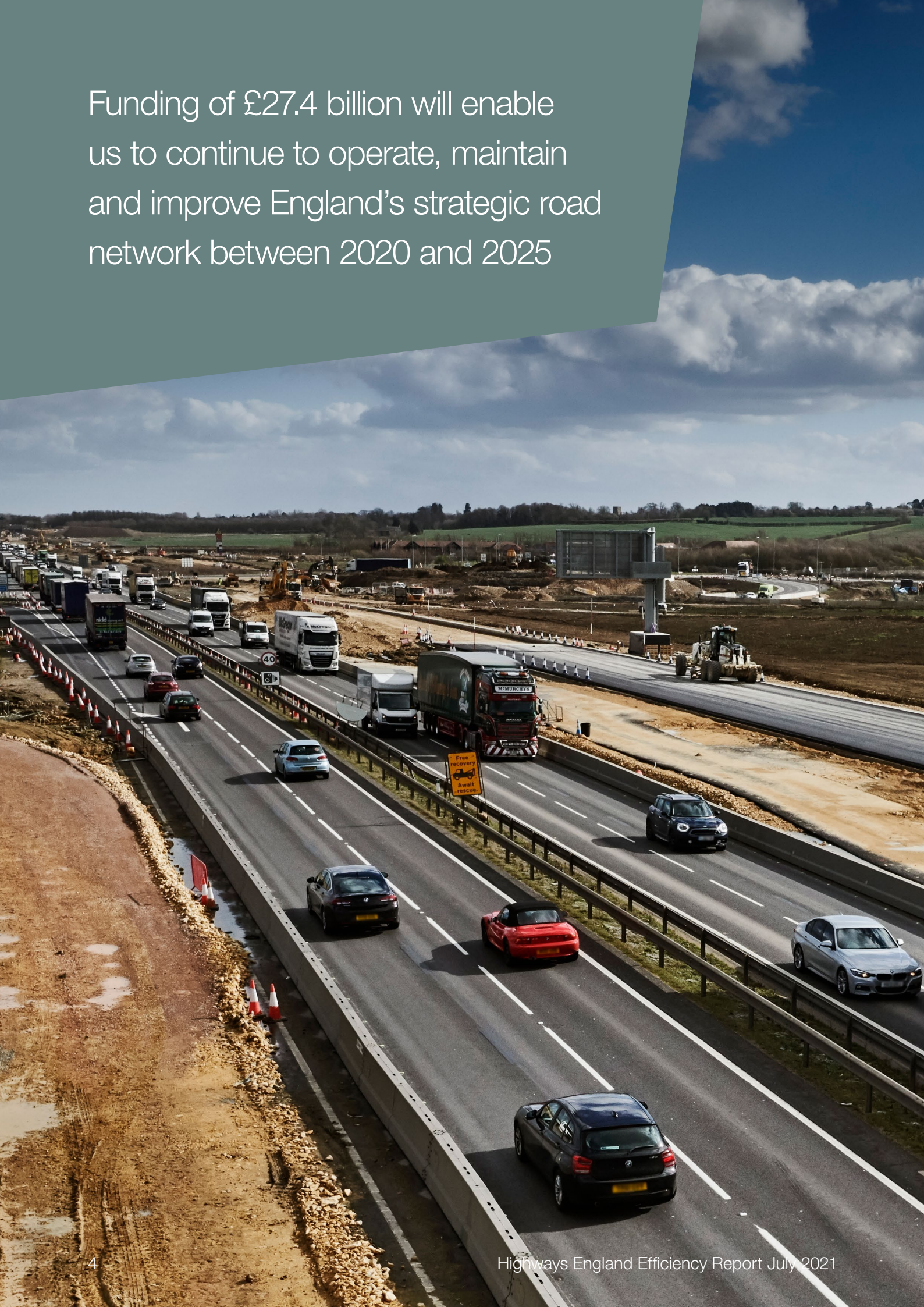
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Funding of £27.4 billion will enable us to continue to operate, maintain and improve England's strategic road network between 2020 and 2025



Foreword

The Government's £27.4 billion funding for the 2020-2025 second road period (RP2) allows Highways England to make more improvements to the strategic road network. Our work creates £2.50 of value for every £1 invested and benefits the economy, road users, communities and the environment. It stimulates employment and supports housing and business developments.

Between 2020 and 2025 we will open 52 schemes for traffic, start construction on a further eight schemes and develop 30 schemes for future roads periods. We will also maintain 4,300 miles of road network and renew 1,100 miles of safety barriers. We will deliver a strong sustainability strategy in support of the Government's carbon net zero ambitions and support up to 64,000 jobs in the construction industry.

During RP2 we will never compromise on our safety, quality and customer focus both within Highways England and our supply chain. The efficiency target for RP2 is £2.23 billion. We will deliver this through cost control and innovation linked to four themes of procurement, effective operations, improved capability and effective processes.

We have worked closely with our colleagues at the Department for Transport (DfT) and the Office of Rail and Road (ORR) to ensure that our plans are robust. We are confident that we can meet the challenging efficiency target whilst keeping safety, customer service and delivery as the imperatives that drive everything we do.



Malcolm Dare

Executive Director, Commercial and Procurement

Executive summary

The Government's second Road Investment Strategy (RIS2) sets out the delivery and performance expectations for the second road period (RP2). Funding of £27.4 billion will enable us to continue to operate, maintain and improve England's strategic road network (SRN) between 2020 and 2025. Our work will make a significant positive contribution to the millions of people using the SRN, and provide benefits to the communities and businesses who live and work alongside it. One of our key performance indicators (KPI) is efficiency and our target was agreed at £2.23 billion following a comprehensive review of our *Strategic business plan* (SBP). The target is intended to be stretching but achievable, without compromising either the safety and welfare of people working or travelling on the network, or the long-term sustainability of our supply chain. The measure is to achieve the KPI target by March 2025, the end of RP2.

We have spent within the available funding for both capital expenditure (capex) and operational expenditure (opex). By delivering our agreed outputs, we have successfully achieved the first-year efficiency milestone (actual £243 million, milestone £233 million). We are on track to achieve the five-year efficiency KPI target.

Our 2020/21 milestone performance and five-year trajectory is summarised in Fig.1 below.

Efficiency category	RP2 post-efficient baseline (ops plan)	2020/21		RP2
		Milestone	Actual	Efficiency planning assumptions
Embedded	£20,908m	£233m	£91m	£1,594m
Measured – RP2 generated	£6,451m		£19m	£273m
Measured – carryover	£0		£133m	£362m
Total	£27,359m		£243m	£2,229m

Figure 1: Overall milestone performance and five-year trajectory

The main body of this report summarises the primary evidence that demonstrates the successful delivery of the 2020/21 efficiency milestone. It also describes the trajectory towards the five-year target. Secondary evidence and other factors to be considered are set out under annexes.

Introduction

Since our formation in 2015 in line with the Government's *Roads reform*, we have striven to become a world-leading road operator and an efficient, modern strategic highways company. We manage, operate and maintain the 4,300 miles of England's SRN, a key national asset that carries 34% of all road journeys and 68% of freight journeys in England.

We aim to ensure that these journeys are smooth and safe. We play a critical role in supporting national productivity, competitiveness and reliable connections between businesses, labour markets and international gateways. As a publicly-owned company we have a responsibility to provide value for money for customers and taxpayers. Alongside safety and customer service, our core drivers are delivery and efficiency.

We are seeking to deliver new or renewed roads, technology and services for less taxpayer money. Our funding means we can provide more certainty in uncertain times through strategic investment that drives continuous improvements and innovation. The coming years will see changes in transportation, road travel and personal and commercial mobility. We are already planning for future roads periods where whole-life cost decision-making, carbon reduction and a long-term view of efficiency is more important than ever.

Following the success in RP1 where we exceeded the efficiency target of £1.2 billion, and the increase to our funding from RIS1 (£15.2 billion) to RIS2 (£27.4 billion), the Government increased our efficiency target for RP2 to £2.23 billion.

In RP1 we measured efficiency against capital enhancements, covering large individual schemes which upgrade the SRN, and capital renewals which are smaller schemes that are needed to keep our roads and infrastructure in a safe condition. In RP2 we must continue to deliver efficiency against these types of capital works, but also against opex, which covers our operations, maintenance and business costs, such as our control centres and provision of traffic officers. It is also the first time that non-roads capex is included in the efficiency KPI, which includes investment in new vehicles, IT projects and buildings.

As part of the funding provided there are various commitments to achieve, including the opening of 52 road enhancement schemes, starting construction on eight new enhancement schemes and developing a pipeline of schemes for future roads periods as well as maintaining and repairing the 4,300 miles of the SRN and delivering other key performance indicators.

The principles of how efficiency is defined and evidenced was published in the *Efficiency and Inflation Monitoring Manual* (EIMM). These principles were agreed with the Department for Transport (DfT) and the Office of Rail and Road (ORR), which acts as the independent monitor and undertake assurance of our performance.

The RP2 target is broken down into three categories:

Embedded efficiency – activities with a defined scope or output, which are funded with post-efficient costs. To agree post-efficient costs, we challenged historic costs and delivery approaches and then built efficiency expectations into the SBP. Further detail on this can be found in the EIMM.

KPI measured efficiency generated in RP2 – applied to activities where the scope or output cannot be defined with confidence, with the main benefit to come in future road periods. Also included in the measured category is:

Carryover efficiency – the effect of efficiency-improving activities undertaken during RP1 that reduce costs in RP2.

For embedded efficiency the evidence required to successfully claim the efficiency achieved is a combination of:

Primary evidence – delivery of agreed outputs/outcomes within the post-efficient funding envelope (moderated by the impact of agreed changes), and:

Secondary evidence – a combination of case studies, explaining the approach to delivering efficiency, and quantitative evidence using activity metrics. Secondary evidence will cover the key elements but not the total value of efficiency.

For measured efficiency the primary evidence is achieved through the production of assured case studies. There is no requirement for secondary evidence under measured efficiency.

Fig.2 details the evidence requirements for each programme of work, and the breakdown of efficiency over time is presented in Fig.3;

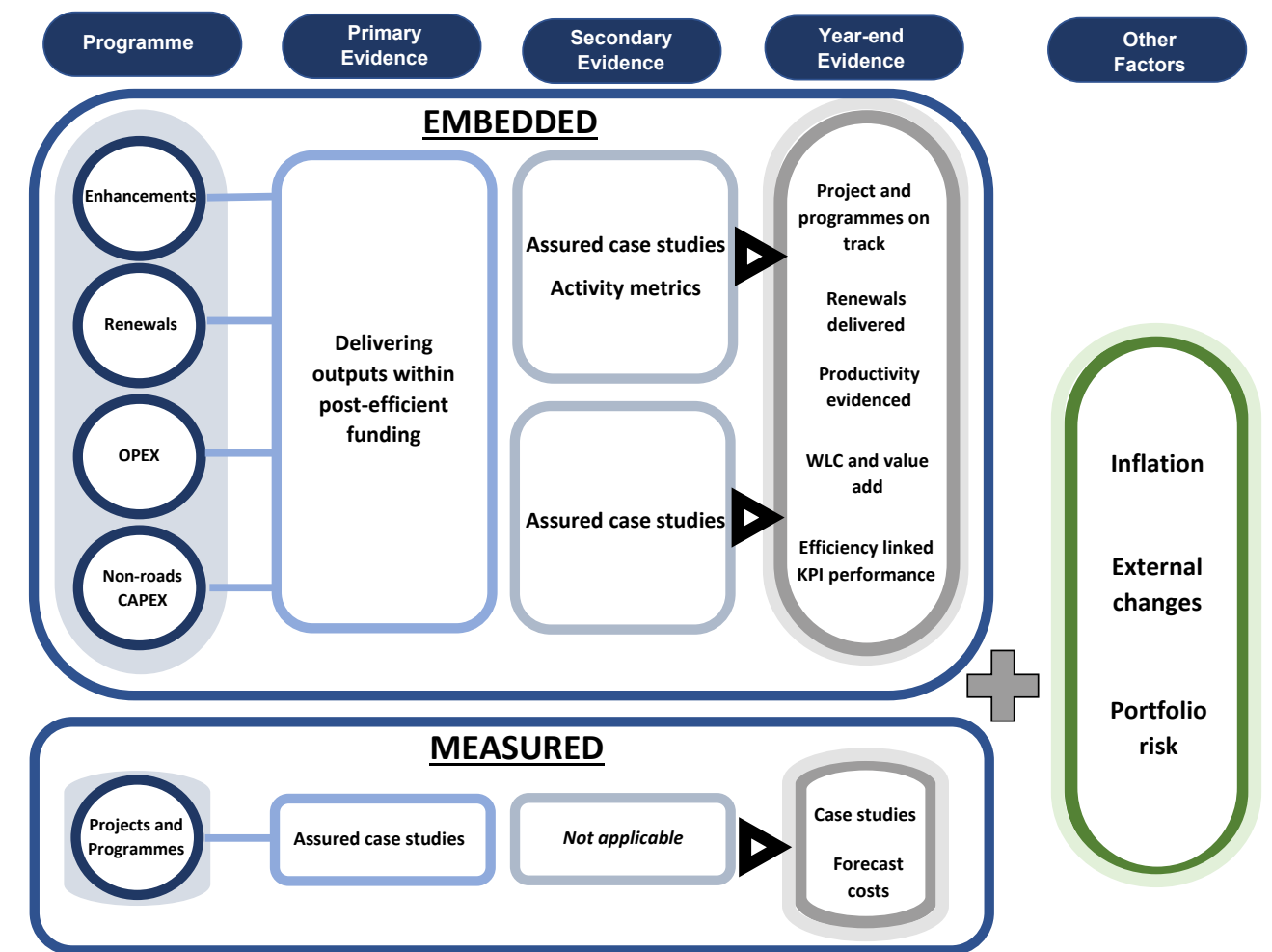


Figure 2: Efficiency KPI requirements

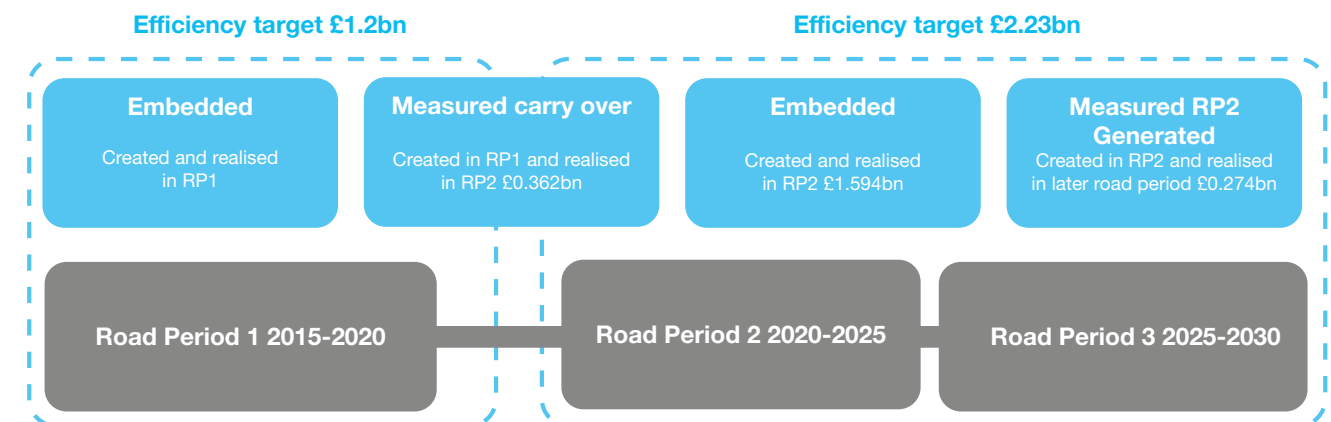
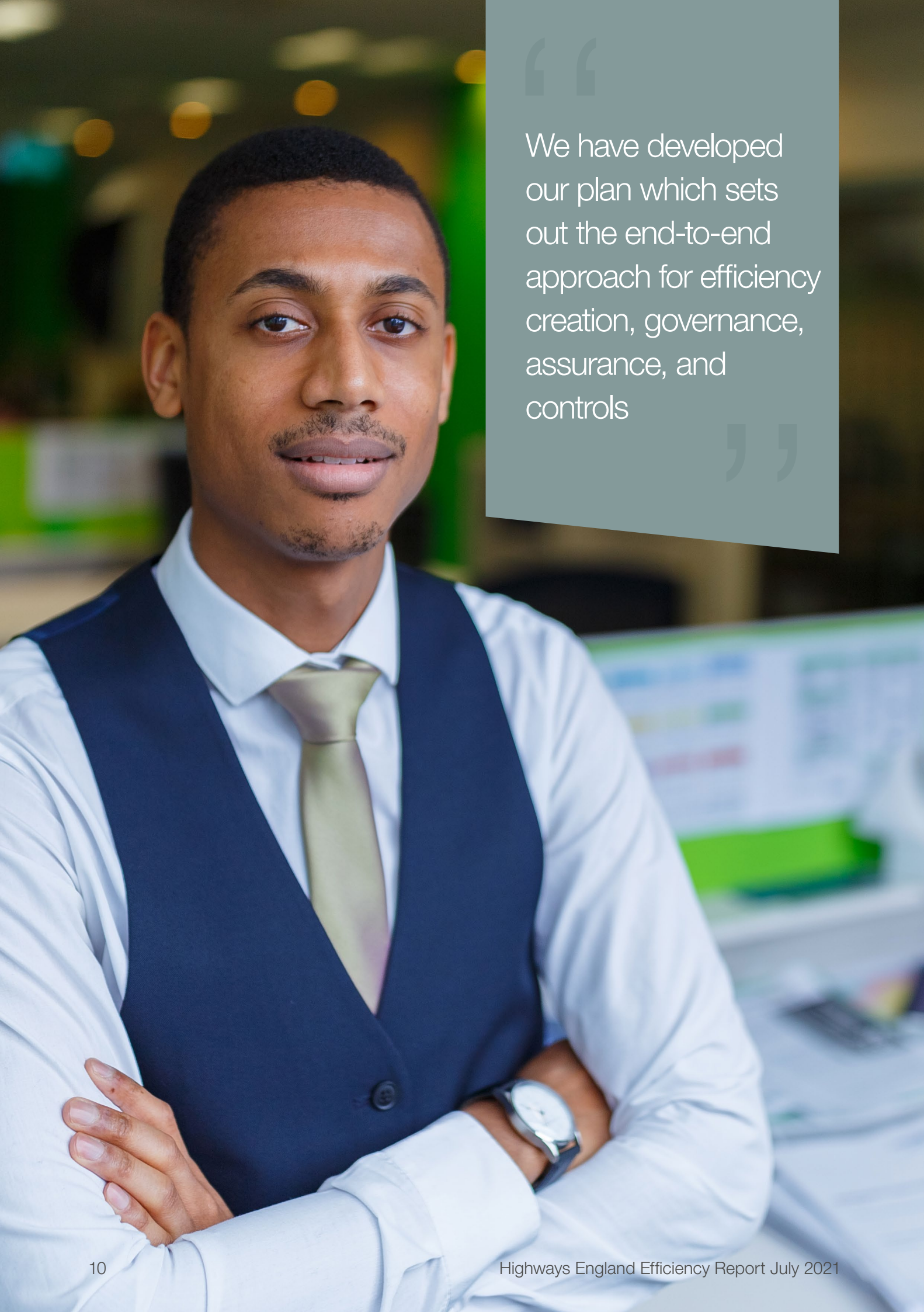


Figure 3: RP1 and RP2 efficiency target breakdown

In the EIMM we committed to publish an annual report which sets out progress and evidence in meeting the agreed annual milestones and trajectory towards achieving the five-year KPI target. This is the first such report for RP2 and covers performance for 2020/21.



We have developed our plan which sets out the end-to-end approach for efficiency creation, governance, assurance, and controls



How we will deliver the KPI

We have developed our plan which sets out the end-to-end approach for efficiency creation, governance, assurance, and controls. It is based on the creation of an integrated suite of change programmes. These have been designed to generate a pipeline of efficiency ideas that collectively exceed the KPI target. Having a pipeline that exceeds the KPI provides confidence in achieving the target. The pipeline has four enabling themes:

- Procurement – improvements developed through the Routes to Market programme. These include the use of Regional Delivery Partnerships (RDP) (six-year design and build contracts aligning all parties' interests) and Alliancing models for use predominantly on SMP.
- Effective operations – improving our operational performance, including the use of renewals efficiency levers which are initiatives that are repeatable across schemes, and the Operational Excellence (OE) programme.
- Improved capability – including our people, senior leadership team, supply chain, and our internal plan for RP2, *Highways England 2025* (HE2025).
- Effective processes – improving the processes we use, including the use of Lean techniques, the introduction of the SMP rapid engineering model, and the major projects transition programme.

The cross-company improvements under each of the enabling themes are summarised in Fig.4, with the proportion of pipeline value sat under each directorate detailed in Fig.5. We regularly review the value of these by working collaboratively across the business.

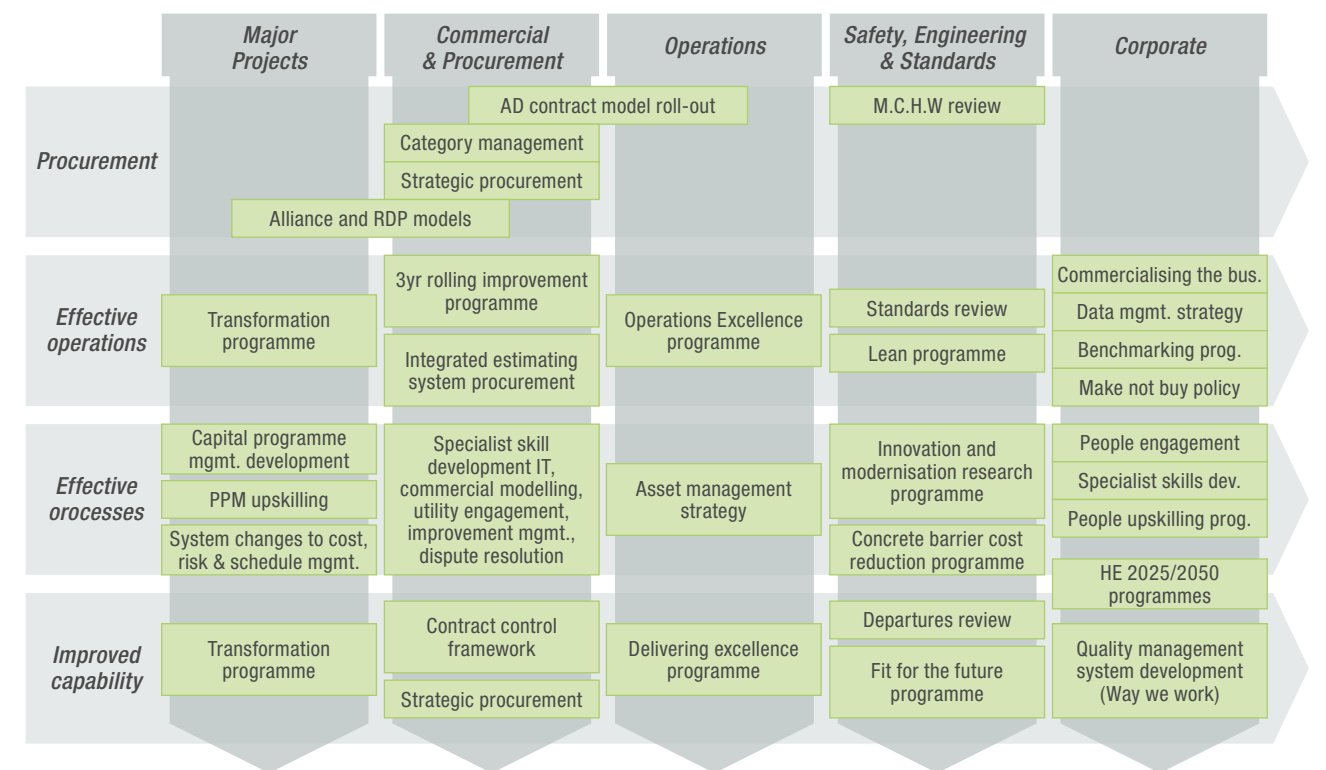


Figure 4: Cross-company improvements under each enabling theme

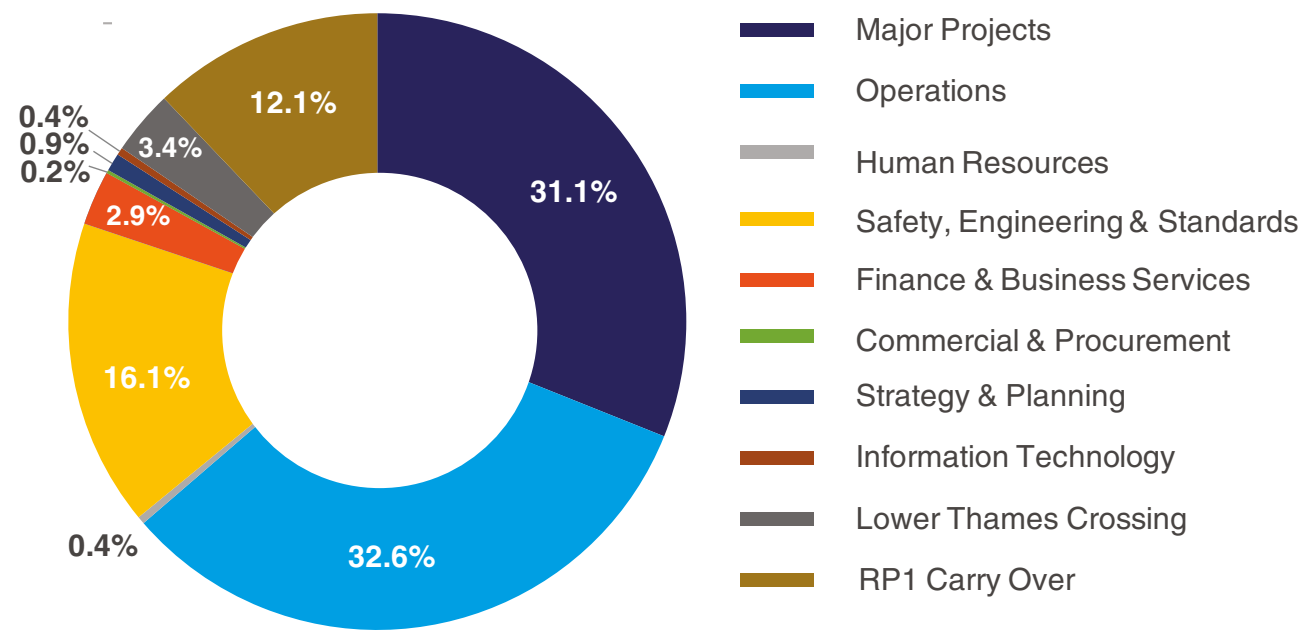


Figure 5: Pipeline initiatives proportional split of value

Change control

In preparing a five-year delivery programme it is normal for there to be some portfolio balancing. This is governed by a formal process of change control where significant funding impacts, and any resulting effect on efficiency, are agreed with DfT.

2020/21 has been an unprecedented year with several interventions outside of our control that have impacted the overall portfolio. These include the impact due to the Covid-19 pandemic, legal challenges on decisions, and Government interventions. The cumulative effect of these changes could lead to the overall efficiency KPI target being revised. We will assess the overall impact in 2021/22, when there is more clarity over the nature, cause and impact of change to enable analysis to be undertaken.

Central risk reserve

The cost of delivering the portfolio was based on scheme estimates produced in 2018 when the scope had not reached the required level of maturity. RP2 post-efficient funding agreed in 2020 included a central risk reserve (CRR) of £1.716 billion to cover:

- The additional cost associated with greater clarity of the scope required.
- Risk within our control which was not included in scheme estimates.

In line with the EIMM unused CRR at the end of the road period can be claimed as an efficiency to incentivise effective risk mitigation. There is a formal governance and control process in place, based on three stages:

- Project managers identify and evaluate the issues leading to being unable to deliver within their post-efficient budget and the reasons why the risk cannot be mitigated effectively. This is normally to recognise scope which was not mature when the initial post-efficient funding baseline was set.
- We internally review the scheme case, make provision for CRR draw down where appropriate, and assess the potential future portfolio requirement for drawdown.
- Executive Directors review the case and decide on whether drawdown is appropriate.

Drawdown approval changes the post-efficient baseline of the relevant schemes and reduces the CRR balance available to manage future portfolio risk. The governance process takes time to complete and, at the end of 2020/21, the £1.716 billion CRR was split into three categories:

- Approved and drawn down (post-formal governance) £426.3 million.
- Provisioned but draw down not yet reviewed/approved (pre-formal governance) £508.6 million.
- Available for potential future draw down £780.9 million.

This position is consistent with the drawdown planning assumptions set at the beginning of the road period post-change control. The impact of CRR will be assessed as RP2 progresses.



Embedded efficiency

When the budget of a project, programme or activity has already been reduced to account for an efficiency saving we refer to this budget as post-efficient funding with an 'embedded efficiency'. The programmes of work detailed within this section have post-efficient funding which is included in the efficiency target, and they have pre and post-efficient baselines that we use to assess efficiency performance.

We achieved £91.5 million of embedded efficiency value in 2020/21 by delivering our agreed outputs within budget. In line with the EIMM, capital enhancement efficiency will be reported when relevant schemes achieve open for traffic (OfT) status. Therefore there was no milestone efficiency target set for capital enhancements in 2020/21.

The primary evidence for demonstrating embedded efficiency is the delivery of the output or outcomes for the baseline funding provided. For example:

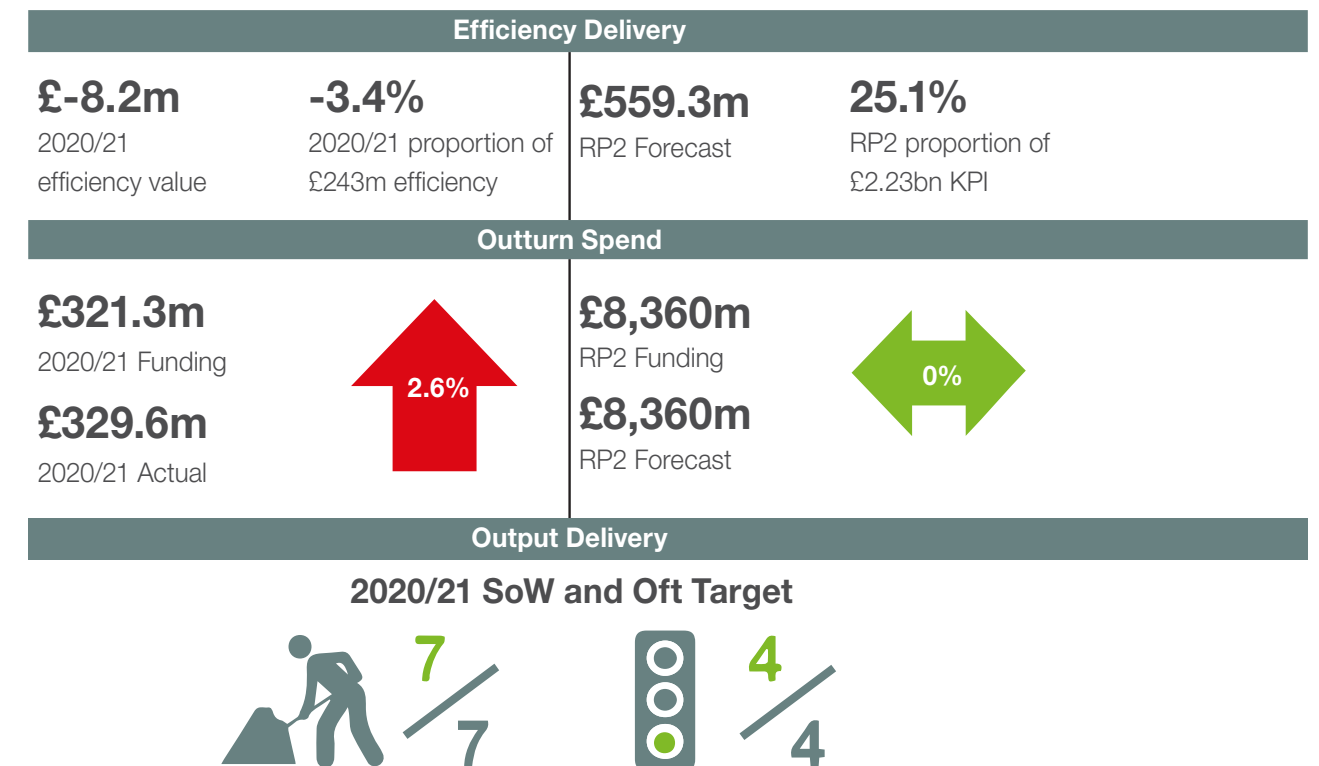
- Capital enhancement programme – a scheme reaching start of works (SoW) or OfT status.
- Capital renewals programme – replacement of the carriageway surface or other projects required to keep our network safe and serviceable.
- Business or operational costs – maintaining business effectiveness.

Capital enhancement programme

The capital enhancement programme is made up of large individual schemes which upgrade the SRN. They range from junction improvements through to the construction of new bypasses and expressways. They are designed to improve network resilience and journey time reliability, improve safety, and facilitate future economic growth.

The capital enhancements programme consists of schemes within the Regional Investment (RIP), Smart Motorways (SMP), Complex Investment (CIP) programmes, and the RIS3 pipeline. The embedded efficiency covers schemes which are scheduled to progress to SoW, OfT, or to have substantially progressed through development by the end of RP2. It also covers the costs associated with delivery of enhancement schemes, such as the stocktake investigating the safety of smart motorways, and costs associated with HS2.

Outturn vs. baseline cost (primary evidence)



Four schemes opened for traffic in 2020/21. None of these schemes had an embedded efficiency milestone to achieve as they were primarily delivered in RP1. While there is no capital enhancement embedded efficiency milestone for 2020/21, we have spent £329.6 million against funding of £321.3 million, an overspend of £8.2 million. This difference is included in the £243 million 2020/21 efficiency value. For RP2 we are forecasting to deliver £559.3 million of efficiency on capital enhancements.

Capital renewals

To keep traffic flowing safely and without delay on our roads we carry out around 2,000 capital renewal schemes each year as well as planned maintenance. This ensures that every part of the network is safe, serviceable, fulfils its intended purpose effectively, and minimises the impact on the environment.

Our key deliverables under capital renewals are road resurfacing, the installation of safety barriers, and the installation of significant structures, which range from bridges to viaducts. Additional assurance deliverables include white lining and the installation of boundary fencing. It is the key deliverables which account for most of our renewals spend. They also contribute most to ensuring that we continue to keep traffic flowing safely, and are therefore where most of the efficiency is delivered.

We are working to deliver strategically planned interventions at the right time, using risk-based forecasts and improving procurement, capability and processes. These actions help to ensure that we deliver our commitment to deliver the agreed outputs within budget.

Outturn vs. baseline cost (primary evidence)

Efficiency Delivery			
£5.8m 2020/21 efficiency value	2.4% 2020/21 proportion of £243m efficiency	£592.0m RP2 Forecast	26.5% RP2 proportion of £2.23bn KPI
Outturn Spend			
£706.4m 2020/21 Funding		£4,231m RP2 Funding	
£733.3m 2020/21 Actual		£4,231m RP2 Forecast	
Output Delivery			



2020-21 Output delivery >100%

% Actual Delivery vs. Revised Delivery Plan Targets (2020/21)

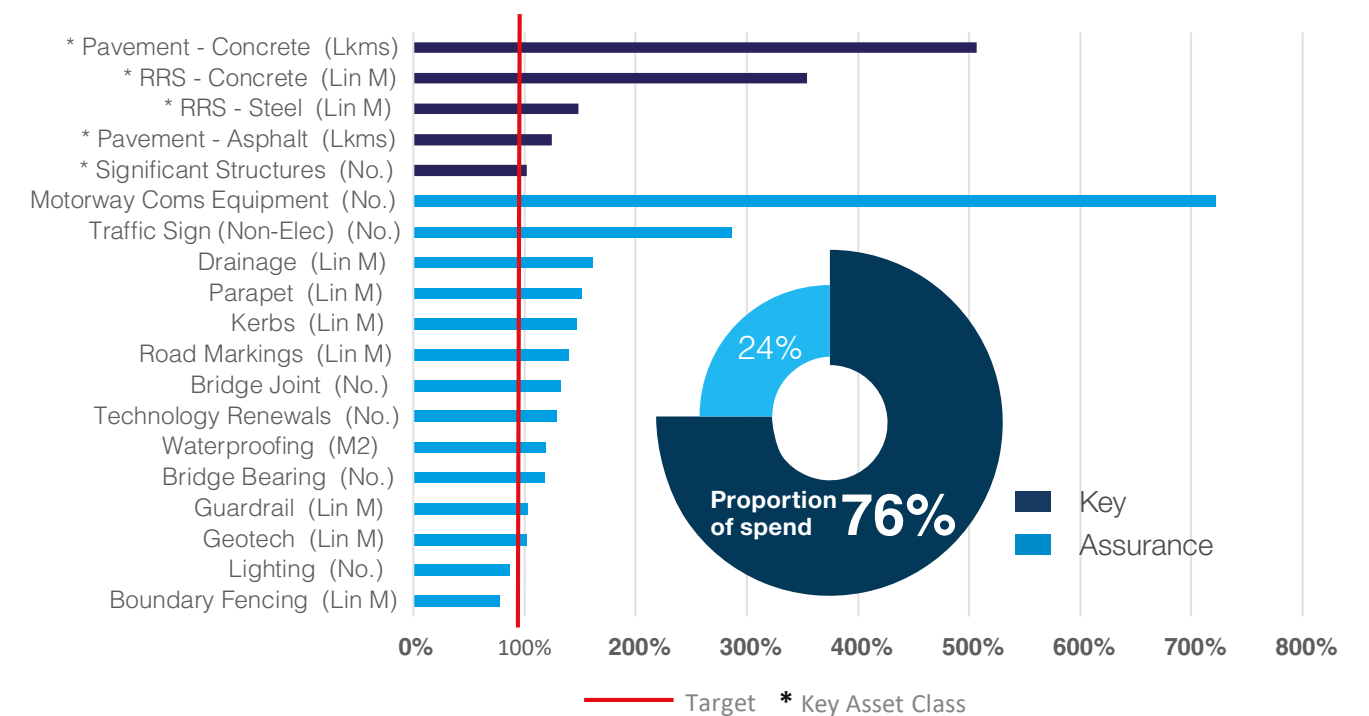


Figure 6: Asset renewal deliverables for 2020-21

For 2020/21 our spending on capital renewals was £733.3 million, which is higher than the post-efficient funding of £704.7 million. The value of efficiency would have been £32.7 million had we delivered within the post-efficient funding of £704.7 million. As spend is £26.9 million over our post-efficient funding the value of efficiency is therefore £5.8 million.

Within 2020/21 it was agreed that operations could accelerate their programme. This has led to the over-delivery of outputs. The in-year funded position has not been adjusted in line with this agreement, so it therefore appears that during the year we have delivered less efficiency than expected. The actual outputs achieved in comparison to the target is shown above in Figure 6.

Outputs are split into key measures, as described in our *Delivery plan*, and assurance measures. Key measures are those which constitute the greatest proportion of our renewals spend, and are therefore expected to contribute most to efficiency. They are supplemented by assurance measures. We have achieved all five key measures including asphalt and concrete pavement, and steel and concrete road restraint systems (RRS). 45 significant structures milestones were delivered against the target of 44, where safety and asset condition were the prime driver of delivery. They were assessed through our inspection programme of almost 8,000 structures within the year.

Two of the 14 assurance measures were not delivered. Boundary fencing was mainly not achieved in the South West where unforeseen delays in design meant starting schemes at certain locations was not possible. Lighting was mainly not achieved in Yorkshire North-East region, where the local authority changed requirements for a diversion route meaning a large lighting scheme was deferred into 2021/22.

Output targets were exceeded by more than 5% on 11 of the 18 measures. This was mainly due to the delivery of £30 million from the renewals risk reserve (RRR) and £25 million of delivery that was brought-forward. On average the RRR delivered 3.5% more outputs (6% of pavement). It's not possible to separately identify the additional scheme delivery but this included all the excess concrete pavement and would typically have delivered the same percentages as the RRR.



Operational, business and maintenance expenditure (opex) and non-roads capital expenditure (capex)

Opex costs are incurred through delivery of our operations and maintenance activity. They include the cost of our workforce, including the provision of our traffic officers who patrol the network managing incidents safely and quickly, our control centres which undertake real-time traffic management across the country, our information systems which provide customers with traffic data and alternative routes, and our weather stations and winter fleet which enable safe journeys in adverse weather.

It also includes outsourced routine and non-routine maintenance work to support and maintain our network assets, such as bridges, footpaths, embankments and safety barriers, helping reduce the need for major interventions and potentially extend the life of these assets. Routine maintenance includes safety barrier maintenance, grass cutting, and emptying gullies. Non-routine maintenance refers to any unexpected work, such as emergency repairs from spillages or incident response, where for example damage to safety barriers can occur.

In addition, under opex, existing private finance initiative (PFI) contracts includes efficiencies which have been built into them through the funding model underlying the contract. Over RP2 there may be occasional opportunities to revisit these. Where opportunities exist, such as refinancing, we will take full advantage to ensure value for money and will develop an efficiency case as evidence.

Non-roads capex includes all work of a capital nature not relating directly to extending and repairing the roads network, such as spend on vehicles, offices and IT.

In RP2 both opex and non-roads capex funding has post-efficient funding. In planning our business, we set out the high levels of customer service and capabilities we intend to provide. Achieving, developing and sustaining these business functions within the funding provided is the primary evidence of efficiency.

Operations, maintenance & business expenditure (opex) – outturn vs. baseline cost

Efficiency Delivery			
£52.8m	21.7%	£296.9m	13.3%
2020/21 efficiency value	2020/21 proportion of £243m efficiency	RP2 Forecast	RP2 proportion of £2.23bn KPI
Outturn Spend			
£1.2bn		£6.07bn	
2020/21 Funding	← 0% →	RP2 Funding	← 0% →
£1.2bn		£6.07bn	
2020/21 Actual		RP2 Forecast	

We have delivered £52.8 million of efficiency on opex, and we have continued to ensure that we are fully operational and have delivered our commitments within the agreed post-efficient funding. The efficiency value was delivered against our planning assumptions shown under Fig. 7.

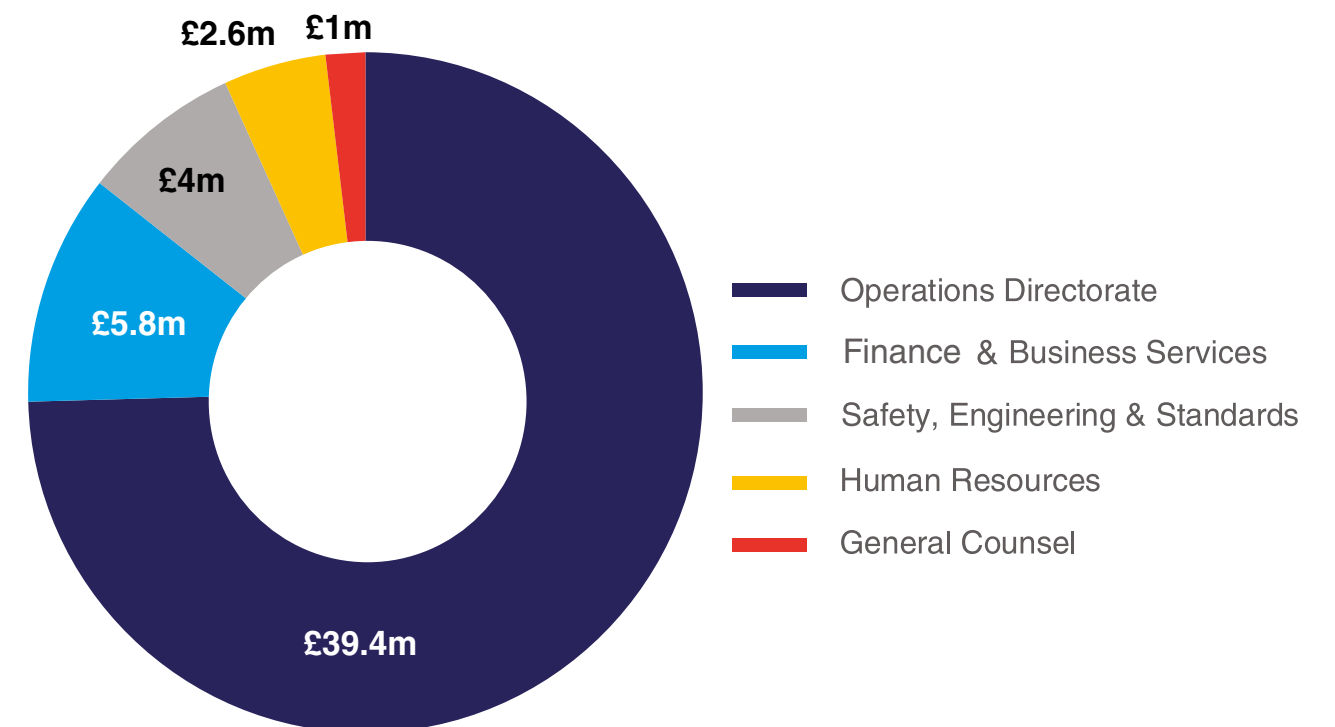


Figure 7: Breakdown of 2020/21 opex planning assumptions for efficiency value

In addition, we have shared an example of the 2020/21 outputs achieved within operations and maintenance under Fig. 8. It is not practical to summarise all opex outputs, and not all opex outputs are measurable. This is therefore presented as an illustrative account of how we have delivered our operational and maintenance commitments.

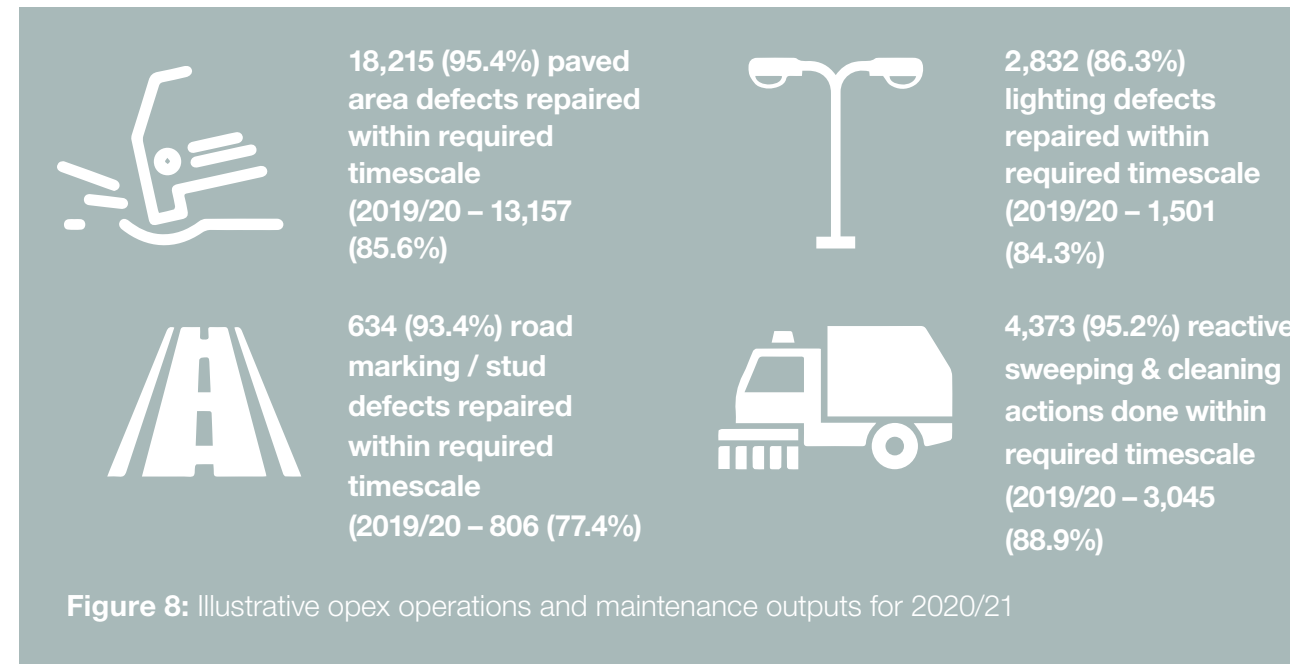


Figure 8: Illustrative opex operations and maintenance outputs for 2020/21

Measured efficiency

Measured efficiency is evidenced by efficiency registers and assured case studies. It has two categories:

RP2 generated efficiency – this does not reduce the funding required for RP2, but does, in general, benefit later road periods or reduce risk within RP2. This type of efficiency applies to areas which did not include an efficiency challenge in the SBP and were therefore left as pre-efficient costs. In practice this mainly applies to new RIS2 capital enhancement schemes that are at early stages of development, but also includes designated funds and the RIS3 development programmes. Other efficiencies generated in RP2 which have most of their effect outside of the roads period may include WLC benefits, or maturity improvements. We primarily evidence RP2 generated efficiency through efficiency registers. We will validate larger value efficiencies (over £1 million) by completing case studies and efficiency guides to provide further detail on benefits and support knowledge sharing. We will use secondary evidence to provide assurance of primary evidence where needed.

Carryover efficiency – this is efficiency which has been identified and secured in RP1 but is also realised in RP2. Carryover efficiency applies to efficiencies from all RIS1 projects and programmes with expenditure profiles which span the road periods. These have been captured, audited and reported using the RP1 detailed register approach and assurance process. These efficiencies have already influenced future expenditure, but are distinct from RP2 embedded efficiencies and are included in the pre-efficient position. To determine the carryover value of RP1 efficiencies, we split the efficiency claims by road period using earned value principles.

Non-roads capex – outturn vs. baseline cost

Efficiency Delivery			
£41.1m 2020/21 efficiency value	16.9% 2020/21 proportion of £243m efficiency	£145.8m RP2 Forecast	6.6% RP2 proportion of £2.23bn KPI
Outturn Spend			
£370.3m 2020/21 Funding		£1.67bn RP2 Funding	
£329.2m 2020/21 Actual		£1.67bn RP2 Forecast	

We have delivered £41.1 million of efficiency on non-roads capex and have delivered our commitments within the agreed post-efficient funding. It is not practical to summarise the planned and actual outputs of every directorate under non-roads capex, and we are currently developing ways by which to summarise these as RP2 progresses.



RP2 generated efficiency

Efficiency Delivery			
£19.4m	8.0%	£273.1m	12.3%
2020/21 efficiency value	2020/21 proportion of £243m efficiency	RP2 Forecast	RP2 proportion of £2.23bn KPI

We have delivered £19.4 million of RP2 generated efficiency in 2020/21, and by the end of RP2 we have a forecast efficiency value of £273.1 million.

RP2 generated efficiency primarily applies to six Tier 1 capital enhancement schemes that are in development. Tier 1 schemes are enhancement schemes that are above £500 million in estimated cost and are nationally significant infrastructure projects (NSIPs). They are subject to staged approvals by DfT, and we work closely with Government in their development and delivery. The six schemes are as follows:

- A303 Amesbury to Berwick Down
- A417 Air Balloon
- A46 Newark Bypass
- A66 Northern Trans-Pennine
- Lower Thames Crossing
- M60/M62/M66 Simister Island Interchange

Also included are:

- Designated funds
- RIS3 development programmes
- Other efficiencies generated in RP2 which have most of their effect outside of the road period
- Any new schemes added to RIS2 through the agreed change control process
- Whole life cost or maturity improvements

Evidence

We provide evidence to achieve the 2020/21 efficiency value of £19.4 million by case studies and small claims (less than £1 million). The chart in Fig.9 provides the 2020/21 breakdown of RP2 generated efficiency delivered by programme and title.

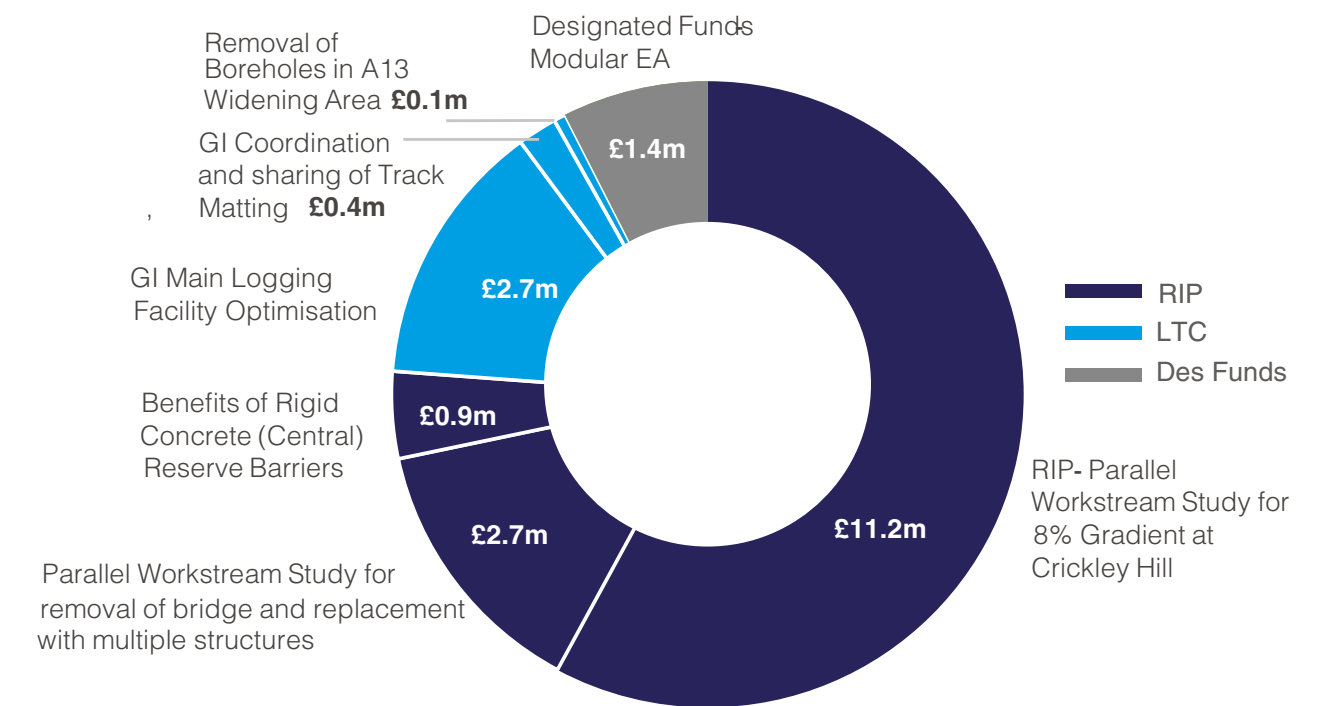


Figure 9: 2020/21 RP2 generated primary evidence by programme and title

Example case study - Modular emergency areas (EA) - designated funds

The Smart Motorways Programme Innovation Team has identified an opportunity to improve the implementation of emergency areas. This has been achieved using a standardised, modular design that can be brought to site and dropped into place without the need for curing time or dependency on weather conditions. The use of the modular solution offers both design cost savings and programme duration savings.

The key benefits of this approach involve making a modular standardised design which can be implemented and easily adapted depending on the retaining and drainage solutions chosen. Off-site manufacturing improves the quality of the product and reduces the level of weather dependency.

With a standardised design, maintenance regimes are more consistent giving a standard approach to work and any remedial works following incidents e.g. HGV fires in emergency areas. Damaged modular units can be lifted out and replaced in a timelier fashion.

The estimated time saving of 10 days per scheme when implementing modular EAs over traditional wet solutions leading to a saving of approx. £7.2 million over RP2.

Whole life cost (WLC) savings

We have a License requirement to adopt a WLC approach to managing our assets, which means considering the cost over the asset life to increase taxpayer value for money. Where appropriate, we evidence this by case studies we share with ORR and report against measured efficiency.

Carryover efficiency

Efficiency Delivery			
£132.6m	54.5%	£362.0m	16.3%
2020/21 efficiency value	2020/21 proportion of £243m efficiency	RP2 Forecast	RP2 proportion of £2.23bn KPI

Carryover efficiency is efficiency created in RP1 that is realised in RP2. A schedule of relevant carryover projects and changes was agreed with the ORR at the end of RP1 to be reported in RP2.

The 2020/21 planning assumption was to report £120.5 million of carryover efficiency. We have exceeded this amount by evidencing and reporting £132.6 million in 2020/21 and are on track to deliver a five-year efficiency milestone of £362.0 million.

Evidence

We deliver primary evidence through case studies, efficiency guides, and efficiency registers which are independently assured internally and reviewed by the ORR. The chart in Fig. 10 provides the 2020/21 breakdown of carryover efficiency delivered by programme and type.

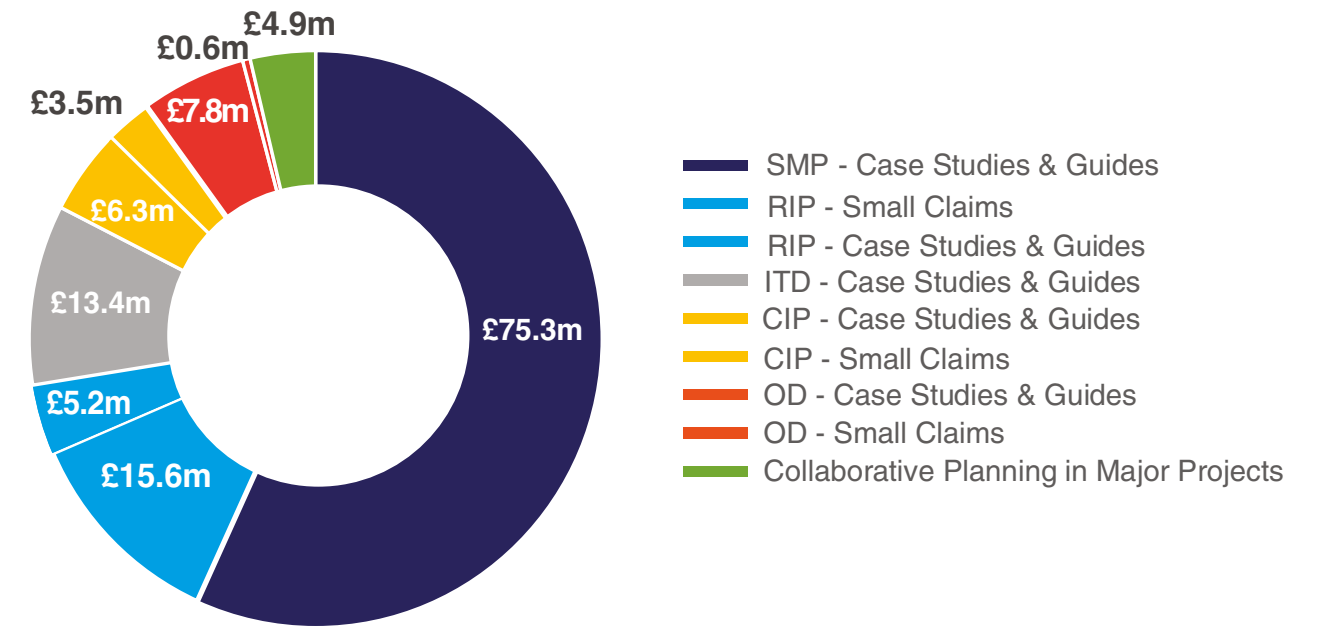


Figure 10: Breakdown of carryover efficiency by programme and type



Example case study - Collaborative planning in major projects

The Collaborative Planning System (CP) is a technique based on Lean methodologies. It's the practice of engaging stakeholders, defining key project milestones and making collective decisions to improve the outputs of a project or process.

It consists of a series of tools, approaches and processes where Highways England, contractors, sub-contractors and third parties work together to improve productivity, deliver better value, remove waste, and reduce time and cost, whilst achieving the outputs of the project. The adoption of Lean Visual Management is integral to realising the benefits of CP by providing team and activity specific information and updates.

Key benefits in implementing CP are reduced programme duration by reviewing progress against the critical path, improving collaboration, transparency and understanding across disciplines. It is also proving highly effective in issue resolutions especially when involving multiple disciplines.

Conclusion

We have driven, generated and realised efficiency to successfully achieve the year 1 milestone of the five-year KPI by delivering £243 million of efficiency against an in-year milestone of £233 million. This puts us in a strong position as we enter the second year of RP2. Supporting this, we have provided robust secondary evidence strengthening the narrative about how we have successfully delivered against the in-year milestone. We have also met our commitment to deliver our agreed outputs for the funding provided. In addition, our pipeline has developed, offering confidence that we are on track to deliver the overall RP2 target of £2.23 billion.

Challenges as we enter the second year of RP2 include our assessment of the impact of Covid-19, change control, and the impact of the Government's spend review. In addition, we are working to address issues outlined in this report such as accounting for over-delivery of outputs.

As RP2 progresses we will be adding to how we provide secondary evidence provision, including the delivery of further activity metrics on capital renewals and the introduction of activity metrics on capital enhancements, alongside the maturation of our efficiency registers, case studies, and efficiency guides.



Annex A – Inflation

Inflation is part of the overall risk that we carry. This means that there is an absorbed upward cost pressure where actual is greater than funded and a downward pressure where actual is less than funded. We have a commitment to evaluate the impact annually and cumulatively and demonstrate that we are taking reasonable steps to minimise the impact. We then discuss with ORR whether there is a bearing on the level of performance reported.

There is no single publicly available model that enables inflation to be forecast and evaluated for the type of infrastructure work that we undertake. We have therefore developed and agreed with the ORR a method of calculation that uses a bespoke model, sourced by the Building Cost Information Service (BCIS). This draws upon several data and information sources.

This model was used to agree with the DfT, ORR and Treasury a funded value of inflation for RP2 based on the following:

	2020-21	2021-22	2022-23	2023-24	2024-25
Capital works	3.41%	3.75%	4.57%	4.25%	3.53%
Operating costs inc. electricity	2.00%	2.00%	2.00%	2.00%	2.00%
Maintenance contracts	2.76%	2.76%	2.76%	2.76%	2.76%

Figure 11: Agreed funded value of inflation

RP2 inflation funding has been stated in nominal terms. This means that an assumed inflation profile has been applied to the forecast scheme costs to inflate them to the year in which the expenditure is forecast. As the efficiency targets are based upon the same inflated values these are also in nominal terms. To reflect this, all costs included in efficiency calculations are calculated and reported at the point of efficiency delivery. For example, if an efficiency relates to the construction phase of the project then the price base for both the pre- and post-efficient values should be the mid-point of this phase.

Our policy is to share risk with our supply chain when negotiating contract rates to incentivise them to exercise control. This means that they share part of the benefit and contribute to any shortfall. We have carried out extensive work to evaluate and control the inflation risk and this has been shared with the ORR.

The levels of inflation experienced by our programme of work in 2020/21 will take some time to fully evaluate. A provisional assessment is shown in Fig. 12 below:

	2020-21 (DSBP)	2020-21 (Actual)
Capital works	3.41%	1.96%
Operating costs including electricity	2.00%	1.01%
Maintenance contracts	2.76%	1.84%

Figure 12: 2020-21 inflation figures

We have built a model to assess the variance between funded and actual inflation. This model will be refined over the coming 12 months to quantify the impact of this variance on the delivery programme.

¹ Capital Works and Maintenance Contract values are calculated as movement between April 20 and April 21. April 21 values are currently forecast and may change. Operating Costs utilise CPI data published by ONS between March 20 and March 21.

Annex B – Capital enhancements secondary evidence

The secondary evidence for capital enhancements is a combination of:

- Case studies detailing major programme level initiatives – over £5 million.
- Metrics that capture the difference between the forecast and actual cost of construction activities – known as activity metrics.

Case studies

We use efficiency registers to record changes that drive efficiency, and we then create case studies or efficiency guides for changes exceeding £5 million. They are subject to review by the Project, Commercial, Strategy and Planning and Audit and Assurance teams and this ensures that the case study or efficiency guide is robust. The efficiency registers are also used to record efficiencies with an RP2 value below £5 million, which are still subject to assurance but where a case study is not required.

The baseline for this evidence is August 2018 on the assumption that initiatives carried out before this date have become business as usual (BAU) in RP2. This applies unless it is demonstrated that the change was either being piloted in RP1 with the intention to roll-out fully in RP2 or was not comprehensively deployed across all regions in RP1.

Four schemes opened for traffic in 2020/21, none of which had an efficiency milestone attached as they were coming to the final stages of their construction period, with efficiency reported in RP1. As a result, there are no case studies in 2020/21 for capital enhancements.

Activity metrics – future schemes

The main capital enhancement output is the provision of additional network capacity. The key activity metric is therefore the unit cost of added capacity measured as £ per additional lane kilometre.

As our first capital enhancement scheme with an efficiency milestone will open in 2021/22, no activity metrics are reportable in 2020/21. We are developing a suite of measures which will enable us to report activity metrics from 2021/22 onwards.

Annex C – Capital renewals secondary evidence

Secondary evidence for capital renewals is split into two elements;

- Case studies for efficiencies exceeding £5 million.
- Activity metrics.

Case studies

Efficiency registers are used to record efficiency at scheme/programme level which leads to the creation of case studies and efficiency guides exceeding £5 million. They are subject to review by the Project, Commercial, Strategy and Planning and Audit and Assurance teams to ensure that case studies and efficiency guides are robust. We also use the efficiency registers to record efficiencies with an RP2 value below £5 million, which are still subject to assurance but where a case study is not required.

The baseline for this evidence is August 2018 on the assumption that initiatives carried out before this date have become BAU in RP2. This applies unless it is demonstrated that the change was either being piloted in RP1 with the intention to fully roll-out in RP2 or was not comprehensively deployed across all regions in RP1.

Registers can also be populated with initiatives that fall below the £5 million threshold. In such instances a case study does not need to be produced but the principle and calculation of the initiative is still subject to internal assurance.

There was £24.9 million of efficiency reported against 2020/21 through efficiency registers. This is summarised by value, type and title under Fig. 13.

The value of secondary evidence exceeds the value of primary efficiency, which is due to over-delivery of outputs.

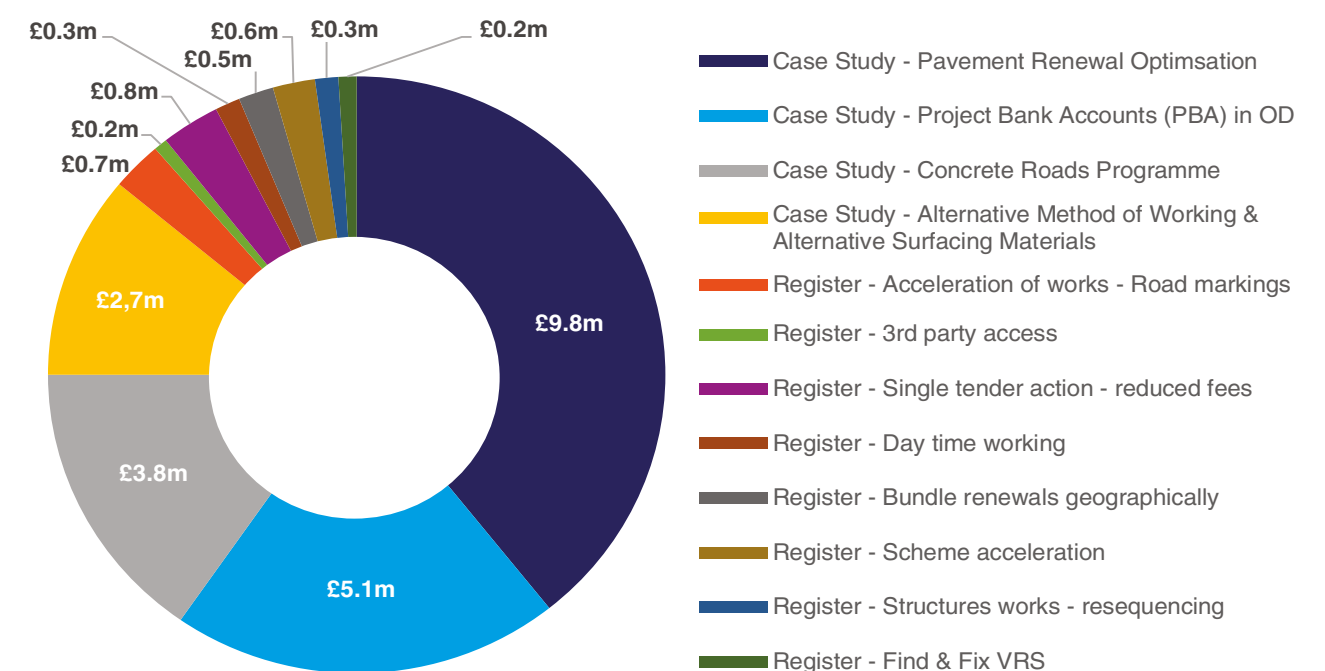


Figure 13: 2020/21 summarisation of capital renewals case studies by title and value

Activity metrics

We are developing capital renewals activity metrics centred on the unit cost movement of our key asset deliverables. We have shared our approach with ORR.

We have developed these by categorising schemes into the relevant asset class using an analytically-assured set of rules. We set a baseline £/unit – for example, £ per lane km – using the available RP1 data, and analysing RP2 data to derive the RP2 £/unit. The baseline £/unit and RP2 £/unit are then compared and this gives us an idea of how each asset class is performing. To ensure a like-for-like comparison between the baseline and RP2, the output quantities – or activity – are normalised for both the baseline and RP2.

For 2020/21 our activity metrics cover the asset classes of asphalt resurfacing and steel VRS. As RP2 progresses and more data emerges we will be adding other asset classes to our analysis, and this will be reported on a cumulative basis throughout RP2.

The activity metrics support the 2020/21 capital renewals efficiency position. The breakdown of this in Fig. 14 shows a 13.8% reduction in the unit cost of asphalt resurfacing schemes, and a 4.6% reduction for steel VRS schemes. Fig.14 also shows the effect that these movements have on our overall spend by using the proportion of spend each asset class constitutes. The metrics show that we were therefore more efficient in 2020/21 compared to the RP1 baseline.

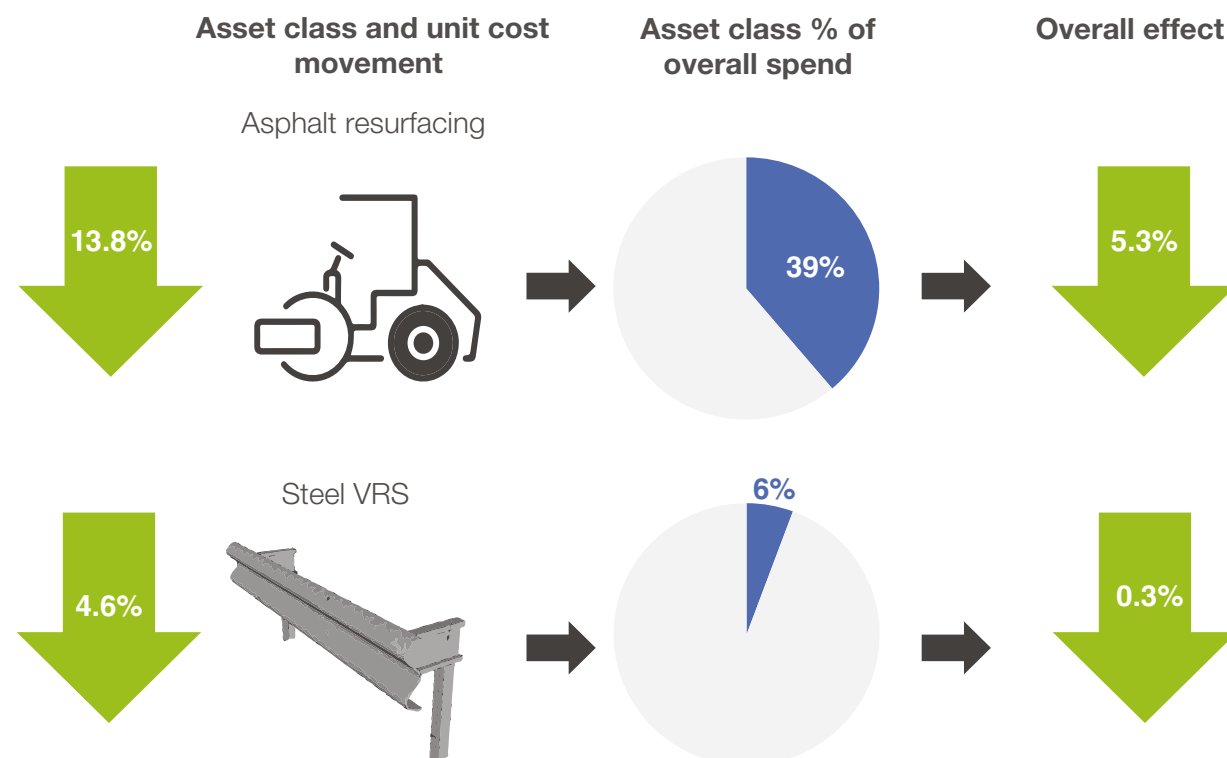


Figure 14: RP2 activity metric results, cumulative position end 2020-21

Annex D – Operations, maintenance & business costs (opex) secondary evidence

We also provide secondary evidence for opex through efficiency registers, mainly comprising case studies with an RP2 value higher than £5 million. We supplement these by assured efficiencies with a value below £5 million which do not have an accompanying case study.

There was £42.5 million of efficiency reported against 2020/21 through efficiency registers. The value and title of the six case studies used as evidence is detailed in Fig.15.

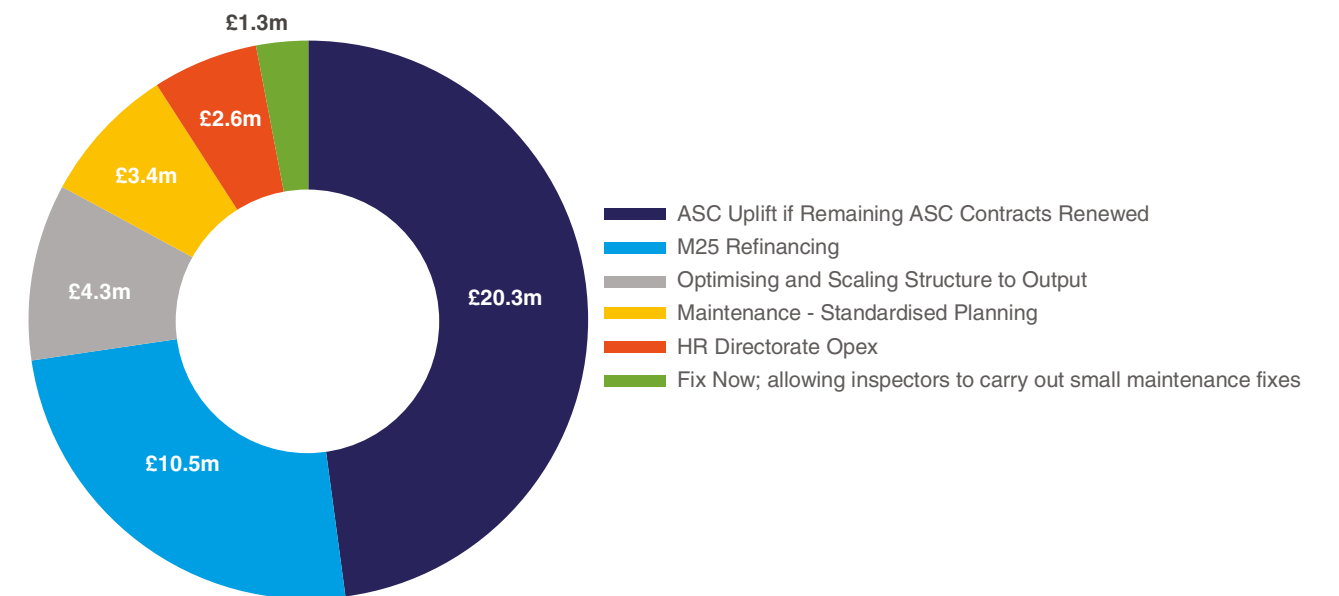


Figure 15: 2020/21 summarisation of opex case studies by title and value

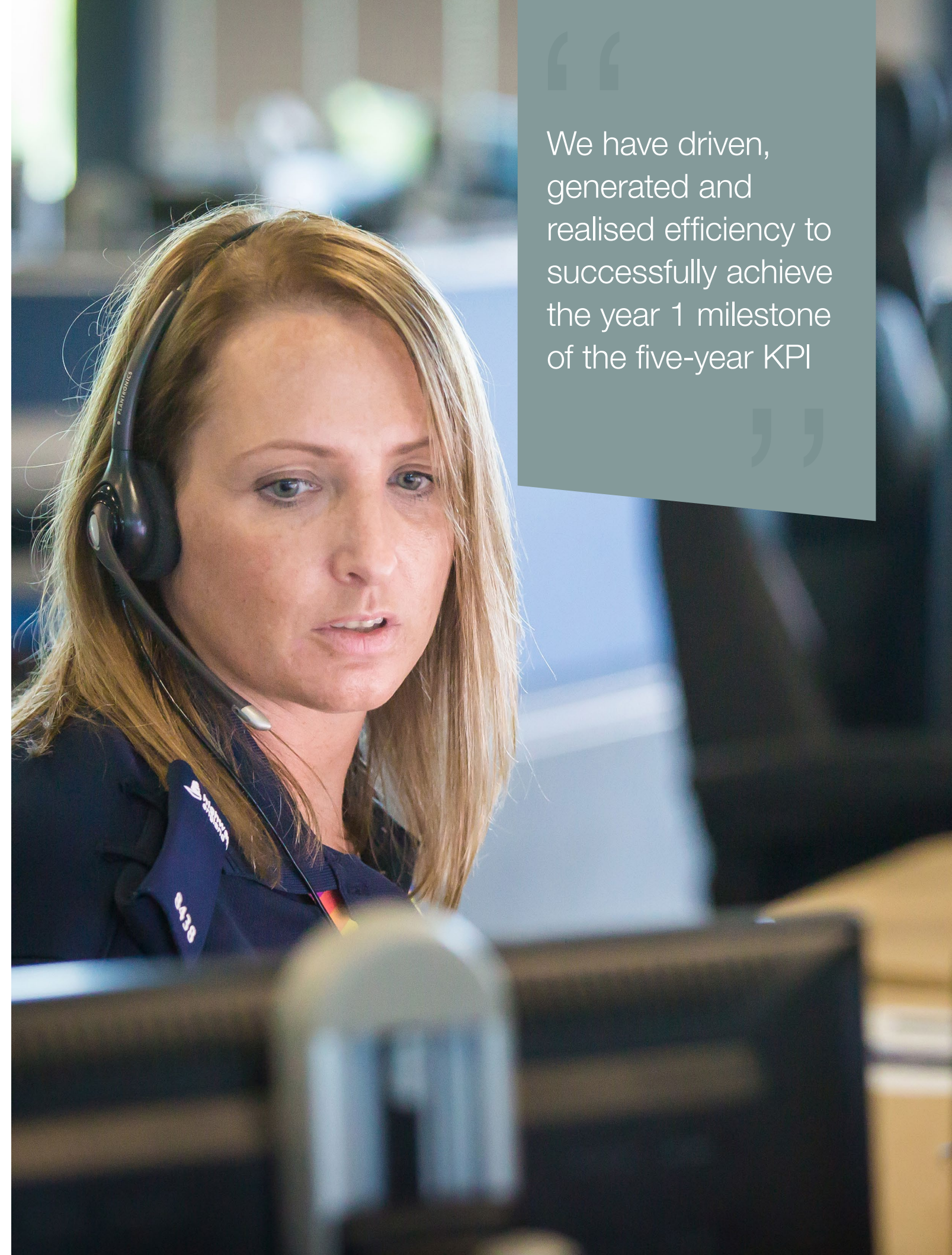
We have worked to ensure that the case studies cover a high proportion of reported primary efficiency (80.5%), offering strong supporting evidence for the in-year milestone.

Annex E – Non-roads capex secondary evidence

Whilst non-roads capex has contributed to the efficiency milestone for 2020/21 there is no secondary evidence to report. The measurement of efficiency for non-roads capex is newly introduced in RP2, and so we are developing methods by which to report secondary evidence as RP2 progresses – such as through case studies – and these will be reported from 2021/22 onwards.

Annex F – Glossary of terms

Carryover	Efficiency which has been identified and secured in RP1, but is also realised in RP2
Central Risk Reserve (CRR)	A contingency within our funding for unexpected risks
Change Control	A formal process where significant funding impacts, and any resultant effect on efficiency, are agreed with DfT and ORR
Designated Funds (Des Funds)	During the first road period, the Government created a series of designated funds, to address a range of issues over and above the traditional focus of road investment, including: growth and housing, innovation, environment, air quality, and cycling, safety and integration
Efficiency and Inflation Monitoring Manual (EIMM)	Document that sets out the approach Highways England uses to define, demonstrate and provide evidence of its delivery of efficiency in RP2. It also sets out how the comparison between forecast (assumed) inflation and actual inflation will be evaluated during the RP
Efficiency Register	This is a standard document that captures efficiencies, as well as associated reporting information, value, evidence and approval information. Each entry in the register is supported by a justification as to the reason why the entry is considered to be efficiency
Embedded efficiency	Efficiency that reduces the funding required at project level and is already built into the post-efficient business plan. Applies to projects and programmes of work that had a defined scope and schedule when the SBP was drafted, or outputs against which efficiency can be measured and against which post-efficient cost baselines have been set
Lever	Repeatable efficiency initiatives that can be utilised across multiple schemes and programmes of work
License	Sets out the Secretary of State's aims, objectives and conditions for Highways England
Measured efficiency	Efficiency that is split into two types, RP2 Generated and Carryover. Measured efficiency will not reduce the funding for RP2 but will, in general, benefit later road periods or reduce risk within RP2. This includes whole life cost efficiency cases
Nationally Significant Infrastructure Project	Major infrastructure projects which require a type of consent known as 'development consent' under procedures governed by the Planning Act 2008
Open for Traffic (OFT)	The date at which a scheme has completed and opened to receive traffic
Post-efficient	Where we challenged historic costs and delivery approaches and then built efficiency expectations into the SBP; further detail on this can be found in the EIMM
Pre-efficient	Costs prior to implementing the principle of post-efficient costs
Primary evidence	For embedded efficiency this is the delivery of the output or outcomes for the funding provided. For measured evidence this is the use of efficiency registers, case studies and efficiency guides for demonstrating efficiency
Regional Delivery Partnerships (RDP)	An initiative to incentivise suppliers to improve safety and deliver increased value. This approach contains incentives for results including: shorter and more accurate roadworks; more efficient, local buying; innovation; and increased environmental benefits
Renewals Risk Reserve (RRR)	A contingency within our funding for unexpected risks
Road Investment Strategy (RIS)	Government's long-term strategy for the strategic road network
RP2 Generated	Efficiency that does not reduce the funding required for RP2, but will, in general, benefit later road periods or reduce risk within RP2. This type of efficiency will apply to the areas of the plan which did not include an efficiency challenge in the SBP and were therefore left as pre-efficient costs
Secondary evidence	Supplementary evidence used to support primary evidence, which is provided through efficiency registers, case studies, and activity metrics
Smart Motorways Project (SMP)	Motorways that use technology to manage the flow of traffic, controlled from Highways England control centres. They monitor traffic and set variable speed limits and signs to help keep the traffic flowing safely and freely
Start of Works (SoW)	The date at which construction formally starts on a scheme
Strategic Business Plan (SBP)	Highways England response to government's second Road Investment Strategy (RIS2). It presents the balancing between maintaining and operating the SRN safely, and providing new capacity where it is needed
Strategic Road Network (SRN)	The network of roads managed by Highways England, comprising motorways and some A-roads



We have driven, generated and realised efficiency to successfully achieve the year 1 milestone of the five-year KPI

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