OFFICE OF RAIL AND ROAD

Annual Assessment of National Highways' performance

April 2022 to March 2023

Office of Rail and Road

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Introduction

National Highways was set up as a government-owned company in 2015, tasked with managing the strategic road network (SRN) – the motorways and major A-roads in England. In its second road investment strategy (RIS2) the government specified a set of outcomes and investments that it requires National Highways to deliver over the second road period (RP2), from 1 April 2020 to 31 March 2025.

The Office of Rail and Road (ORR) holds National Highways to account for the delivery of the requirements set out in RIS2, its broader licence commitments and how it achieves its efficiency targets. This report sets out our assessment of National Highways' performance in the third year of RP2, between 1 April 2022 and 31 March 2023 (the reporting year).

The reporting year coincides with a period of significant financial uncertainty for National Highways caused by external pressures, such as high inflation. The uncertainty is also complicating decision making over enhancement schemes that the company is due to deliver towards the end of RP2. ORR continues to work closely with National Highways and government to understand the impact on and risks to delivery that are associated with this uncertainty.

Despite financial uncertainties, National Highways has delivered well for road users. The company worked with ORR and Transport Focus to reinstate the strategic roads user survey that was suspended during the Coronavirus (COVID-19) pandemic. It supported reliable journeys on the network by meeting its targets for incident clearance and network availability. However, over the reporting year traffic levels and delays increased. The company must continue to focus on delivering in this area.

National Highways met its target for delivering a well-maintained and resilient network. The company improved its performance in notifying users of road closures, but more work is required to achieve its challenging targets set for the end of the road period. We continue to hold the company to account to achieve this as we enter the final two years of RP2.

This report does not include a detailed assessment of National Highways' performance on safety, except where new data is available on workforce safety. In December 2022, we published our first annual assessment of safety performance on the strategic road network that includes commentary on the latest road casualty data. We will publish an updated safety report by December 2023 using the latest data due to be published by the Department for Transport in September 2023. This will also include an update of our work

relating to the Transport Select Committee's recommendations on the roll-out and safety of smart motorways. This is unaffected by the government's announcement in April 2023 to cancel all smart motorway enhancement schemes not yet in construction.

Our annual assessment is supported by four key messages.

Key message 1: efficiency

In the reporting year, National Highways delivered more efficiently and has met its March 2023 milestone towards its 2025 target of £2.1 billion. The company is forecasting that it will meet that target. However, efficiency performance for the remainder of the second road period (RP2) is uncertain. National Highways must demonstrate that it has a clear understanding of how to meet its key performance indicator target despite changes in outputs, cost and delivery risks and a challenging enhancements programme for the remainder of RP2.

1. National Highways reports that it met its March 2023 cumulative efficiency milestone, after adjusting for inflation above the funded level. During the reporting year we pressed the company to improve the quality of its efficiency evidence and worked with it to ensure that its inflation adjustment is robust. The company has made good progress in these areas and we found that its evidence supports its reported position.

2. National Highways has also reported that it is on track to meet its efficiency key performance indicator (KPI) target at the end of RP2. We note that the position is challenging. In the next two years, the level of inflation that the company will face is uncertain, and to meet the target the company will need to deliver a challenging programme of works.

3. National Highways must ensure that it has a clear understanding of how inflation is impacting all areas of efficiency and how other external cost pressures (such as non-recoverable VAT) are impacting its business. Following the announced changes to enhancement schemes in March 2023, the efficiency KPI could be revised to reflect adjusted volumes of work. The company must then show us how it will mitigate cost and delivery risks that could impact its second road investment strategy efficiency performance.

Key message 2: enhancements portfolio

National Highways did not meet its revised 2022 delivery plan enhancements commitments. The company agreed substantial changes to its commitments with government because of reasons outside its control, such as statutory planning delays. However, it also missed four of its 21 in-year commitments because of factors within its control. Forecast costs have increased due to delays and inflation. As a result, the company faces ongoing risks to delivery for the remainder of the second road period. It must continue to demonstrate to us that it is improving its capability to deliver, learn, and appropriately assess and mitigate its risks. The second road investment strategy enhancements portfolio, as published in 2020, has significantly changed and it is unlikely that the expected user benefits will be realised in the intended timescales.

4. National Highways did not meet all of its revised 2022 delivery plan start of works (SOW) and open for traffic (OFT) commitments.

5. Some of National Highways' unachieved commitments were due to reasons beyond its control, such as statutory planning delays. The company used formal change control processes to agree with government new delivery date commitments for these schemes.

6. However, some of National Highways' unachieved commitments were due to factors government deemed to have been within the company's control and have been recorded as missed commitments. For its commitments due in the reporting year, the company missed one of its nine SOW commitments and three of its 12 OFT commitments. In total for the second road period (RP2), there have been seven schemes that have been classified as missed commitments (two for SOW, three for OFT and two schemes declared that they will miss their OFT commitments). Information provided by the company suggests that the majority of these missed commitments are as a result of procurement issues, specifically linked to supply chain management and commercial contract management. We are seeking action from the company to ensure that it learns lessons and embeds them into its business.

7. Since the start of RP2, we have seen several risks affect National Highways' delivery of its enhancements portfolio and its ability to achieve its SOW commitments. We anticipate that these risks will continue for the remainder of RP2 and beyond. The key risks to portfolio delivery over the reporting year were:

- schemes gaining planning consent, in particular development consent orders (DCOs). Several schemes had legal challenge. The key reasons for the challenges were around the consideration of cumulative carbon for the portfolio and localised environmental concerns. Whilst these issues are likely to be outside of National Highways' control, they cause scheme programme delay that could require the company and government to agree further changes to the delivery plan. We will continue to hold the company to account to deliver any revised commitments; and

- National Highways forecasts that the total outturn costs for delivering the second road investment strategy (RIS2) enhancements portfolio rose by 13% (from £25,388 million to £28,613 million) in the reporting year. This was primarily caused by delays and inflation. The company, in-line with a DfT ministerial statement, has mitigated the cost pressure on the RP2 budget by moving the delivery of some schemes into the third road period (RP3). These scheme delays and rescheduling have meant that the company underspent its capital budget in the reporting year. However, in-line with its governance, it moved £357 million (10%) of funding into later years of RP2 to align with anticipated construction programmes.

Key message 3: asset management

In our last annual assessment, we challenged National Highways to demonstrate to us that it is optimally renewing its network. This has been a concern of ours for several years as it affects the longer-term efficiency and sustainability of the strategic road network. In the reporting year the company introduced a new reporting tool that improved the information we see about the decisions that it takes regarding its renewals on the network. This is a big step forward. Later in 2023, we expect to be able to draw firmer conclusions on whether the company is optimising its renewals decisions.

8. In our last annual assessment, we raised concerns that National Highways' reporting of capital renewals was based on asset volumes renewed against its annual delivery plan targets and spend. This provided us with an indication that work was delivered, but it did not tell us whether the work addressed an asset need. We were concerned that the company might compromise long-term efficiency and asset sustainability in pursuit of short-term benefits and challenged it to demonstrate the alignment between its policy and what it delivered.

9. In July 2022, we made it clear to National Highways that we would hold it to account to produce its new renewals reporting tool: the Capital Delivery Management Tool (CDMT). In September 2022, the company produced its first national report that showed renewals scheme delivery data across all its regions. These deliverables provide us with greater confidence that the company is adopting a best practice approach to managing the lifecycle of its assets.

10. However, we note that in the reporting year we only received three quarterly reports. This is not sufficient to establish a robust baseline performance level because it does not capture delivery seasonality. To ensure that we reach that position as soon as possible, we will continue to work with National Highways to support the further development and maturity of its reporting. A baseline of at least one full year of reporting will provide us with a better understanding of the company's renewals scheme delivery. Continued, regular, reporting will strengthen our ability to hold the company to account to deliver its renewals programme.

11. Pavement renewals are a good example of the need for National Highways' renewals reporting to demonstrate best practice whole-life asset management. In January 2023, National Highways forecast that it would miss its pavement condition key performance indicator (KPI) target. The company used updated asset condition information to adjust its renewals programme, recovered its position and met its target. We asked the company to demonstrate to us, using the renewals reporting tool, how it responded to the risk of missing the KPI target. The company provided output data from CDMT showing changes made to the pavement renewals programme and its approach to data processing. By using data from the renewals reporting tool, the company was able to demonstrate its maturing approach to asset management.

12. National Highways has stated that a reason for the reduction in the pavement condition forecast was due to the impact of extreme hot weather experienced in July 2022. Therefore, the company needs to demonstrate in its asset management reporting evidence that it is delivering network resilience, including to account for the ongoing impacts of climate change.

13. Going forward, we will continue to hold National Highways to account to build on what it has done to improve the intelligence available to support asset management decisions. The company must also demonstrate its ability to forecast, mitigate risks and plan for changing asset need.

Key message 4: environment

In the reporting year, ORR successfully challenged National Highways on its ability to deliver no net loss in biodiversity and reduce its corporate carbon emissions by 2025. The company produced robust plans following the concerns we raised. We will continue to hold National Highways to account to deliver its end of road period targets. In particular, we will scrutinise and evaluate the company's plans to deliver biodiversity improvements and corporate carbon reductions.

14. National Highways has a key performance indicator (KPI) target for the second road period (RP2) to deliver no net loss of biodiversity by 2025. In our last annual assessment, we reported that the company was forecasting a biodiversity net loss by 2025. As a result of ORR's challenge and increased engagement, the company produced a robust biodiversity delivery plan in September 2022. It is now forecasting that it will achieve no net loss of biodiversity by the end of RP2.

15. In the reporting year, government agreed to adjust National Highways' RP2 corporate carbon reduction KPI target. This was because grid electricity production is more carbon intensive than was forecast in 2020 when the target was set. The company remains committed to reducing its electricity usage by 22% by the end of RP2 compared to the baseline as originally planned.

16. National Highways has plans in place that it believes will meet its second road investment strategy performance commitments on air quality and noise. We continue to scrutinise the company's environmental plans to satisfy ourselves that they are robust, deliverable and will enable it to meet its performance targets.

1. Key message: efficiency

In the reporting year, National Highways delivered more efficiently and has met its March 2023 milestone towards its 2025 target of £2.1 billion. The company is forecasting that it will meet that target. However, efficiency performance for the remainder of the second road period (RP2) is uncertain. National Highways must demonstrate that it has a clear understanding of how to meet its key performance indicator target despite changes in outputs, cost and delivery risks and a challenging enhancements programme for the remainder of RP2.

1.1 National Highways reports that it met its March 2023 cumulative efficiency milestone, after adjusting for inflation above the funded level. During the reporting year we pressed the company to improve the quality of its efficiency evidence and worked with it to ensure that its inflation adjustment is robust. The company has made good progress in these areas and we found that its evidence supports its reported position.

1.2 National Highways has also reported that it is on track to meet its efficiency key performance indicator (KPI) target at the end of RP2. We note that the position is challenging. In the next two years, the level of inflation that the company will face is uncertain, and to meet the target the company will need to deliver a challenging programme of works.

1.3 National Highways must ensure that it has a clear understanding of how inflation is impacting all areas of efficiency and how other external cost pressures (such as non-recoverable VAT) are impacting its business. Following the announced changes to enhancement schemes in March 2023, the efficiency KPI could be revised to reflect adjusted volumes of work. The company must then show us how it will mitigate cost and delivery risks that could impact its second road investment strategy efficiency performance.

Outcome: achieving efficient delivery

1.4 National Highways has one key performance indicator (KPI), two performance indicators (PIs) and a commitment in this outcome area.

1.5 The PIs and commitment are discussed in paragraphs 2.76 to 2.80.

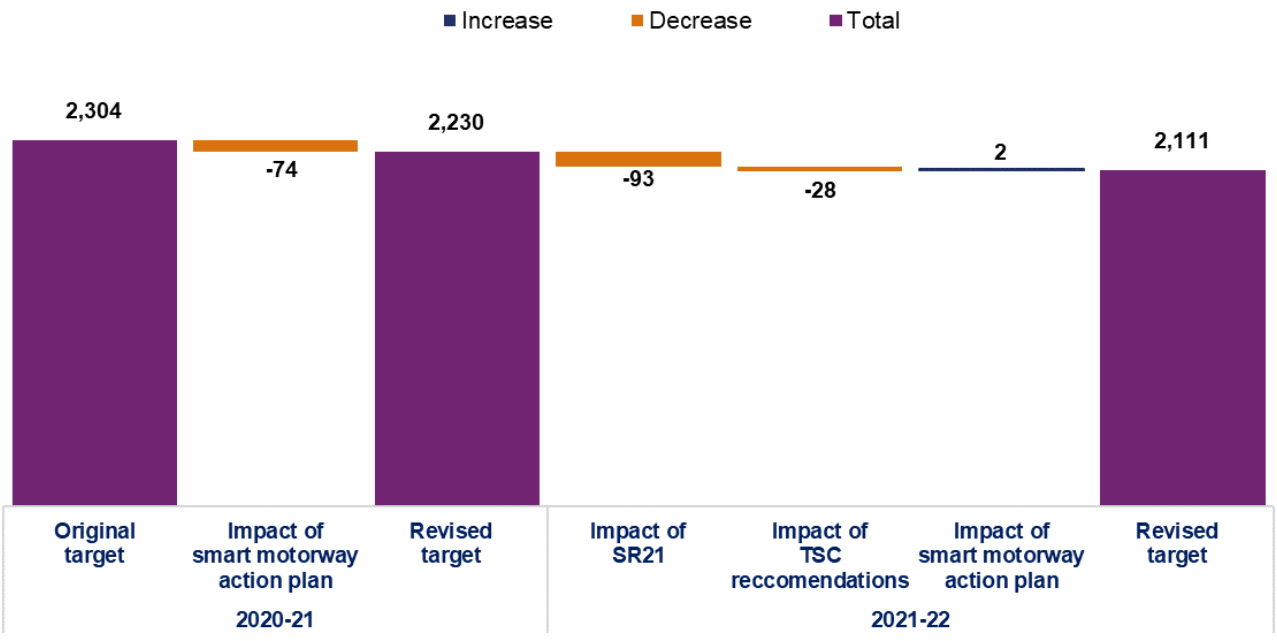
KPI: Total efficiency

1.6 We hold National Highways to account for its delivery of the efficiency KPI target. This includes reviewing and challenging the company on the efficiency evidence that it reports. This chapter summarises the reported position and our view of the quality of the efficiency evidence National Highways has provided.

1.7 National Highways has a target to deliver £2,111 million of capital or operational efficiency during the second road period (RP2). The company sets internal cumulative milestones to track its progress towards achieving its RP2 efficiency target. The internal cumulative milestone for 1 April 2022 to 31 March 2023 (the reporting year) was £776 million.

1.8 During the reporting year, government announced changes to the enhancements programme in response to planning delays and inflationary driven financial pressures. These may require a change to the KPI target in the following year. As shown in Figure 1.1 the KPI target was revised earlier in RP2 due to the impact of the smart motorway action plan and Spending Review 2021.

Figure 1.1 Change in efficiency target from start of RP2 (£ million)

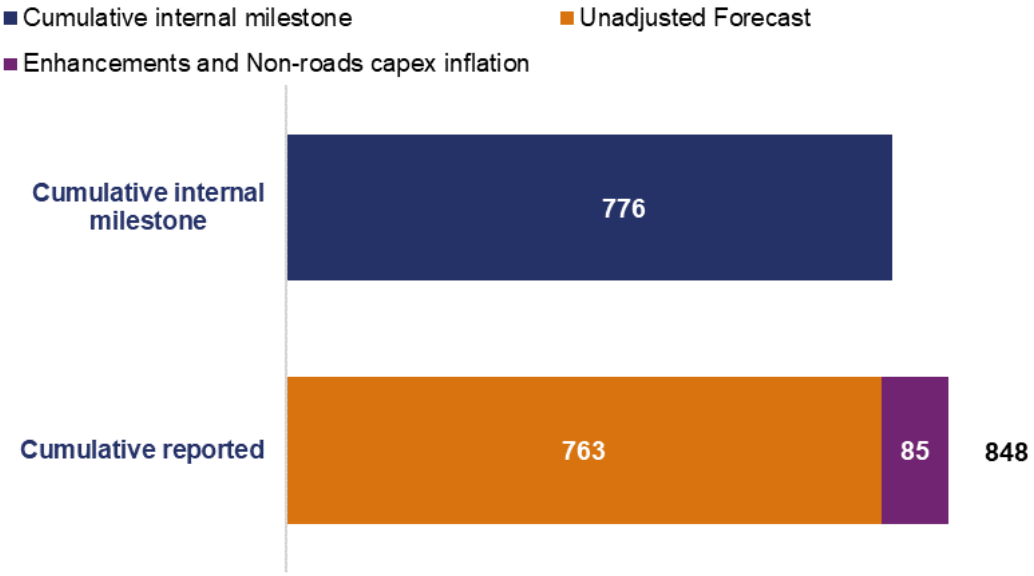


National Highways' reported efficiency over the first three years of RP2

1.9 Figure 1.2 shows that National Highways reported a cumulative efficiency total of £848 million. This includes an adjustment for inflation of £85 million. This represents 40% of the efficiency KPI target and £72 million more than the

company's internal milestone of £776 million. Paragraphs 1.14 to 1.30 set out our assessment of the evidence the company presented.

Figure 1.2 Cumulative reported efficiency against milestone (£ million)



1.10 The reported £848 million of cumulative efficiency is made up of:

- £496 million of embedded efficiency where efficiency is 'baked-in' to RIS2 through reduced funding in the original allowance, this value includes the £85 million inflation adjustment for enhancements and non-roads capex;
- £91 million of measured RP2 generated efficiency that does not reduce funding but reduces risk in RP2 or in the third road period (RP3) and beyond; and
- £262 million of measured carry-over efficiency, representing the RP2 element of the first road period (RP1) delivered efficiency.

Case study: Inflation impacts on efficiency performance

National Highways receives funding to deliver the second road investment strategy on a nominal basis. This means it is based on the expected level of cost inflation at the start of the road period. Funding is not revised for actual inflation, so National Highways takes the risk of inflation being different to the expected level.

For National Highways' reporting of efficiency performance, it is important that the company can demonstrate the impact of inflation on the cost of its activities. This is because changes in

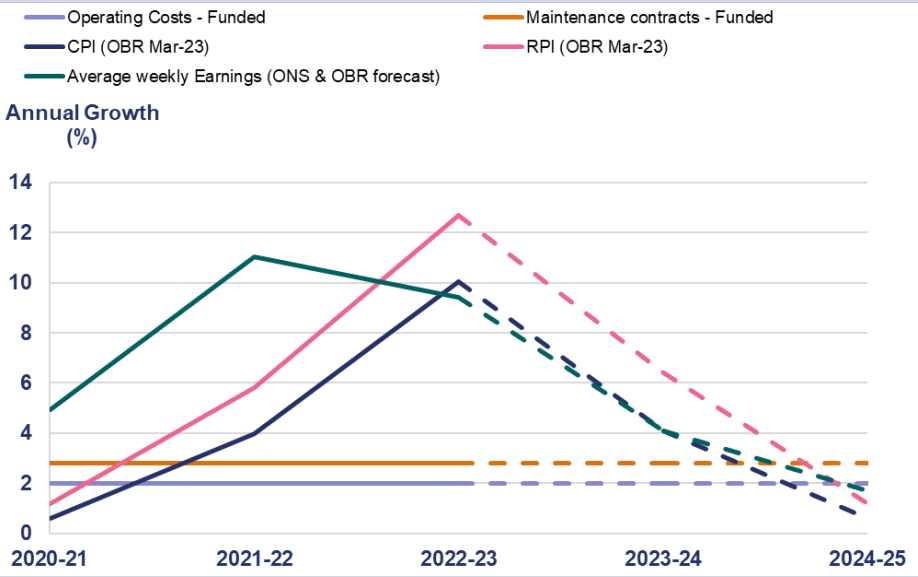
cost caused by external factors are not related to its level of efficiency and can distort its reported efficiency performance.

Inflation was lower than the funded level in the first road period (RP1). This created a small 'tailwind' benefit. National Highways, to demonstrate that it was delivering efficiently, needed to show it had delivered more outputs than was required in RP1. Figure 1.3 shows that to date in the second road period (RP2), inflation was below the funded level before moving above it in recent years. This 'headwind' of higher inflation in RP2 was initially caused by the effects of the Coronavirus (COVID-19) pandemic but in this reporting year a significant driver has been the impact of the war in Ukraine.

The consumer price index is a widely used measure of inflation. It shows how price changes impact the wider economy. However, price changes for National Highways may differ. The company's supply chain is responsible for much of its operational and capital delivery. The impact of material or labour cost changes may be fully passed on to National Highways or shared between the company and the supplier. Also, the company may not experience the impact of inflation immediately due to the timing of contractual payments.

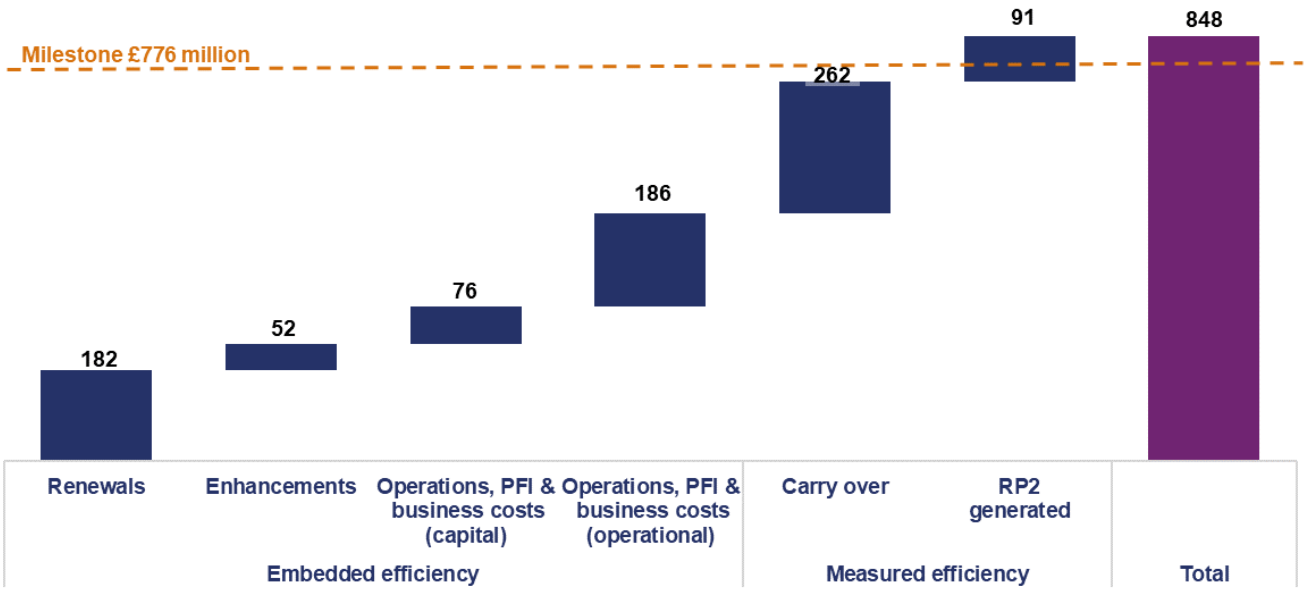
In RP2 the inflation headwind is materially impacting National Highways' efficiency performance in the middle of the road period. In early 2022, ORR challenged the company on its reported under delivery against milestones and its RP2 forecast. It produced a detailed model of the impact of inflation on its business. We worked with the company to refine this, challenging its underlying assumptions before it was finalised. As a result, we agreed an adjustment to its reported efficiency performance and forecasts.

Figure 1.3 Real price effects – RIS2 SoFA inflation profile



1.11 Figure 1.4 shows the cumulative reported efficiency by category. Reported cumulative efficiency is above the expenditure category milestones when the inflation adjustment is included, except for renewals. However, we track progress and assess National Highways efficiency evidence against the total milestone of £776 million.

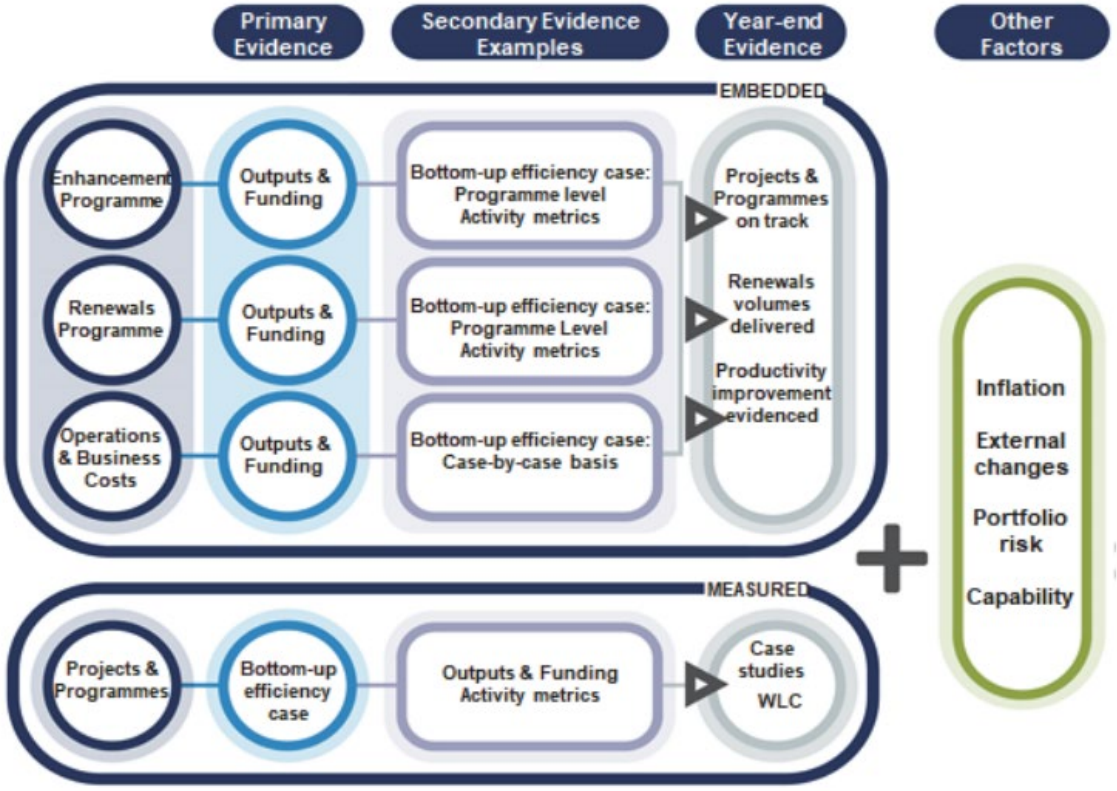
Figure 1.4 Cumulative reported efficiency against milestone (£ million) by type



1.12 Figure 1.5 shows the different types of efficiency and the supporting primary and secondary evidence the company presents to support the reported values. National Highways' Efficiency Report, published annually, provides definitions of types of efficiency, and summarises the evidence for its reported efficiency.

1.13 For embedded efficiency, primary evidence is based on National Highways demonstrating it is delivering the RIS outputs for its post-efficient funding which included the Central Risk Reserve (CRR). Secondary evidence is based on activity metrics (financial measure of a unit of activity) and case-study descriptions of efficiency initiatives. For measured efficiency, case-studies provide the primary evidence. Secondary evidence is based on activity metrics and delivering outputs for funding.

Figure 1.5 Sources of evidence for types of efficiency by expenditure category



Source: National Highways' Efficiency and Inflation Monitoring Manual

Assessment of cumulative efficiency evidence in the reporting year

1.14 Tables 1.1 and 1.2 show our assessment of the quality of National Highways' evidence to support the company's reported efficiency from April 2020 to March 2023. The colours indicate a summary of our view of the evidence quality. Where we indicate there is developing evidence, we believe it requires improvement. Further detailed commentary on our assessment of efficiency evidence can be found in paragraphs A44 to A59.

Table 1.1 Embedded efficiency reported and our assessment of supporting evidence

Expenditure categories	Reported cumulative (£496 million)	Primary: outputs and funding	Secondary: activity metrics	Secondary: case studies
Capital enhancements	£52 million	Good evidence	Good evidence	Good evidence
Capital renewals	£182 million	Developing evidence	Good evidence	Good evidence
Operations and business costs (capital expenditure)	£76 million	Good evidence	Developing evidence	Developing evidence
Operations and business costs (operational expenditure)	£186 million	Good evidence	Developing evidence	Good evidence

Embedded efficiency: primary evidence

1.15 National Highways has made improvements to the quality of primary evidence supporting its reported efficiency. This includes new reporting on renewal pavement depth suggesting it is delivering road surface renewal at the depth it was funded. We would like to see this reporting developed further in the next reporting year to provide greater assurance about how depth has been calculated.

1.16 National Highways has made less progress with reporting how efficiency values are affected when it delivers either more or less renewals outputs than planned. This is important because reported efficiency is linked to cost variances that may be due to accelerating or decelerating work rather than efficiency.

Embedded efficiency: secondary evidence

1.17 National Highways continues to make progress developing activity metrics for renewals and enhancements:

- For renewals, the company has shown for its five key asset classes that it is delivering efficiency at a similar scale to the level shown in primary evidence.
- For enhancements, it has developed activity metric models for smart motorways and Regional Investment Programme bypass and widening schemes. Work on a model for junction improvement schemes has begun and is expected to report in the coming year.

1.18 For enhancements would like to see this work taken further to more clearly show how it supports the level reported using primary evidence.

1.19 For operations and business costs (operational and capital expenditure) use of activity metrics is challenging due to the diverse activity in these categories. In this reporting year National Highways has begun to explore whether there are any areas of its expenditure where they can be applied.

1.20 National Highways continued to report case studies (descriptions of efficiency initiatives and financial benefits) across all categories of efficiency. The case studies cover a wide range of initiatives taking place in RP2. In some instances, the value of secondary evidence presented continues to be below the reported efficiency.

Table 1.2 Measured efficiency reported and our assessment of supporting evidence

	Reported cumulative (£353 million)	Primary: case studies	Secondary: outputs and funding	Secondary: activity metrics
Carry-over	£262 million	Good evidence	Not applicable	Not applicable
RP2 generated	£91 million	Good evidence	Not available in the reporting year	Developing evidence

Measured efficiency: primary evidence

1.21 National Highways' carry-over efficiency includes £75 million of smart motorway enhancement efficiencies, as determined by a unit cost model that we reviewed and accepted in RP1. The company will annually update this reported efficiency to reflect any adjustments to efficiency values for the carry-over schemes as they open for traffic within the embedded category.

1.22 National Highways continues to report case studies in support of RP2 generated efficiencies. The value of case studies reviewed this reporting year aligns with the cumulative value reported, an improvement on the prior year.

Measured efficiency: secondary evidence

1.23 In this reporting year, National Highways started to explore how existing activity metrics could be applied to the schemes that fall within the scope of the RP2 generated category. We will continue to work with the company in this area to identify suitable activity metrics to provide robust secondary evidence.

1.24 We are also working with the company to explore the use of outputs and funding as secondary evidence for RP2 generated efficiency.

Other factors: inflation, capability and risk

1.25 National Highways has included an inflation adjustment to account for the external impact on reported efficiency of higher than funded inflation. The reported efficiency is directly related to the costs incurred by the company. So, for the purposes of reporting efficiency, the inflation adjustment reduces the cost and increases the reported efficiency. Therefore, the adjustment ensures that the company's reported efficiency is not impacted by inflation over which it has no control.

1.26 National Highways believes its efficiency position has been impacted materially by other factors including the Coronavirus (COVID-19) pandemic but has not yet developed a robust case for an adjustment for these.

1.27 National Highways provides an overview in its year 3 efficiency report, due to be published in July 2023, of several capability building change programmes (controlled through its wider Transformation Programme) that it expects to deliver efficiency improvements during RP2. Efficiency case-study evidence provides further detail and, in some areas, quantifies efficiency benefits.

1.28 National Highways improved its reporting on the use of the CRR, funding allocated for portfolio level risks, and made progress showing how it impacts reported efficiency. For further detail on the CRR, see paragraphs 2.72 to 2.75.

Evidence assessment summary

1.29 National Highways improved its efficiency evidence in the reporting year providing increased assurance for its reported position. The company introduced an inflation adjustment and responded constructively to our feedback on the assumptions behind the adjustment. It also worked to improve secondary evidence by widening the scope of activity metrics.

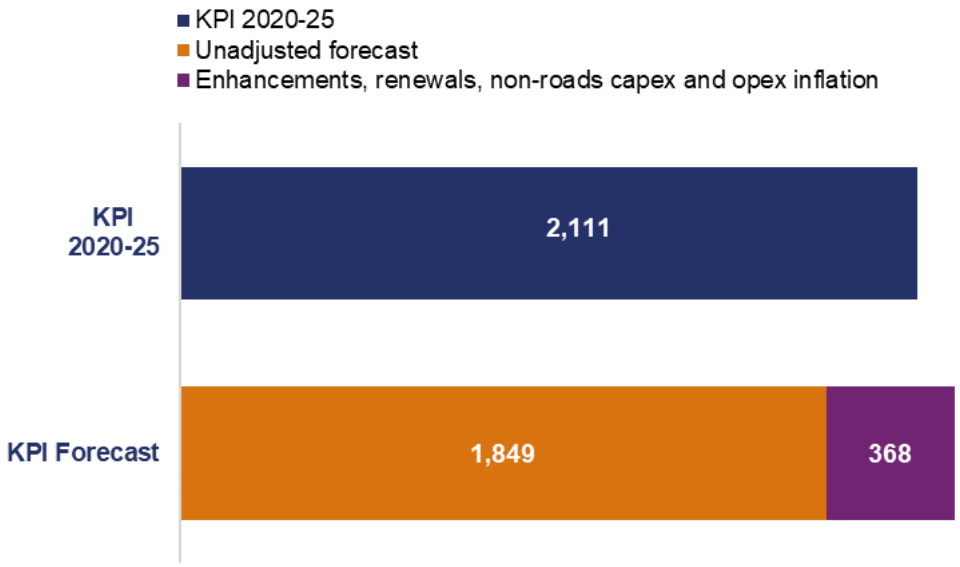
1.30 The evidence taken as a whole is sufficient to support the reported value and achievement of the milestone for years one to three of RP2. However, we want to see National Highways make further improvements to its reporting in the remaining years of the road period, recognising that the efficiency target is back end loaded, and that the company has 60% of the target to deliver in the remaining two years.

National Highways forecast efficiency against its KPI target

1.31 As set out in Figure 1.6, National Highways is forecasting efficiency improvements of £2,216 million across RP2 as a whole. This includes an adjustment for inflation of £368 million. This forecast represents 105% of its efficiency KPI target.

1.32 National Highways notes in its year 3 efficiency report, due to be published in July 2023, that delivering the target requires a comprehensive forecast of costs and outputs through to 2025. The company also highlights that this carries a degree of uncertainty that will reduce as it approaches the end of RP2.

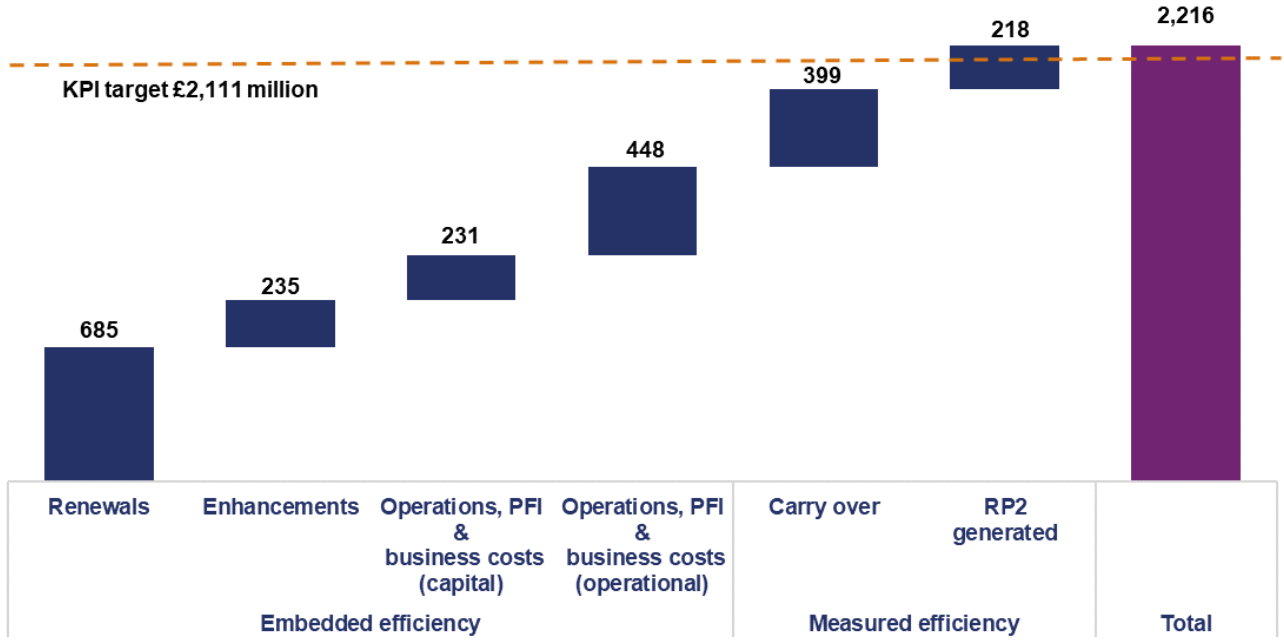
Figure 1.6 Reported forecast efficiency against KPI (£ million)



1.33 As shown in Figure 1.7, the reported £2,216 million of forecast efficiency against the £2,111 million target is made up of:

- £1,599 million of embedded efficiency where efficiency is 'baked-in' to RIS2 through reduced funding in the original allowance, this value includes the £368 million inflation adjustment applying to each expenditure category;
- £218 million of measured RP2 generated efficiency that does not reduce funding but reduces risk in RP2 or in the third road period (RP3) and beyond; and
- £399 million of carry-over efficiency, representing the RP2 element of the first road period (RP1) delivered efficiency.

Figure 1.7 Reported forecast efficiency against KPI by type (£ million)



Assessment of efficiency evidence RP2 forecast

1.34 In response to ORR challenge in our last annual assessment, National Highways included within its efficiency report a forecast of efficiency against the target for the first time in RP2. In this section we consider the potential impact of change on efficiency and other factors that mean future efficiency performance is uncertain.

1.35 National Highways' forecast efficiency is made up of three parts. Carry-over efficiency is relatively certain as it is representing the balance of efficiency that began to be delivered in RP1. Embedded efficiency and measured efficiency are more directly linked to the company's performance in RP2 and are therefore affected by wider factors that could impact the cost or delivery of parts of RIS2.

Change in RIS2 outputs impacting efficiency

1.36 National Highways continued to experience delays to enhancement scheme delivery driven by challenges with achieving planning consent on large complex schemes. In the first two years of RP2, this led to funding, schedule and efficiency target changes. In addition, in the reporting year, inflation has been significantly higher than anticipated for RP2. These factors together are complicating decision making over enhancement schemes that are due to be delivered towards the end of RP2. In March 2023, the Secretary of State announced planned changes to the timescales for three RIS2 schemes.

1.37 National Highways and Department for Transport (DfT) are yet to complete the process for agreeing changes required to the efficiency target. This is expected to be completed in the next reporting year.

1.38 Changes to RIS2 outputs and the efficiency target make forecasting efficiency particularly challenging. This is because, in anticipation of planned/expected changes to RIS2, National Highways will (with government agreement) make decisions impacting cost and delivery timelines that impact efficiency.

External headwinds impacting efficiency

1.39 National Highways adjusted its reported efficiency for its latest assessment of inflation above the funded level for two expenditure categories. The company has made a similar adjustment to its forecast (covering the inflation experienced in the first three years of RP2) but for all expenditure categories. This is because it has not developed sufficient evidence to support inclusion of the adjustment for all categories in its current milestone reporting but is confident that it will do so prior to the end of RP2.

1.40 National Highways only included an adjustment for the first three years of RP2 because enhancement scheme level cost forecasts (and therefore efficiency forecasts) do not yet include the higher inflation expected.

1.41 National Highways reports that it has identified other external headwinds affecting its costs that are not related to efficiency/inefficiency. It intends to develop the case for these further early in the next reporting year and expects to propose further adjustments to the reported position. As with the inflation adjustment we will closely scrutinise any case made to ensure it is robust.

Cost and delivery risk impacting efficiency

1.42 RIS2 funding was set at a level that assumes National Highways will deliver RIS2 outputs and efficiency plans for RP2 based on those outputs. Therefore, if the company cannot deliver RIS2 outputs due to factors within its control, it is unlikely that it will meet the efficiency target.

1.43 National Highways reports that it has missed some of its enhancement commitments to date within RP2. Also, whilst recent cost pressures have reflected higher inflation (outside of the company's control), cost increases and large enhancement CRR provisions earlier in RP2 (89% allocated by March 2022) indicate there have been cost challenges unrelated to inflation. For further details on remaining enhancement delivery and cost risks, see paragraphs 2.17 to 2.27.

1.44 On renewals, whilst National Highways has delivered its annual planned volumes, for most asset types, it will need to significantly increase volumes for concrete restraints and concrete pavement in the remaining two years to deliver the committed volumes for RP2 as a whole. The company will also need to improve the quality of efficiency evidence.

1.45 National Highways' efficiency delivery plan is back end loaded because it is linked to enhancement delivery and efficiency being reported only when a scheme opens for traffic. Plans for delivering efficiency were originally set on a programme of work that has since changed during RP2. Changes to timescales and deliverables will inevitably create additional challenges for efficiency that the company will need to recognise and overcome by March 2025.

Summary: Uncertainty in forecast

1.46 National Highways is forecasting that it will meet its target but highlights there is a degree of uncertainty in its reported forecast. We consider there are several factors that add to the challenge the company faces in meeting this target, including change to the target, future inflation, other headwinds and finance/delivery risks for enhancements in particular. We will continue to work with the company on efficiency reporting improvements, ensuring it recognises these risks to the delivery of efficiency and has a clear plan across the business to mitigate them in the remainder of RP2.

2. Key message: enhancements portfolio

National Highways did not meet its revised 2022 delivery plan enhancements commitments. The company agreed substantial changes to its commitments with government because of reasons outside its control, such as statutory planning delays. However, it also missed four of its 21 in-year commitments because of factors within its control. Forecast costs have increased due to delays and inflation. As a result, the company faces ongoing risks to delivery for the remainder of the second road period. It must continue to demonstrate to us that it is improving its capability to deliver, learn, and appropriately assess and mitigate its risks. The second road investment strategy enhancements portfolio, as published in 2020, has significantly changed and it is unlikely that the expected user benefits will be realised in the intended timescales.

2.1 National Highways did not meet all of its revised 2022 delivery plan start of works (SOW) and open for traffic (OFT) commitments.

2.2 Some of National Highways' unachieved commitments were due to reasons beyond its control, such as statutory planning delays. The company used formal change control processes to agree with government new delivery date commitments for these schemes.

2.3 However, some of National Highways' unachieved commitments were due to factors government deemed to have been within the company's control and have been recorded as missed commitments. For its commitments due in the reporting year, the company missed one of its nine SOW commitments and three of its 12 OFT commitments. In total for the second road period (RP2), there have been seven schemes that have been classified as missed commitments (two for SOW, three for OFT and two schemes declared that they will miss their OFT commitments). Information provided by the company suggests that the majority of these missed commitments are as a result of procurement issues, specifically linked to supply chain management and commercial contract management. We are seeking action from the company to ensure that it learns lessons and embeds them into its business.

2.4 Since the start of RP2, we have seen several risks affect National Highways' delivery of its enhancements portfolio and its ability to achieve its SOW commitments. We anticipate that these risks will continue for the remainder of RP2 and beyond. The key risks to portfolio delivery over the reporting year were:

- schemes gaining planning consent, in particular development consent orders (DCOs). Several schemes had legal challenge. The key reasons for the challenges were around the consideration of cumulative carbon for the portfolio and localised environmental concerns. Whilst these issues are likely to be outside of National Highways' control, they cause scheme programme delay that could require the company and government to agree further changes to the delivery plan. We will continue to hold the company to account to deliver any revised commitments; and

- National Highways forecasts that the total outturn costs for delivering the second road investment strategy (RIS2) enhancements portfolio rose by 13% (from £25,388 million to £28,613 million) in the reporting year. This was primarily caused by delays and inflation. The company, in-line with a DfT ministerial statement, has mitigated the cost pressure on the RP2 budget by moving the delivery of some schemes into the third road period (RP3). These scheme delays and rescheduling have meant that the company underspent its capital budget in the reporting year. However, in-line with its governance, it moved £357 million (10%) of funding into later years of RP2 to align with anticipated construction programmes.

RIS2 enhancements portfolio overview

2.5 At the start of RP2, National Highways committed in its 2020-2025 delivery plan to:

- achieve SOW on 43 RIS2 schemes;

- achieve OFT 52 RIS2 schemes; and

- support the delivery of nine third party and Housing Infrastructure Fund (HIF) scheme commitments. As National Highways is not delivering these schemes they are not included in this assessment's analysis.

2.6 By the end of the reporting year, National Highways had:

- SOW 13 RIS2 schemes;

- agreed with government a net reduction of 12 SOW commitments (one scheme accelerated from the third road investment strategy (RIS3) pipeline, one scheme cancelled due to poor value for money (VfM), nine smart motorways programme (SMP) schemes cancelled and three* schemes changed to RP3 SOW);
- OFT 19 RIS2 schemes; and
- agreed with government a net reduction of 17 OFT commitments (one accelerated from RIS3 pipeline, seven SMP pre-construction schemes cancelled, two SMP schemes already under construction cancelled, two schemes that missed their OFT commitment rescheduled to RP3 and seven* schemes changed to RP3 OFT).

**Excluding the addition of A47 Great Yarmouth Vauxhall Junction to the portfolio. Government agreed that the scope of the original A47 Great Yarmouth Junctions scheme should be split into two projects - A47 Great Yarmouth Harfreys Junction and A47 Great Yarmouth Vauxhall Junction to enable progress of the overall Great Yarmouth improvements which includes the Third River Crossing being delivered by Norfolk County Council.*

2.7 For the remaining two years of RP2, the company has a commitment to achieve:

- 18 RIS2 schemes SOW; and
- 16 RIS2 schemes OFT. This does not include the Mottram Moor Link Road and A57 Link Road scheme as this was originally a RP3 OFT commitment.

2.8 Figures 2.1 and 2.2 show the remaining RIS2 commitments. Further detail can be found in Tables B1 to B8. Paragraphs 2.33 and 2.34 show the impact of these changes on the original commitments.

Figure 2.1 RIS2 SOW commitments at end of third year of RP2

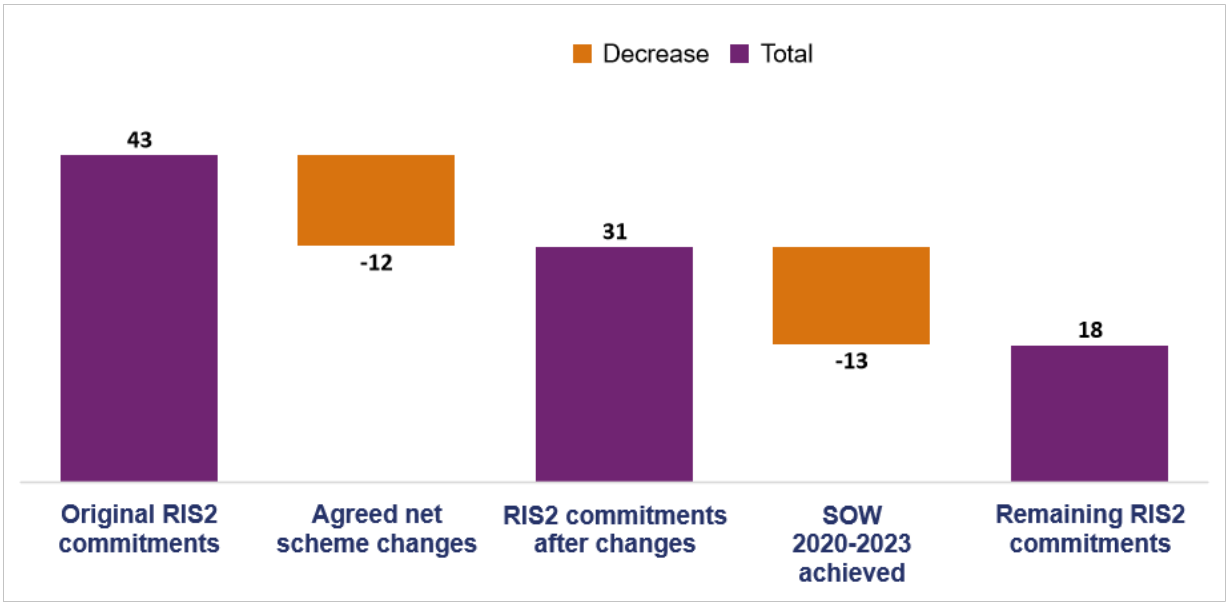
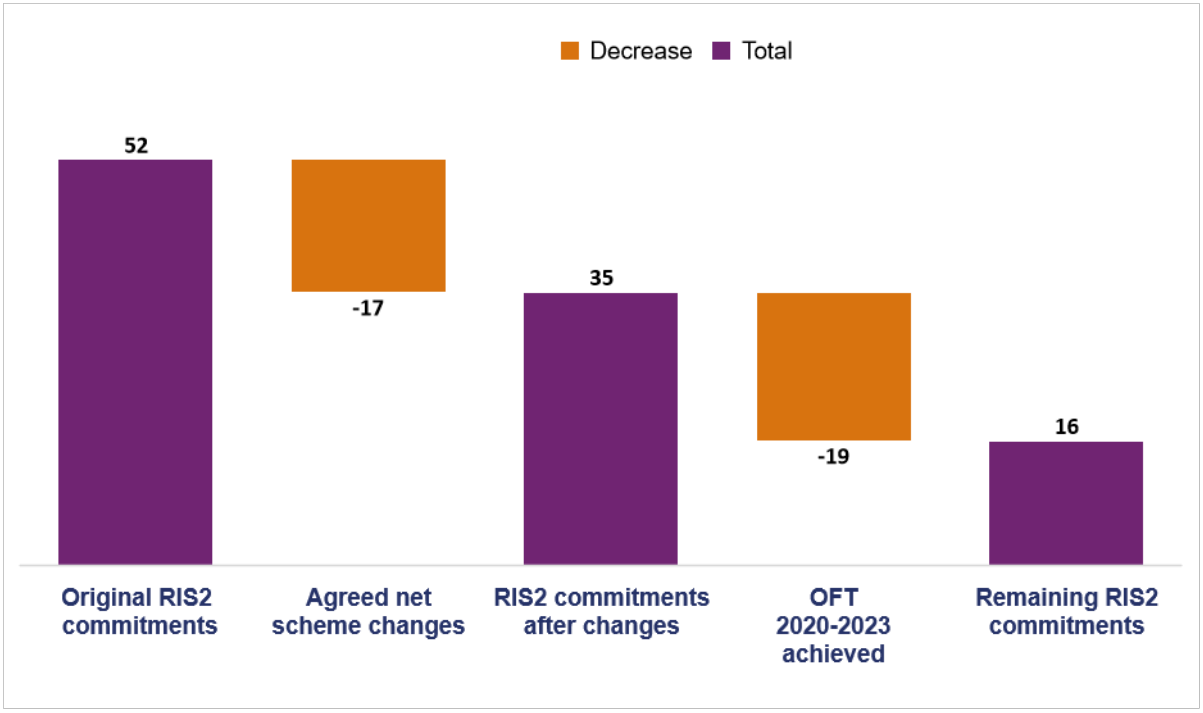


Figure 2.2 RIS2 OFT commitments at end of third year of RP2



2.9 Of the remaining RIS2 commitments, nine SOW and four OFT commitments have not been allocated revised dates yet. These dates will be determined following the outcomes of DCO decisions and legal challenges. The four OFT commitments exclude the Mottram Moor Link Road and A57 Link Road scheme as this was originally a RP3 OFT commitment.

2.10 If a change or delay to the delivery of RIS2 or delivery plan commitments is primarily a result of something within National Highways' control, the change will normally be classed as a missed commitment. In RP2 to date, the company has reported seven missed commitments. Four of these missed commitments were in this reporting year. These figures exclude the A417 Air Balloon scheme which the company had declared as a missed commitment but has since recovered and met its original SOW commitment.

2.11 Commitment changes agreed with government reduced the number of schemes that will SOW and OFT during RP2. This means there will be less enhancement construction in the remainder of RP2 with these works moving into RP3 and beyond.

2.12 The reduction in the delivery of the enhancement programme will result in the original programme benefits not being realised in this road period. This may have a negative impact on road users experiencing congestion and increased levels of delay on the network.

2.13 The forecasted cost of delivering RIS2 enhancements increased significantly during the reporting year due to high inflation and scheme delays. However, in RP2, forecast costs remained broadly static due to inflation being offset by several schemes that had construction take place later than planned. The cost impact is greater for RP3, as inflation and scheme schedule delay mean some challenging decisions will be required.

2.14 RIS2 contains four third party schemes and five HIF schemes, which National Highways is required to support, and they are not included in this assessment's analysis. These schemes are associated with both commercial and residential developments. However, the HIF specifically targets unlocking housing developments. Table B9 lists the status of these schemes.

Key challenges for RP2 delivery

2.15 Our key message reflects that the substantial change in the RIS2 enhancement portfolio has affected National Highways' ability to achieve the enhancement portfolio benefits. These changes are a consequence of several challenges including:

- obtaining planning consent;
- government's response to the Transport Select Committee (TSC) recommendations on the roll-out and safety of smart motorways;

- higher inflation than originally planned for; and
- achieving the VfM threshold.

2.16 We will set out how each challenge has affected the company's ability to deliver its enhancements programme.

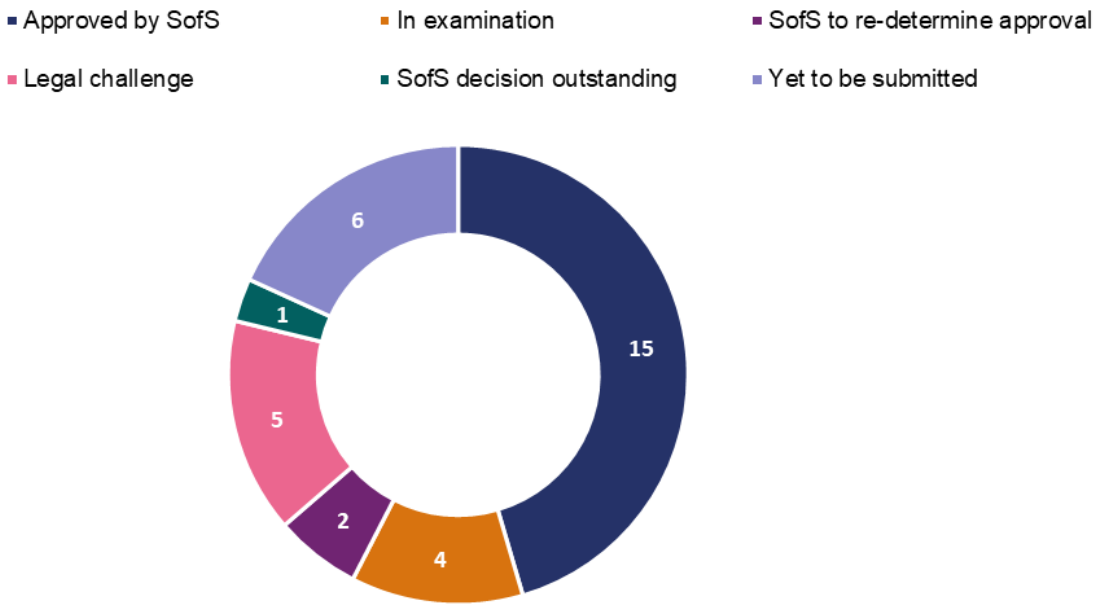
Planning consents

2.17 The original RIS2 portfolio had 33 schemes that required a DCO. At the end of March 2023, 15 had been approved by the Secretary of State (SofS) without legal challenge, 13 of which have started work.

2.18 Of the remaining SOW schemes yet to receive consent, 18 are at different stages of the DCO process. We consider schemes which require a DCO to be approved are at risk until the legal challenge period has elapsed. However, National Highways only considers that 12 of these schemes are at risk of meeting their SOW commitments.

2.19 Figure 2.3 shows the status of DCO applications and decisions at the end of the third year of RP2. Table B10 provides more detail on each scheme.

Figure 2.3 Status of schemes that require a DCO



2.20 During the reporting year, National Highways planned to submit seven DCO applications. Of these applications:

- four were submitted (Lower Thames Crossing, M3 Junction 9, A12 Chelmsford to A120 and A66 Northern Trans-Pennine);
- one was delayed to allow the SofS sufficient time to assess the scheme (A358 Taunton to Southfields);
- one was delayed to ensure that its design did not breach the government's commitment to TSC's recommendations to not to introduce any new All Lane Running (ALR) sections of Motorway (M60/M62/M66 Simister Island Interchange); and
- one has been deferred until RP3 (A27 Arundel Bypass).

2.21 The SofS approved ten National Highways DCOs in this reporting year. Five have subsequently been legally challenged. The risk of decisions being challenged is now greater than the risk of not being consented.

Government response to the rollout and safety of smart motorways programme (SMP)

2.22 In January 2022, government paused the roll-out of 11 RP2 ALR smart motorways schemes. On 15 April 2023 government announced that all smart motorways schemes not yet in construction will be cancelled due to financial pressures and lack of confidence felt by drivers. This cancellation consists of the 11 schemes already paused and three schemes scheduled for construction during RP3. Table B11 lists the status of the SMP.

2.23 Two smart motorway schemes already in construction will be completed and converted into ALR smart motorways (M56 Junctions 6-8 and M6 Junctions 21A-26).

2.24 National Highways will continue to manage and improve existing ALR sections of the strategic road network, including:

- improving stopped vehicle detection (SVD) performance;
- improving the performance of operational technology;
- delivering TSC commitments, including its national emergency area retrofit (NEAR) programme; and
- continuing to monitor, analyse and publish data relating to the safety performance of smart motorways.

Higher inflation than originally planned for

2.25 National Highways experienced increased enhancements costs in the first three years of RP2 and in its forecast for RP3. This is primarily due to the impact of planning delays. However, in this reporting year, the company was exposed to a higher level of inflation than was expected and funded for within RIS2. This is discussed further in paragraphs 2.54 to 2.69.

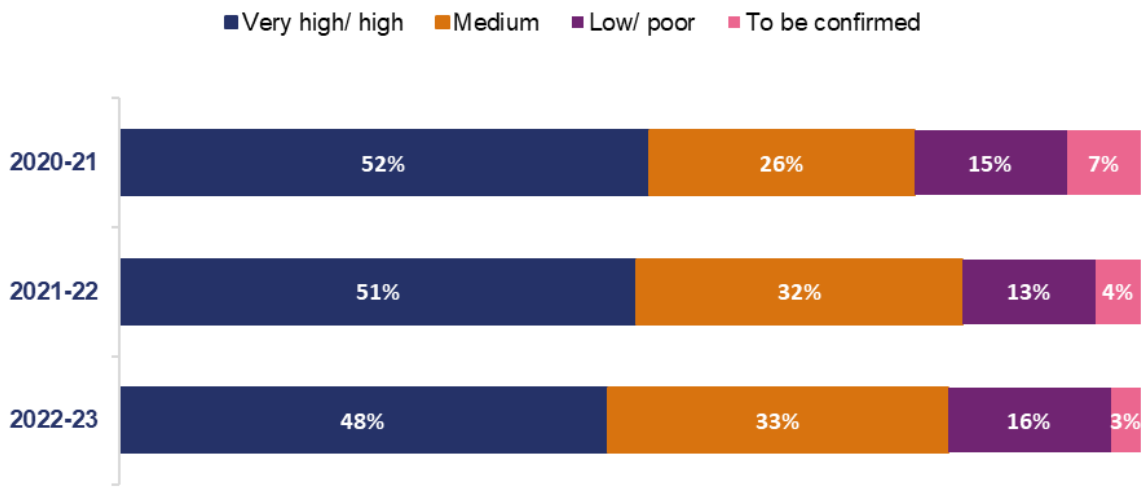
Achieving the VfM threshold

2.26 The enhancements portfolio VfM assessment for the reporting year shows that 48% of the portfolio is considered to have a very high or high VfM assessment.

2.27 There are 11 schemes identified as having a low or poor VfM rating, with one scheme cancelled due to its poor VfM assessment (A5 Dodwells to Longshoot). Of the 11 schemes, eight are regional investment programme (RIP) schemes, two are complex infrastructure programme (CIP) schemes and one is a SMP scheme).

2.28 National Highways will undertake further analytical assurance of these schemes as they progress through the options and development stages. We will assess the impact of low or poor VfM status on portfolio commitments in the next reporting year. Figure 2.4 shows variation to VfM for the enhancement portfolio.

Figure 2.4 RIS2 enhancement portfolio VfM during RP2



Case study: A417 Air Balloon - DCO stakeholder engagement

A large number of National Highways' enhancement schemes require a Development Consent Order (DCO). The process requires extensive consultation with stakeholders. Effective management of the process is key to reducing risks to delivery of the RIS2 programme. This case study demonstrates the scale of engagement required to mitigate the risk.

National Highways is improving the section of the A417 which links the Brockworth bypass and Cowley roundabout in Gloucestershire. The scheme has many environmental and engineering challenges. It's within the Cotswolds Area of Outstanding Natural Beauty (AONB), and the scheme is a "Nationally Significant Infrastructure Project" under the Planning Act 2008. This means that the scheme requires a DCO.

Given the environmentally sensitive nature of the scheme, the company needed to work closely with key stakeholders, including the Cotswolds Conservation Board, National Trust and Gloucestershire Wildlife Trust. The scheme was developed in collaboration with a strategic stakeholder panel (three main conservation groups and three local authorities) to advise and guide the scheme.

The company produced six options, but only two provided VfM. Responses to these options were collated in 2018. Over 2,000 people attended scheme events and 1,958 responses were received via questionnaires (online and freepost), email and letters. In 2019, consultation took place on the preferred route and its outline design. The consultation events were attended by 1,520 people, with approximately 1,000 responses received.

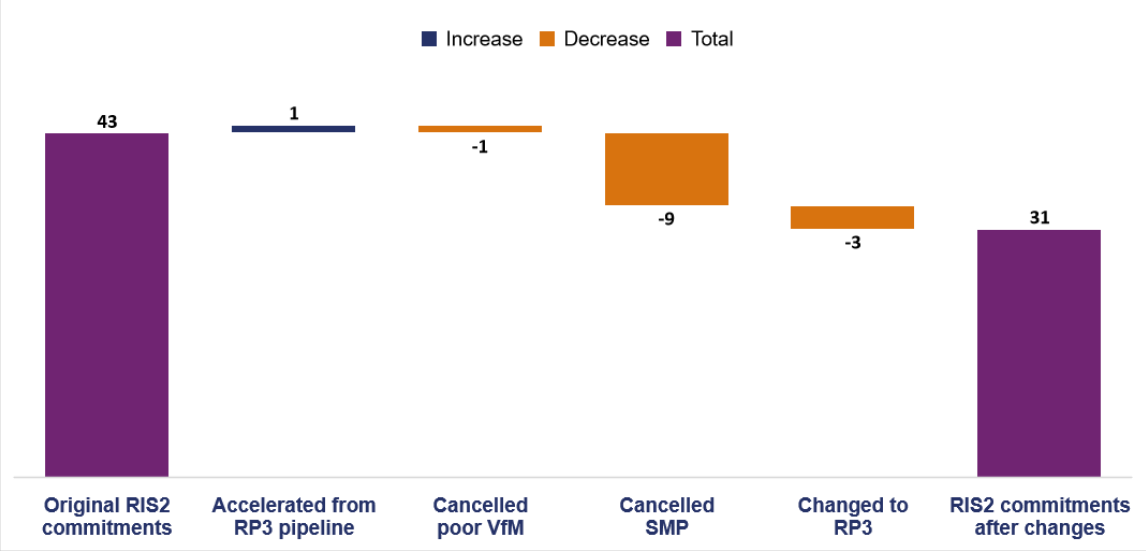
The Coronavirus (COVID-19) pandemic created a new risk for face-to-face consultations. In response, and to ensure that the scheme remained on target to start work, the company used alternative methods, for example, a virtual exhibition, webinars, live web chats and access to telephone call back.

National Highways worked with the Planning Inspectorate before submitting the DCO application. While the iterative cycle of consultation and engagement with stakeholders during the pandemic was challenging, National Highways took positive steps to overcome these challenges. The consultation and planning process took four years and despite these challenges the scheme was approved and started work on time in February 2023.

Changes to the RIS2 portfolio

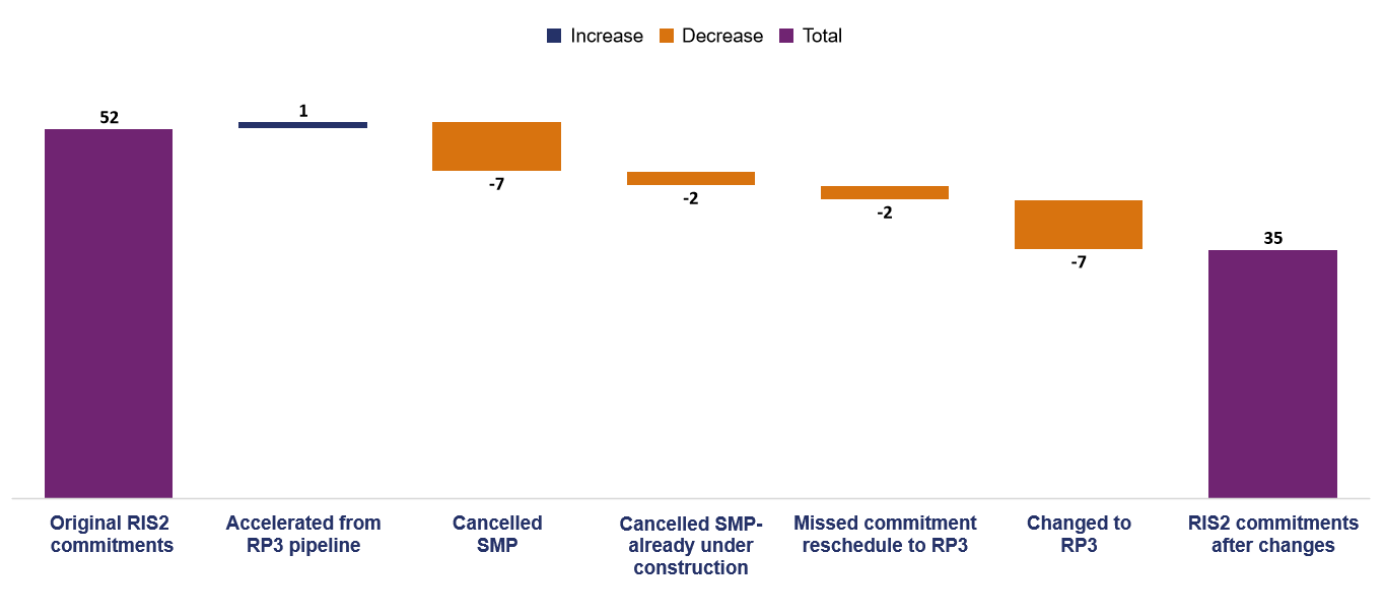
2.29 Figure 2.5 shows government agreed changes to SOW commitments. RIS2 listed 43 schemes committed to achieve SOW during RP2. During the first three years of RP2, government agreed to reduce the number of schemes committed to 31 schemes. This does not include two SMP schemes (M3 Junctions 9 to 14 and M40/M42 interchange) that had already started work and were subsequently cancelled.

Figure 2.5 Government agreed changes to SOW commitments



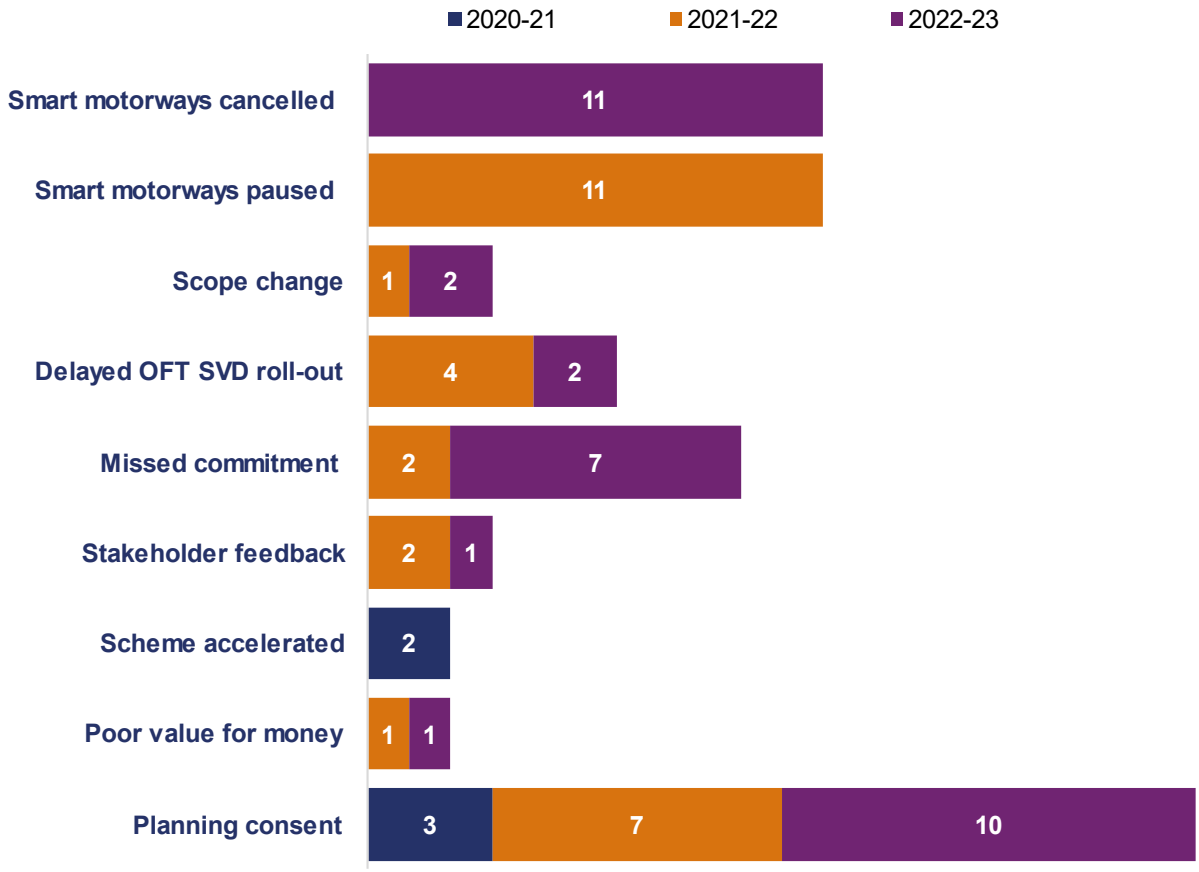
2.30 Figure 2.6 shows RIS2 listed 52 schemes committed to OFT in RP2. During the first three years of RP2, government agreed to reduce the number of schemes committed to 35 schemes.

Figure 2.6 Government agreed changes to OFT commitments



2.31 The total changes to the RIS2 enhancement portfolio (changes to the number of schemes committed in RP2 and changes that affect the schemes within RP2) led to 67 enhancement scheme changes. During RP2, government agreed five changes in the first year, 28 changes in the second year and 34 changes in the third year. Figure 2.7 shows the different reasons for these changes. Table B12 provides further details about the changes and reasons for the changes.

Figure 2.7 Government agreed changes to RIS2 enhancement schemes by reason



2.32 Government agreed to split the A47 Great Yarmouth Junctions scheme into two schemes (A47 Great Yarmouth Harfreys Junction and A47 Great Yarmouth Vauxhall Junction) to enable progress of the overall Great Yarmouth improvements scheme (including the Third River Crossing being delivered by Norfolk County Council).

2.33 The A47 Great Yarmouth Harfreys Junction will achieve SOW and OFT in RP2, whilst the A47 Great Yarmouth Vauxhall Junction is scheduled for delivery in RP3.

Risks to the delivery of the RIS2 portfolio

2.34 Despite the significant number of risks being mitigated through government agreed changes, the proportion of risks to the portfolio have increased compared with the start of RIS2. We would have expected the risk to the portfolio to reduce as the schemes are progressed through the development stages and identified risks being mitigated. Figure 2.8 shows our analysis of the changes to the portfolio risk profile across the first three years of RP2.

Figure 2.8 RIS2 enhancement scheme commitments status

2.35 We are concerned that the risks National Highways faces will continue in the next reporting year and beyond. This could ultimately impact the delivery of RIS2 key performance indicators (KPI) and portfolio road user benefits. The company must demonstrate that it has robust risk mitigations in place to minimise slippage to its programme. We will hold the company to account for the delivery of its commitments, reporting of early warnings and risk mitigations.

Missed commitments

2.36 As at March 2023, National Highways reported that seven committed schemes in its delivery plan are classified as missed commitments. The company has:

- missed two SOW commitments;
- missed three OFT commitments; and
- declared that two schemes will miss their OFT commitments.

2.37 In the last reporting year, National Highways reported that the A417 Air Balloon scheme would not achieve its SOW commitment in this reporting year and we reported it as a missed commitment. However, the company recovered this position and achieved SOW as per its original commitment. Therefore, we no longer consider this scheme to be a missed commitment.

2.38 We have seen evidence that National Highways is applying learning to improve its delivery performance and that is true in the case of some missed commitments. Additionally, the company has examined the causal factors for its missed commitments. Based on that information, we have determined that the key themes for the missed commitments since the start of RP2 were:

- project management capability;
- commercial and procurement capability;
- asset data quality;
- technical and asset management knowledge capability; and
- supply chain management capability.

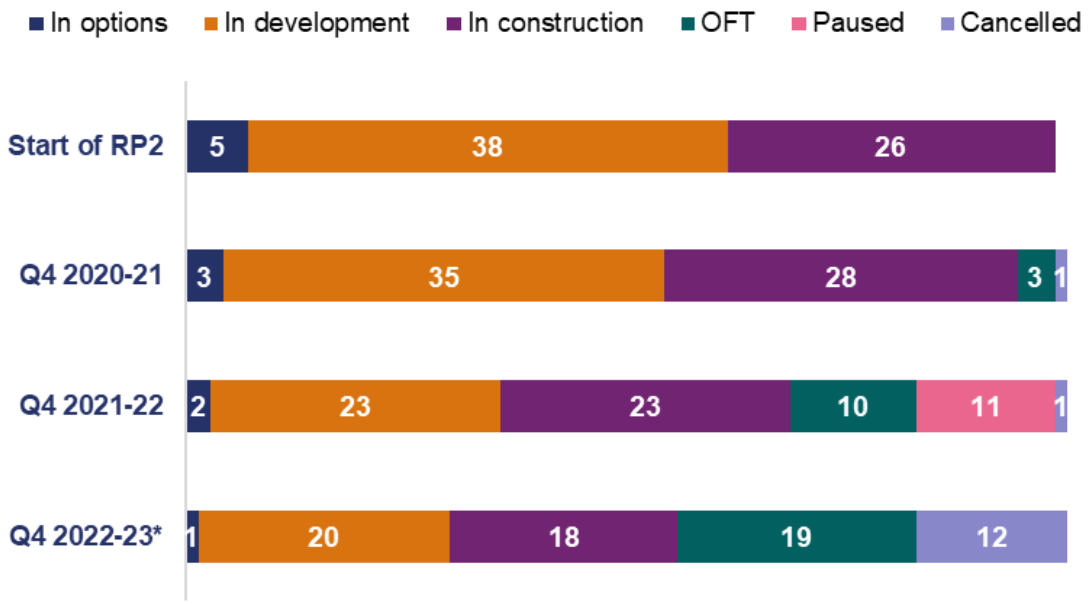
2.39 Table B13 lists the schemes that missed their commitments during RP2.

Performance of enhancements delivery in the reporting year

2.40 Since the start of RP2, National Highways progressed schemes through its project lifecycle stages. It continued to develop and deliver a steady volume of schemes to start construction and has not focussed only on construction activities.

2.41 In this reporting year, National Highways progressed RIS2 schemes through its project control framework process, as shown in Figure 2.9.

Figure 2.9 Progress of enhancement schemes during RP2



** These numbers exclude the A47 Great Yarmouth Vauxhall Junction scheme*

SOW commitments delivery performance

2.42 National Highways' 2022 delivery plan committed the company to achieve SOW on nine schemes. In the reporting year:

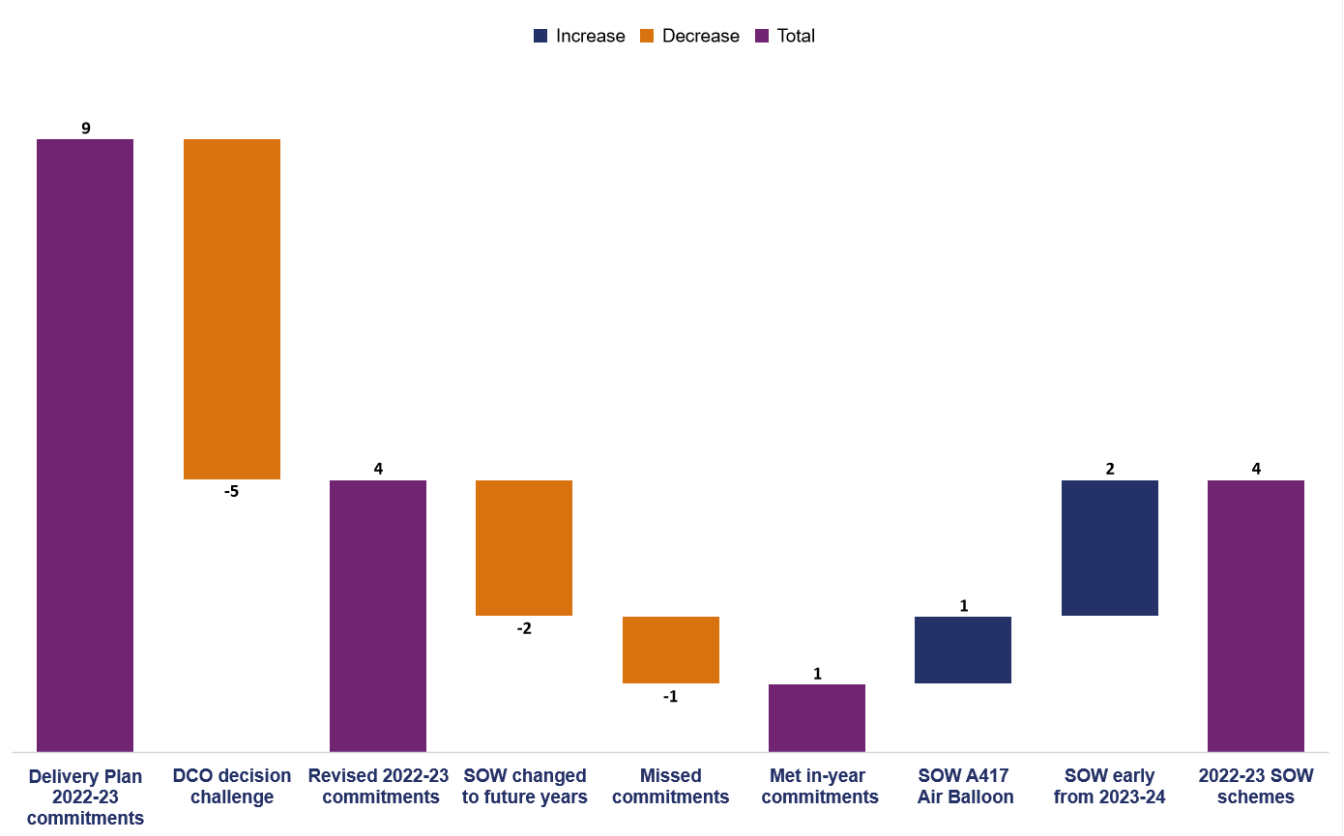
- five schemes were affected by legal challenges to the DCO and will not meet their commitments. They are proceeding through the change control process (A47 North Tuddenham to Easton, A47 Thickthorn Junction, A47 Blofield to North Burlingham, A428 Black Cat to Caxton Gibbet and Mottram Moor Link Road & A57 Link Road);
- two schemes have been changed and will start in future years; one scheme was affected by the SofS's DCO decision delay (A47 Wansford to Sutton) and has an agreed change of SOW to the next reporting year; and one scheme had its SofS DCO decision postponed until September 2023 and will therefore not start as scheduled (A1 Morpeth to Ellingham). Its SOW commitment is to be confirmed by government;
- one scheme missed its SOW commitment and a new commitment date is to be agreed with government (M54-M6 Link Road);
- one scheme met its SOW commitment (M25 Junction 10);

- one scheme (A417 Air Balloon) started work and met its original RIS2 commitment (March 2023) having previously been declared as a missed commitment; and

- two schemes scheduled for SOW in the fourth year of RP2 started early (A47 Great Yarmouth Harfreys junction and M25 Junction 28);

2.43 Figure 2.10 shows the progress made in delivering the SOW commitments for this reporting year. Table B14 lists scheme's SOW status for the reporting year.

Figure 2.10 SOW delivery for the reporting year April 2022 to March 2023



OFT commitments delivery performance in the reporting year

2.44 National Highways' 2022 delivery plan committed the company to OFT 12 schemes. In the reporting year:

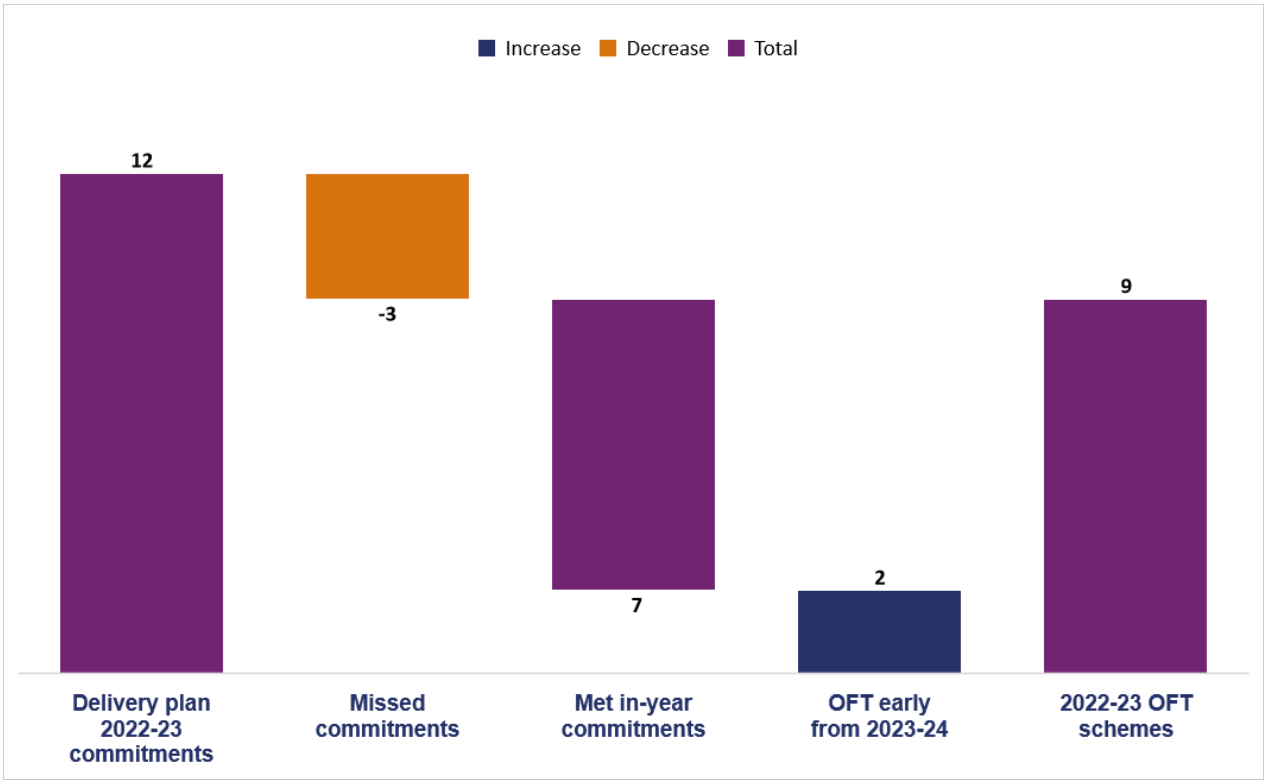
- three schemes missed their commitments (M6 Junctions 21A-26, M56 Junctions 6-8, and M6 Junction 10);

- seven schemes met their commitments (A1 Scotswood to North Brunton, M6 Junctions 13-15, M1 Junctions 13-19, M4 Junctions 3-12, M27 Junctions 4-11, A2 Bean and Ebbsfleet, and A27 East of Lewes Package); and

- two schemes OFT ahead of their in-year schedule (M25 Junction 25 and A31 Ringwood).

2.45 Figure 2.11 shows the progress made in delivering the OFT commitments for this reporting year. Table B15 lists OFT schemes status for the reporting year.

Figure 2.11 OFT delivery for April 2022 to March 2023



Enhancements delivery for the remainder of RP2

2.46 National Highways has worked to mitigate risks to its SOW commitments, but it still faces significant challenges both within and outside of its control, for example, achieving timely DCO approvals. Failure to successfully mitigate risks will likely result in the company requiring government approved changes or missing commitments and therefore starting work on more schemes later in RP2 or deferring works into RP3. This will mean some expected user benefits will not be fully realised in RP2.

Capability and capacity to deliver RIS2 enhancement portfolio

2.47 National Highways is taking positive steps to build the capability of its major projects directorate that delivers enhancements. The company established a major projects knowledge team to work across the enhancement programme to create a consistent approach to capturing, sharing and applying knowledge from scheme delivery to drive improvements. The company has initiated a broad framework of initiatives for deployment and use in RP2 that will drive capability improvements and efficiency in RP3. These initiatives include:

- single view of the customer: to establish a single common workflow for all capital projects across the business;
- delivering efficient projects: to improve value, reduce waste, optimise resources through improved contracting;
- innovation reapplied: to deliver projects with a focus on innovation, repetition and best practice to drive project productivity;
- net zero carbon: efficient delivery of low carbon assets; safer, quicker, cheaper and predictable; enable shorter construction; and
- digital by default: to create capabilities to deliver projects digitally end-to-end.

2.48 The number of missed commitments in RP2 has necessitated interventions by National Highways to improve deliverability and tackle the issues causing missed commitments. We worked with National Highways to understand the reasons behind the missed commitments. National Highways concluded that there are capability issues and has put in place a change plan to look at gaps in its capability and how to bridge these gaps.

2.49 We have been working with the company to assess how lessons are captured and shared, through the knowledge management initiative. We have established that the company has been taking positive steps to capture and share knowledge by:

- creating a team to work across the enhancement programme;
- creating a lessons learned log and knowledge portal; and
- having better engagement with the business to encourage knowledge sharing.

2.50 National Highways must demonstrate it is improving its capability to deliver, learn and appropriately assess and mitigate its risks. The company must provide us with assurance that processes for capturing learning and challenges are embedded in the business and are proactively acted on. We will continue to work with National Highways to assess progress and hold the company to account to enhance its capabilities and deliver the enhancements portfolio.

Enhancement scheme benefit realisation

2.51 In order for National Highways to understand if it is delivering its capital investment efficiently and successfully, including for its enhancement schemes, the company must have robust benefit realisation processes that:

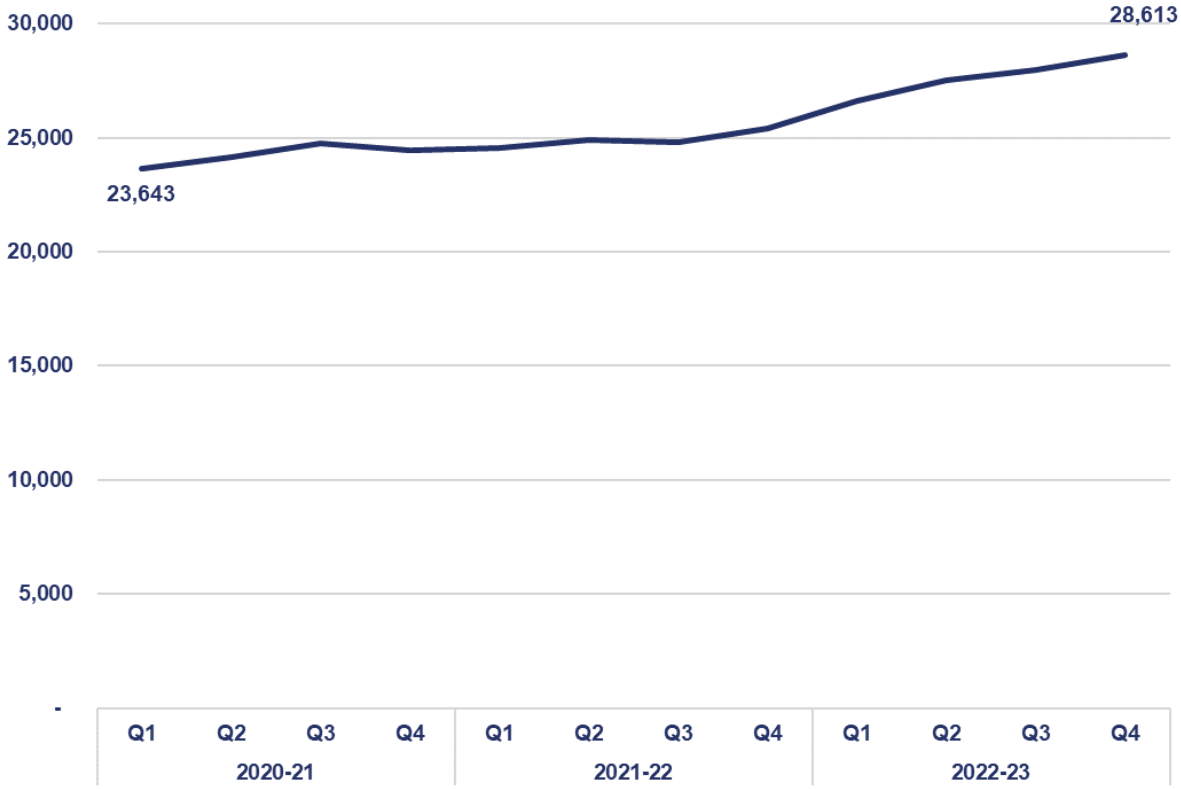
- Identify and assess whether the expected benefits of capital schemes and programmes have been realised;
- assess how wider transformational work regarding capability development and maturity are impacting delivery; and
- apply lessons learned that improve delivery of current and future enhancement schemes and programmes.

2.52 An important process that National Highways uses to assess benefits achieved by its enhancement schemes are post opening project evaluations (POPEs). The company's programme of publishing POPE reports is behind schedule. We have challenged the company to produce a robust and deliverable plan to publish POPE reports. In the next reporting year, we will scrutinise National Highways for the delivery of its POPE programme for the rest of RP2.

RIS2 enhancements financial performance

2.53 At the start of RP2, the expected cost of enhancements (schemes and other costs) was £23,643 million. As shown in Figure 2.12, this has since increased by 21% (£4,969 million) to £28,613 million. In this reporting year, the increase was 13% (£3,225 million). The figures exclude National Highways' latest assessment of inflation impacting enhancements in RP3 that could add a further £600 million approximately to total capital costs.

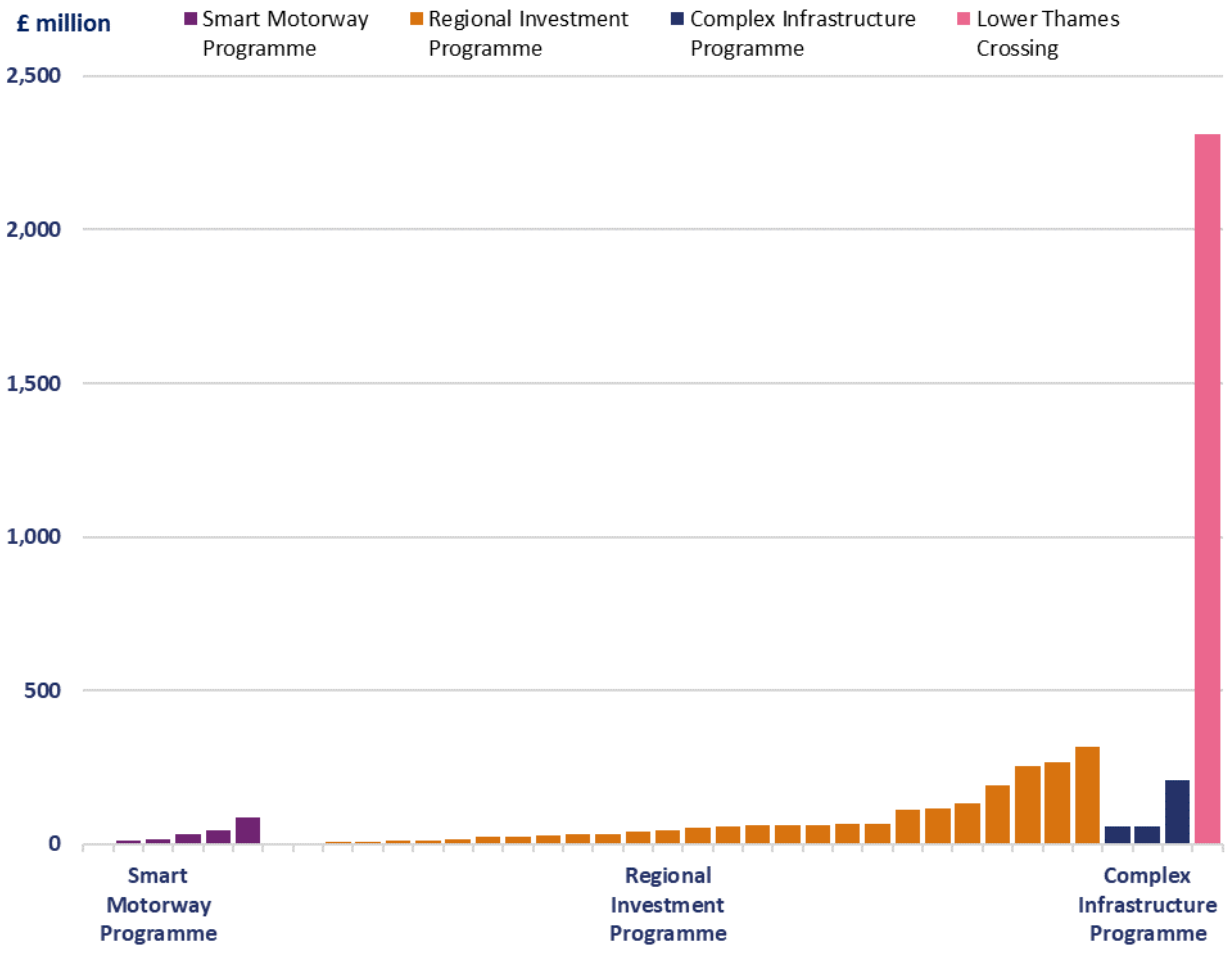
Figure 2.12 RIS2 enhancements forecast cost since April 2020 (£ million)



2.54 On 15 April 2023 government announced the cancellation of all smart motorway schemes that were not already in construction. The overall cost increase for enhancement schemes, after excluding these smart motorway schemes, was 22.9% (£4,746 million). Cost increases have been caused by planning delays for large complex schemes throughout RP2 and more recently the impact of high inflation in this reporting year.

2.55 As shown in Figure 2.13, the Lower Thames Crossing (LTC) scheme had the largest forecast cost increase, of £2,312 million (39%) to £8,305 million. The increase was partly driven by the impact of inflation, additional land requirements, DCO related costs and other operating costs. However, other schemes have also seen large changes.

Figure 2.13 Change in forecast cost for large enhancement schemes (greater than £100m) since April 2020 (£ million)

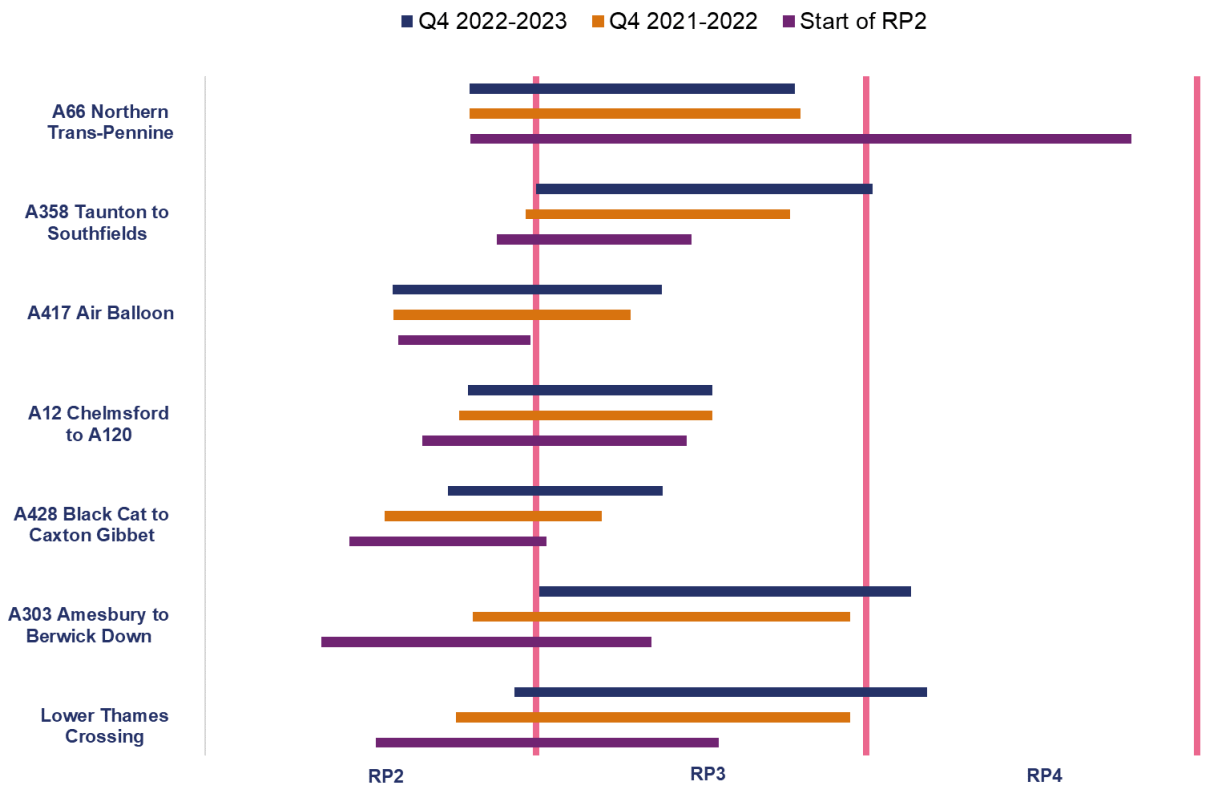


2.56 Overall, the Complex Infrastructure Programme increased by 8% (£323 million). The Regional Investment Programme has increased by 23% (£1,925 million) and Smart Motorway Programme by 8% (£187 million).

2.57 Costs have decreased for some schemes where scope has been reduced. These include cancelled smart motorway schemes.

2.58 Figure 2.14 shows how planned construction periods have changed for large and complex schemes due to start construction in RP2. In most cases delays have been caused by difficulties in gaining planning consent.

Figure 2.14 Construction periods for large and complex schemes due to start construction in RP2



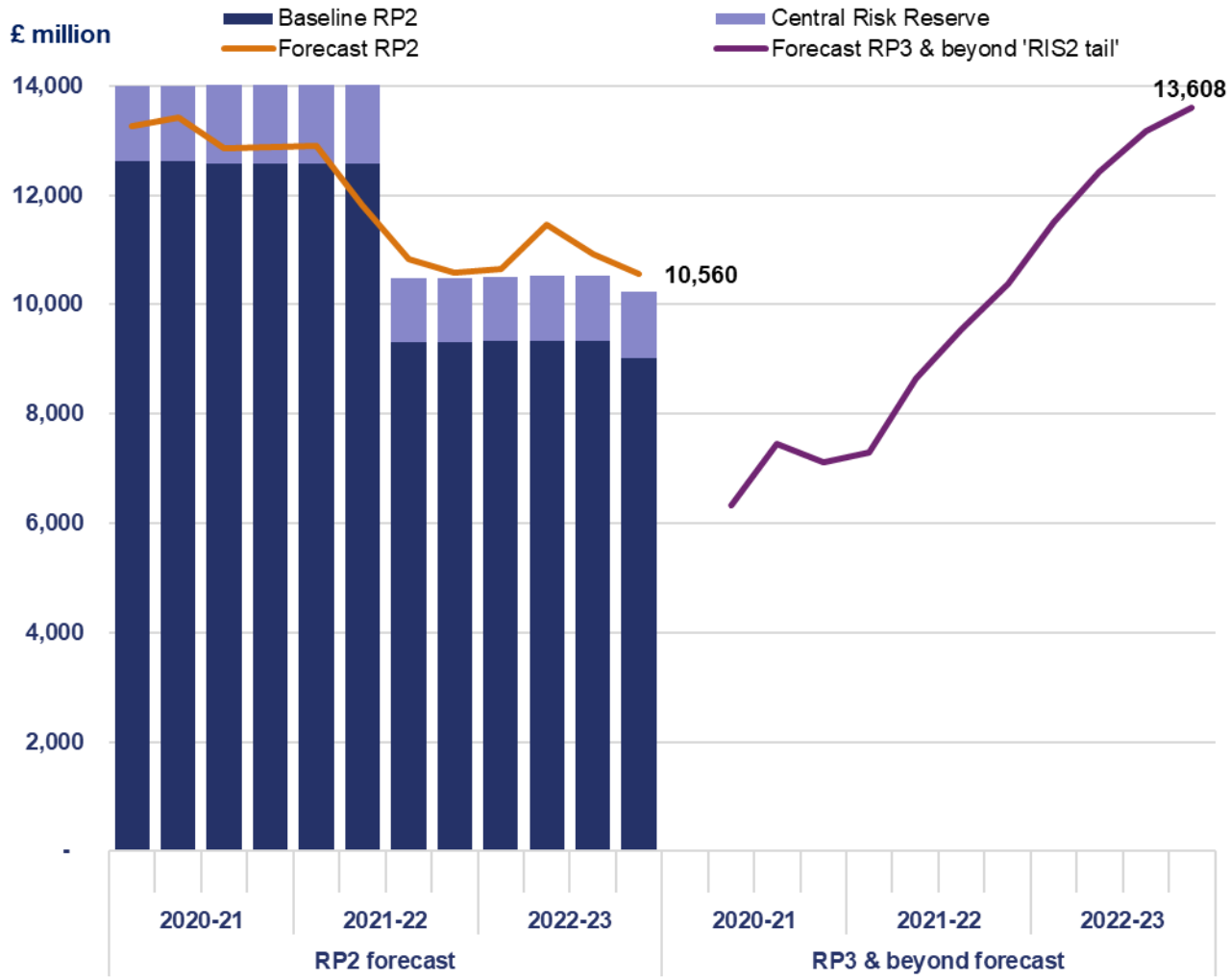
2.59 The A66 Northern Trans-Pennine scheme received £145 million of additional funding during RP2 to accelerate its construction period. However, its forecast cost increased by £318 million since the start of RP2. In March 2023 government announced a rephasing of the LTC scheme and the deferral of the A27 Arundel and A5036 Princess Way schemes to RIS3. National Highways has not yet reflected this change in its reporting because revised commitment dates have not yet been set by government.

2.60 The impact of inflation on National Highways' costs is difficult to separate from other factors such as delay and productivity effects due to the Coronavirus (COVID-19) pandemic. The company's RP2 scheme forecasts include the impact of inflation from April 2020 to March 2023. It has also included a further £500 million within its overall enhancement RP2 cost forecast for expected inflation that is not yet in scheme forecasts. The causes and impacts of inflation on National Highways' costs are discussed further in paragraph 1.25.

2.61 National Highways' cost forecasts for RIS2 enhancements (that OFT in RP2 or RP3) are increasing over time. Additionally, the delays to large schemes mean there is also a trend of these costs moving from RP2 into RP3.

2.62 Figure 2.15 shows that RP2 forecast costs for enhancements have been reducing in RP2 and government removed £3,496 million of National Highways RIS2 funding in the previous reporting year. For RP3 and beyond the cost commitments of enhancements announced in RIS2 (the 'RIS2 tail') have increased due to slippage and inflation.

Figure 2.15 Enhancement cost forecasts for RP2 and 'RP3 & beyond' since April 2020 (£ million)



2.63 In this reporting year, RP2 cost forecasts were affected by the continuing impact of delays to large schemes but this was more than offset by the effects of inflation. The company is forecasting to overspend its baseline and risk funding for

enhancements in RP2 by £337 million. The enhancement cost pressure also means that it is forecasting to overspend its RIS2 funding overall in RP2 by £140 million.

2.64 Changes to the enhancements portfolio announced in March 2023 are expected to reduce the cost pressure for RP2 once cost forecasts are revised for these changes. Additionally, any further delays to schemes may also contribute towards reducing the overspend pressure in RP2. However, this will also contribute to cost pressures in future road periods.

Enhancements expenditure in the reporting year

2.65 As National Highways' costs have moved further from RP2 into RP3, an in-year underspend of £286 million has occurred for enhancements. This is part of a wider in-year capital underspend of £360 million.

2.66 Early in the reporting year, the company identified a forecast underspend of £429 million for enhancements. This was due to the impact of ongoing slippage and the budget being set before the finalisation of SR21 funding changes in March 2022.

2.67 National Highways set a target to reduce its forecast capital underspend to £357 million, which at 10% of funding, is the maximum it can carry forward to a future financial year without government approval. This was achieved in part through the acceleration of some project activity to reduce risks to project delivery.

2.68 National Highways' in-year financial performance is discussed further in paragraphs A5 to A26.

Use of Central Risk Reserve (CRR) on enhancements

2.69 National Highways has a CRR for funding portfolio level risks for enhancements, LTC, RIS3 development and renewals. This was originally funded at £1,541 million (£1,347 million for enhancements including LTC, £194 million for RIS3 development and renewals) but government has made changes during RP2 in-line with wider funding changes.

2.70 National Highways has made significant allocations from its enhancements CRR in RP2. As shown in Figure 2.16, the enhancements CRR funding is now over-allocated by £46 million. However, £132 million of the CRR for RIS3 development and renewals remains unallocated, meaning that overall, there is a CRR balance remaining of £86 million.

Figure 2.16 Funding changes and use of Central Risk Reserve (CRR) since April 2020 (£ million)

2.71 The changes to the enhancement portfolio announced in this reporting year mean some of the CRR allocated for enhancement schemes is no longer required in RP2. This will improve the enhancements CRR balance. However, the reporting year changes to the programme and those expected in the fourth year of RP2 have created uncertainty and challenges for the management of financial risks to the end of RP2.

2.72 It is vital that National Highways has a good understanding of how it is using its CRR and can forecast its use of the reserve in the remainder of the road period. In 2022, ORR's review of National Highways' use of CRR identified that the company needed to improve its management of the reserve. In this reporting year we have seen the company begin to introduce recommended changes to provide greater control over the use of the reserve and improvements in its management reporting. It has plans to improve its forecasting and assessment of future risks to

ensure it can prioritise its use of funding, particularly where it may not be sufficient in the fourth year of RP2. We will scrutinise these changes as they develop to ensure they deliver the stated benefits.

Earned Value Metrics

2.73 Earned value metrics cover National Highways' supply chain performance against the cost and schedule contractual commitments of enhancements construction. Therefore, these metrics are not necessarily a direct reflection of the company's performance. For example, a supplier may be behind its contract schedule in a metric, but the company could still deliver the relevant commitment on time. However, these metrics are indicative of scheme health.

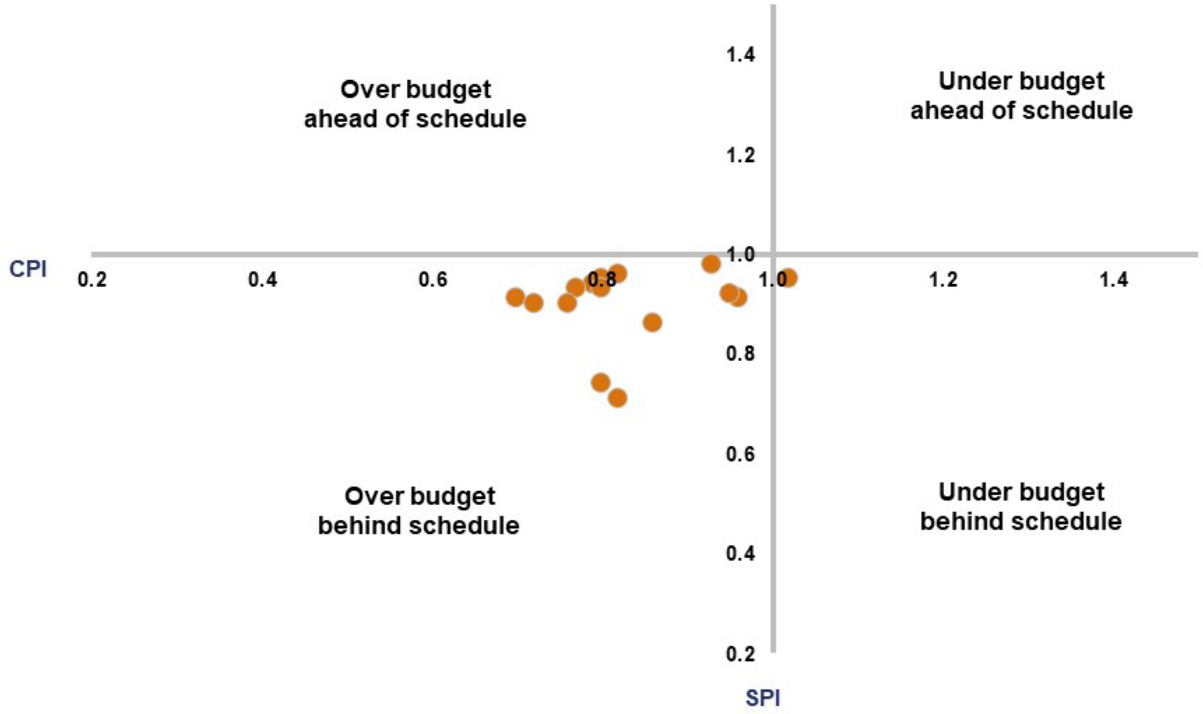
2.74 We assess National Highways' earned value metrics through two commonly used measures:

- cost performance index (CPI): a ratio that measures the budgeted cost of work performed to date against actual cost to date; and
- schedule performance index (SPI): a ratio that measures the relationship between the progress of work to date and planned (or scheduled) progress.

2.75 If the CPI is greater than 1.0 the task is under budget, if it is less than 1.0 it is over budget. If the SPI is greater than 1.0 the task is ahead of schedule, if it is less than 1.0 it is behind schedule.

2.76 Figure 2.17 shows the CPI and SPI scores reported by the company. All 15 schemes reporting scores had an SPI of less than 1.0. One scheme had a CPI of greater than 1.0. This means that nearly all of the schemes currently in construction are reporting poor scores, that indicate they are over budget or behind schedule compared to the contractual commitments. National Highways should use these scores to manage the performance of its supply chain partners.

Figure 2.17 Reported CPI and SPI scores



2.77 National Highways has a RIS2 commitment to investigate and look to develop new or improved metrics to monitor cost and schedule for enhancement scheme development and construction, engaging with ORR. To date in RP2, the company has focused on improving data quality of the existing metrics whilst investigating alternative supporting metrics. We will continue to hold it to account for development of metrics that enhance its management of cost and delivery of enhancement schemes.

3. Key message: asset management

In our last annual assessment, we challenged National Highways to demonstrate to us that it is optimally renewing its network. This has been a concern of ours for several years as it affects the longer-term efficiency and sustainability of the strategic road network. In the reporting year the company introduced a new reporting tool that improved the information we see about the decisions that it takes regarding its renewals on the network. This is a big step forward. Later in 2023, we expect to be able to draw firmer conclusions on whether the company is optimising its renewals decisions.

3.1 In our last annual assessment, we raised concerns that National Highways' reporting of capital renewals was based on asset volumes renewed against its annual delivery plan targets and spend. This provided us with an indication that work was delivered, but it did not tell us whether the work addressed an asset need. We were concerned that the company might compromise long-term efficiency and asset sustainability in pursuit of short-term benefits and challenged it to demonstrate the alignment between its policy and what it delivered.

3.2 In July 2022, we made it clear to National Highways that we would hold it to account to produce its new renewals reporting tool: the Capital Delivery Management Tool (CDMT). In September 2022, the company produced its first national report that showed renewals scheme delivery data across all its regions. These deliverables provide us with greater confidence that the company is adopting a best practice approach to managing the lifecycle of its assets.

3.3 However, we note that in the reporting year we only received three quarterly reports. This is not sufficient to establish a robust baseline performance level because it does not capture delivery seasonality. To ensure that we reach that position as soon as possible, we will continue to work with National Highways to support the further development and maturity of its reporting. A baseline of at least one full year of reporting will provide us with a better understanding of the company's renewals scheme delivery. Continued, regular, reporting will strengthen our ability to hold the company to account to deliver its renewals programme.

3.4 Pavement renewals are a good example of the need for National Highways' renewals reporting to demonstrate best practice whole-life asset management. In January 2023, National Highways forecast that it would miss its pavement condition key performance indicator (KPI) target. The company used updated

asset condition information to adjust its renewals programme, recovered its position and met its target. We asked the company to demonstrate to us, using the renewals reporting tool, how it responded to the risk of missing the KPI target. The company provided output data from CDMT showing changes made to the pavement renewals programme and its approach to data processing. By using data from the renewals reporting tool, the company was able to demonstrate its maturing approach to asset management.

3.5 National Highways has stated that a reason for the reduction in the pavement condition forecast was due to the impact of extreme hot weather experienced in July 2022. Therefore, the company needs to demonstrate in its asset management reporting evidence that it is delivering network resilience, including to account for the ongoing impacts of climate change.

3.6 Going forward, we will continue to hold National Highways to account to build on what it has done to improve the intelligence available to support asset management decisions. The company must also demonstrate its ability to forecast, mitigate risks and plan for changing asset need.

Outcome: a well-maintained and resilient network

3.7 National Highways has one targeted key performance indicator (KPI), four performance indicators (PIs) and two commitments in this outcome area.

KPI: pavement condition

3.8 In the current reporting year, National Highways met its target of 96.2% of pavement requiring no further investigation, despite challenges in-year. Figure 3.1 shows the performance in the reporting year.

3.9 In April 2022, National Highways implemented an improved metric to assess pavement (road surface) condition, as committed in the second road investment strategy (RIS2). The updated metric measures the condition of all lanes, compared to the old metric that only considered the condition of lane one (the first lane on the left). This provides a better representation of National Highways' management of overall road surface condition on the strategic road network (SRN).

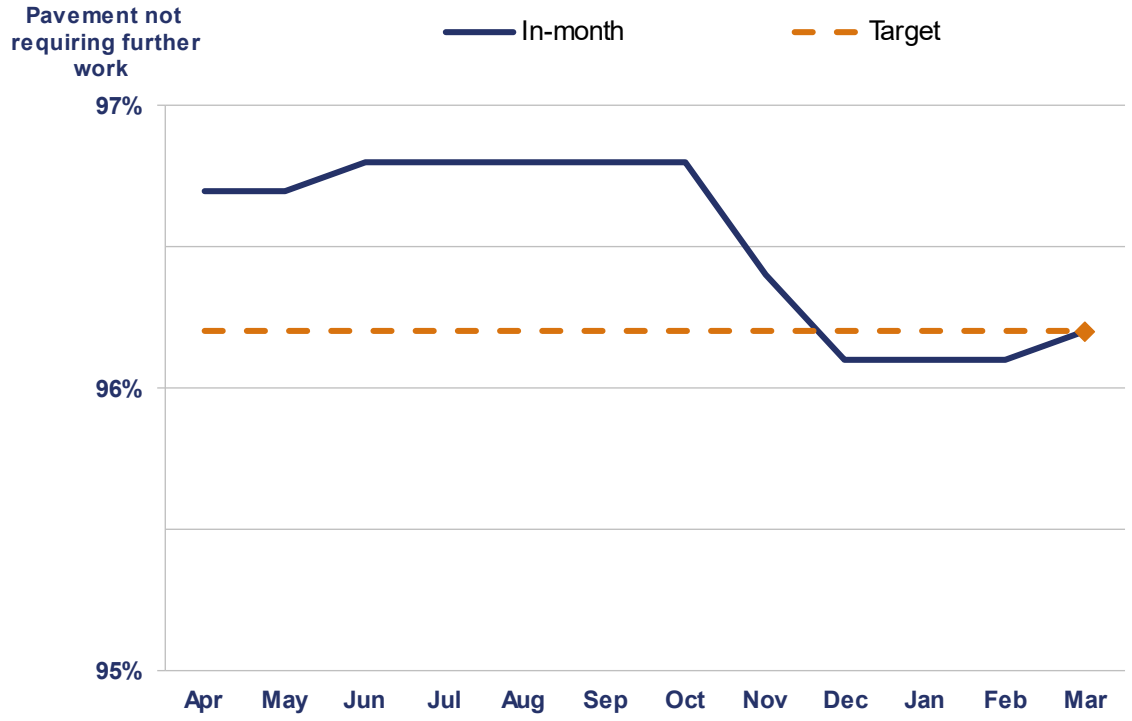
3.10 In January 2023, National Highways notified ORR that it was at risk of missing its year-end target of 96.2%. At that point, the company was forecasting an end of year position of 96.1%. It cited an increased rate of deterioration due to the extreme heat in July 2022 as the main factor in the reduction in its forecast.

3.11 We challenged National Highways on its plans to improve performance and achieve its target by the end of the reporting year.

3.12 Between January and April 2023, we worked more closely with National Highways at all levels to understand the root cause of this issue and the company's plan to deliver additional work to improve performance. Following this additional scrutiny and engagement from ORR, the work delivered by National Highways resulted in the company achieving its target of 96.2% by the end of March 2023.

3.13 We will continue to work with the company in 2023 to better understand the plans it has in place to reduce the risk of similar performance issues occurring in the future.

Figure 3.1 Pavement not requiring further investigation between April 2022 and March 2023 (%)



PIs: a well-maintained and resilient network

3.14 PIs are untargeted metrics. They enable us to scrutinise more aspects of National Highways' network performance beyond the headline KPI.

Structures condition

3.15 The condition of structures (for example, culverts, gantries, retaining walls and bridges) is measured by three performance indicators:

- the average condition of the stock (SCAV);
- the condition of the assets' most critical elements (SCRIT); and
- the percentage of structures that have been inspected and rated as 'good' (SCI).

3.16 Table 3.1 shows the reported numbers for all three PIs have increased slightly which aligns with the company's aim of maintaining a 'steady state' condition for its structures assets.

Table 3.1 Structures PI scores for the first three years of RP2

RP2 Year	SCAV score	SCRIT score	SCI score
April 2020 to March 2021	85.4	63.3	81.2
April 2021 to March 2022	85.3	63.5	81.0
April 2022 to March 2023	85.4	63.7	81.4

Technology availability

3.17 This indicator measures the percentage of time that roadside technology assets on the SRN are available and functioning. This includes assets such as cameras, electronic signs and weather stations. As shown in Figure 3.2, in this reporting year, 95.31% of technology assets were available and functioning. This is a reduction of 1.57 percentage points compared to the end of March 2022.

3.18 National Highways is conducting a deep dive to establish the different factors that contributed to the reduction. One known factor is that the company became aware of a coding error in February 2023, within its reporting database which had been present since 2018. This led to an over-reporting of the PI by 0.5 percentage points. The company has now rectified this error and applied improved processing controls. It is carrying out a detailed lessons learned analysis and will share its findings with us once completed.

Drainage resilience

3.19 As at March 2023, 69% of the SRN did not have an observed significant susceptibility to flooding. This is two percentage points worse than the previous year. This means that 31% of the SRN has drainage catchments that have high risk flood hotspots within.

3.20 National Highways is working to minimise the impact of flooding on the network. The company has improved the quality of its reporting and analysis by putting together a flood taskforce team, to review and enhance its internal processes and practices such as training and operational requirements. Improved reporting increases the likelihood of more flood events being recorded. Therefore, it is considered to be the main reason for reduced performance of this metric in the reporting year.

Geotechnical condition

3.21 This PI captures the percentage length of National Highways' geotechnical assets that are in 'good' condition or better. Geotechnical assets include earthworks that support other highway assets and adjacent land. In the reporting year, the company reported that 99.65% of its geotechnical assets achieved at least a 'good' rating. This is 0.06 percentage points better than the previous reporting year; indicating that the condition of the geotechnical asset portfolio is not deteriorating.

Commitments: a well-maintained and resilient network

3.22 Commitments are priorities that are not suited to metrics, such as developing new metrics, publishing reports on specific performance items or improving reporting for future years.

Implement the Asset Management Development Plan (AMDP) for the second road period (RP2)

3.23 In the first road period (RP1), National Highways transferred the milestones it had set out in its AMDP into an Asset Management Transformation Programme (AMTP). The company met those milestones for the first year of RP2.

3.24 Delivery of the milestones in its AMTP remains an important part of how National Highways improves its asset management capability. In the reporting year, the company met 17 milestones. As we reported in our last annual assessment, two milestones were missed in the second year of RP2:

- the development of a new ride quality metric; and
- the Asset Data Governance Model.

3.25 The work on the new ride quality metric is now complete and National Highways is reporting on this metric as a non-targeted PI.

3.26 National Highways changed the scope and timescale for the Asset Data Governance model, reporting that this was to align with existing work on data governance. In the reporting year, the company delivered:

- a vision for the Data Governance Framework; and
- validation of the Data Governance and Plan.

3.27 National Highways states these milestones are part of a charter to deliver a new Asset Data Governance Model comprising the development of an Asset Data Management Plan which will set out the scope, timeline and costs to implement appropriate data governance and improvement processes to increase confidence in its data.

3.28 National Highways is now entering the final two years of the AMTP. The company needs to provide assurance that the AMTP will be delivered and we will continue to hold the company to account against its progress next year to ensure it delivers its milestones and consistently demonstrates its asset management maturity development.

Investigate an improved structure condition metric and an alternative indicator for technology assets

3.29 National Highways is on track to deliver this commitment. The company is in the final stage of metric development and will complete its validation of the metric by July 2024.

Managing the SRN

3.30 We assess National Highways' asset management of the SRN by analysing the company's reported data sets. Asset management investment is typically split into two main categories:

- capital renewals: this is the renewal of assets that have reached the optimum asset life, or are life expired such as road surfacing and bridge structures that are part of the SRN; and
- maintenance: this aims to keep the SRN safe and serviceable by undertaking routine cyclical operations such as cutting vegetation, clearing drains, and reactive repairs to defects such as potholes.

3.31 These two categories are linked. For example, if National Highways does not adequately deliver maintenance, assets may fail prematurely requiring early

renewal, and if the company does not undertake renewal activity in a timely manner, an asset may require increased maintenance to keep it safe for users. The range of different asset types that form the SRN and the impact of varying traffic levels and from different weather conditions across the country make this a complex challenge for the company to manage.

3.32 Maintenance and renewals are substantial parts of the overall asset management system that enables National Highways to maximise the value of the SRN to users and achieve the strategic requirements of the road investment strategy. As a minimum, the company must ensure that the SRN is safe for use and fit for purpose. It is therefore important that the company demonstrates that it is delivering against its asset management policy, strategy and plans. This will ensure it is maintaining, operating and renewing all its assets to safely and efficiently manage the SRN.

3.33 Paragraphs C1 to C17 contain a summary of maintenance and renewal reported data.

Capital renewals – planning and delivery

3.34 National Highways delivered four types of planned major life-extension renewals in the reporting year. However, it under delivered its planned renewal of concrete safety barriers by 21%. The company has reported that this was due to difficulties in agreeing financial sign off with a Design Build Finance Operate (DBFO) contractor for a large scheme in the Yorkshire and North East region; the scheme would have contributed 3,750 linear metres to the concrete safety barrier renewals reporting for the third year of RP2 and would have resulted in an over delivery of 9%. The whole scheme has commenced early in the fourth year of RP2 with a total planned output of approximately 10,000 linear metres.

3.35 The company has told us that the impact on road safety of delaying the start of works on the scheme from the last quarter of the reporting year to the first quarter of the fourth year of RP2 is negligible.

3.36 National Highways failed to deliver against its plan for three of its 14 cyclical renewal types:

- it marginally missed its planned delivery for two renewal types: bridge bearings and technology renewals and improvements; and
- it missed its planned delivery for bridge waterproofing by 9%.

3.37 The company reported that the under delivery of bridge waterproofing was primarily as a result of under delivery in the Midlands and East regions. The under delivery in the Midlands region was due to challenges transferring to the Asset Delivery model, combining East and West Midlands into One Midlands, and programme re-prioritisation. In the East region, under delivery was due to a combination of delays on two schemes, and scope changes to another scheme where following further inspection waterproofing requirements were reduced from 2,300m^2 to 900m^2.

3.38 In the second year of RP2 reported waterproofing renewals were missed by 25%. Waterproofing is a key intervention to prevent asset deterioration and expensive bridge structure renewal. It is important that National Highways delivers on planned renewals, where required, to demonstrate efficient asset management.

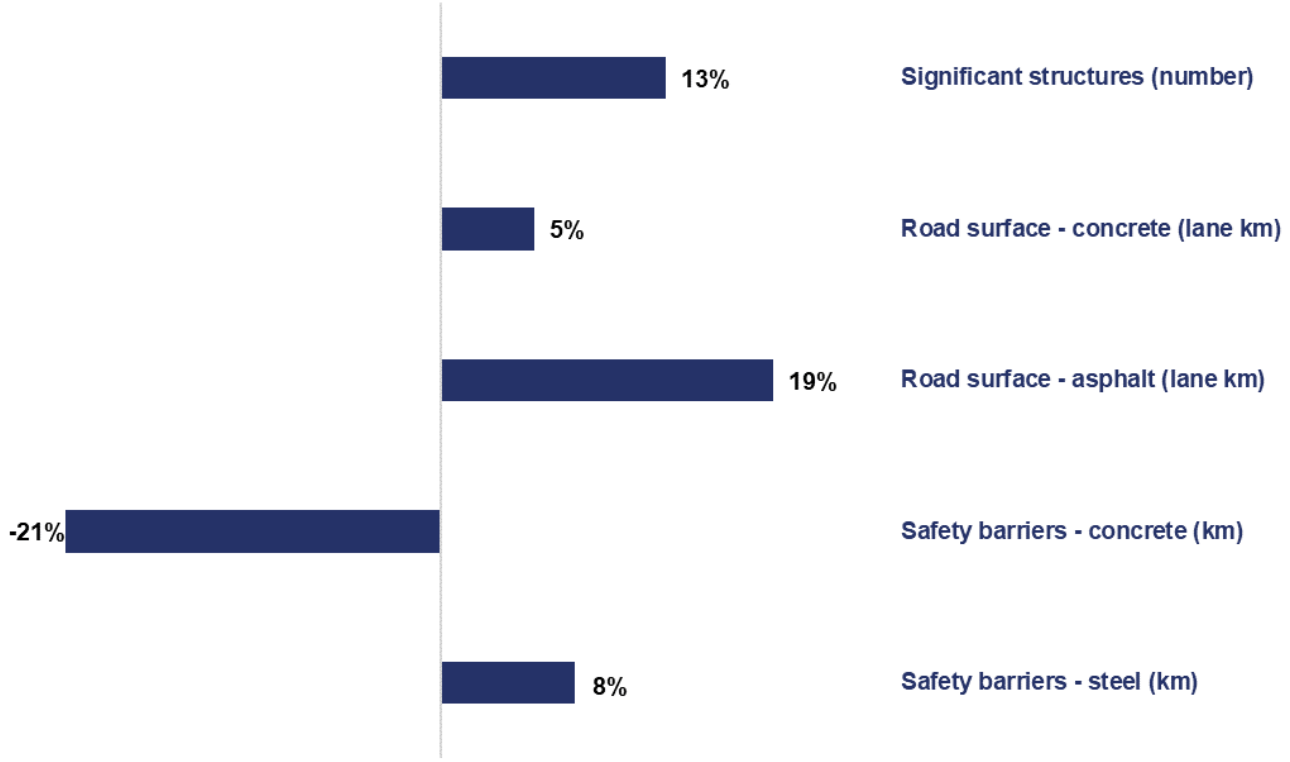
3.39 National Highways over delivered against its plan for all other renewal types. High levels of over delivery against plan were reported for:

- kerbs (by 87%);
- drainage (by 85%); and
- asphalt road pavement (by 19%).

3.40 Over delivery against plan may provide an indication that National Highways' planning abilities are limited. The company indicated the primary reason for over delivery is due to the secondary benefits of a renewal being realised. For example, a pavement renewal scheme is planned for, but the kerb renewal required as part of the pavement renewal is not recorded within the plan but is reported in the number of renewals delivered. Over delivery in general is a concern and potentially an indication that the needs of the asset portfolio were not adequately known at the planning stage. For example, over delivery could be an indication the asset need is worse than anticipated, or assets are being unnecessarily renewed, and as a result an indication that the company is investing inefficiently in its asset portfolio. CDMT reporting is key to illustrating what schemes are planned and subsequently delivered as part of the renewals programme.

3.41 Figure 3.2 summarises the major life extension renewals volumes that National Highways delivered against its planned commitments in the reporting year. Paragraphs C12 to C17 provide a full summary of renewals delivery.

Figure 3.2 Volumes of major life-extension renewals over or under delivered compared to plan between April 2022 and March 2023



3.42 In the reporting year, National Highways underspent its in-year funding against capital renewals. Overall, the company underspent by £14 million (1.5%). The budget included £36 million of renewals risk reserve; only £22 million was drawn down in year, resulting in the £14 million underspend. This funding will be rolled forward to be utilised when required over the remaining two years of the road period.

3.43 National Highways must deliver key asset renewal volumes in-line with the RIS2 specification, its delivery plans and within its funding. Delivering the RIS2 requirements within funding is an important part of the evidence of performance against the efficiency KPI for all areas of expenditure.

3.44 For renewals, we recognise that focusing mainly on volumes and spend could lead to the company taking a short-term approach in its decision making. This could mean not always renewing the right assets at the right time in their lifecycle or providing a less complex, lower quality renewal. We saw improvements in some but not all areas of National Highways' renewals practice this reporting year. For example:

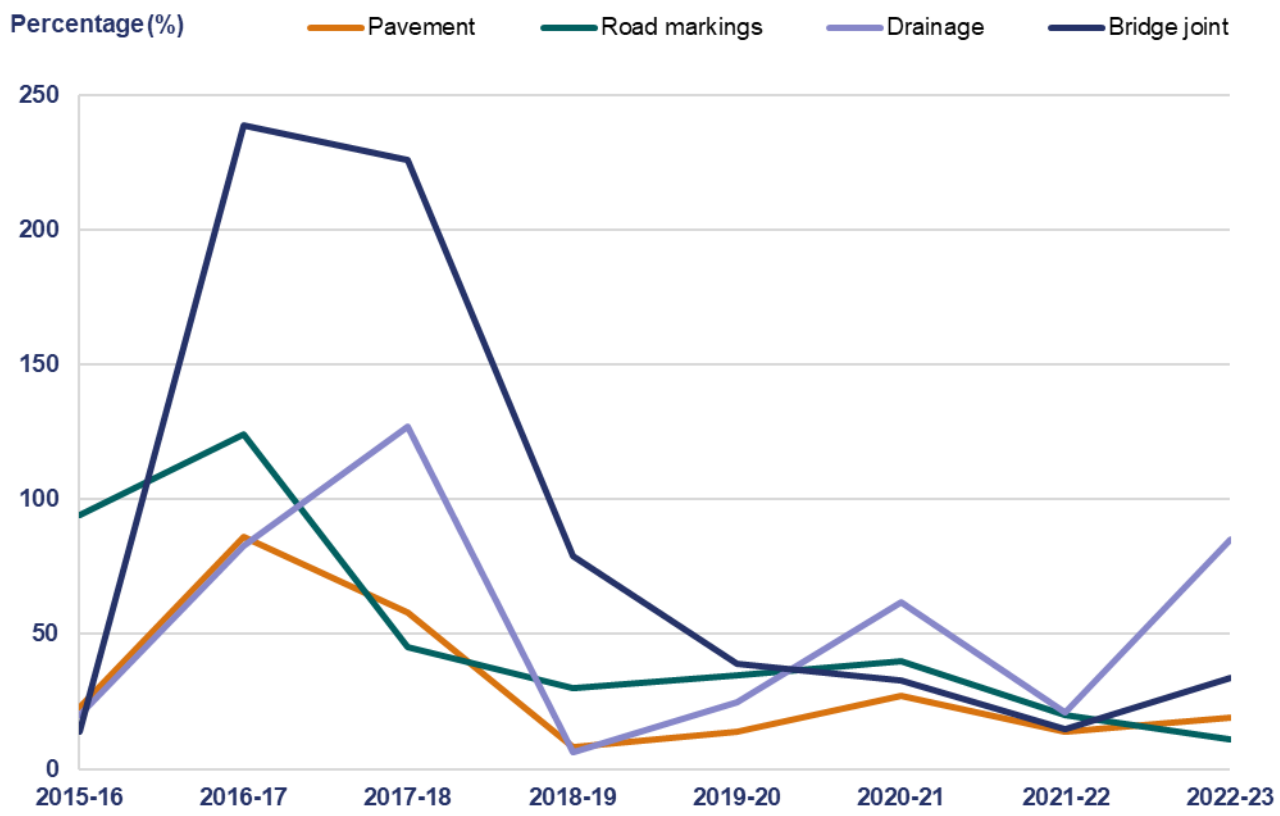
- the company provided evidence that it is delivering, on average, asphalt pavement renewals deeper than the average depth levels of 54mm that it was funded to do within RIS2 to achieve reduced whole-life costs. However, there is still work to do to gain assurance about how the depth delivered has been calculated;

- the company started to deliver some more complex full surface reconstruction repairs. However, the largest proportion of delivery was still of 'life extension' concrete pavement renewals comprised of localised repairs; and

- slow delivery of renewals in the early part of the reporting year led to higher than planned delivery during the winter months when adverse weather can impact renewal quality.

3.45 In our last annual assessment, we reported that National Highways' delivery of renewals was closer to plan than in the first year of RP2. However, in this reporting year, more assets are reporting to have exceeded 50% delivery variance from the plan. This shows that the company is not yet able to demonstrate its ability to consistently deliver against its plans. Figure 3.3 shows how the company has performed against its delivery plan for a selection of assets since 2015. Whilst it has improved overall, the reporting year highlights a divergence from plans compared to the second year of RP2. Reporting continued divergence against plans provides further potential indication that the company is investing inefficiently in its asset portfolio. We will continue to hold National Highways to account for delivery against its plans to ensure the SRN's assets are renewed safely and efficiently.

Figure 3.3 Volumes of renewals delivery compared to plan for a selection of assets between April 2015 and March 2023



3.46 It should be noted that in December 2022, National Highways' delivery volume was below plan for all asset types, with the exception of kerbs. The average under delivery was 39% across all asset renewal types. By March 2023, the company reported an average over delivery of 20%, indicating that a significant volume of renewals were delivered in the last three months of the reporting year.

3.47 In our last annual assessment, we raised concerns that National Highways' reporting of capital renewals was based on asset volumes renewed against annual delivery plans targets and spend. Whilst this provided us with an indication that work was delivered, it did not tell us whether the work addressed an asset need. Concerned that the company may compromise long-term efficiency and asset sustainability in pursuit of short-term benefits, we challenged it to demonstrate the line of sight, or alignment, between its policy and what is delivered. The company must continue to consistently demonstrate to us evidence of its asset management

maturity development. Furthermore, the company should demonstrate its ability to forecast, mitigate risks and plan for changing asset need.

3.48 In July 2022, we made it clear to National Highways that we will hold it to account for delivering the reporting from its new renewals reporting tool (CDMT). In September 2022, the company used this tool to produce its national report showing renewals scheme delivery data across all regions. These deliverables provide us with greater confidence that the company is adopting a best practice approach to managing the lifecycle of its assets. However, it should be noted that in the reporting year, we only received three quarterly reports. That is not sufficient to establish a robust baseline performance level because it does not capture delivery seasonality. To ensure that we reach that position as soon as possible, we will continue to work with the company to support the further development and maturity of its reporting. A full year's worth of data will allow us to robustly use this data in holding the company to account for the efficient delivery of its renewals programme.

3.49 RIS2 requires National Highways to report asset performance against a range of metrics, see paragraphs C1 to C17 for further detail. This gives us an indication of the volume of maintenance and renewal activities carried out on the SRN and the impact the activities have delivered. However, the company continues to report only limited aspects of performance and does not include all asset types. For example, the renewal of safety barriers is funded in RIS2 as part of the major life extension renewals programme, yet the performance of barriers is unknown. In this reporting year, the company reported an under delivery of 21% less concrete safety barriers than it had planned. However, this does not tell us about the impact on the SRN, for example whether road user safety is impacted.

Maintenance

3.50 National Highways reports maintenance performance against a range of metrics covering core maintenance activities, defect management, asset inspection and insurance claims.

3.51 In the second year of RP2, National Highways reported that it continued to improve its cyclical and reactive maintenance performance. However, in this reporting year, the company's performance deteriorated. National Highways failed to address high priority defects across most defect types within its 24-hour target. Furthermore, its performance in addressing normal defects within required timescales decreased across most defect types. National Highways only

addressed 62.5% of drainage and service ducts defects within the required timescale.

3.52 National Highways indicated that the impact on the SRN as a result of deteriorating maintenance performance is due to issues in transferring to the Asset Delivery contract model in the Yorkshire and North East, South East and Midlands regions. Last year we identified concerns that lessons learned from earlier transfers did not enable a smoother contract mobilisation and this trend continues into this reporting year, the company must embed the lessons it has learned.

3.53 National Highways spent £462 million on operations and maintenance in the reporting year. This was £42 million (10%) more than planned. The company overspent £31.6 million against routine maintenance due to unanticipated inflationary pressures, increased incidents and increased maintenance requirements following Asset Support Contracts transferring to the Asset Delivery contract model.

3.54 The company also paid £25 million relating to maintenance of detrunked sections of the former A14, following the completion of the A14 Cambridge to Huntingdon enhancement scheme. This is a handover payment agreed with Cambridgeshire County Council as set out in the scheme's planning consent. This contributed to the overspend.

3.55 These overspends were offset slightly by underspends against pay where there was slower than expected recruitment. The company also received £17.3 million of additional income from a third party scheme.

Efficient delivery of the renewals programme

3.56 In our last annual assessment, we reported that National Highways had been unable to provide us with sufficient confidence that what it was delivering through its maintenance and renewals programmes is evidentially linked to its asset management policy. The company proposed to use a reporting mechanism to demonstrate renewals scheme delivery and the reasons for scheme changes using a new computer-based tool, the Capital Delivery Management Tool (CDMT). In September 2022, the company produced its national report showing renewals scheme delivery data across all regions; we received quarterly reporting in September 2022, December 2022 and March 2023.

3.57 The report shows the number of renewals schemes the company planned to deliver and by summarising changes to schemes across each region it supports our understanding of National Highways' asset management approach. However,

the maturity of reporting is limited. A total of 182 schemes (31%), were categorised as 'other' when reporting the reason for scheme change.

3.58 We will continue to scrutinise the new renewal reporting tool (CDMT) to support how we hold the company to account for its efficient management of its asset portfolio and establish a robust baseline of performance over the longer-term.

3.59 Last year we highlighted the importance of performance reporting beyond the data provided against RIS2 performance specification metrics. We want to be able to better assess the health of all of National Highways' assets and to understand the impact of the asset interventions (renewals or maintenance) that the company delivers. We will work with National Highways to establish asset performance reporting to support the company's ability to demonstrate the health of all its assets.

Design, build, finance and operate (DBFO) contract hand back

3.60 There are 11 routes across the SRN that are managed by private finance initiatives (DBFO contracts); eight of these will come to an end in RP3 and the routes will be handed back to National Highways on the following dates:

- M1-A1 Link Lofthouse to Bramham – 25 March 2026
- A1(M) Alconbury to Peterborough – 31 March 2026
- A417/A419 Swindon to Gloucester – 31 March 2026
- A69 Carlisle to Newcastle – 31 March 2026
- A50 Stoke to Derby – 30 June 2026
- A30/A35 Exeter to Bere Regis – 30 September 2026
- M40 Denham to Warwick – 5 January 2027
- A19/A168 Dishforth to Tyne Tunnel – 23 February 2027

3.61 There are various requirements set out in DBFO contracts to manage the hand back process. National Highways reported that the hand back programme is on track and that DBFO data for inclusion in RP3 will be included as part of RIS3 metrics. The company has reported it met the first key date of the first inspection and the exchange of hand back reports to determine the condition of pavements and structures for contract compliance. We will continue to examine how the company manages the transfer process in the following reporting year.

4. Key message: environment

In the reporting year, ORR successfully challenged National Highways on its ability to deliver no net loss in biodiversity and reduce its corporate carbon emissions by 2025. The company produced robust plans following the concerns we raised. We will continue to hold National Highways to account to deliver its end of road period targets. In particular, we will scrutinise and evaluate the company's plans to deliver biodiversity improvements and corporate carbon reductions.

4.1 National Highways has a key performance indicator (KPI) target for the second road period (RP2) to deliver no net loss of biodiversity by 2025. In our last annual assessment, we reported that the company was forecasting a biodiversity net loss by 2025. As a result of ORR's challenge and increased engagement, the company produced a robust biodiversity delivery plan in September 2022. It is now forecasting that it will achieve no net loss of biodiversity by the end of RP2.

4.2 In the reporting year, government agreed to adjust National Highways' RP2 corporate carbon reduction KPI target. This was because grid electricity production is more carbon intensive than was forecast in 2020 when the target was set. The company remains committed to reducing its electricity usage by 22% by the end of RP2 compared to the baseline as originally planned.

4.3 National Highways has plans in place that it believes will meet its second road investment strategy performance commitments on air quality and noise. We continue to scrutinise the company's environmental plans to satisfy ourselves that they are robust, deliverable and will enable it to meet its performance targets.

Outcome: Being environmentally responsible

4.4 National Highways has four targeted KPIs, four performance indicators (PIs) and two commitments in this outcome area.

KPI: biodiversity

4.5 National Highways' target is to deliver no net loss in biodiversity by the end of RP2. At the end of March 2023, the company forecast a net gain of 2,025 biodiversity units for the end of the road period. This only includes funded projects with a high confidence of delivery in the next two years.

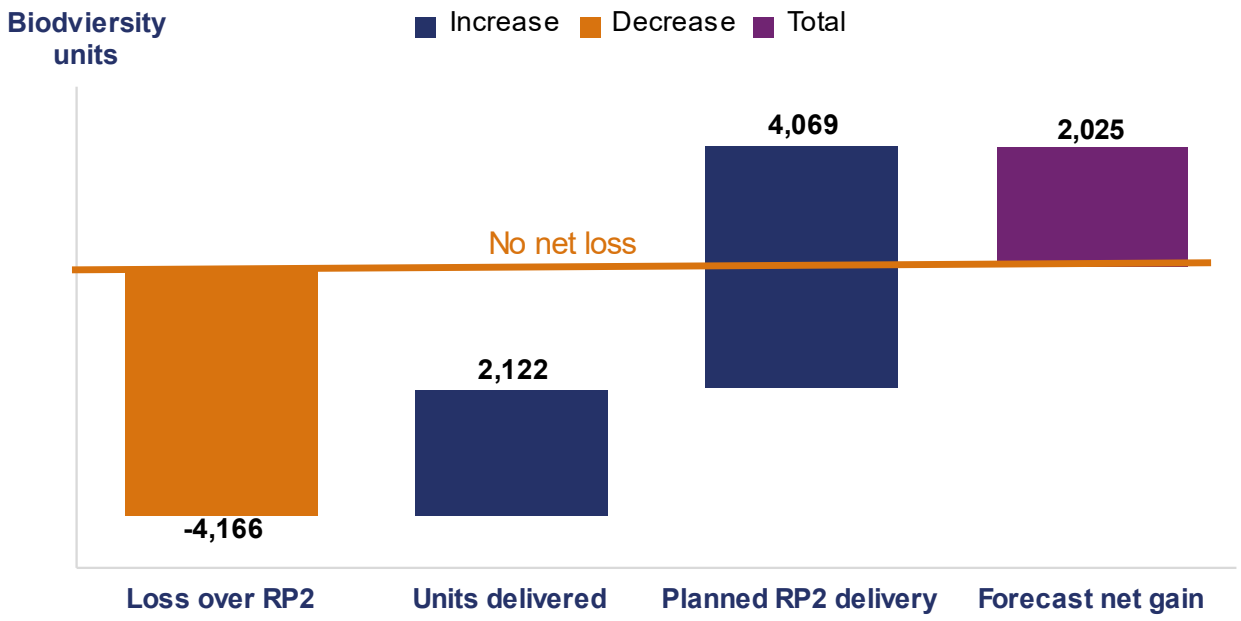
4.6 A biodiversity unit is linked to the size, condition and location of a habitat or piece of land (see Natural England's website). In 2020, National Highways calculated a baseline of 130,848 units across its estate. This covers all the company's land, including verges either side of the carriageway. The company then estimated the biodiversity loss from all enhancement schemes planned to start work in RP2, alongside a 1% degradation each year. This degradation accounts for loss from day-to-day renewals and maintenance activities and the operation of the network, such as noise and air pollution.

4.7 National Highways estimated that without any additional biodiversity mitigation there would be a loss of 4,166 biodiversity units over RP2.

4.8 Last year, ORR challenged National Highways to produce an updated plan to demonstrate how it would achieve no net loss by the end of the road period. We received and scrutinised the plan to satisfy ourselves of its robustness. We have also worked with the company to increase our engagement on this area and it now shares quarterly detailed updates on its pipeline of biodiversity improvements. The company has funded projects expected to deliver up to 4,069 biodiversity units. This would deliver a net gain of 2,025 biodiversity units over RP2. It also has further schemes in design and feasibility that could deliver an additional 3,597 biodiversity units.

4.9 In the reporting year, National Highways delivered 1,618 biodiversity units. Figure 4.1 shows that since April 2020, the company has delivered a total of 2,122 biodiversity units.

Figure 4.1 National Highways' biodiversity programme at April 2023 (excluding schemes in early design)



Case study: Biodiversity – M60 wildflowers

National Highways has a key performance indicator (KPI) target to achieve no net loss of biodiversity by 2025. To support delivery of this, the company:

- designs its enhancements to minimise loss of biodiversity;
- considers on-site biodiversity improvements that it can deliver alongside its enhancements; and
- funds biodiversity improvements using the environment and wellbeing designated fund.

In March 2023 National Highways delivered a wildflower scheme near Ashton-under-Lyne, alongside the M60 near Junction 23. The company carried out surveys of the three-hectare habitat to establish a baseline. It then undertook works to improve it, using robotic mowers and scarifiers to prepare the ground and remove cut grass and planting specially selected lowland meadow seeds to introduce biodiversity.

National Highways will monitor the site for at least five years. For each of these years the company will do a full cut and remove the cuttings to encourage wildflower growth and establishment.

The scheme had a budget of £427,000, funded by the environment and wellbeing designated fund. This scheme delivered 23 biodiversity units towards the company's biodiversity KPI.

National Highways will deliver a similar scheme to introduce species-rich grassland on the M6 in Cumbria as part of its Network for Nature programme.

Source: National Highways, wildflower planting alongside the M60

KPI: corporate carbon

4.10 When the RP2 performance specification was set, National Highways had a KPI target to reduce its corporate carbon emissions by 75% by 2025 compared to its April 2017 to March 2018 baseline.

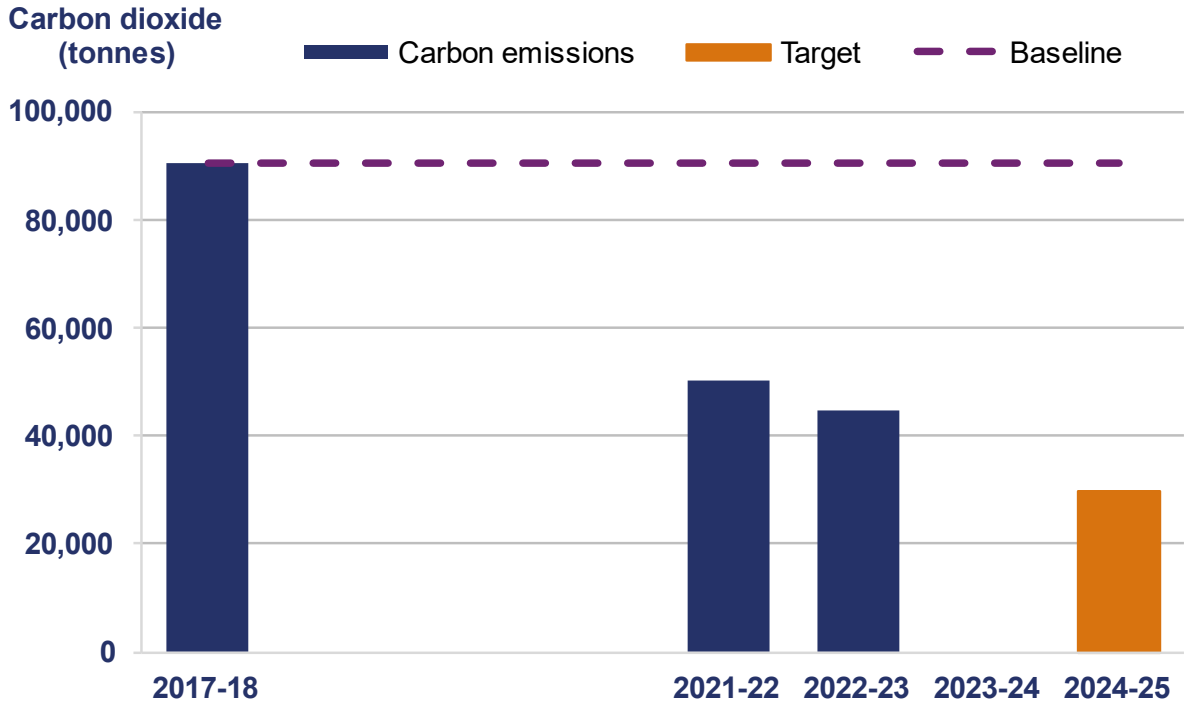
4.11 In the reporting year, government agreed to adjust National Highways' RP2 corporate carbon reduction KPI target. This proposal has changed the target from a 75% to a 67% reduction by 2025 compared to the 2017 to 2018 baseline. This was due to the carbon intensity of generated electricity being higher than modelled in 2020, when the original target was set. National Highways' longer term ambition for net zero corporate emissions by 2030 is unaffected by this change.

4.12 The revised target does not affect the actions National Highways is taking to reduce its corporate carbon emissions. For example, the company is still committed to reducing its electricity usage by 22% by 2025. This is the source of

over half of its carbon emissions. Given this, in addition to corporate carbon emissions, we will also analyse and report on the company's electricity usage for the remainder of the road period.

4.13 Figure 4.2 shows that National Highways emitted 44,809 tonnes of carbon dioxide (CO2) in the reporting year. This was a 50% reduction compared to its April 2017 to March 2018 baseline but 1,910 tonnes higher than the company projected.

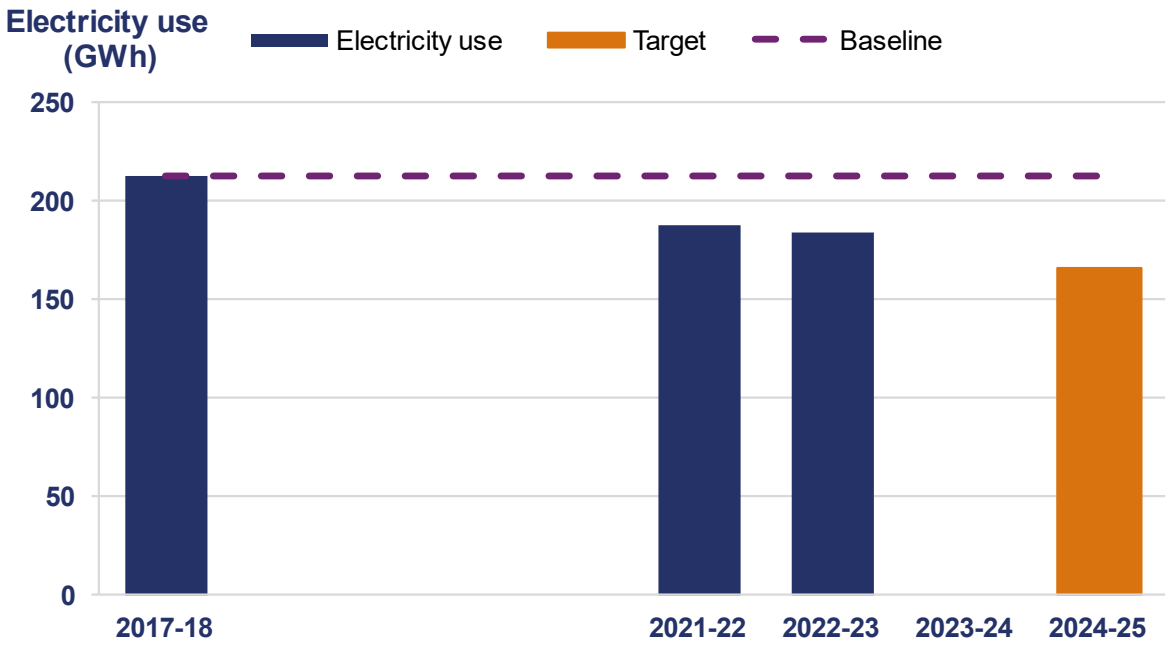
Figure 4.2 National Highways' corporate carbon emissions, April 2017 to March 2018 baseline and April 2021 to March 2023



4.14 National Highways' performance in the reporting year was worse than it expected due to slower delivery of new hybrid operational vehicles. The company has plans in place to deliver its 2025 target by installing LED streetlights (discussed in our case study), rolling out more hybrid and electric vehicles across its fleet and reducing energy use in its offices and buildings.

4.15 Figure 4.3 shows that National Highways used 184 gigawatt hours (GWh) of electricity in the reporting year. This was 4GWh less than the previous reporting year and a 13% reduction on the baseline.

Figure 4.3 National Highways' electricity use, April 2017 to March 2018 baseline and April 2021 to March 2023



Case study: LED roll-out

National Highways has a target to reduce corporate carbon emissions from its estate and day-to-day operations to net zero by 2030. This is an ambitious target.

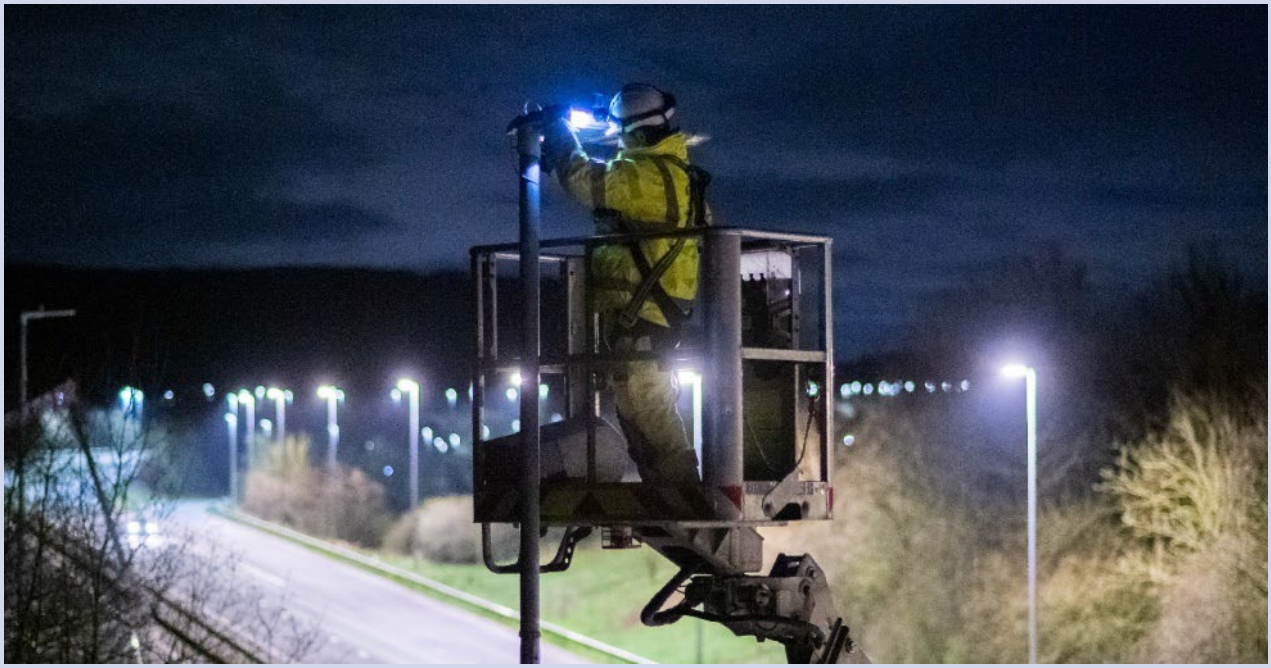
The largest contributor to National Highways' corporate carbon emissions is the electricity it uses to light and operate the strategic road network (SRN). Corporate carbon emissions also include vehicle fuel for traffic officers' vehicles, business travel, corporate purchases, and waste.

Electricity in the UK grid is produced by a mixture of renewable energy sources (wind, solar) and fossil fuel-based generation (coal, gas, oil). National Highways has little control over the source of grid electricity it uses or how this changes from year to year. More than half of the company's electricity use is to light the SRN, so by installing LED bulbs that consume far less electricity than standard lightbulbs the company can substantially reduce its electricity usage and corporate carbon emissions.

National Highways estimates that it has 105,000 streetlights on its network. By February 2023, it had converted 26% of its streetlights to LED, so there is an opportunity for large electricity reductions. On average, LED bulbs save 437kWh per year compared to conventional bulbs.

The company plans to install 32,000 LED bulbs across its network by the end of the second road period. It expects that the LED programme would save 13GWh of electricity by 2025.

National Highways has agreed to supply ORR with quarterly updates on its electricity usage and its delivery of LED streetlights. We will use this information as part of our work in holding the company to account to reduce its corporate carbon emissions by 2025.



Source: National Highways, worker installing an LED bulb

KPI: noise

4.16 National Highways mitigated noise for 985 households between April 2022 and March 2023. This is fewer than the company expected in the reporting year. The company has mitigated 4,163 households since the start of RP2, it was expecting to have mitigated 5,000 households by March 2023. This is 56% of its target of 7,500 by the end of the road period. It will need to deliver a further 3,337 mitigations in the final two years of RP2 to meet its target.

4.17 National Highways has identified 2,218 mitigations that it has high confidence it can deliver in the final two years of RP2. This would leave the company requiring a further 1,119 mitigations to meet its target of 7,500. At the end of March 2023, it was progressing an additional 1,953 mitigations towards delivery. This includes a contingency above the RP2 target level.

4.18 National Highways expects to mitigate 829 households in the next reporting year. If the company delivers this, it would have to mitigate 2,508 households in the final year of RP2 to achieve its target. In the first year of RP2 it mitigated 2,111 households. This is the highest number it has achieved in a single year.

4.19 We are challenging National Highways on its programme to accelerate and increase the number of noise mitigations delivered. We continue to hold the company to account for achieving its target through increased engagement and scrutinising detailed delivery figures.

KPI: air quality

4.20 We hold National Highways to account to deliver air quality mitigation on links identified by government. Our work sits within a broader framework, with other bodies (Department for Transport (DfT), Department for the Environment, Food and Rural Affairs (Defra) and the Joint Air Quality Unit (JAQU)) also holding the company to account to improve air quality.

4.21 For air quality purposes, 'links' are unique stretches of road between junctions defined by the Defra's Pollution Climate Mapping (PCM) model. There are 43 links on the SRN that exceed the legal limit for nitrogen dioxide, a pollutant common in vehicle exhausts. National Highways' air quality performance is reported in its Air Quality on England's Strategic Road Network: Annual Evaluation Report 2021.

4.22 For 15 of the 43 links, National Highways has considered all potential measures to improve air quality, such as a bus retrofit, speed limits, traffic management measures and pollution barriers. DfT wrote to the company in September 2021 to accept that these links have no viable additional mitigation. The letter set out a monitoring regime that the company must follow for each of these links. DfT also requires the company to publish an annual air quality report.

4.23 National Highways is designing and implementing air quality improvement measures for the remaining 28 links. These measures include reducing speed limits and working with local authorities to encourage the use of electric vehicles on the SRN, through grants and charging hubs. The company has put air quality improvement measures in place on eight of these links. It is working to identify appropriate measures for the remaining 20 links. We are content with the progress that the company has made to deliver these measures and await its next air quality update report, to be published in December 2023.

PIs: being environmentally responsible

4.24 PIs are untargeted metrics. They enable us to scrutinise more aspects of National Highways' network performance beyond the headline KPI.

Supply chain carbon emissions

4.25 National Highways' supply chain is critical to the maintenance, renewal, and enhancement of the network. The supply chain emitted 346,910 tonnes of CO2 equivalent in the reporting year. This is higher than the 286,238 tonnes it emitted in the previous reporting year.

4.26 National Highways reports that the increase in emissions is due to additional schemes in construction in the reporting year and an improvement in governance and reporting of carbon emissions of its supply chain.

4.27 Supply chain emissions are affected by the amount of construction delivered on the network. To account for this, National Highways reports on the tonnes of CO2 equivalent per £1 million it spent with its supply chain. For this reporting year, the company reported 134 tonnes of CO2 equivalent per £1 million spent. This is the same as the tonnes of CO2 equivalent per £1 million spend in the previous reporting year.

4.28 In August 2021, National Highways published its Net zero highways plan. The company committed to achieve net zero maintenance and construction emissions by 2040. The company delivered four actions from the plan in the reporting year:

- PAS2080 accreditation of its carbon management system, PAS2080 is a global standard for managing whole-life carbon emissions from infrastructure;
- a carbon construction innovation programme that funds novel solutions to reduce carbon emissions from building and maintaining roads;
- a carbon reduction roadmap across concrete, asphalt and steel that sets out the activities needed across the construction and materials sector to reduce carbon emissions; and
- an improved database of low carbon solutions that holds information on low carbon materials and processes and how they can be used on the network.

Condition of cultural heritage assets

4.29 This PI measures the quality and condition of assets owned by National Highways that are listed on national asset registers, such as Historic England's listed building

data. National Highways reported an improvement in cultural heritage in this reporting year, with a cultural heritage score of 51,626. This is higher than the score of 51,592 in the last reporting year, with works completed on three stone milestones and a historic bridge.

4.30 This metric excludes assets owned by the Historic Railways Estate. This is managed by National Highways on behalf of DfT. We do not report on any aspect of the Historic Railways Estate. This is a matter for DfT.

Water quality

4.31 National Highways improved 6.7km of watercourse in the reporting year, ahead of its own internal forecast of 3.5km. This is due to the difference in size and number of improvements delivered in the year. These improvements are funded by National Highways' environment and wellbeing designated fund.

Litter

4.32 In the reporting year, National Highways surveyed the SRN and reported that 53.6% of the network was rated at Grade A or B according to Defra's litter code of practice. This was worse than the 60.8% of the network in the previous reporting year being free of litter or predominately free of litter and refuse apart from some small items.

4.33 We have challenged National Highways to use its data on litter on the network to identify and act on litter hotspots, share improved processes across regions and continue to engage with local highways authorities that are responsible for the collection of litter on A-roads. National Highways is currently analysing performance in the reporting year by region and road type. We will work closely with the company in the next reporting year to understand the conclusions of this analysis and challenge it to deliver improvements.

Commitments: being environmentally responsible

4.34 Commitments are priorities that are not suited to metrics, such as developing new metrics, publishing reports on specific performance items or improving reporting for future years.

Investigate, and as appropriate develop, new environmental metrics informed by the natural capital approach

4.35 As reported in our last annual assessment, in September 2021 government agreed to cease further development work on this commitment.

Investigate and assess incorporating into new and existing contracts air quality standards for supply chain vehicles deployed on National Highways work, and associated reporting requirements.

4.36 To progress this commitment, National Highways has committed to zero carbon plant and electric cars and vans by 2030 in its Net Zero Plan, alongside electric or hydrogen heavy vehicles by 2040. The company is also working with its supply chain on securing PAS2080 accreditation for suppliers to improve reporting of carbon data.

5. Delivering for road users and the workforce

5.1 All users of the strategic road network (SRN), whether travelling by car, van, lorry, bus or coach, or by motorcycle or bicycle, on foot, wheeled or on horseback – as well as those who live, work and play alongside it – have expectations that it should meet their particular needs. Consequently, assessing how the SRN delivers for all its users relies on a range of information, indicators and measures.

5.2 This chapter describes how National Highways is performing against key performance indicators (KPI) and performance indicators (PIs) that measure performance across three outcome areas: delivering for road users, fast and reliable journeys, and safety for all.

Outcome: meeting the needs of all users

5.3 National Highways has two targeted KPIs in this outcome area, three PIs and six commitments.

KPI: road user satisfaction

5.4 The Strategic Roads User Survey (SRUS) measures users' satisfaction with a journey on the SRN within the last 28 days. The survey, managed by the Highways Watchdog, Transport Focus, was conducted face-to-face until it was suspended during the Coronavirus (COVID-19) pandemic. National Highways' KPI target for road user satisfaction was also suspended at this time.

5.5 Re-instating the user satisfaction KPI target as soon as possible has been a key priority for ORR, the Department for Transport (DfT), National Highways and Transport Focus. In April 2021, Transport Focus introduced an online questionnaire. However, its analysis of the responses indicated that results were not directly comparable to those collected using the face-to-face methodology and the target remained suspended while Transport Focus undertook further development and validation work.

5.6 National Highways' KPI target for road user satisfaction continued to be suspended for 1 April 2022 to 31 March 2023 (the reporting year) because there was insufficient data to baseline and revise the target. We have worked with key stakeholders to give us confidence that the data from the new survey is stable, comparable, and can be used to set a robust baseline and revised target.

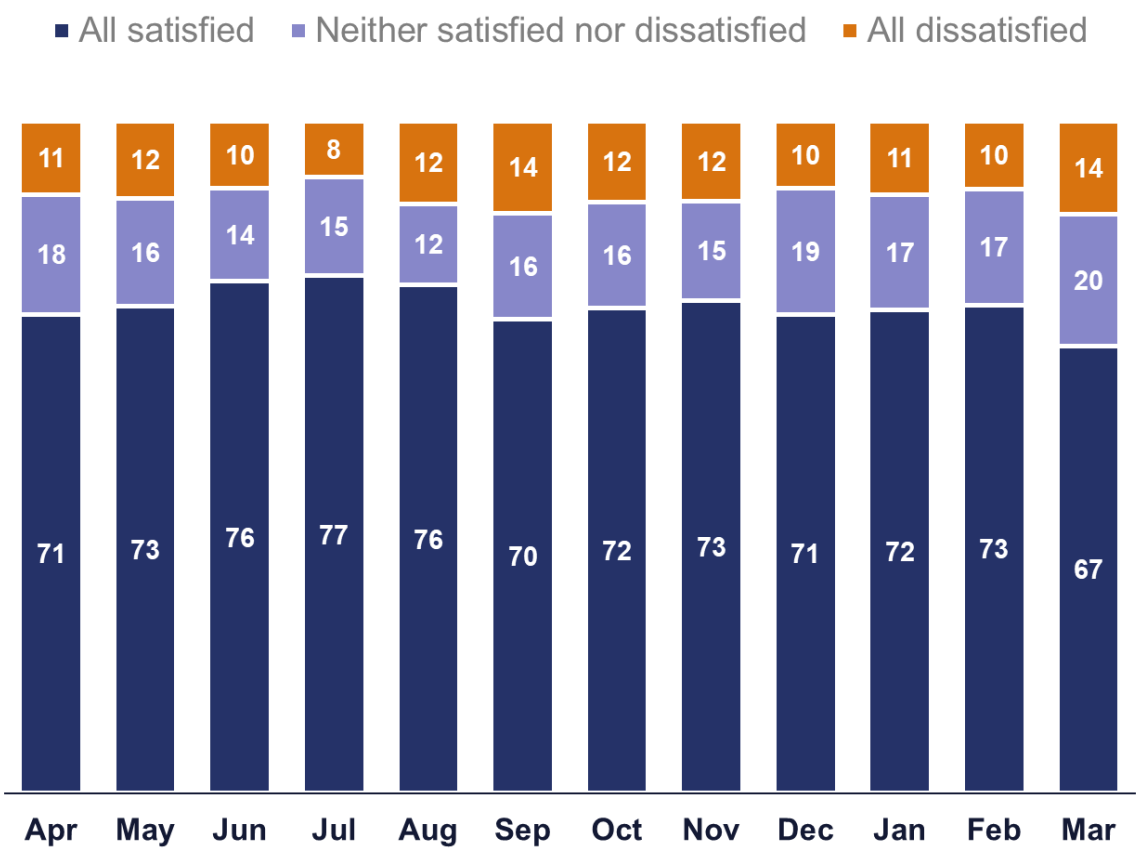
5.7 Following this work, government agreed to set a new user satisfaction KPI target for the company of 73.0% from April 2023 until March 2024. DfT, National Highways, ORR and Transport Focus will review the target level for the final year of RP2.

5.8 In the first year of the re-established target, ORR will continue to evaluate other sources of data to measure user satisfaction and assess delivery of the proposals in National Highways' annual customer service plan. This continues the approach we have taken since 2020 when the road user satisfaction target was suspended. It draws on four key sources of information:

- SRUS;
- HighView – National Highways' survey of its customers' experiences (road user satisfaction);
- evidence from National Highways setting out how it delivered the outputs of its 2022 customer service plan; and
- evidence from Transport Focus' other user surveys, such as its Logistics and Coach Operators survey.

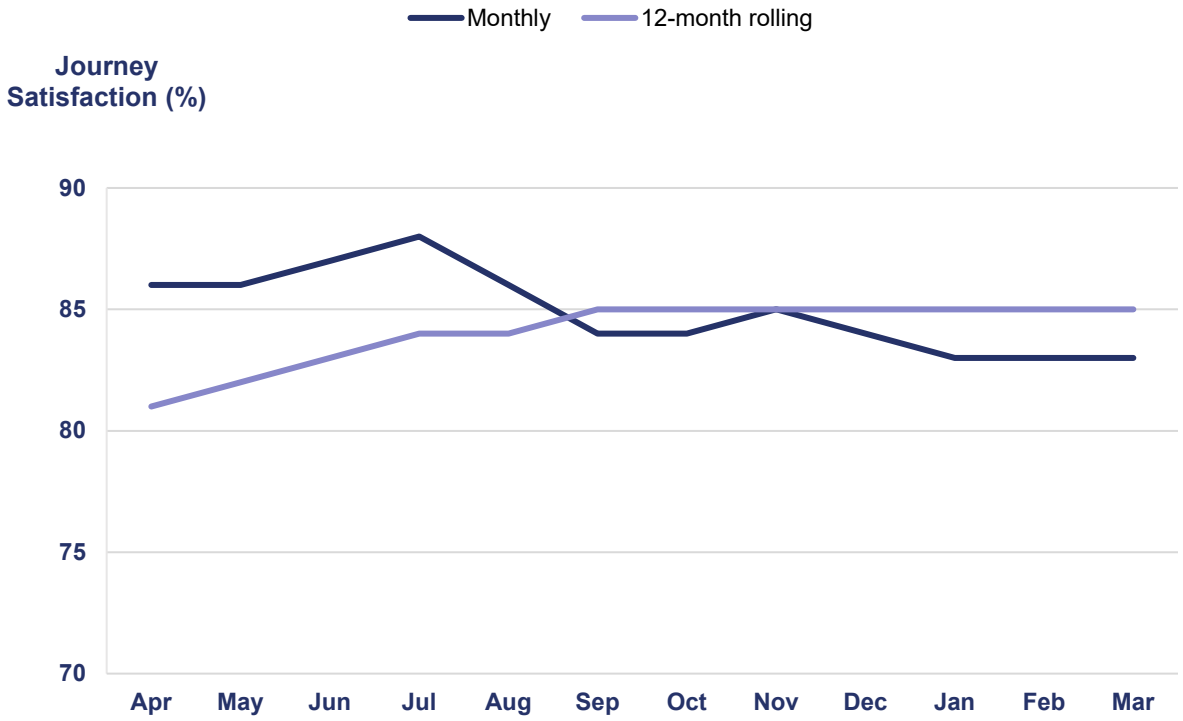
5.9 Figure 5.1 shows the monthly average satisfaction scores of those surveyed using SRUS between April 2022 and March 2023. The percentage of respondents satisfied with their journey varied between 67% in March 2023 and 77% in July 2022. The average for the reporting year was 73%. The percentage dissatisfied with their journey averaged 11% in the reporting year.

Figure 5.1 SRUS road user satisfaction in the reporting year (%)



5.10 HighView is National Highways' monthly online customer experience survey. It draws from 21,000 responses a year, split equally across the company's six regions. It provides insight on SRN users' journey experiences in the four weeks prior to being surveyed.

Figure 5.2 HighView 'fairly good' and 'very good' customer experience in the reporting year



5.11 We used HighView customer experience data to support our understanding of user satisfaction trends while the SRUS target was suspended. As shown in Figure 5.2, the 12-month rolling average percentage of respondents who rated their journey on the SRN as 'fairly good' or 'very good' rose from 81% in April 2022 to 85% in September 2022, where it remained for the remainder of the reporting year. The in-month ratings were more varied. They peaked in July 2022 at 88% before falling to 83% in March 2023.

5.12 SRUS and HighView have different methodologies and purposes, and therefore are not directly comparable. However, when the trends in the two data sets are reviewed alongside each other there is evidence to suggest that National Highways maintained overall journey experience for road users in the reporting year.

5.13 We have tracked delivery of the proposals in National Highways' annual customer service plan that forms part of the company's customer service strategy. We met regularly with the company to review its delivery of the outputs. Of the 51 initiatives contained in its plan for April 2022 to March 2023, it delivered 49 (96%) and did not deliver two.

5.14 Initiatives delivered by the company in the latest year included:

- producing a guidance document to reduce the impact of road works;
- undertaking 20 drive-through customer road works audits per month by mystery shoppers at each large project. The score is 50% evidentiary and 50% perception. Each project team is provided with a detailed report and video drive-throughs, allowing them to make improvements;
- awarding, through a road works innovation competition, ten contracts to organisations to test the feasibility of new solutions related to road works; and
- developing 'customer journey mapping' to better understand key issues for different user groups such as freight drivers and electric vehicle drivers.

5.15 The two initiatives that National Highways did not deliver in the reporting year, were:

- to develop and start a trial of a major scheme customer experience survey. The company intended that this would help it to better understand the customer experience on individual schemes. No tenders were submitted during procurement to undertake feasibility work. The supply chain fed back that a scheme specific survey was not feasible due to the difficulty of recruiting a robust sample size.
- use insight from freight customers to identify and deliver improvements to three facilities on or near the SRN. The company received bids for improvements from facility operators and told us that it anticipates awarding the first grants by September 2023.

KPI: roadworks information timeliness and accuracy

5.16 National Highways' target for the end of RP2 is to ensure that 90% of road works involving an overnight closure are accurately notified within seven days.

5.17 At the end of March 2023, National Highways accurately notified within seven days 70.0% of road works involving an overnight closure. As shown in Figure 5.3, this is 1.9 percentage points better than the previous year, when 68.1% of road works were accurately notified. It is also 28.4 percentage points better than in April 2020, when the company's accuracy rate was 41.6%.

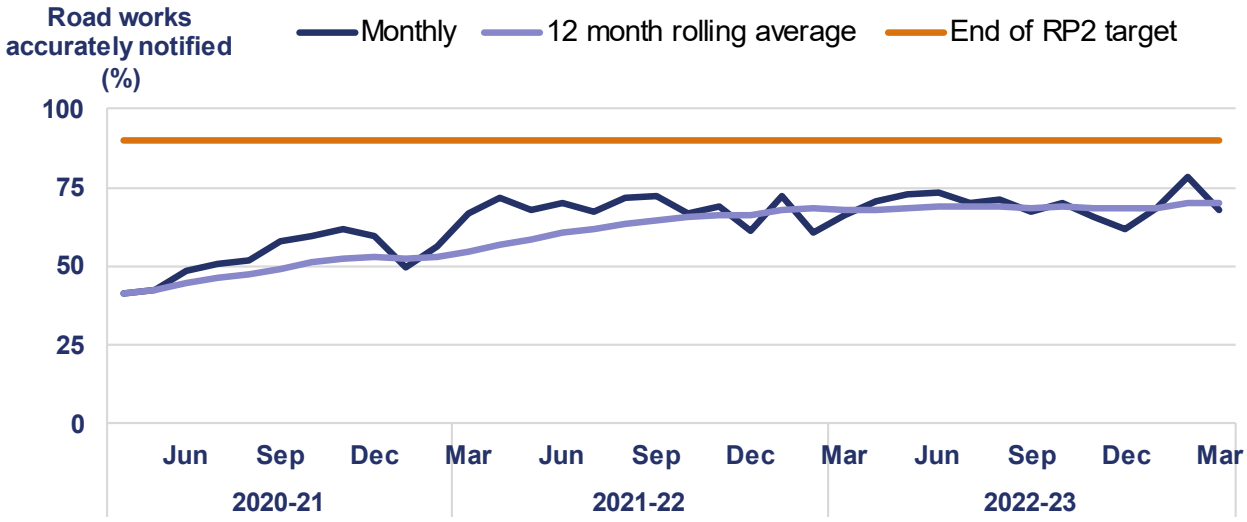
5.18 This represents significant progress since the start of RP2, but the end of road period target remains challenging. We expect to see continued effort from National Highways to deliver further improvements and meet its 90.0% target by the end of RP2.

5.19 As National Highways matures as a network operator and assumes full control of its maintenance and renewals activities, we expect to see the company improve its planning of road works and closures. We are working closely with the company to understand its detailed plans to deliver these improvements and meet its end of road period target.

5.20 National Highways reported that performance against this KPI varies across its six regions. Our January 2023 Benchmarking National Highways report sets out further regional detail for the previous reporting year. The company has told us that it is sharing best practice with its regions and updating its processes. The company's biggest reported contributor to poor performance is where notified road closures are cancelled with less than seven days' notice. Other factors include late bookings for urgent safety repairs and late starts, where the road closure start time is delayed.

5.21 Around half of the poor performance is for reasons within National Highways' control, such as booking errors, clashes with other works and contingency bookings. We expect the company to continue to improve its performance in the next reporting year. We will continue to scrutinise its progress.

Figure 5.3 National Highways' accuracy and timeliness of road works



PIs: meeting the needs of all users

5.22 PIs are untargeted metrics. They enable us to scrutinise more aspects of National Highways' network performance beyond the headline KPI.

Timeliness of information to road users through electronic signage

5.23 In the reporting year, National Highways took an average (median) time of 2 minutes 20 seconds to set signs and signals on motorways after being notified of an incident. This was nine seconds slower than the previous reporting year average of 2 minutes 11 seconds.

Ride quality

5.24 The ride quality metric is designed to better represent car drivers' experience of using the road, separate to the pavement condition KPI, see paragraphs 3.7 to 3.12. It is based on the smoothness of the road surface for each ten-metre length of road. In the reporting year, National Highways achieved ride quality satisfaction of 98.6%, an improvement of 0.2 percentage points compared to the previous reporting year.

5.25 National Highways worked with Transport Focus to develop an improved ride quality PI that it implemented from April 2023. We will report against the updated metric in our next annual assessment.

Working with local highway authorities to review diversion routes for unplanned events

5.26 In the reporting year, National Highways engaged with 99.0% of local highway authorities (92 of 93) with an SRN diversion route through their area. This is higher than 97.2% in the previous reporting year and shows National Highways has increased its engagement with local authorities during unplanned events.

Commitments: meeting the needs of all users

5.27 Commitments are priorities that are not suited to metrics, such as developing new metrics, publishing reports on specific performance items or improving reporting for future years.

Review SRUS performance in the previous reporting year to determine targets later in RP2

5.28 Government agreed to set the company a 73.0% target for the next reporting year. In addition, there will be further ongoing data analysis to support setting a target for the last year of RP2, see paragraphs 5.4 to 5.9.

Develop a measure of ride quality that reflects road users' experience

5.29 This commitment was to develop a measure of ride quality to reflects road users' experience of the network. National Highways has completed and implemented this commitment, see paragraph 5.26 for more detail.

Investigate expanding the scope of the timeliness of electronic signage information PI

5.30 National Highways started work on this commitment in April 2020. In May 2022, government agreed that the company could cease work as initial data showed that the time to clear signs was the same as the time taken to set signs. This is an existing PI. The company is working with Transport Focus to understand the causes for exceptionally long times to set some signals.

Develop a satisfaction survey for cyclists and pedestrians

5.31 National Highways discussed this commitment with Transport Focus and agreed to develop a qualitative survey. Work on this, including discussions with stakeholders, has continued through the year. In March 2023,Transport Focus published further results of regional surveys of pedestrian, cyclist and equestrian experiences and needs.

Develop satisfaction surveys for logistics and coach managers

5.32 National Highways and Transport Focus developed a logistics and coach manager survey. Transport Focus carries out the survey three times each year, with the results published on Transport Focus' data hub annually in January, May and September.

Investigate expanding the scope of the working with local highway authorities PI

5.33 Government ceased the development of this metric. There is a statutory requirement on National Highways to work with local authorities on planned diversion routes. This meant that the proposed PI reported 100% each month.

Outcome: fast and reliable journeys

5.34 National Highways has three KPIs, five PIs and three commitments in this outcome area.

Traffic levels

5.35 Traffic levels increased in the reporting year. This led to increased delays and reduced journey time reliability compared to the previous reporting year. National Highways' performance is broadly in-line with where it was pre-pandemic.

5.36 Traffic returned to 98% of pre-pandemic levels in March 2023, up from 94% in March 2022. Freight vehicle traffic continues to be above pre-pandemic levels. Many delay metrics for the SRN report worsening performance as traffic levels increase.

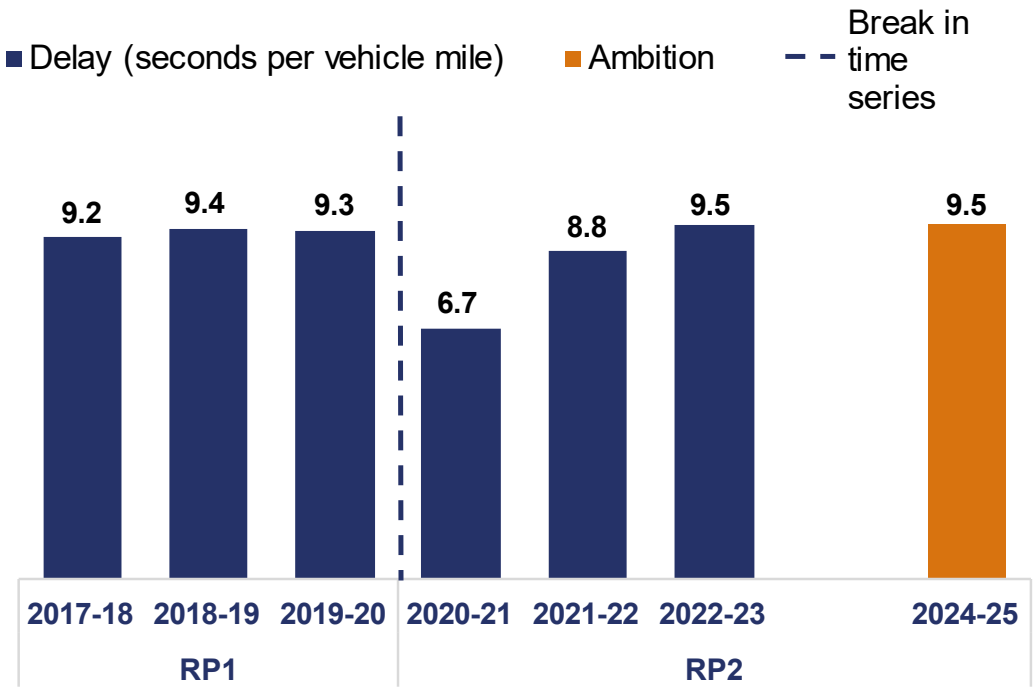
KPI: average delay

5.37 National Highways has an ambition that average delay on the SRN is no higher than 9.5 seconds delay per vehicle mile at the end of RP2. As shown in Figure 5.4, at the end of March 2023, average delay was 9.5 seconds per vehicle mile. This is worse than the 8.8 seconds per vehicle mile in the previous year but equal to the ambition for the end of the road period.

5.38 In 2021, National Highways published Managing delay on the strategic road network. This document set out the key actions that the company planned to take to ensure that delay was no worse than 9.5 seconds per vehicle mile by March 2025. We continue to scrutinise its progress against these actions.

5.39 National Highways continues to achieve its KPI targets for incident clearance rate and road works network impact, see paragraphs 5.40 to 5.42. These are the two biggest contributors to average delay within the company's control. We are working with the company to understand other reasons for worsening delay and the actions that it is taking to mitigate them.

Figure 5.4 Average delay on the SRN (seconds per vehicle mile), April 2016 to March 2023



KPI: roadworks network impact

5.40 This KPI measures the impact of road works on road users. It combines:

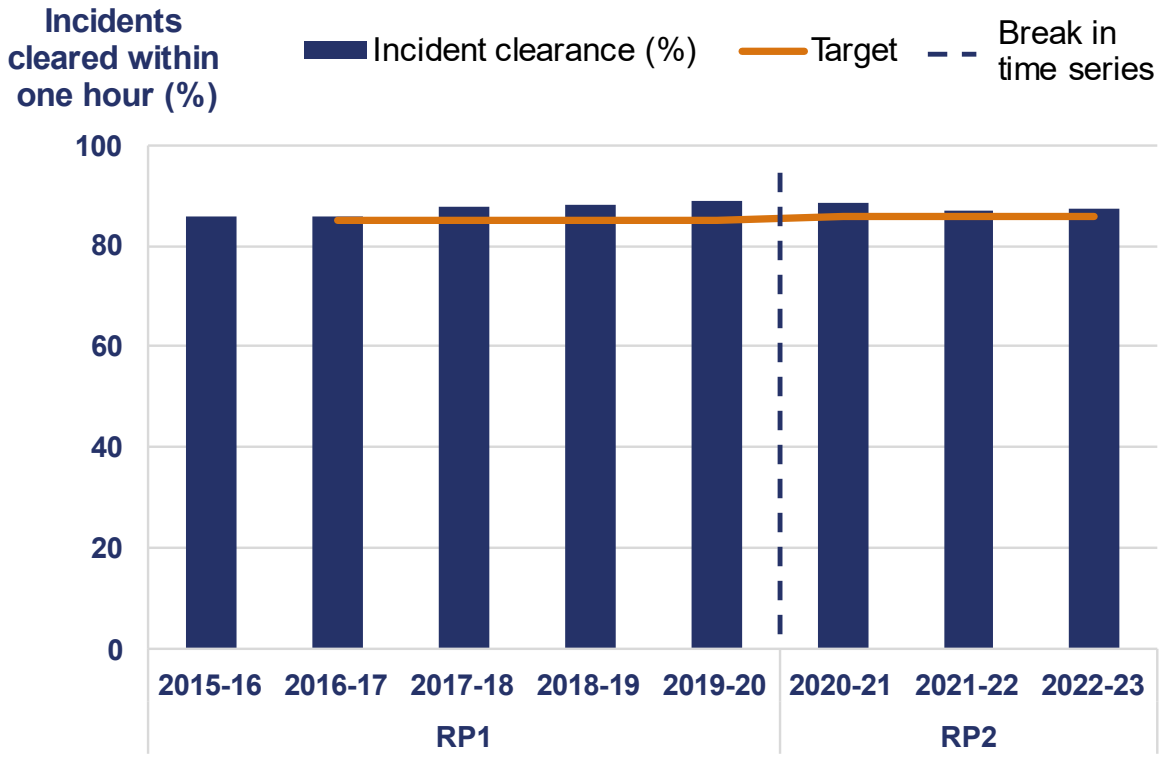
- the length of road works;
- the amount of time they are in place on the network;
- the number of lanes affected; and
- the type of traffic management in use.

5.41 In the reporting year, road works network impact averaged 42.3 million against National Highways' target to keep below 47 million. March 2023 was the single month with the highest impact from road works, an in-month score of 52.9 million. At the start of RIS2, the target was agreed to increase in the reporting year due to more enhancement schemes expected to be in construction. However, with delays to many schemes, ORR asked the company and DfT to recalculate an appropriate target for the next reporting year. They have said that they will undertake this work once the effects of enhancements scheme delays are formally agreed.

KPI: incident clearance rate

5.42 As shown in Figure 5.5, in the reporting year, National Highways cleared 87.2% of incidents affecting traffic flow on its motorways within one hour. This is better than the RP2 target of 86% and performance in the previous reporting year (87.1%), but worse than the first year of RP2, when it cleared 88.6% of incidents within one hour.

Figure 5.5 National Highways' incident clearance performance



Case Study: Clearing incidents in a timely manner

In the reporting year, National Highways traffic officers responded to over 74,000 incidents and drove a collective one million miles. The company has a key performance indicator (KPI) target to clear 86% of motorway incidents that result in a live lane closure within one hour of being reported.

Delivery depends on traffic officers and regional operations centre (ROC) staff working effectively together. When an incident is spotted by National Highways staff, the police or a member of the public, a traffic officer is dispatched and ROC staff set electronic signs to alert other road users.

In the reporting year, National Highways has introduced several initiatives and changes to work practices to improve the speed and efficiency of incident clearance, these include:

Single view of the network: traffic officer managers use a digital tool to locate traffic officers and set patrol routes on the motorway network, to reduce response times to incidents;

Remote statutory removals: recovery vehicles are deployed closer to a report of a stranded vehicle, so if a traffic officer is unable to move the vehicle, a purpose-built recovery vehicle is nearby to clear an incident; and

Battery boosters: all traffic officer vehicles carry a device that is able to jump start engines of stranded vehicles in order to move the vehicle to a safer area.

Although National Highways is performing better than target for the incident clearance KPI, it is important that the company continues to innovate and improve its service to road users.

Source National Highways, traffic officers on the network

PIs: fast and reliable journeys

5.43 The PIs listed show a decline in performance compared to the previous year. In all cases except where noted this is caused by traffic levels recovering year-on-year and approaching pre-pandemic levels.

Average delay on smart motorways

5.44 This PI compares the actual journey time on smart motorways compared to travel time based on the set speed limit at the time. In the reporting year, average delay on smart motorways was 11.2 seconds per vehicle mile. This was higher than the previous reporting year when delay was 9.9 seconds.

Average delay from roadworks

5.45 This PI measures the additional delay caused by road works. In the reporting year, road works added an average 1 minute 20 seconds of delay to journeys per hour travelled. This was higher than in the previous reporting year, when it was 1 minute 12 seconds per hour travelled. A contributing factor may have been more enhancement schemes in construction on the SRN in the reporting year.

Journey time reliability

5.46 This PI measures the difference between actual travel times and the expected travel time including regular congestion. This includes unplanned incidents and additional congestion over and above normal amounts. In the reporting year, reliability was 2.9 seconds per vehicle mile. This was higher than in the previous reporting year, when it was 2.8 seconds per vehicle mile.

Average delay on gateway routes

5.47 This metric measures the average delay experienced by road users on the roads serving airports and ports across England. It is designed to measure the impact of delay on freight. In the reporting year, delay on these roads was 8.8 seconds per vehicle mile. This was higher than in the previous reporting year when delay was 7.9 seconds per vehicle mile.

Average speed

5.48 The average speed of vehicles travelling on the SRN was 57.9 miles per hour in the reporting year. This was slower than in the previous reporting year when average speed was 58.6 miles per hour.

Commitments: fast and reliable journeys

5.49 Commitments are priorities that are not suited to metrics, such as developing new metrics, publishing reports on specific performance items or improving reporting for future years.

Replace existing network availability KPI with a new expanded metric

5.50 National Highways completed this commitment. It has been reporting the new KPI since April 2021.

Investigate the development of new metrics on journey time reliability and delay in roadworks

5.51 National Highways has worked with Transport Focus and consultants to identify new metrics that would make its reporting more accessible to road users. These metrics have been developed and are progressing through validation.

Investigate new PIs on delays from incidents and delays on the SRN/local road boundary and an alternative performance measure for smart motorways operations

5.52 In the reporting year, National Highways completed development of an incident delay metric, with validation due to be completed by July 2023.

5.53 In May 2022, government agreed to cease development of a boundary delay metric. A feasibility study concluded that the new metric would be complex and not provide actionable intelligence. Transport Focus continues to support a measure of user experience at the boundary of the SRN and local road network.

5.54 In the reporting year, National Highways developed a performance measure for smart motorway operations that is now in the validation stage.

Designated funds

5.55 National Highways has four designated funds, assigned a total of £936 million across RP2. The purpose of these funds is to address issues that are of particular importance to road users and stakeholders, beyond the traditional focus of roads investment. The funds are:

- environment and wellbeing;
- users and communities;
- safety and congestion; and
- innovation and modernisation.

5.56 National Highways spent £148 million across its funds in the reporting year, against a revised budget of £165 million. This was an underspend of £17 million. The company reported that while it approved £200 million of projects for delivery in the reporting year, it underspent due to individual project delays and inflationary pressures. The company underspent the innovation and modernisation fund by £32 million, this was offset by smaller overspends in all other funds. Table 5.1 shows the breakdown by individual fund.

5.57 The two projects contributing the most to the underspend were:

- LED programme (environment and wellbeing fund); and
- growth and housing schemes (growth and housing fund from RP1).

Table 5.1 Designated funds budget and spend in the reporting year

Fund (RP2 total)	Reporting year budget	Reporting year spend	Percentage of annual budget spent
Environment and wellbeing (£410 million)	£66 million	£69 million	105%
Users and communities (£167 million)	£24 million	£26 million	108%
Safety and congestion (£145 million)	£18 million	£28 million	158%
Innovation and modernisation (£214 million)	£57 million	£25 million	44%
Total (£936 million)	**£165 million**	**£148 million**	**90%**

5.59 National Highways reports three milestones for each designated fund project:

- feasibility;
- detailed design; and
- implementation.

5.60 Table 5.2 shows that in the reporting year National Highways did not progress designated funds projects through the three milestones as it had planned in April 2022. Less than a quarter of stage gates were complete in the reporting year.

Table 5.2 Designated fund project milestones in the reporting year

Fund	Milestones planned	Milestones completed
Environment and wellbeing	197	56
Users and communities	146	27
Safety and congestion	124	29
Innovation and modernisation	41	12
Total	508	124

5.61 National Highways has £524 million remaining to spend in the final two years of RP2. This is a significant risk, as the company needs to spend more in the final two years than it has done in the first three years of RP2. The final budget for designated funds is also subject to significant financial uncertainty for National Highways caused by external pressures, such as high inflation.

5.62 In the reporting year, National Highways approved £287 million of funding so far for schemes to deliver in the last two years of RP2, against its remaining budget of £524 million.

5.63 We will continue to scrutinise how National Highways' progresses and delivers its designated fund projects to ensure that it is delivering them in a timely manner. We are also working with the company to understand how it is monitoring and evaluating its delivered projects and realising the benefits of the designated funds programme.

Outcome: Improving safety for all

5.64 In December 2022, ORR published its first annual assessment of safety performance on the strategic road network. This included the latest data on road casualties that are used to measure National Highways' performance against its safety KPI and three of its PIs. The rest of this section summarises the headline figures for those KPIs and PIs; the safety report provides further detail. We will update the data in our next annual safety report, to be published by the end of 2023. This will follow DfT's publication of 2022 road casualty data in September 2023.

KPI: number of people killed or seriously injured on the SRN

5.65 In 2021, 1,857 people were killed or seriously injured on the SRN. This is a 42% reduction from the baseline (2005-09 average) and put National Highways on course to reach its target of a 50% reduction by 2025.

PIs: improving safety for all

5.66 The following PIs are measured using DfT's road casualty data:

- total number of people killed or injured on the SRN;
- number of non-motorised and motorcyclist users killed or injured on the SRN; and
- number of injury collisions on the SRN.

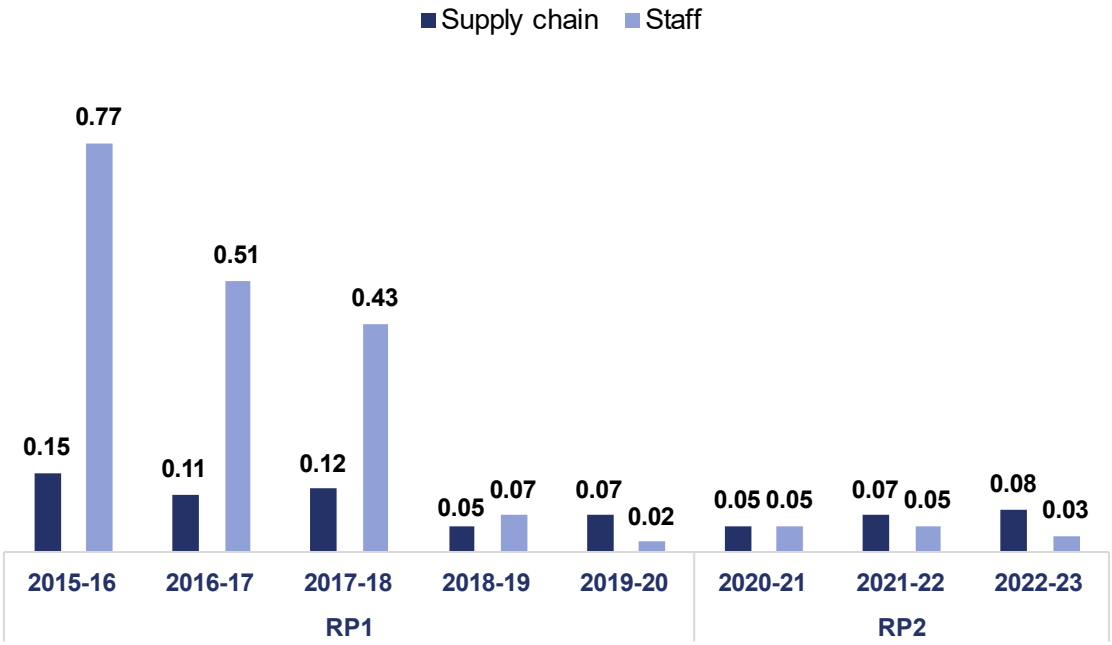
5.67 The latest position for each of these PIs is reported in our annual safety report that was published in December 2022.

Accident frequency rate for National Highways' staff and supply chain

5.68 For National Highways' staff, there were four RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013) reportable incidents on the SRN in the reporting year. As shown in Figure 5.6, this equates to an accident frequency rate of 0.03 reportable incidents per 100,000 hours worked. This is lower than the previous year when the rate was 0.05.

5.69 For National Highways' supply chain, there were 28 RIDDOR reportable incidents on the SRN in the reporting year. This equates to 0.08 incidents per 100,000 hours worked. This is higher than the previous year when the incident rate was 0.07.

Figure 5.6 Accident frequency rate for National Highways' supply chain and staff



Percentage of traffic using iRAP 3-star or above rated roads

5.70 iRAP (international road assessment programme) is a tool to measure how safe a road network is. This is done with a 5-star rating for each section of road. The roads with the highest risk to road user safety are rated one star and roads with the lowest risk are rated five stars.

5.71 Last year we reported that National Highways met and exceeded its RIS1 target to ensure that 90% of travel on the SRN was on roads rated three start or better, using iRAP version 1.

5.72 For RP2, iRAP introduced an updated model (v3.02) that has more demanding requirements for 3-star roads as it includes ten times as many attributes to record, such as pedestrian and cyclist flows.

5.73 National Highways reports that by the end of 2020, 89% of travel on the SRN was on roads rated three stars or better against the v3.02 model. This was an improvement compared to 82% of travel in 2015 that would have been on 3-star roads under that model.

5.74 In the most recent year, National Highways has demonstrated to us how it is developing its use of iRAP data, including tools to better reflect local conditions, and the economic impact of fatal and serious injuries. It is important that the

company continues to develop this evidence to support decision making that delivers better safety outcomes.

Commitments: improving safety for all

5.75 Commitments are priorities that are not suited to metrics, such as developing new metrics, publishing reports on specific performance items or improving reporting for future years.

In 2021 establish an iRAP baseline and 2025 forecast, based on latest iRAP methodology

5.76 Last year, we reported that National Highways had met this commitment. The company forecast that 89% of travel in 2025 will be on roads rated three stars or better against the v3.02 model. The company has told us that this is unchanged from the 2020 baseline because it is mostly undertaking network improvements to reduce risks on 3, 4 and 5-star rated roads.

Work with Transport Focus to investigate a rate-based measure for non-motorised user casualties

5.77 In April 2022, government approved National Highways' request to cease the development of a rate-based measure for non-motorised user casualties. This was due to difficulties in gathering data on non-motorised miles travelled on the SRN.

6. Looking ahead

6.1 We are now in the final two years of the second road period (RP2). It is important that National Highways maintains its focus on delivering its current performance targets and commitments while planning for the third road investment strategy (RIS3). This year we are more closely scrutinising how the company is delivering its plans to achieve its end of road period targets and realising the intended benefits. We also want to see it maintain its focus on the issues discussed elsewhere in this report. These are summarised below. We will report on progress in our next annual assessment.

Holding to account: performance priorities in the next reporting year

6.2 We expect National Highways to demonstrate that it has a clear understanding of how to meet its efficiency key performance indicator (KPI) target, despite changes in outputs, cost and delivery risks as well as a challenging enhancements programme for the remainder of RP2. We will scrutinise the company's progress in this area.

6.3 National Highways must ensure that its enhancements portfolio remains deliverable. It must demonstrate that it is improving its delivery capability and capability to learn. The company must demonstrate that it has embedded suitable processes for capturing learning and knowledge management in its business.

6.4 The company must demonstrate that it is being proactive in future thinking, planning and forecasting. It must also demonstrate that it has robust processes to identify, assess and mitigate risks to the delivery of the enhancements portfolio.

6.5 We will continue to hold the company to account to deliver its enhancements portfolio. We will continue to scrutinise the company's success in areas including but not limited to:

- its effectiveness in capturing risk and putting mitigations in place;
- improving its consistency when capturing and sharing learning;
- carrying out analysis of trends and patterns and assessing how these are disseminated across the business;

- identifying gaps in business processes and providing solutions to close these gaps;
- ensuring the completeness and quality of asset data; and
- timely completion of assessing and evaluating benefits.

6.6 The government cancelled all new smart motorways schemes in April 2023. However, National Highways will continue to operate, manage and improve existing smart motorway sections of the strategic road network (SRN). We will continue to hold the company to account to deliver safety enhancements including its national emergency area retrofit (NEAR) programme.

6.7 We will continue to hold National Highways to account for its efficient delivery of its renewals programme, based on data available to support its asset management decisions. We also expect the company to demonstrate its ability to forecast, mitigate risks and plan for changing asset need. We are working with the company to improve its secondary output identification of renewals at the planning stage.

6.8 National Highways must ensure that it maintains its assets efficiently throughout the remainder of RP2. We will continue to scrutinise the company's maintenance performance with a particular focus on priority defects. We expect the company to resolve issues due to transferring to the Asset Delivery contract model and learn lessons to improve its future procurement exercises.

6.9 National Highways needs to provide assurance that the asset management transformation plan (AMTP) will be delivered and we will continue to hold the company to account against its progress next year to ensure it delivers its milestones.

6.10 We will continue to challenge National Highways' delivery of biodiversity improvements, carbon emission reductions and noise mitigations. The company must continue to develop and deliver its programmes to meet its targets in the environmental outcome area. We will report on the company's progress in reducing its electricity usage, which will remove the impact of carbon intensity of grid electricity. We will continue to hold the company to account to implement air quality improvements where improvements are possible on the network.

6.11 National Highways must continue to meet the needs of all road users. We will hold the company to account to achieve its new KPI target for road user satisfaction for the next reporting year, and review complementary datasets and qualitative information. We will challenge the company to continue increasing the proportion

of road closures that it correctly notifies seven days in advance, to ensure it is on track to achieve its 90% KPI target by March 2025. We will scrutinise the company's delivery of actions to manage delay on its network. This is increasingly important as traffic levels and average delay increase.

6.12 National Highways is over-programming its designated funds spend for the final two years of the road period to ensure that it uses its total budget. We will scrutinise the company's progress in delivering its designated fund projects and work with it to understand how it is realising the benefits of its designated funds programme for RP2.

6.13 The Department for Transport (DfT) will publish its 2022 road casualty data in September 2023. We will publish our second annual assessment of safety performance on the SRN by the end of 2023. This report will set out the company's performance against the safety KPI and associated injury and collision performance indicators. It will also provide an update on ORR's work on the Transport Select Committee's recommendations relating to smart motorways.

Developing the third road investment strategy (RIS3)

6.14 RIS3 will cover the five years from April 2025 to March 2030. National Highways' licence sets out the formal stages of the development process of the road investment strategy. The first stage is the preparation and publication of the SRN Initial Report. This contains an assessment of the current state of the network and users' requirements, potential maintenance and enhancement priorities, and future development needs and prospects. In May 2023 National Highways published its SRN Initial Report. This formed part of a DfT consultation on the development of RIS3 that closed on 13 July 2023.

6.15 In May 2023, National Highways published 20 Route Strategy Initial Overview Reports. These reports form part of the evidence base for the development of the SRN Initial Report and RIS3. The National Highways consultation on the reports is ongoing and will close in August 2023.

6.16 We expect the Secretary of State to publish the draft RIS3 by the end of this calendar year. At that point, we will set out guidance on the evidence we expect National Highways to include in its draft Strategic Business Plan (dSBP).

6.17 Once National Highways has prepared its dSBP, we will undertake our Efficiency Review of the plan. This review will assess if the dSBP is deliverable with the proposed financial resources, the levels of efficiency the company proposes to achieve, and the extent to which the company's plans are challenging.

Annex A: Financial performance and detailed efficiency evidence assessment

A.1 This annex discusses:

- changes to National Highways' funding for the second road period (RP2);
- how the company spent its funding between April 2022 and March 2023 (the reporting year);
- its forecast capital expenditure and use of risk funding for RP2;
- its forecast total outturn expenditure for its enhancements portfolio (for RP2 and future road periods); and
- detailed efficiency evidence assessment.

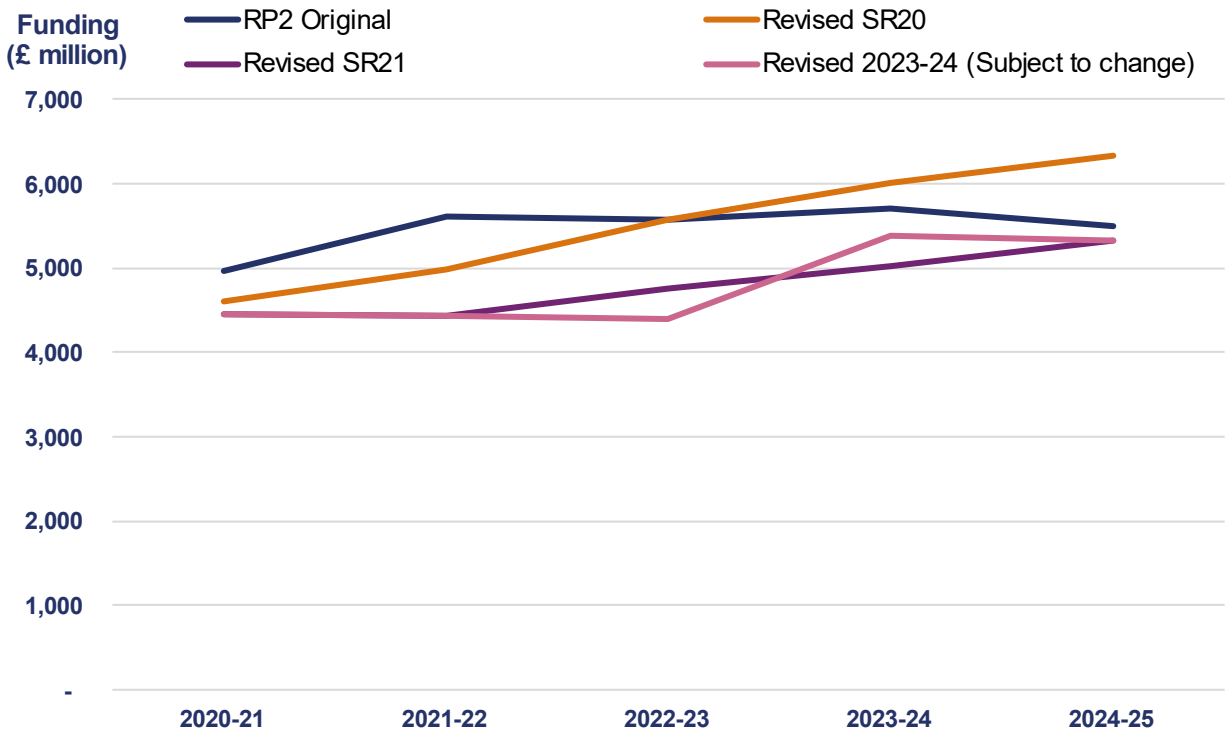
Overview of funding changes for the second road investment strategy (RIS2)

A.2 In the reporting year, the Department for Transport (DfT) increased National Highways' total RIS2 resource funding by £100 million to £6,109 million. This was due to a transfer of £100 million from capital funding in the next reporting year to meet inflationary pressures.

A.3 National Highways' RIS2 capital funding was reduced by £100 million to £17,901 million due to the transfer to resource funding. In addition, National Highways moved £357 million capital funding from year three (the reporting year) to a later year using the company's 'capital flex' facility to move up to 10% of funding between years.

A.4 The National Highways' 2023 delivery plan notes that the above is subject to change within the total RIS2 funding remaining at £24,009 million. Figure A1 shows how the funding profile has changed since the start of the road period.

Figure A.1 Annual funding profile at the start of RP2 and as revised through Spending Review 2020(SR20), Spending Review 2021(SR21) and Revised 2023-2024 (£ million)



April 2022 to March 2023 funding

A.5 In the reporting year, National Highways' original budget was £4,774 million. This was split between £3,571 million for capital expenditure and £1,203 million for resource expenditure.

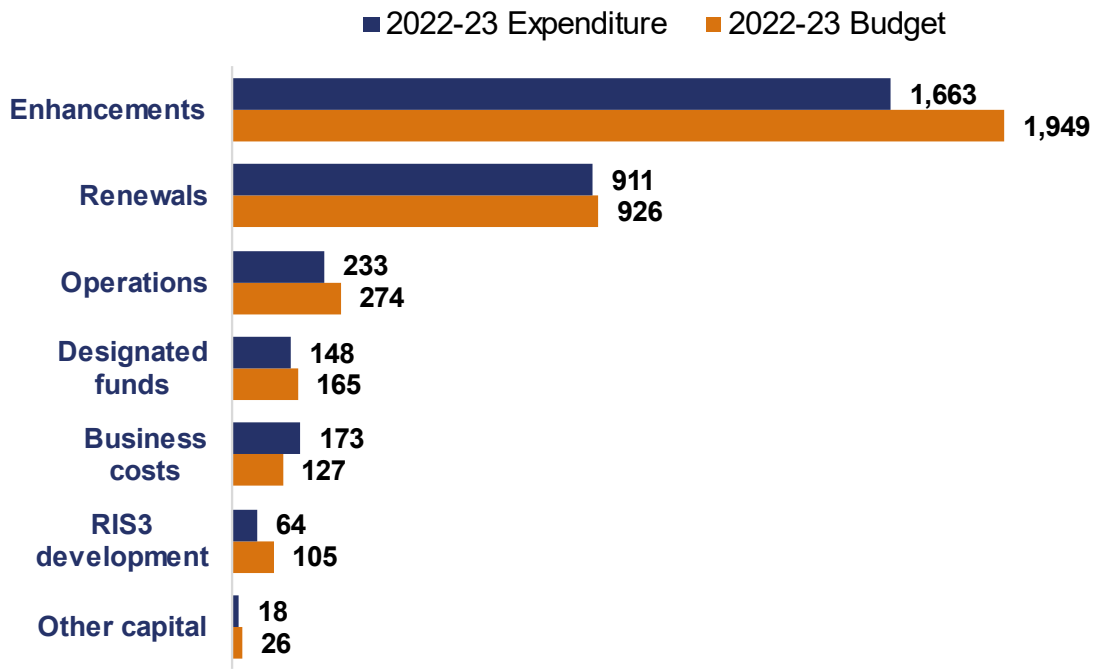
April 2022 to March 2023 capital expenditure

A.6 National Highways identified early in the reporting year that it would not require all the capital funding budgeted for the year. This was principally due to changes made to the enhancements portfolio in the final months of the previous reporting year, after the current year's budget had already been agreed.

A.7 National Highways indicated to DfT that it wished to use its capital flex facility to move £357 million of its capital funding to a later year. This was the maximum that the company was able to move without government approval.

A.8 During the reporting year, slippage on some large enhancement schemes continued, for example A428 Black Cat to Caxton Gibbet which further reduced expenditure. However, inflation was higher than anticipated creating an unexpected partially offsetting cost pressure. National Highways spent £3,211 million within the year which was an underspend of £360 million. Therefore after taking account of the £357 million movement to a later year, the company underspent by £3 million.

Figure A.2 Capital expenditure against budget April 2022 to March 2023 (£ million, rounded)



Enhancements

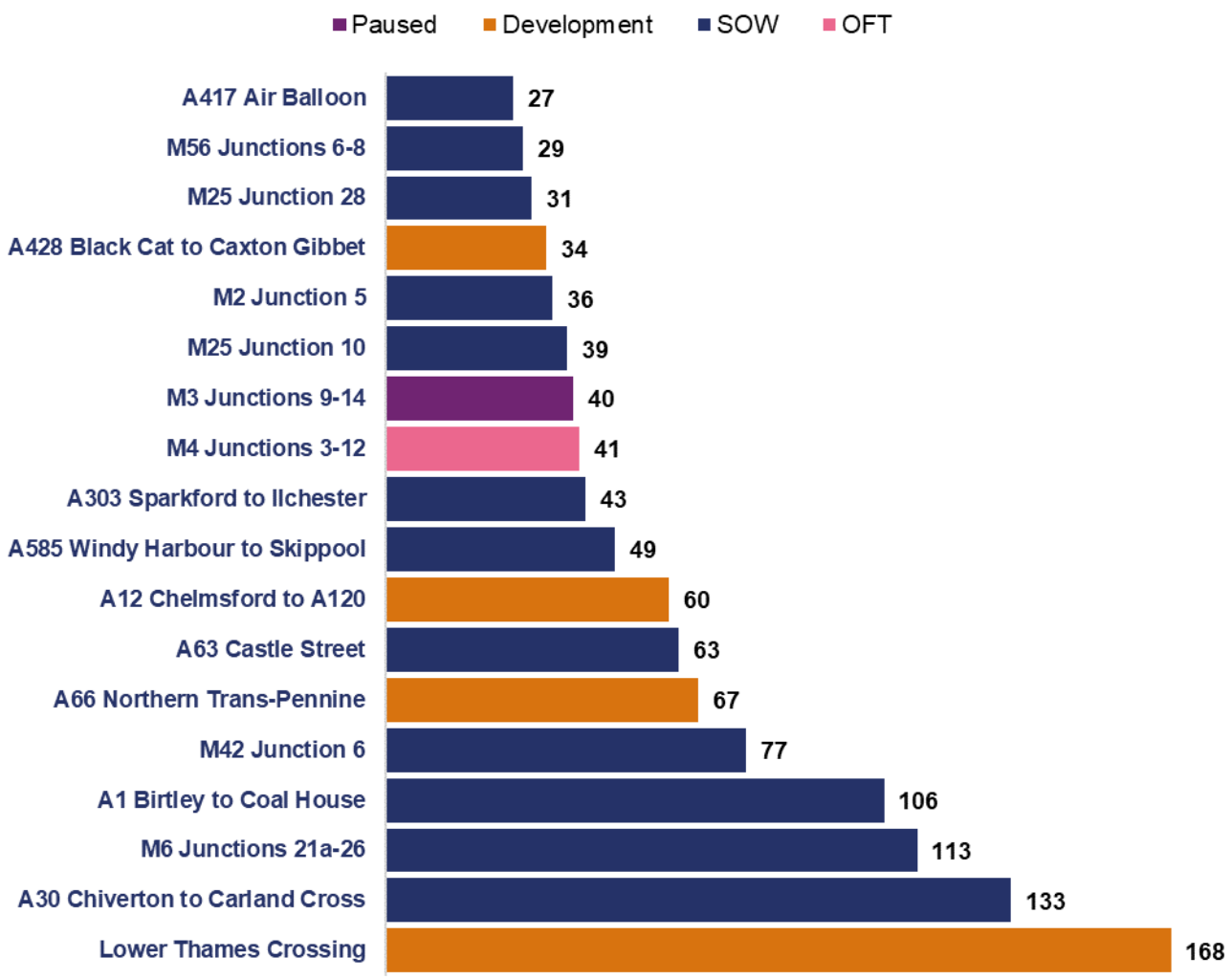
A.9 In the reporting year, National Highways spent £1,663 million on enhancements. This was £286 million (14.7%) less than planned. The majority of this underspend relates to the funding identified by the company that was not required in this reporting year, see paragraph A7. This included £240 million arising from delays to schemes in achieving their Development Consent Orders (DCOs), £85 million due to the funding mismatch of the Transport Select Committee (TSC) smart motorway report outcome, where budgets were set for the reporting year prior to the TSC recommendations being announced, and £59 million of other, non-DCO-related, scheme slippage.

A.10 These underspends were offset by some overspends against specific schemes, for example the A1 Birtley to Coal House overspent by £49 million due to costs on the Allerdene Bridge and increases in the cost of steel. The A30 Chiverton to Carland Cross overspent by £47 million due to increases in construction costs and work on drainage, earthworks and pavement being brought forward into the reporting year.

A.11 The enhancements category includes, but is not limited to, expenditure on delivering enhancement schemes. There were 18 enhancement schemes where National Highways spent more than £25 million. Figure A3 shows the expenditure incurred and the phase of the schemes at the end of the reporting year. As expected, many of these schemes are currently in construction as this is where most expenditure is incurred.

A.12 However, Lower Thames Crossing is the scheme with the largest spend in the reporting year (£168 million) and is in the development phase. This was an overspend of £38 million and relates to multi-year leases for land required for the scheme.

Figure A.3 Enhancement schemes with in-year spend greater than £25m by scheme phase (£ million)



Third road investment strategy (RIS3) development

A.13 National Highways spent £64 million on RIS3 enhancements development in the reporting year, £41 million (39%) less than it planned. This is due to several projects in the pipeline being deferred by the DfT in March 2023 for consideration for inclusion in RIS4.

Renewals

A.14 National Highways spent £911 million on renewals in the reporting year, £14 million (1.5%) less than planned. The budget included £36 million of renewals risk reserve; only £22 million was drawn down in year, resulting in the £14 million underspend. This funding will be rolled forward to be utilised when required over

the remaining two years of the road period. More detail on renewals performance and delivery can be seen in paragraphs 3.42 to 3.44.

Designated funds

A.15 National Highways spent £148 million on designated funds in the reporting year. This was £17 million (10.3%) less than planned. This is due to the company underspending by £30 million against the Innovation and Modernisation fund as a result of difficulty in identifying appropriate projects for approval and progression. This underspend was slightly offset by overspends against the three other funds. See paragraphs 5.56 to 5.63 for further details on designated funds.

Business costs

A.16 National Highways spent £173 million on business costs in the reporting year, £46 million (36.2%) more than planned. This is due to a combination of increased digital services spend and less income than expected from disposals.

Operations

A.17 National Highways spent £233 million on operations in the reporting year. This was £41 million (15%) less than planned. This was caused by managed slippage into the next reporting year across a number of projects and schemes.

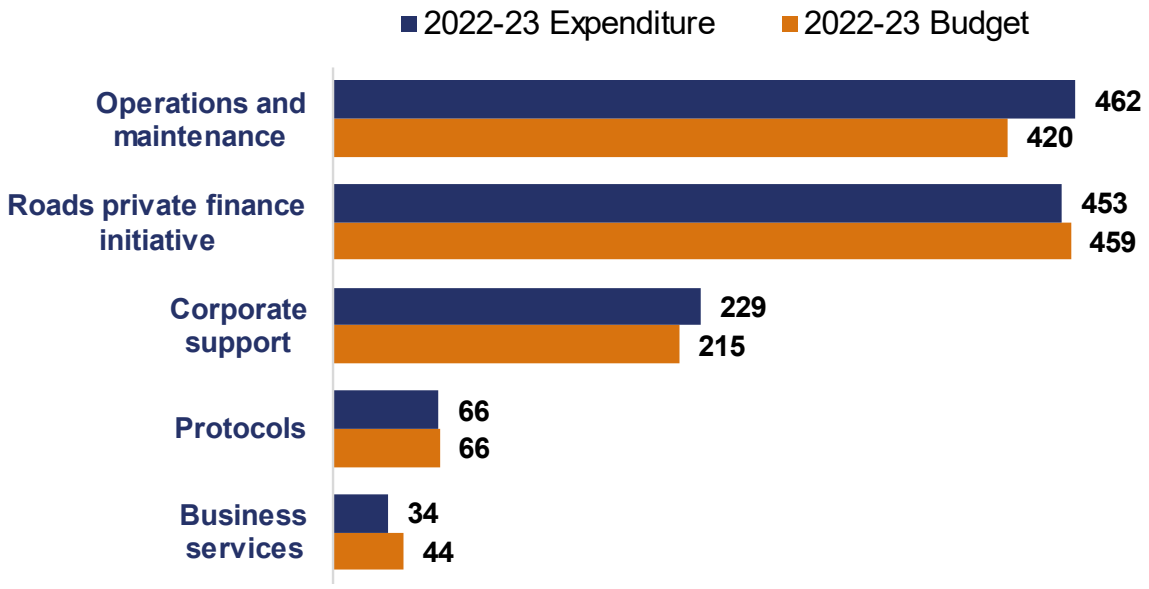
Other capital expenditure

A.18 National Highways spent £18 million on capital works associated with Operation Brock in the reporting year. This was £8 million (30.8%) less than planned. This is because when Operation Brock is in operation capital works are suspended. The capital works unable to take place in this reporting year will now take place in the next reporting year.

Resource expenditure in the reporting year

A.19 In the reporting year, National Highways spent £1,244 million of resource funding. This was an overspend of £41 million compared to the original budget of £1,203 million, but an overspend of £9 million against the revised funding position of £1,235 million. The budget was increased by £32 million, following DfT agreement to £32 million additional funding outside of the RIS.

Figure A.4 Resource expenditure against budget April 2022 to March 2023 (£ million, rounded)



Operations and maintenance

A.20 National Highways spent £462 million on operations and maintenance in the reporting year. This was £42 million (10%) more than planned. This was a net position of a number of under and overspends in different areas. See paragraphs 3.53 to 3.55 for further details on operations and maintenance spend.

Private Finance Initiative (PFI) contracts

A.21 National Highways spent £453 million on PFI contracts (public sector projects financed through the private sector) in the reporting year, £6 million (1.3%) less than planned. Inflation impacted spend on committed costs in this area. However, the company was able to offset the impact of this by identifying savings through review of contractual commitments.

Corporate support

A.22 National Highways spent £229 million on corporate support in the reporting year, £14 million (6.5%) more than planned. It was largely because this category holds £19 million of general corporate support cost pressure anticipated when the business plan for the reporting year was agreed. This is also where the company recorded its £6 million unfunded spend on Operation Brock. These overspends were slightly offset by savings in Digital Services.

Business services

A.23 National Highways spent £34 million on business services in the reporting year. This was £10 million (22.7%) less than planned. This is mostly due to slower than expected recruitment.

Protocols

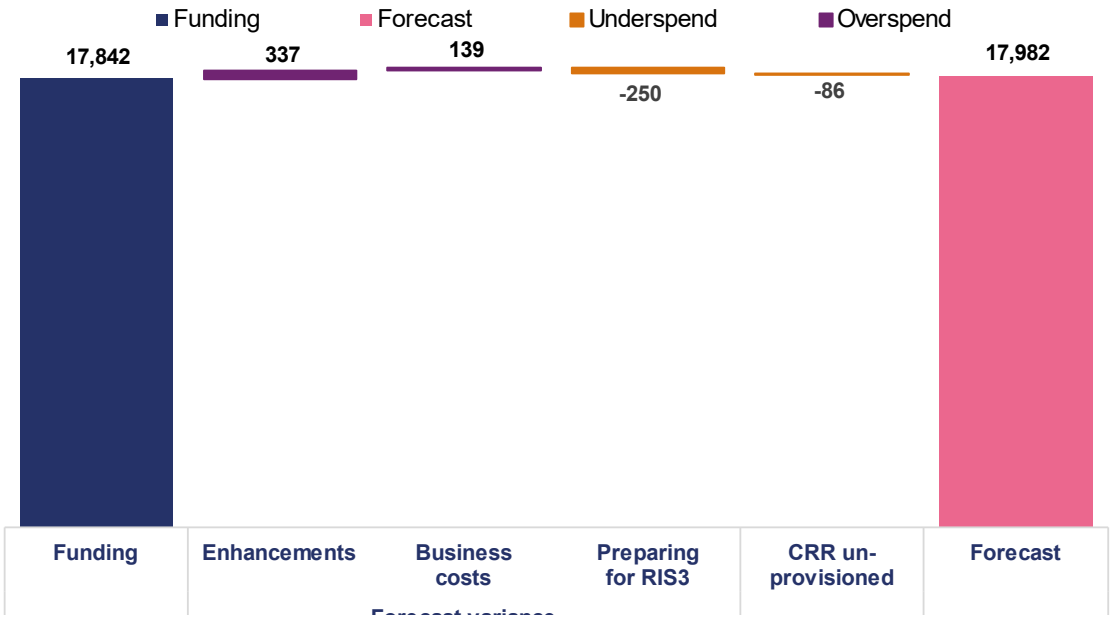
A.24 The Secretary of State for Transport requires National Highways to perform protocols services on their behalf. These cover functions or activities that are not core to its role as a strategic highways company. The company spent £66 million on protocols in the reporting year which was in-line with the budget.

RP2 capital expenditure forecast

A.25 National Highways is forecasting to spend £17,982 million across RP2 against its capital funding allocation of £17,842 million. This is an overspend of £140 million (0.8%) and includes variances of:

- £337 million (3.3%) overspend on enhancements (see paragraphs A28 to A32);
- £139 million (8.2%) overspend on business costs relating to National Highways' Digital Data and Technology Strategy; and
- £250 million underspend (49%) on preparing for RIS3 reflecting reduced scope of work following the Secretary of State's Written Ministerial Statement on 9 March 2023.
- £86 million underspend on 'unprovisioned' Central Risk Reserve (CRR), for which the company has not identified a spending need. Provisioned CRR of £1,271 million is already reflected in other expenditure category budgets.

Figure A.5 RIS2 capital funding and forecast variance at April 2023 (£ million)



A.26 Table A1 shows how the overspend on enhancements is broken down between enhancement schemes (with RP2 delivery milestones) in the delivery plan and other enhancements.

Table A.1 Enhancements RP2 forecast cost analysis

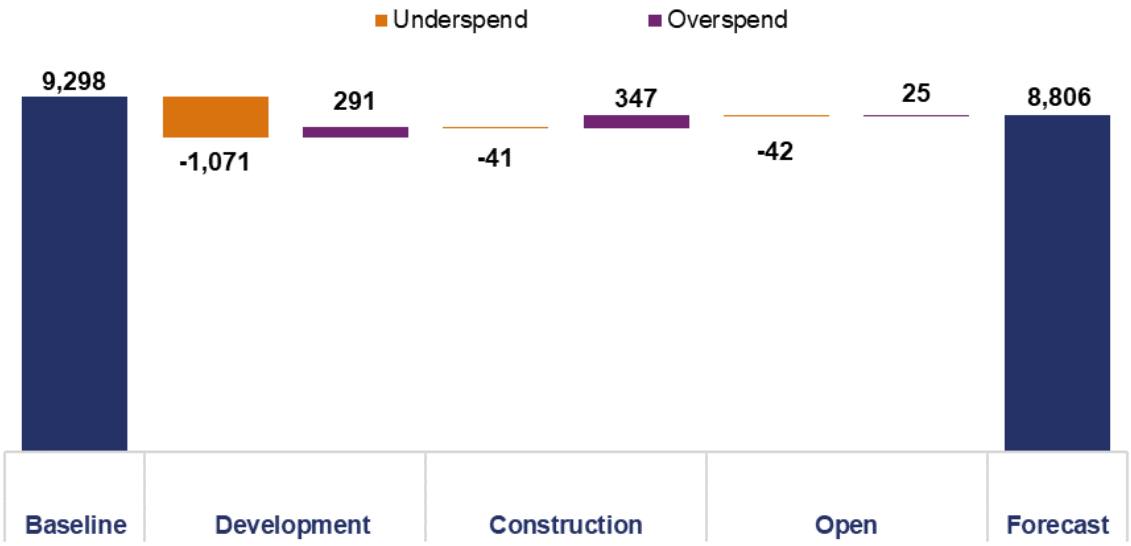
	Baseline (£ million)	Forecast (£ million)	Variance (£ million)	Percentage variance
Enhancement schemes	9,298	8,806	492	5%
Other enhancements	925	1,754	-829	-90%
Total enhancements	**10,223**	**10,560**	**-337**	**3%**

A.27 The 'other enhancements' budget covers the cost of smart motorway action plan deliverables, legacy costs of previously completed projects, contributions to schemes delivered by third parties and safety congestion works deferred from the first road period. However, in the last quarter of the reporting year, National Highways also included within other enhancements its £500 million assessment of the cost impact on the enhancement portfolio of higher inflation that is not yet included in scheme cost forecasts. It also reduced the enhancements baseline by £200 million for a £100 million funding transfer to resource expenditure in 2023-24 and further £100 million expected in 2024-25.

A.28 The company intends to reflect these changes in enhancement scheme baseline and forecast changes in its baseline update in the next reporting year. This will give a clearer view of the impact of inflation at scheme level.

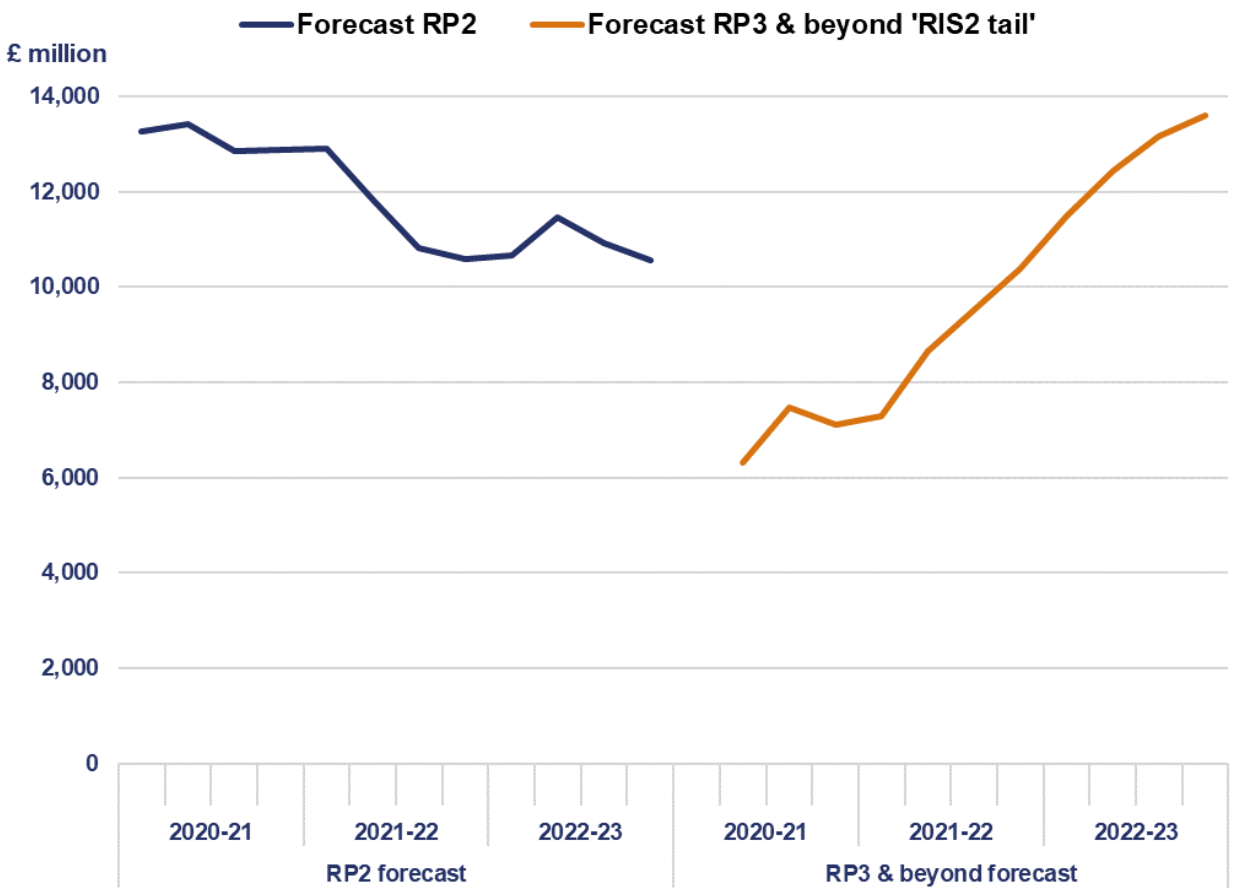
A.29 However, analysis of forecast scheme variances by phase shows the impact on the financial position of further scheme delays despite re-baselining after the funding reduction in Spending Review 2021. Eleven schemes in the development phase have underspends totalling £1,071 million predominantly due to ongoing challenges in achieving planning consent.

Figure A.6 RP2 enhancement scheme variance between baseline and forecast by current scheme phase as at 31 March 2023 (£ million)



A.30 As discussed in paragraphs 2.63 to 2.66, the delays in achieving planning consent for several schemes is reducing forecast cost pressure in RP2 but is driving up forecast costs in later road periods.

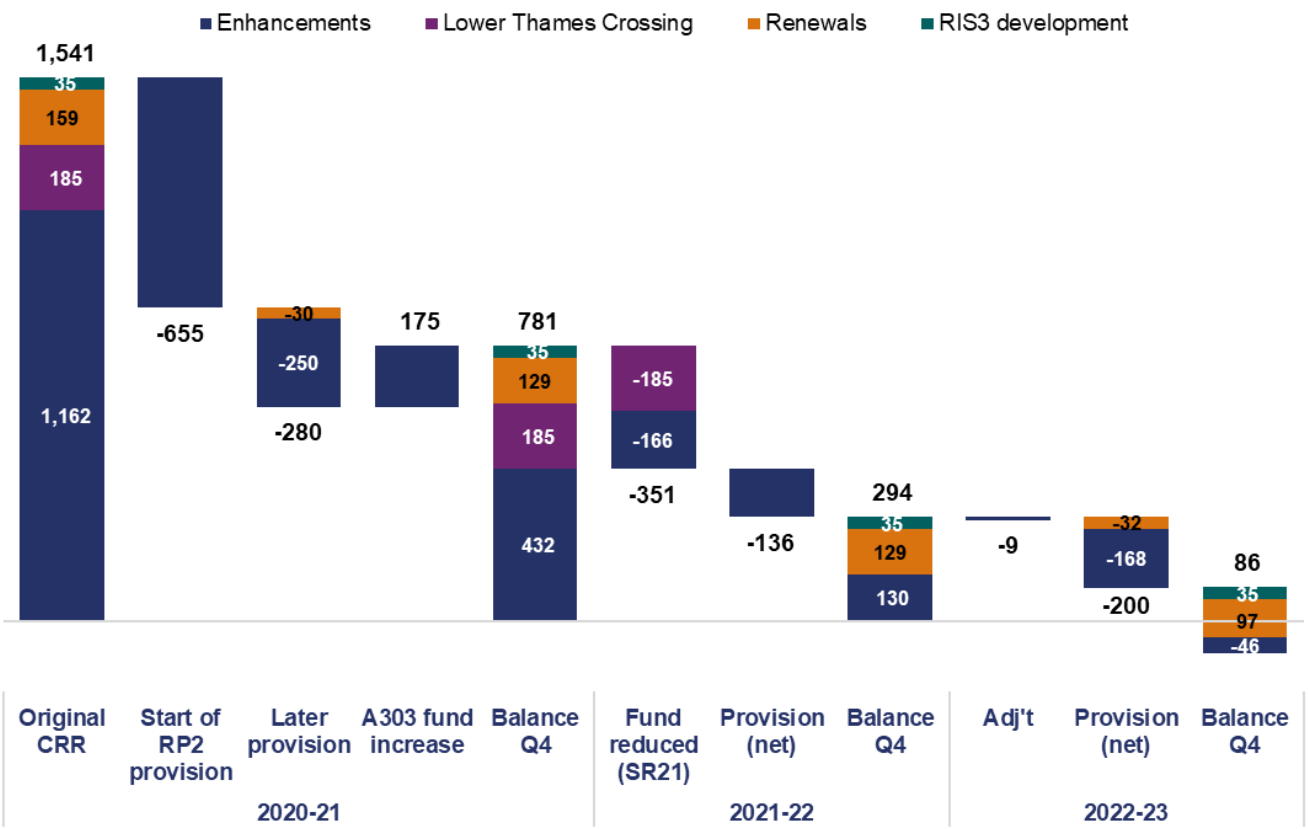
Figure A.7 RIS2 schemes total forecast cost reducing in RP2 and increasing in RP3 and beyond (£ million)



Central risk reserve

A.31 National Highways' overall capital funding includes a central risk reserve (CRR) that the company holds separately to the core funding provided by government for delivering the capital programmes in RIS2. The CRR provides for portfolio risks and other risks not covered as part of base funding. It is split into allocations for enhancements, renewals and RIS3 development.

Figure A.8 Changes in CRR provision in RP2 (£ million)



A.32 At the start of RP2, the CRR contained £1,541 million. During the first two years the overall balance was reduced to £294 million (£130 million for enhancements, £129 million for renewals, £35 million for RIS3 development). This was due to both government agreed increases/decreases in the reserve consistent with changes to funding of the enhancements portfolio, and National Highways using the CRR for making risk provisions into its base funding. The provisions shown in Figure A8 represent a net position of funding transferred from the reserve to base funding and funding transferred from base funding back into the reserve (where a saving has been made).

A.33 In our last annual assessment, we highlighted our concern about the balance remaining in the reserve for enhancements in particular. In the current reporting year, National Highways made a £9 million adjustment correcting a reporting error in the previous year and against a backdrop of high inflation, provisioned a further £200 million (£168 million for enhancements and £32 million for renewals). This leaves an overall balance of £86 million with the enhancements element overallocated by £46 million. During the year the company implemented changes to its internal processes for approval of provisions from the reserve and no

provisions have been made from the reserve in the second half of the year. It has also introduced improvements to its regular CRR reporting to ORR and DfT. This was in response to an ORR commissioned review of CRR published in July 2022.

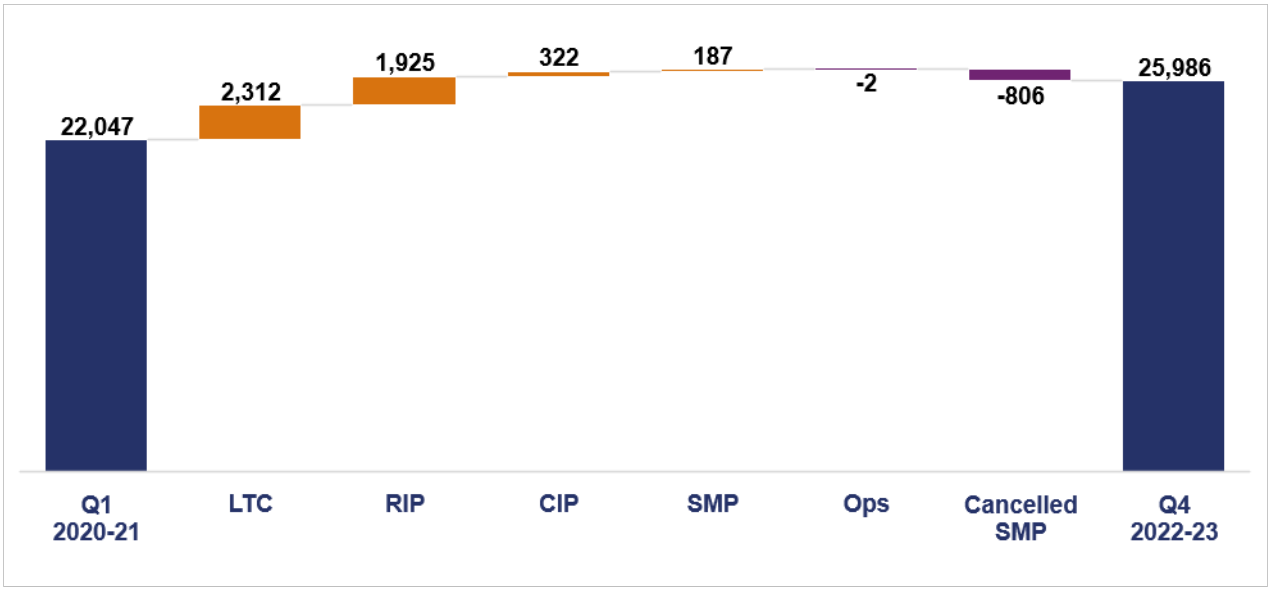
A.34 The CRR balance remains a concern despite the risk of further enhancement planning approval delay, see paragraphs 2.19 to 2.23 for further details, meaning CRR pressure could reduce over time. The changes to RIS2 scheme schedules announced by the Secretary of State in March 2023 are unlikely to improve the CRR position as they do not currently have any CRR allocated to their baselines. However, the deferral of RIS3 development schemes to RP4 could mean RIS3 development allocated CRR being available to manage wider enhancements pressures.

Total outturn capital forecast expenditure for enhancements

A.35 The total forecast outturn cost of RIS2 enhancements is £28,613 million, comprising £25,986 million for enhancement schemes and £2,627 million for other enhancements. This has increased by £4,969 million (21%) since the start of RP2. £3,225 million was in the past year.

A.36 Figure A9 shows that the forecast costs have increased across most of the programmes, with the exceptions of Operations, that has decreased by £2 million, and the Smart Motorway Programme schemes that were cancelled that had an original forecast value of £806 million.

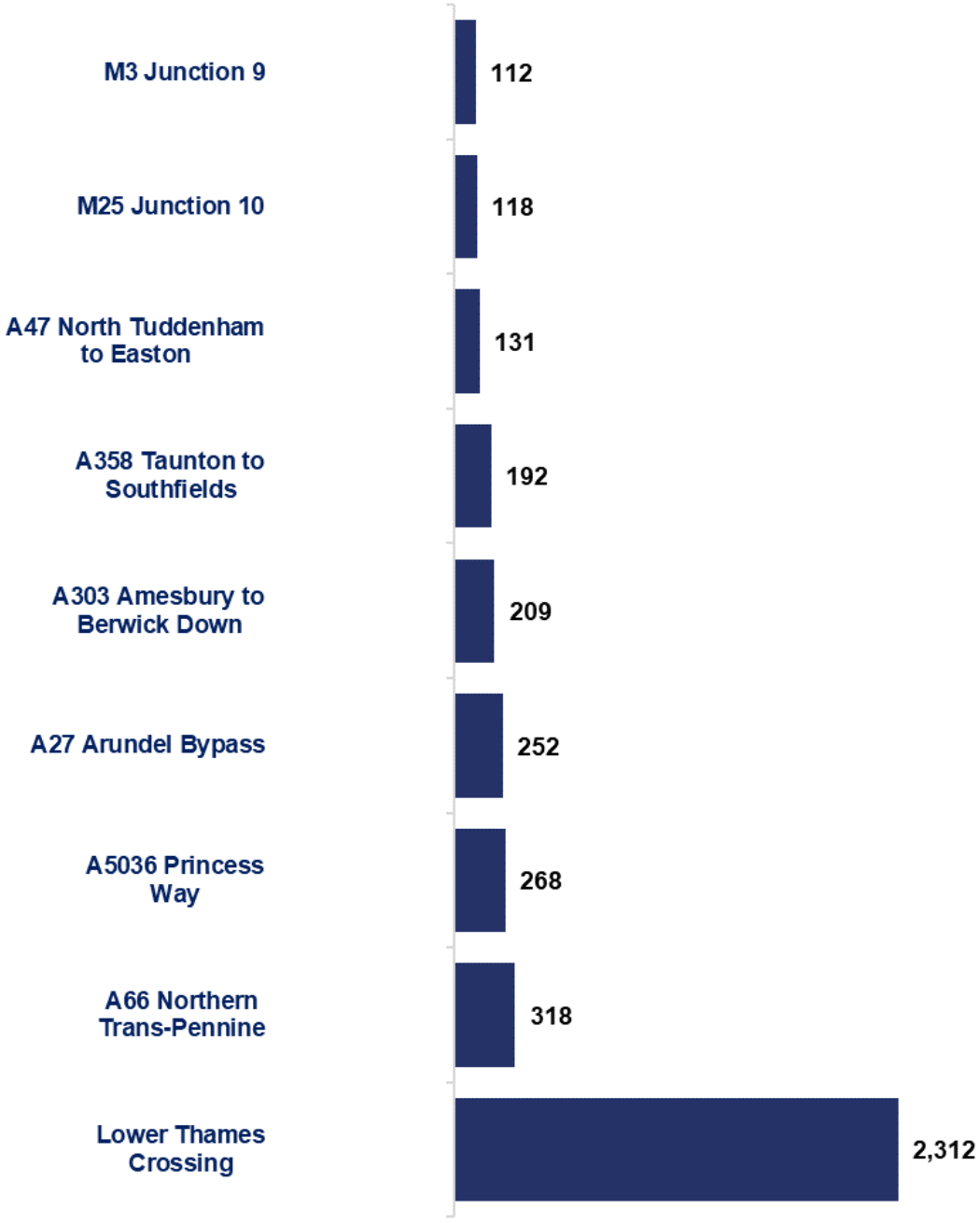
Figure A.9 Change in total outturn forecasts by programme since the start of RP2 (£ million)



A.37 Figure A10 shows the individual schemes with the largest change in total outturn forecast since the start of RP2 compared to the end of the reporting year. The largest change is related to the Lower Thames Crossing scheme. This increased by £2,312 million.

A.38 There are also three schemes where the forecast total outturn has reduced by greater than £100 million since June 2020. This mostly relates to smart motorway schemes that government announced it would cancel in April 2023.

Figure A.10 Increase in total outturn forecast from April 2020 to March 2023 for schemes where variance is over £100 million (£ million)



Delegated expenditure controls

A.39 Delegated expenditure controls are the financial controls that National Highways is required to have in place to reflect its delegated authority to incur expenditure on behalf of DfT.

A.40 DfT confirmed in March 2023 that National Highways is no longer required to produce a self-assessment of its delegated expenditure controls. As such the role for ORR to review the self-assessment has also been removed. This is in recognition of the fact that the original requirement was set at a time when the company was new and had yet to build its capacity and capability in this area. DfT note that ORR's annual assessments were a critical part of ensuring that NH took the necessary actions to develop and establish the appropriate internal systems and controls.

Detailed efficiency evidence assessment

A.41 This section provides greater detail on our assessment of the quality of evidence National Highways provided to support its reported efficiency.

Table A.2 Embedded efficiency reported and our assessment of supporting evidence

Expenditure categories	Reported cumulative (£496 million)	Primary: outputs and funding	Secondary: activity metrics	Secondary: case studies
Capital enhancements	£52 million	Good evidence	Good evidence	Good evidence
Capital renewals	£182 million	Developing evidence	Good evidence	Good evidence
Operations and business costs (capital expenditure)	£76 million	Good evidence	Developing evidence	Developing evidence
Operations and business costs (operational expenditure)	£186 million	Good evidence	Developing evidence	Good evidence

Embedded efficiency: primary evidence

A.42 Within the enhancements expenditure category, National Highways reports efficiency for enhancements schemes based on when they open for traffic. For other enhancements (and all other areas of spend) the position is assessed based

on cumulative spend compared to funding at the end of the year. Use of the CRR funding is allowable in evidence of delivering RIS outputs for funding. However, any inefficient use of the CRR (e.g. for poor contractor performance) creates a risk of remaining RP2 funding being insufficient to deliver the required outputs, meaning it would need to find additional efficiency to do so.

A.43 The cumulative £52 million reported for enhancements is £19 million above the cumulative milestone and includes an inflation adjustment of £61 million. Before application of the inflation adjustment, £48 million of efficiency is from schemes that have opened for traffic, offset by £58 million of inefficiency on other enhancements. The evidence provided has improved during the reporting year and supports the reported value.

A.44 To date in RP2, National Highways has delivered more than its planned profile of renewals on the key assets of asphalt pavement, steel restraints and significant structures. However, it has underdelivered concrete pavement due to delivering more life extension in place of some planned full reconstruction and it has delivered less concrete restraints than its planned profile.

A.45 National Highways overspent its budget and adjusted the reported efficiency on this basis. However, the company has not made an inflation adjustment or an adjustment for over- or under-delivery of outputs. It has begun to consider how these can be reflected in its efficiency reporting, but with only two years remaining in RP2 it is important for this to be resolved in the coming year.

A.46 On operations and business costs (capital expenditure), National Highways reported efficiency £17 million above its planned cumulative level which includes an inflation adjustment of £24 million. The company has reduced its reported efficiency by £12 million to reflect timing effects where projects have been delivered later than in its efficiency plans. The evidence provided has improved during the reporting year and supports the reported value.

A.47 For expenditure on operations and business costs (operational expenditure), National Highways reported efficiency marginally above its milestone due to a small underspend in this category. The company raised more income and spent below funding on PFI routes and used this to cover increased maintenance costs. The evidence provided supports the reported value.

Embedded efficiency: secondary evidence

A.48 National Highways has continued to extend the scope of its activity metrics as secondary evidence for renewals and enhancements:

- For enhancements, the company has well established activity metric models for reporting smart motorway and Regional Investment Programme bypass and widening schemes. It is extending this junction improvement schemes in the coming year. We would like to see this work taken further to more clearly show how it supports the level reported using primary evidence.

- For renewals, the company's activity metric models show it is delivering more efficiency at a level comparable to that shown in primary evidence.

- For operations and business costs (operational and capital expenditure), use of activity metrics is challenging due to the diverse activity in these categories. In previous years National Highways has stated this evidence is not available. However, in this reporting year National Highways has made progress exploring with us whether there are any areas of its expenditure where they can be applied.

A.49 The case studies presented by National Highways in RP2 provide supporting secondary evidence for the embedded efficiency reported. The company presented case studies supporting enhancements, capital renewals, operational expenditure and non-roads capital expenditure. The studies cover a wide range of initiatives taking place in RP2.

A.50 For non-roads capital expenditure, the value of case study secondary evidence presented is significantly below the reported efficiency. We will press National Highways to improve secondary evidence and assess it closely throughout RP2 to ensure it appropriately supports the primary reported value.

A.51 For enhancements, the value of case study secondary evidence includes a large proportion of efficiency initiatives that are below the threshold for formally reporting a case study to ORR. In time we expect some of these efficiencies to increase in size and to form part of the total case studies by the end of the road period and the proportion of below the threshold initiatives to decrease.

A.52 Some of the case studies presented are repeatable initiatives that are utilised across several different schemes. The values for these initiatives are generated using the same assured process to ensure consistency in the recognised efficiency. We review a selection of these calculations to understand the build-up of efficiency. We will continue to do this in the final two years of the road period.

Table A.3 Measured efficiency reported and our assessment of supporting evidence

	Reported cumulative (£353 million)	Primary: case studies	Secondary: outputs and funding	Secondary: activity metrics
Carry-over	£262 million	Good evidence	Not applicable	Not applicable
RP2 generated	£91 million	Good evidence	Not available in the reporting year	Developing evidence

Measured efficiency: primary evidence

A.53 National Highways' £262 million carry-over efficiency is supported by case studies and efficiency guides presented in RP1. The company has undertaken ongoing assurance of the reported efficiencies and it has updated some of the values (relating to RP2) where appropriate. We continue to review the company's reported efficiencies for RP2 to understand the reasons for any variances.

A.54 National Highways reported £91 million of cumulative RP2 generated efficiencies this reporting year. This is evidenced by case studies across several themes. So far in RP2, the value of case studies we have reviewed is in-line with the reported efficiency. This is an improvement on the previous year. We will continue to review case studies presented by the company in the final two years of the road period.

Measured efficiency: secondary evidence

A.55 National Highways has engaged positively in the reporting year to identify potential opportunities for secondary evidence to support RP2 generated measured efficiency. The company has started to explore the way that existing activity metrics could be applied to the schemes that fall within the scope of the RP2 generated category. We will continue to work with it in this area.

A.56 Due to the impact of delay and change to the largest schemes in the portfolio in the reporting year there is difficulty in meaningfully using outputs and funding as secondary evidence for RP2 generated efficiency. However, we will continue to explore this in the next reporting year.

Annex B: Enhancements

Enhancements portfolio overview

B.1 At the start of the second road period (RP2), National Highways was responsible for progressing the delivery of 69 enhancement schemes, in addition to adding two schemes and cancelling 12 schemes from the programme. The enhancement schemes listed in the second road investment strategy (RIS2) are intended to improve capacity and connectivity across the strategic road network (SRN), for example by:

- improving junctions;
- adding new lanes;
- opening the hard shoulder for traffic; and/or
- bypassing congested parts of the network.

Enhancements programme delivery

B.2 National Highways delivers its enhancements schemes under four programmes:

- Complex Infrastructure Programme (CIP);
- Smart Motorways Programme (SMP);
- Regional Investment Programme (RIP); and
- Operations delivered (OD).

B.3 The programme structure groups enhancement schemes by commonalities, such as type and complexity, and allows us to identify shared trends that can impact a specific group of schemes.

Scheme status and risk to delivery commitment being met

B.4 Tables B1 to B6 show the status of each scheme at the end of this reporting year, at programme and regional level. The data included the company's reported risk of achieving start of works (SOW) or open for traffic (OFT) commitments.

Table B.1 Status of North East scheme delivery as at end of March 2023

RIS2 number (programme)	Scheme name	SOW commitment	OFT commitment
1 (RIP)	A1 Scotswood to North Brunton	Completed RP1	Completed RP2
2 (RIP)	A19 Testos	Completed RP1	Completed RP2
3 (RIP)	A19 Norton to Wynyard	Completed RP1	Completed RP2
4 (RIP)	M621 Junctions 1-7	Completed RP1	On target
5 (RIP)	A61 Westwood Roundabout	Completed RP1	Completed RP2
6 (RIP)	A1 Morpeth to Ellingham	At risk. Commitment to be agreed with Government	At risk. Commitment to be agreed with Government
7 (RIP)	A1 Birtley to Coal House	Completed RP2	On target
8 (RIP)	A19 Down Hill Lane	Completed RP2	Completed RP2
9 (RIP)	A63 Castle Street	Completed RP1	On target
10 (SMP)	M62 junctions 25-30 upgrade DHS running to all lane running	Cancelled	Cancelled

Table B.2 Status of North West scheme delivery as at end of March 2023

RIS2 number (programme)	Scheme name	SOW commitment	OFT commitment
11 (RIP)	A585 Windy Harbour to Skippool	Completed RP1	On target
12 (SMP)	M62 Junctions 20-25	Cancelled	Cancelled RP3
13 (RIP)	M6 Junction 19	Completed RP1	Completed RP2
14 Tier 1 (RIP)	A66 Northern Trans-Pennine	On target	RP3
15 (RIP)	A5036 Princess Way	Changed to RP3	-
16 (SMP)	M6 Junctions 21A-26	Completed RP2	Missed commitment (rescheduled to June 2024)

RIS2 number (programme)	Scheme name	SOW commitment	OFT commitment
17 (RIP)	Mottram Moor Link Road & A57 Link Road	At risk. Commitment to be agreed with Government	At risk. RP3 commitment to be agreed with Government
18 (SMP)	M56 Junctions 6-8	Completed RP1	Missed commitment (rescheduled to September 2023)
19 (RIP)	M60/M62/M66 Simister Island	At risk of missing commitment	-

Table B.3 Status of Midlands scheme delivery as at end of March 2023

RIS2 number (Programme)	Scheme name	SOW commitment	OFT commitment
20 (RIP)	A500 Etruria	Completed RP1	Completed RP2
21 (SMP)	M6 Junctions 13-15	Completed RP1	Completed RP2
22 (RIP)	M42 Junction 6	Completed RP1	Missed commitment (rescheduled to RP3)
23 (RIP)	A46 Coventry Junctions	Completed RP1	RP3
24 (SMP)	M40/M42 interchange	Completed RP1	Cancelled
27 (RIP)	A38 Derby Junctions	At risk. Commitment to be agreed with Government	Changed to RP3
28 (RIP)	M54-M6 Link Road	Missed commitment (rescheduled)*	Changed to RP3
29 (OD)	A5 Dodwells to Longshoot	Cancelled (VfM)	Cancelled for RP3 (VfM)

RIS2 number (Programme)	Scheme name	SOW commitment	OFT commitment
30 (RIP)	A52 Nottingham Junctions	Completed RP1	Missed commitment (rescheduled to RP3)
31 (RIP)	M6 Junction 10	Completed RP1	Missed commitment (rescheduled to March 2024)
32 (RIP)	A46 Newark Bypass	Changed to RP3	-
33 (SMP)	M42 junctions 4-7 upgrade DHS running to all lane running	Cancelled	Cancelled
34 (SMP)	M6 junctions 4-5 upgrade DHS running to all lane running	Cancelled	Cancelled
35 (SMP)	M6 junction 5-8 upgrade DHS running to all lane running	Cancelled	Cancelled
36 (SMP)	M6 junctions 8-10a upgrade DHS running to all lane running	Cancelled	Cancelled

** SOW commitment of March 2023 missed. New SOW date to be agreed with government*

Table B.4 Status of East scheme delivery as at end of March 2023

RIS2 number (Programme)	Scheme name	SOW commitment	OFT commitment
25 (OD)*	A45/A6 Chowns Mill Junction	Completed RP1	Completed RP2
26 (SMP)*	M1 Junctions 13-19	Completed RP1	Completed RP2
37 Tier 1 (CIP)	A14 Cambridge to Huntingdon	Completed RP1	Completed RP2
38 (RIP)	A47 Wansford to Sutton	Changed to March 2024	Changed to RP3
39 (RIP)	A47 Great Yarmouth Harfreys Junction	Completed RP2	Changed to December 2023
40 (RIP)	A47 Guyhirn Junction	Completed RP2	Completed RP2

RIS2 number (Programme)	Scheme name	SOW commitment	OFT commitment
41 (RIP)	A47 North Tuddenham to Easton	At risk. Commitment to be agreed with Government	At risk. Commitment to be agreed with Government
42 (RIP)	A47 Thickthorn Junction	At risk. Commitment to be agreed with Government	At risk. Commitment to be agreed with Government
43 (RIP)	A47 Blofield to North Burlingham	At risk. Commitment to be agreed with Government	At risk. Commitment to be agreed with Government
44 Tier 1 (CIP)	A428 Black Cat to Caxton Gibbet	Changed to March 2024	RP3
45 Tier 1 (RIP)	A12 Chelmsford to A120	On target	RP3
46 (SMP)	M1 junctions 10-13 retrofit upgrade DHS running to all lane running	Cancelled	Cancelled
71 (RIP)	A47 Great Yarmouth Vauxhall Junction	RP3	RP3

**Schemes included in East region in RIS2*

Table B.5 Status of South East scheme delivery as at end of March 2023

RIS2 number (Programme)	Scheme name	SOW commitment	OFT commitment
47 Tier 1 (SMP)	M4 Junctions 3-12	Completed RP1	Completed RP2
48 (OD)	A34 Newbury to Oxford Enhancements	Completed RP1	Completed RP2
49 (SMP)	M3 Junctions 9-14	Completed RP1	Cancelled
50 (SMP)	M27 Junctions 4-11	Completed RP1	Completed RP2
51 (RIP)	M25 Junction 25	Completed RP2	Completed RP2
52 (RIP)	M25 Junction 28	Completed RP2	Changed to RP3

RIS2 number (Programme)	Scheme name	SOW commitment	OFT commitment
53 (SMP)	M25 Junctions 10-16	Cancelled	Cancelled, originally an RP3 commitment
54 (RIP)	M25 Junction 10	Completed RP2	Changed to RP3
55 (RIP)	M3 Junction 9	On target	RP3
56 (RIP)	M27 Junction 8	At risk. Commitment to be agreed with Government	Changed to RP3
57 (RIP)	A27 Arundel Bypass	Changed to RP3	-
58 (RIP)	A27 Worthing and Lancing Improvements	On target	RP3
59 (RIP)	A31 Ringwood	Completed RP2	Completed RP2
60 (RIP)	A2 Bean and Ebbsfleet	Completed RP1	Completed RP2
61 (RIP)	M2 Junction 5	Completed RP2	On target
62 (RIP)	A27 East of Lewes Package	Completed RP1	Completed RP2
63 (Tier 1 CIP)	Lower Thames Crossing	To be rephased *	RP3
70 (OD)	A21 Safety Package	Accelerated. Completed RP2	On target
RP1 Scheme	M271/A35 Redbridge roundabout upgrade	Completed RP1	Completed RP2

** Rephasing of scheme to be agreed with Government which may affect the SOW.*

Table B.6 Status of South West schemes at end of March 2023

RIS2 number (Programme)	Scheme name	SOW commitment	OFT commitment
64 (RIP)	A303 Sparkford to Ilchester	Completed RP2	On target
65 (CIP)	A303 Amesbury to Berwick Down (Stonehenge)	At risk. Commitment to be agreed with Government	RP3
66 (Tier 1 RIP)	A358 Taunton to Southfields	At risk of missing commitment	RP3
67 (RIP)	A30 Chiverton to Carland Cross	Completed RP1	On target
68 (Tier 1 RIP)	A417 Air Balloon	Completed RP2	Changed to RP3
69 (SMP)	M4 junctions 19-20 and M5 junctions 16-17 upgrade DHS running to all lane running	Cancelled	Cancelled

Table B.7 SOW status of schemes by National Highways' regions

Region	SOW prior to RP2	SOW forecast at start of RP2	SOW in RP2	SOW in remainder of RP2	Changed to RP3	Cancelled or stopped
North East (NE)	6	4	2	1	0	1
North West (NW)	3	6	1	3	1	1
Midlands (M)	10*	8	0	2	1	5*
East (E)	1	9	2	6	0	1
South East (SE)	7**	11	6	4	1	1**
South West (SW)	1	5	2	2	0	1

** M40/M42 – SOW; Smart motorway element cancelled*

*** M3 J9-14 – SOW; Smart motorways element cancelled*

Table B.8 OFT status of schemes by National Highways' regions

Region	OFT beyond RP2	OFT forecast at start of RP2	OFT in RP2	In construction	Changed to RP3	Cancelled or stopped
North East (NE)	0	10	5	3	0	1
North West (NW)	5	4	1	3	0	0
Midlands (M)	3	14	2	4	4	5
East (E)	2	8	4	1	1	1
South East (SE)	5	12	7	2	3	1
South West (SW)	2	4	0	2	1	1

Third party and housing infrastructure fund (HIF) scheme status

Table B.9 Third party and HIF schemes

Scheme name	Scheme type	SOW commitment	OFT commitment
M55 Junction 2	Third party	Started in RP1	March 2024
M11 Junction 7a	Third party	Started	Open
M62 Junction 19	Third party	Started	Open
A5 Towcester Relief Road	Third party	Started	RP3
A249 Swale Transport Infrastructure*	HIF	Started	March 2025
A120 Tendring/Colchester Borders Garden Community*	HIF	March 2024	March 2025
M5 Junction 10 and Link Road*	HIF	March 2025***	March 2026
M6 South Lancaster Growth Catalyst Junction 33a*	HIF	March 2025	RP3
A5 Dordon to Atherstone**	HIF	RP3	RP3

** These schemes will be delivered by local authorities with National Highways support and are subject to future planning decisions.*
*** This scheme will be delivered by National Highways and is subject to future planning decisions.*
**** This scheme now requires a development consent order (DCO), therefore the start of work has been revised.*

Key challenges for the second road investment strategy (RIS2) enhancements portfolio

B.5 National Highways faces challenges to its successful delivery of the RIS2 enhancement portfolio, including but not limited to:

- large and complex schemes valued at over £500 million or that are novel or contentious (Tier 1), involving complex engineering design and/or detailed consultations with stakeholders; and

- development consent order (DCO) planning applications for any scheme categorised as a Nationally Significant Infrastructure Project (NSIPs);
- changes to the smart motorway programme;
- additional enhancement scheme changes; and
- higher inflation than originally planned for.

Planning consent

B.6 National Highways requires DCOs for its large and significant enhancement schemes, classified as NSIPs. The Planning Act 2008 introduced a new development consent process for NSIPs. The Planning Inspectorate considers applications and evidence is heard via a public examination, the Planning Inspectorate will make recommendations to the Secretary of State (SofS), who will decide whether to grant consent for a proposed scheme. A decision by the SofS can be challenged via the courts and this has occurred on seven schemes. The court's decision can, if successful, quash the decision and lead to a reconsideration of the design (redetermination). This has occurred on two schemes.

B.7 Table B10 lists all 33 RIS2 schemes that require a DCO and their status at the time of publication.

Table B.10 Status of RIS2 schemes that require a DCO application

RIS2 number	RIS2 scheme name	DCO status
37	A14 Cambridge to Huntingdon	Approved by SofS in May 2016
47	M4 junctions 3-12	Approved by SofS in September 2016
2	A19 Testos	Approved by SofS in September 2018
64	A303 Sparkford to Ilchester	Approved by SofS in January 2021
67	A30 Chiverton to Carland Cross	Approved by SofS in February 2020
9	A63 Castle Street	Approved by SofS in May 2020
11	A585 Windy Harbour to Skippool	Approved by SofS in April 2020
22	M42 junction 6	Approved by SofS in May 2020

RIS2 number	RIS2 scheme name	DCO status
8	A19 Down Hill Lane	Approved by SofS in July 2020
54	M25 junction 10	Approved by SofS in May 2022
7	A1 Birtley to Coal House	Approved by SofS in January 2021
28	M54 to M6 link Road	Approved by SofS in April 2022
52	M25 junction 28	Approved by SofS in May 2022
68	A417 Air Balloon	Approved by SofS in November 2022
38	A47 Wansford to Sutton	Approved by SofS in February 2023
45	A12 Chelmsford to A120	In examination. DCO Application was delayed in March 2022 and May 2022 before being submitted in August 2022
14	A66 Northern Trans-Pennine	In examination. DCO Application planned for February 2022 was achieved in June 2022.
63	Lower Thames Crossing	In examination. DCO Application submitted in October 2022
55	M3 Junction 9	In examination. DCO Application was delayed in March 2022 and April 2022 before being submitted in November 2022
27	A38 Derby Junctions	DCO quashed; application to be redetermined by SofS
65	A303 Amesbury to Berwick Down (Stonehenge)	DCO quashed; application to be redetermined by SofS
41	A47 North Tuddenham to Easton	Approved by SofS in August 2022. Legal challenge dismissed by the High Court on 7 July 2023
42	A47 Thickthorn Junction	Approved by SofS in October 2022. Legal challenge dismissed by the High Court on 7 July 2023
43	A47 Blofield to North Burlingham	Approved by SofS in June 2022. Legal challenge dismissed by the High Court on 7 July 2023

RIS2 number	RIS2 scheme name	DCO status
44	A428 Black Cat to Caxton Gibbet	Approved by SofS in August 2022. Legal challenge dismissed
17	Mottram Moor Link Road & A57 Link Road	Approved by SofS in October 2022. Legal challenge being considered
6	A1 Morpeth to Ellingham	SofS approval delayed till 5 September 2023
66	A358 Taunton to Southfields	Pre-application. DCO Application delayed in October 2022, December 2022 and February 2023. It was rescheduled for May 2023 and is now expected at a later date subject to government advice
57	A27 Arundel Bypass	Pre-application (delayed to RP3)
15	A5036 Princess Way	Pre-application (delayed to RP3)
32	A46 Newark Bypass	Pre-application
23	A46 Coventry Junctions	Pre-application
19	M60/M62/M66 Simister Island	Pre-application. DCO application was delayed in June 2022 and October 2022. It is expected to be resubmitted in Autumn 2023

B.8 In the previous reporting year, National Highways and the Department for Transport (DfT) recognised the risks to SOW commitments if DCOs are not approved on schedule. The company developed an action plan to help mitigate the risks at application stage.

Highways Act 1980

B.9 The Highways Act 1980 is used to gain approval for schemes that are not NSIPs, but that require alterations or additions within the highway boundary. This requires a different approach to consultation and approval. In the previous reporting year there was a public inquiry into the M27 Southampton Junction 8 scheme. The Public Inquiry concluded in May 2022 and the application has been refused by the SofS. The SOW commitment is at risk.

Government response to the rollout and safety of Smart Motorways Programme (SMP)

B.10 The government's response to the Transport Select Committee's (TSC) November 2021 report had an impact on National Highways' RP2 enhancements programme

delivery. Furthermore, in April 2023 the government announced that all smart motorway schemes not yet in construction will be cancelled. Table B11 sets out the changes that government agreed to the SMP.

Table B.11 Position of SMP as at March 2023

RIS2 number	Scheme name	Government agreed changes
16	M6 Junctions 21a-26	In construction, missed its March 2023 OFT commitment. OFT forecast by June 2025
18	M56 Junctions 6-8	In construction, missed its September 2022 OFT commitment. OFT changed from March 2022 to September 2022 to incorporate stopped vehicle detection (SVD). OFT forecast for September 2024
21	M6 Junctions 13-15	Met OFT revised commitment. OFT changed from March 2022 to September 2023 to carry out safety assessments of SVD
47	M4 Junctions 3-12	Met OFT revised commitment. OFT changed from March 2022 to December 2023 to incorporate SVD
50	M27 Junctions 4-11	Met OFT revised commitment. Original OFT September 2021 was changed to June 2022 to allow for SVD testing
26	M1 Junctions 13-19	Met its March 2023 OFT commitment
24	M40/M42 interchange	Scheme cancelled
49	M3 Junctions 9-14	Scheme cancelled
10	M62 Junctions 25-30 upgrade DHS to all lane running	Scheme cancelled
34	M6 Junctions 4-5 upgrade DHS running to all lane running	Scheme cancelled
12	M62 J20-25	Scheme cancelled
35	M6 Junction 5-8 upgrade DHS running to all lane running	Scheme cancelled
36	M6 Junctions 8-10a upgrade DHS running to all lane running	Scheme cancelled

RIS2 number	Scheme name	Government agreed changes
46	M1 J10-13 retrofit upgrade DHS running to all lane running	Scheme cancelled
69	M4 J19-20 & M5 J16-17 upgrade DHS running to all lane running	Scheme cancelled
33	M42 Junctions 4-7 upgrade dynamic DHS to all lane running	Scheme cancelled
53	M25 Junctions 10-16	Scheme cancelled

Changes to the RIS2 portfolio

B.11 Throughout the first three years of RP2, National Highways and government agreed changes to the company's 2020 to 2025 delivery plan. Table B12 sets out the reasons for these changes over the first three years of RP2.

Table B.12 All schedule changes by programme between April 2020 and end of March 2023

RIS2 number (programme)	Region	Scheme name	Reasons	Reporting year agreed
10 (SMP)	NE	M62 junctions 25-30	Cancelled SMP	2022-23*
12 (SMP)	NW	M62 Junctions 20-25	Cancelled SMP	2022-23*
24 (SMP)	M	M40/M42 interchange	Cancelled SMP	2022-23*
33 (SMP)	M	M42 Junctions 4-7	Cancelled SMP	2022-23*
34 (SMP)	M	M6 Junctions 4-5	Cancelled SMP	2022-23*
35 (SMP)	M	M6 junctions 5-8	Cancelled SMP	2022-23*
36 (SMP)	M	M6 Junctions 8-10a	Cancelled SMP	2022-23*
46 (SMP)	E	M1 Junctions 10-13	Cancelled SMP	2022-23*
49 (SMP)	SE	M3 Junctions 9-14	Cancelled SMP	2022-23*
53 (SMP)	SE	M25 Junctions 10-16	Cancelled SMP	2022-23*
69 (SMP)	SW	M4 Junctions 19-20 and M5 Junctions 16-17	Cancelled SMP	2022-23*
4 (RIP)	NE	M621 Junctions 1-7	Scope change	2021-22
55 (RIP)	SE	M3 Junction 9	Scope change	2022-23
39 (RIP)	E	A47 Great Yarmouth (Harfreys Junction)	Scope change**	2023-24
70 (Ops)	SE	A21 Safety Package	Accelerated	2020-21
14 (RIP)	NW	A66 Northern-Trans Pennine	Accelerated	2020-21

RIS2 number (programme)	Region	Scheme name	Reasons	Reporting year agreed
18 (SMP)	NW	M56 J6-8	Delayed OFT- SVD roll-out	2021-22
47 (SMP)	SE	M4 Junctions 3-13	Delayed OFT- SVD roll-out	2021-22
21 (SMP)	M	M6 J13	Delayed OFT- SVD roll-out	2021-22
50 (SMP)	SE	M27 Junctions 4-11	Delayed OFT- SVD roll-out	2021-22
47 (SMP)	SE	M4 Junctions 3-13	Delayed OFT- SVD roll-out	2022-23
50 (SMP)	SE	M27 Junctions 4-11	Delayed OFT- SVD roll-out	2022-23
29 (Ops)	M	A5 Dodwells	Poor VfM	2020-21
32 (RIP)	M	A46 Newark bypass	Poor VfM	2022-23
61 (RIP)	SE	M2 Junction 5 Improvement	Planning consent	2020-21
64 (RIP)	SW	A303 Sparkford - Ilchester	Planning consent	2020-21
65 (CIP)	SW	A303 Amesbury to Berwick Down (Stonehenge)	Planning consent	2020-21
27 (RIP)	M	A38 Derby junctions	Planning consent	2021-22
63 (CIP)	SE	Lower Thames Crossing	Planning consent	2021-22
65 (CIP)	SW	A303 Amesbury to Berwick Down (Stonehenge)	Planning consent	2021-22
56 (RIP)	SE	M27 Southampton junctions	Planning consent	2021-22
28 (RIP)	M	M54 to M6 Link Road	Planning consent	2021-22
52 (RIP)	SE	M25 J28	Planning consent	2021-22
54 (RIP)	SE	M25 J10	Planning consent	2021-22
27 (RIP)	M	A38 Derby junctions	Planning consent	2022-23

RIS2 number (programme)	Region	Scheme name	Reasons	Reporting year agreed
38 (RIP)	E	A47 Wansford to Sutton	Planning consent	2022-23
41 (RIP)	E	A47 North Tuddenham to Easton	Planning consent	2022-23
42 (RIP)	E	A47 Thickthorn Junction	Planning consent	2022-23
43 (RIP)	E	A47 Blofield to North Tuddenham	Planning consent	2022-23
44 (CIP)	E	A428 Black Cat to Caxton Gibbet	Planning consent	2022-23
65 (CIP)	SW	Amesbury to Berwick Down	Planning consent	2022-23
6 (RIP)	NE	A1 Morpeth to Ellingham	Planning consent	2022-23
17 (RIP)	NW	A57 Link Roads	Planning consent	2022-23
56 (RIP)	SE	M27 Junction 8 (Southampton)	Planning consent	2022-23
15 (RIP)	NW	A5036 Princess Way	Stakeholder	2021-22
57 (RIP)	SE	A27 Arundel Bypass	Stakeholder	2021-22
47 (SMP)	SE	M4 Junctions 3-12	Stakeholder	2022-23

** In January 2022, government paused the roll-out RP2 ALR smart motorways schemes. On 15 April 2023, government cancelled all smart motorway schemes that have not started construction.*

*** Government agreed that the scope of the original A47 Great Yarmouth Junctions scheme should be split into two projects - A47 Great Yarmouth Harfreys Junction and A47 Great Yarmouth Vauxhall Junction to enable progress of the overall Great Yarmouth improvements which includes the Third River Crossing being delivered by Norfolk County Council.*

B.12 For clarity, the reference to quarters in the tables below are defined as follows:

- 1 April to 30 June is Q1;
- 1 July to 30 September is Q2;

- 1 October to 31 December is Q3; and
- 1 January to 31 March is Q4.

B.13 Table B13 lists schemes that missed commitments, reported in the first three years of RP2.

Table B.13 List of missed commitments

RIS2 number	Scheme name	Description	New Date
16	M6 Junctions 21A-26	OFT Q4 2022-23 commitment missed.	Q1 2024-25
18	M56 J6-8	OFT Q2 2022-23 commitment missed.	Q2 2023-24
22	M42 Junction 6	OFT 2024-25 commitment will be missed.	RP3
28	M54-M6 Link Road	SOW Q4 2022-23 commitment missed.	TBC
30	A52 Nottingham Junctions	OFT Q4 2023-24 commitment will be missed.	RP3
31	M6 Junction 10	OFT Q1 2022-23 commitment missed.	Q4 2023-24
44	A428 Black Cat to Caxton Gibbet	SOW Q2 2022-23 commitment missed. Revised date Q3 2022-2023 has been change controlled due to planning challenge.	Q4 2023-24
68	A417 Air Balloon	Declared as a SOW missed commitment. No longer considered as such because the position was recovered and SOW was achieved in February 2023.	N/A

Performance of enhancement delivery in the reporting year

B.14 National Highways' 2022 delivery plan lists the company's commitments to SOW and OFT enhancement schemes. Tables B14 and B15 list the status of these schemes respectively.

Table B.14 SOW status for the reporting year, April 2022 to March 2023

RIS2 number	Scheme name	2022-23 Delivery plan SOW commitment	Status at March 2023
6	A1 Morpeth to Ellingham	Q2 2022-23	DCO decision delayed. SOW to be confirmed with government.
17	Mottram Moor Link Road & A57 Link Road	Q4 2022-23	DCO decision has been legally challenged
28	M54-M6 Link Road	Q4 2022-23	Missed commitment. SOW to be agreed confirmed with government.
38	A47 Wansford to Sutton	Q4 2022-23	DCO decision delayed SOW change agreed to Q4 2023-24
39	A47 Great Yarmouth Harfreys Junction	Q4 2023-24	SOW Q4 2022-23 ahead of commitment
41	A47 North Tuddenham to Easton	Q4 2022-23	High Court challenge dismissed
42	A47 Thickthorn Junction	Q4 2022-23	High Court challenge dismissed
43	A47 Blofield to North Burlingham	Q4 2022-23	High Court challenge dismissed
44	A428 Black Cat to Caxton Gibbet	Q3 2022-23	High Court challenge dismissed

52	M25 Junction 28	Q1 2023-24	SOW Q2 2022-23 ahead of commitment
54	M25 Junction 10	Q3 2022-23	Met commitment
68	A417 Air Balloon	Q4 2022-23	Met commitment

Table B.15 OFT status for the reporting year, April 2022 to March 2023

Delivery plan number	Scheme name	2022-23 Delivery plan OFT commitment	Status at March 2023
1	A1 Scotswood to North Brunton	Q2 2022-23	Met commitment
16	M6 Junctions 21a-26	Q4 2022-23	Missed commitment. New commitment Q1 2024-25
18	M56 Junctions 6 - 8	Q2 2022-23	Missed commitment. New commitment Q2 2023-24
21	M6 Junctions 13-15	Q2 2022-23	Met commitment
26	M1 Junctions 13-19	Q4 2022-23	Met commitment
31	M6 Junction 10	Q1 2022-23	Missed commitment. New commitment Q4 2023-24
47	M4 Junctions 3-12	Q2 2022-23	Change agreed to Q3 2022-23. Met revised commitment
50	M27 Junctions 4-11	Q1 2022-23	Met commitment
51	M25 Junction 25	Q3 2022-23	OFT ahead of schedule in Q2 2022-23
59	A31 Ringwood	Q4 2022-23	OFT ahead of schedule in Q3 2022-23
60	A2 Bean and Ebbsfleet	Q1 2022-23	Met commitment
62	A27 East of Lewes Package	Q4 2022-23	Met commitment

Earned value metrics

B.15 Table B16 shows all the CPI and SPI scores reported by National Highways at the end of the reporting year. We will hold the company to account for improving these scores during the remainder of RP2.

Table B.16 CPI and SPI scores reported as at March 2023

Scheme name	CPI	SPI
M621 Junction 1 to 7	0.80	0.74
A1 Birtley to Coal House	0.80	0.93
A63 Castle Street	1.02	0.95
A585 Windy Harbour to Skippool	0.72	0.90
M6 Junctions 21a to 26	0.76	0.90
M56 Junctions 6 to 8	0.86	0.86
M42 Junction 6	0.80	0.95
A46 Coventry Junctions	0.79	0.94
A52 Nottingham Junctions	0.96	0.91
M6 Junction 10	0.70	0.91
M25 Junction 28	0.82	0.96
M25 Junction 10	0.93	0.98
M2 Junction 5	0.95	0.92
A303 Sparkford to Ilchester	0.82	0.71
A30 Chiverton to Carland Cross	0.77	0.93

Annex C: Maintenance and renewals

Maintenance

C.1 National Highways has a legal duty under the Highways Act 1980 and its licence to maintain the strategic road network (SRN). Maintenance is split into two budget categories:

- routine cyclical and reactive work to keep users safe and the network serviceable (resource); and
- renewal of life-expired assets (capital).

C.2 Table C1 shows a summary of the key performance indicators (KPI) and performance indicators (PI) that the company reports against each category in the second road investment strategy (RIS2). From 1 April 2022 to 31 March 2023 (the reporting year) the capital maintenance and renewals budget was £926 million, and the resource operation and maintenance budget was £420 million.

Table C.1 Maintenance categories

Maintenance type	Primary reporting source
Capital maintenance and renewals – renewal of assets	Renewals delivered against annual commitment Capital budget expenditure
Resource operations and maintenance – fixing defects, for example, potholes routine maintenance, for example, cleansing drainage systems, and inspections	Maintenance performance statement (defects, cyclical and reactive maintenance, inspections) Resource budget expenditure

Maintenance activity performance

C.3 Table C2 details how National Highways' performance delivering winter services, collecting litter, and undertaking cyclical reactive maintenance has changed since reporting year 31 March 2020 to 1 April 2021. In the reporting year, National Highways reported a similar maintenance activity performance compared to the previous year, noting a marginal improvement in its cyclical maintenance performance.

Table C.2 Summary of National Highways' maintenance activity performance between April 2020 and March 2023

Maintenance Activity	Activity Description	2020-21 (%)	2021-22 (%)	2022-23 (%)
Winter service	The percentage of precautionary salting delivered within time	100	99	100
Winter service	Percentage of instances where running lanes were available	100	100	100
Litter	Percentage of planned litter clearance activities undertaken	95	92	92
Cyclical maintenance (AD areas only)	Percentage of cyclic works that are completed within the required timescales	77	79	83
Reactive maintenance (AD areas only)	Percentage of reactive, less than 24 hour works that are completed within the required timescales	91	93	93

Defect management

C.4 An indicator of maintenance performance is how promptly National Highways addresses defects such as potholes. Table C3 and C4 summarise defect performance since April 2019. Two categories of performance are provided:

- the percentage of high priority defects addressed within 24 hours; and
- the percentage of other defects addressed within the required timescale for that defect type.

C.5 In the second year of RP2 National Highways merged some of the defect type categories that it reports performance against to align with its revised data standards. Table C3 shows the gaps in performance data that have emerged as a result, where those applicable to Asset Delivery (AD) areas are noted.

C.6 National Highways reported that the company's performance has deteriorated failing to address both high priority and normal defects across most defect types within the required timescales.

C.7 National Highways indicated that the impact on the SRN as a result of deteriorating maintenance performance is due to issues in transferring to the Asset Delivery contract model.

Table C.3 Summary of National Highways' priority (within 24 hours) defects performance between April 2019 and March 2023

Defect type	2019-20 (%)	2020-21 (%)	2021-22 (%)	2022-23 (%)
Paved area (road surfacing)	90.6	94.7	94.8	85.6
Road markings and road studs	93.5	95.1	Not applicable	Not applicable
Traffic signs, road markings and road studs	Not applicable	Not applicable	95.6	89.6
Vehicle restraint systems (safety barriers)	95.0	92.7	93.8	93.9
Lighting	81.1	89.8	91.5	80.9
Signage	89.0	93.1	Not applicable	Not applicable
Soft estate (AD areas)	90.3	90.9	94.9	86.9
Reactive sweeping and cleaning actions (excluding graffiti) (AD areas)	96.9	97.4	Not applicable	Not applicable
Sweeping and cleaning – offensive graffiti	100.0	80.0	Not applicable	Not applicable
Sweeping and cleaning (including offensive and non-offensive graffiti)	Not applicable	Not applicable	93.1	83.0

Defect type	2019-20 (%)	2020-21 (%)	2021-22 (%)	2022-23 (%)
Fences and walls	91.2	97.7	96.0	91.0
Drainage and service ducts (AD areas)	91.1	94.0	94.3	84.2
Geotechnical (AD areas)	83.3	100.0	99.4	None reported
Structures (AD areas)	85.1	98.3	92.5	None reported

Table C.4 Summary of National Highways' non-priority defect performance between April 2019 and March 2023

Defect type	2019-20 (%)	2020-21 (%)	2021-22 (%)	2022-23 (%)
Paved area (road surfacing)	85.6	95.4	94.5	85.7
Road markings and road studs	77.4	93.4	Not applicable	Not applicable
Traffic signs, road markings and road studs	Not applicable	Not applicable	91.5	84.8
Vehicle restraint systems (safety barriers)	77.7	93.0	89.1	85.3
Lighting	84.3	86.3	88.9	78.3
Signage	81.7	93.5	Not applicable	Not applicable
Soft estate (AD areas)	75.8	87.7	85.1	88.9
Reactive sweeping and cleaning actions (excluding graffiti) (AD areas)	90.0	95.1	Not applicable	Not applicable

Defect type	2019-20 (%)	2020-21 (%)	2021-22 (%)	2022-23 (%)
Sweeping and cleaning – offensive graffiti	78.3	95.6	Not applicable	Not applicable
Sweeping and cleaning (including offensive and non-offensive graffiti)	Not applicable	Not applicable	Not applicable	86.9
Fences and walls	79.4	95.1	93.3	86.1
Drainage and service ducts (AD areas)	69.5	91.0	87.3	62.5
Geotechnical (AD areas)	77.3	100.0	94.9	100.0
Structures (AD areas)	75.3	96.2	93.1	90.2

Insurance claims processing

C.8 Green and red claims are insurance claims against motorist or their insurers, or against National Highways. They provide an indication of the company's performance against its statutory obligations and how well it is recouping financial loss:

- Green claims occur where the SRN has been damaged by a road user, for example from a collision, and the company needs to recoup costs to repair the asset damage; and
- Red claims are processed where a loss has occurred to a road user as a result of the company not meeting its requirements to maintain highway and the company pays out for the loss.

C.9 Tables C5 and C6 provide a summary of the number of claims and number of settled claims of each type. In the reporting year National Highways recorded a 75% and 27% increase in red and green claims, respectively from the previous reporting year. Furthermore, the company reported an 18% and 14% decrease in red and green settled claims, respectively from the previous reporting year.

Table C.5 Total number of National Highways' claims between April 2018 and March 2023

Claim type	2018-19	2019-20	2020-21	2021-22	2022-23
Red claims	2,239	1,751	1,284	1,198	2,097
Green claims	4,937	3,906	5,155	6,898	8,762

Table C.6 Total number of National Highways' settled claims between April 2018 and March 2023

Claim type	2018-19	2019-20	2020-21	2021-22	2022-23
Red claims	992	394	764	512	419
Green claims	Not available	706	3,848	7,420	6,397

Asset inspection performance

C.10 Inspection performance shows that National Highways is meeting its requirements to inspect the SRN and gives us assurance that the asset performance that the company reports under its key performance indicators and performance indicators is based on accurate, timely condition data. Table C7 provides a summary of National Highways' planned inspection performance.

C.11 National Highways improved the percentage performance of inspection programme completed for structures, safety barriers, and traffic signs and technology. Lighting and geotechnical inspections reduced. The company reported that its reduced performance in lighting is due to outstanding inspections in South East, South West and North West, with those regions identifying actions to resolve this. Reduced performance in geotechnical inspections is due to outstanding inspections in South East region, with the company reporting a plan is in place to ensure these are completed by the end of June 2023. We will scrutinise National Highways inspection performance in completing outstanding inspections.

Table C.7 Summary of planned inspections that National Highways completed between April 2019 and March 2023

Asset type	2019-20 (%)	2020-21 (%)	2021-22 (%)	2022-23 (%)
Structures	92.2	97.0	92.0	96.5
Vehicle restraint system (safety barrier)	79.4	84.7	88.0	90.9
Lighting	66.3	116.0	89.0	76.7
Geotechnical	82.8	95.0	101.0	88.4
Traffic signs and technology	92.3	85.0	101.0	107.9

Renewals

Asset renewal delivery

C.12 National Highways' 2022 delivery plan set out the volumes of renewals work it planned to deliver during the year. The company reports renewals work under two categories for the second road period (RP2): routine cyclical renewals; and, work termed major life-extension renewals. Major life-extension renewals include:

- road surfacing – asphalt and concrete;
- safety barriers – steel and concrete; and
- significant structures (such as the refurbishment of bridges with greatest need).

C.13 In the reporting year, National Highways delivered its planned volumes of renewals against all major life-extension assets with the exception of concrete safety barriers, where it underdelivered by 21%. The company has reported this is due to difficulties in agreeing financial sign off with a Design Build Finance Operate (DBFO) organisation for a large scheme in the Yorkshire and North East region; the scheme would have contributed 3,750 linear metres to the renewals reporting for the third year of RP2 resulting in a potential variance of 9%.

C.14 National Highways underdelivered on three routine cyclical asset types. The company reported the following reasons for missing its renewals:

- bridge bearing (-1%) – missed commitment by one bridge bearing;

- waterproofing (-9%) – missed commitment by 2,091 m^2 due to a combination of transferring to Asset Delivery model and delays on two schemes, and scope changes to another; and

- technology renewals and improvements (-0.67%) – missed commitment by three technology renewal schemes.

C.15 National Highways reported significant over delivery of kerbs 87% and drainage 85%. The company told us the primary reason for over delivery is due to the secondary benefits of a renewal being realised. For example, some over delivery in kerb renewals is due to East region not identifying the secondary kerb outputs related to concrete roads renewal in its forward programme.

C.16 On average, National Highways delivered within 20% of its plan for all renewal asset types, this is compared to within 18% in the second year of RP2. This demonstrates a similar performance. However, it is important that the company is able to demonstrate adequate planning capability to evidence the right asset intervention is planned and renewed to assure optimum approach to asset management.

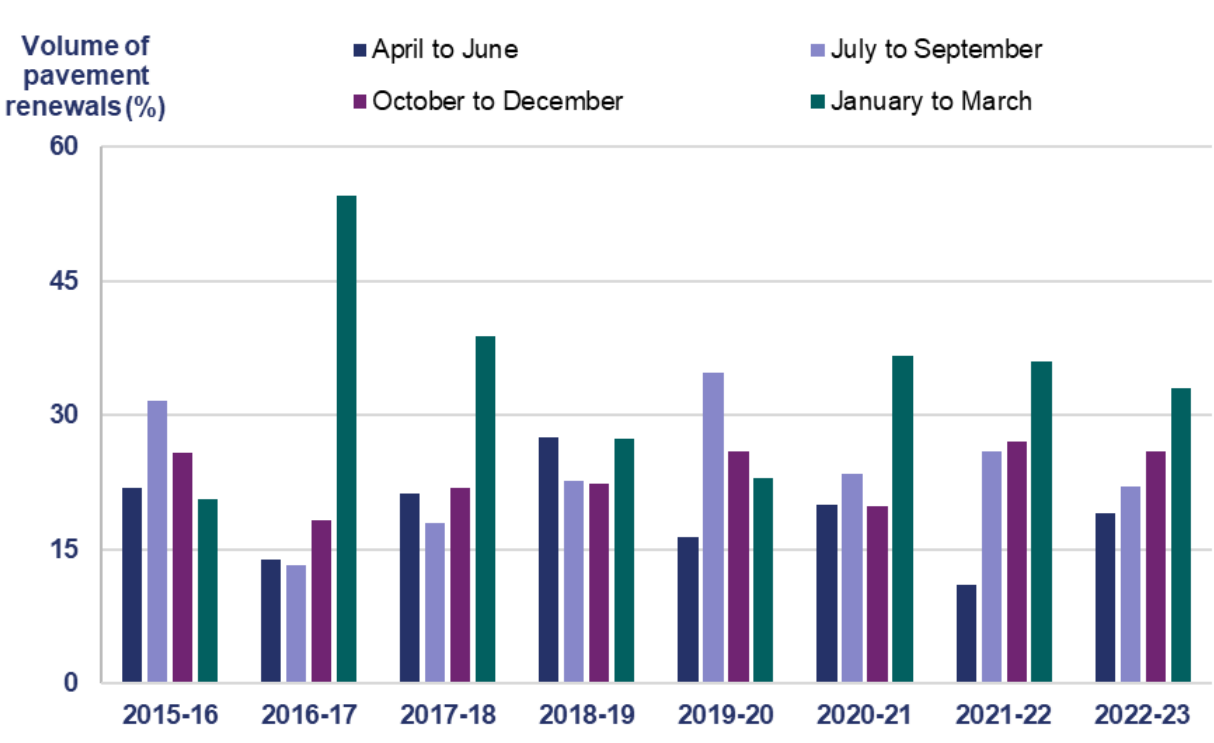
Table C.8 Volumes of renewals delivered compared to plan in reporting year

Type of renewal	Asset renewal description	Planned output	Actual output	Output variance (%)
Major life-extension renewals	Safety barriers – steel (kilometres)	350	377	8
Major life-extension renewals	Safety barriers – concrete (kilometres)	13	10	-21
Major life-extension renewals	Road surface – asphalt (lane kilometres)	1,350	1,606	19
Major life-extension renewals	Significant structures (number)	39	44	13
Major life-extension renewals	Road surface – concrete (lane kilometres)	77	81	5

Type of renewal	Asset renewal description	Planned output	Actual output	Output variance (%)
Renewal of roads	Traffic signs (number)	2,000	2,117	6
Renewal of roads	Kerbs (kilometres)	10	18	87
Renewal of roads	Drainage (kilometres)	130	240	85
Renewal of roads	Road markings (kilometres)	3,300	3,665	11
Renewal of roads	Guardrail (kilometres)	0.5	0.8	56
Renewal of roads	Boundary fencing (kilometres)	57	62	10
Renewal of roads	Geotechnical (kilometres)	1.8	2.5	37
Renewal of roads	Lighting (number)	600	712	19
Renewal of structures	Bridge bearing (number)	100	99	-1
Renewal of structures	Bridge joint (number)	350	469	34
Renewal of structures	Parapet (kilometres)	4.5	5.0	11
Renewal of structures	Waterproofing (square metres)	24,000	21,909	-9
Renewal of technology	Motorway communication equipment (number)	300	353	18
Renewal of technology	Technology renewals and improvements (number)	450	447	-1

C.17 Figure C1 shows that National Highways delivered the majority of road surfacing (concrete and asphalt) renewals between January 2023 and March 2023; reflecting the same trend of deliver in the first and second year of RP2. We have previously reported that the last three months of the financial year are typically not ideal for undertaking certain types of activity due to unfavourable weather conditions. Furthermore, it does not demonstrate alignment with optimum asset management intervention planning.

Figure C.1 Quarterly volumes of pavement renewals delivered between April 2015 and March 2023



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