

# Updated advice on environmental plans and performance

Office of Rail and Road

30 November 2025



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## 1. INTRODUCTION

The Office of Rail and Road (ORR) independently monitors National Highways' (NH) management of the Strategic Road Network (SRN) – the motorways and main A roads in England. As part of its role, the ORR advises the government on the appropriate level of funding and performance requirements for future road periods.

The ORR reviews NH's draft Strategic Business Plan (dSBP) and advises the Secretary of State on whether the proposed requirements for Road Investment Strategy (RIS) 3 are both challenging and deliverable within the available financial resources. This process is known as the Efficiency Review.

In June 2024, the draft RIS for Road Period 3 (RP3) was not finalised. To maintain momentum, the Department for Transport (DfT) instructed NH to produce an interim version of its dSBP based on agreed assumptions and requirements and invited the ORR to review those plans. The ORR then commissioned CEPA, in partnership with Temple Group, to assess the maturity of NH's plans and readiness to deliver environmental actions and outcomes in RIS3. CEPA and Temple Group completed an initial review of NH's environmental submission, as outlined in the interim draft Strategic Business Plan (interim dSBP).

CEPA prepared a report for the ORR titled 'Lot 4 – Environment', providing CEPA and Temple Group's overall observations on the completeness and maturity of the RIS3 environmental plan. The report highlighted areas where the evidential basis and justification for the proposed funding and performance were lacking. We also provided independent recommendations for the ORR on the environmental component of the interim dSBP.

The draft RIS was published in August 2025. NH subsequently provided an updated version of the interim dSBP, and CEPA conducted an assessment of the 2025 dSBP for environmental performance. This report assesses four environmental areas: water quality, biodiversity, noise, and air quality. The report covers the following scope:

- Engaging with NH to understand its plans in detail.
- Assessing whether the plans and proposed performance targets are both challenging and deliverable.
- Evaluating NH's cost estimates for environmental initiatives, using benchmarks to assess their appropriateness.
- Confirming that NH has a robust plan for delivering environmental improvements, including project design, selection, risk management, and delivery.
- Identifying any unmitigated risks to successful delivery.

To assist the ORR with the prioritisation of its ongoing engagement with NH and its challenge of the dSBP, we have, where appropriate, assigned RAG ratings for each outcome area against the scope questions. These RAG ratings consider two different aspects of NH's plans:

- **How developed the plans are**, i.e., the progress that has been made to be ready to deliver environmental actions and outcomes in RIS3 (**none, some, good**).
- **How important the issue is**, i.e., how urgently the ORR should respond to this issue by requesting additional detail on NHs' plan (**high, medium, low**).

Our main findings for each environmental outcome area are summarised in Sections 3 through 6 where we discuss each area in more detail.

## 2. OVERVIEW OF THE JUNE 2024 ASSESSMENT OF THE INTERIM DSBP

CEPA, in partnership with Temple Group, reviewed the maturity of NH’s plans and its readiness to deliver environmental actions and outcomes in RIS3.

We assessed whether there was a clear line of sight from NH’s environmental performance requirements and statutory responsibilities to the identification of activities and development of a robust programme, including project identification, costing, and expected timescales for delivery. We also considered how NH had accounted for and mitigated risks related to the deliverability of the environmental programme.

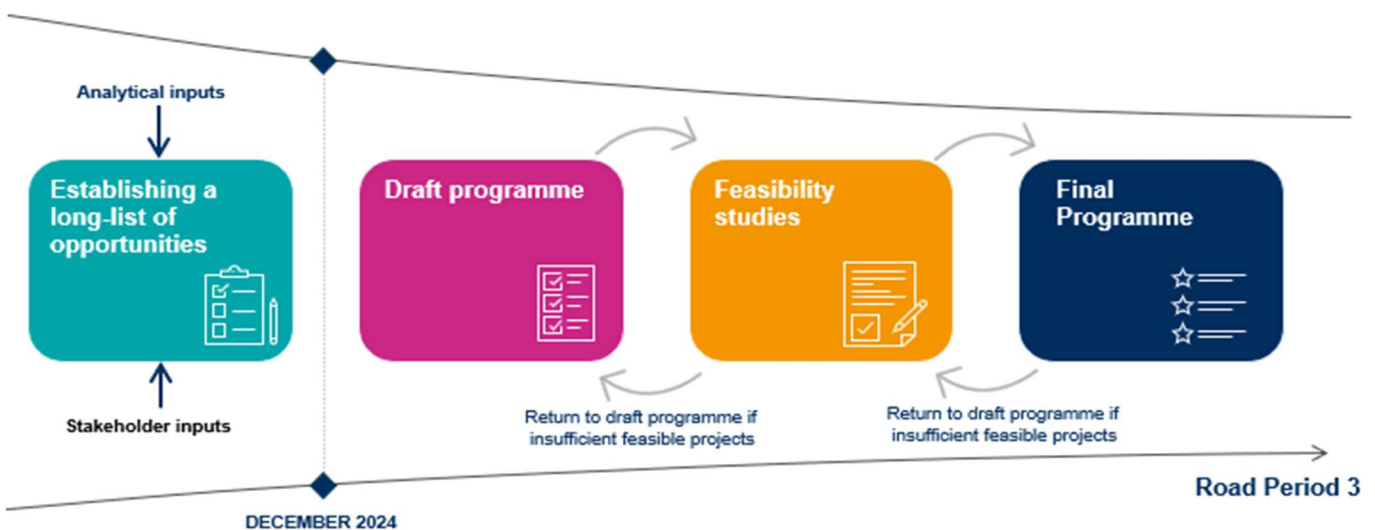
We conducted a desktop review of the interim dSBP, supporting materials, and responses from NH to Requests for Information (RFIs), and clarified our understanding of the proposed approach through a challenge workshop with NH’s environmental leads. Temple Group, as environmental subject matter experts, provided input on cost benchmarks and external comparators where appropriate.

The draft report on the interim dSBP provided our overall observations on the completeness and maturity of the RIS3 environmental plan, highlighting areas where the evidential basis and justification for the proposed funding and performance were lacking. We also provided independent recommendations for the ORR on the environmental component of the interim dSBP.

Many aspects of the environmental plan were not sufficiently developed. For example, there was often no pipeline of named schemes in place, cost estimates tended to be at an early stage, and the interim dSBP did not appear to have sufficiently accounted for the risks associated with the environmental programmes that NH was proposing to deliver. The spending profile for environmental funds from the National Programmes and Designated Funds was back-end loaded; NH did not appear prepared to begin RIS3 with a running start.

Overall, the funding allocated to the environmental plan was less well evidenced and justified than other aspects of the interim dSBP we reviewed. NH’s view of the status of environmental programme development in June 2024 is shown in Figure 1. In response to our draft report, NH said that it was logical that planning for delivery to ramp up as funding and overall performance levels became more settled through the RIS process. We took a different view: the aim of the SBP development process was for NH to present an efficient and deliverable business plan; there remained much progress to be made before the start of RIS3.

Figure 1: NH’s view of the status of programme development in June 2024



Source: National Highways

### 3. WATER QUALITY

#### Key findings

- NH's plan for mitigating outfalls has developed since the interim dSBP. Following validation and verification of all candidate outfalls, 249 high-risk sites that require mitigation have been identified. However, NH has reduced the water quality delivery target from all high-risk sites identified (254 estimated in the interim dSBP) to between 110-130 high-risk outfalls. At the same time, the funding request for RIS3 water quality in the Environment National Programme has risen from £127.5m to £159m.
- NH indicates that the increased budget and reduced mitigation target are the result of increased mitigation cost estimates compared to the interim dSBP. Delivery has been de-scoped to fit within a similar budget envelope. NH has increased the estimated cost of mitigation from £350,000 - £450,000 per asset to £900,000 - £1.2m per asset. This change is due to an updated cost methodology. NH explained that its 2025 dSBP cost approach is based on an updated understanding of the scope and cost intelligence on retrofit and land implications, factoring in the receiving environment and discussions with key stakeholders. However, the approach remains largely top-down, with limited evidence of bottom-up cross-checks. We are concerned the cost increase of this magnitude has not been sufficiently justified and there is a substantial risk that the programme is overpriced and/or under ambitious for the budget and number of mitigations currently proposed.
- NH has developed a plan to mitigate 118 outfalls across RP3, but approvals, land agreements, and near-term start dates are still very high-level. In addition, the plan prioritises simple mitigations earlier in the road period, deferring more complex mitigations to the back end of RP3. This may present a risk of non-delivery noting that these more complex mitigations may take longer to deliver. There is a monitoring role for the ORR to ensure that NH is making progress on the more complex schemes so that they can be addressed within RP3.
- In our view, significant risks persist including third-party land, road-space/programme clashes, supply-chain capacity, and higher per-site costs. Considering the size of the programme, these risks are important for the ORR to monitor. Additional information will be required to do this effectively. There may therefore be a case for the Performance Indicator (PI) to have greater status in the performance specification given the associated expenditure.
- NH has indicated that maintenance requirements for newly treated water quality solutions will vary by type, and it will use a risk-based, solution-specific approach. While some passive features may not need maintenance within RP3, other activities will be managed per CG 701 and CG 801 (NH's inspection and maintenance standards), prioritised by risk and with regard to budget to maintain performance and safety. We have not seen any plan for maintaining newly treated outfalls in order to provide a view on whether NH's plans are appropriate. We suggest that the ORR considers whether it wishes to follow up on this.

#### 3.1. SCOPE OF ASSESSMENT FOR WATER QUALITY

We were asked to:

- Assess how NH's plans for mitigating water outfalls have developed since the interim dSBP.
- Re-assess the deliverability of NH's plans and the robustness of cost estimates.
- Examine the potential issues and risks.
- Review the current status of the Water Quality Plan for mitigating high-risk outfalls and soakaways, with a view to providing assurance that existing treated outfalls are being appropriately maintained.

#### 3.2. CONTEXT

NH has a legal duty under the Water Regulations (2017) and Environment Permitting Regulations (2016) not to pollute water courses. In order to meet this obligation and improve water quality, NH needs to mitigate confirmed

high-risk outfalls from which polluted runoff enters into the watercourses near the SRN. NH has committed to achieving this by 2030 in its Environmental Sustainability Strategy.<sup>1</sup>

Mitigating high-risk outfalls requires capital interventions to intercept and treat polluted runoff. This investment is intended to contribute to the PI, now measured as the sum of all outfalls/ soakaways mitigated, and to support NH in meeting its legal obligations.<sup>2</sup>

### **3.3. DEVELOPMENT OF NH'S PLANS SINCE THE INTERIM dSBP**

#### **Interim dSBP findings on water quality**

##### *Early-stage plans*

In June 2024, NH's plans for improving water quality were at an early stage. NH was verifying outfalls to determine how many high-risk outfalls needed to be addressed, which would inform feasibility and early design work. NH also procured an external technical adviser to help accelerate the programme. At that time, NH expected to mitigate 254 outfalls in RIS3 with a high-level cost estimate of approximately ~£350,000–£450,000 (2024 prices) per asset. Most mitigations were proposed to be delivered between years 3 and 5 of the RIS.

##### *Large programme to deliver compared to RIS2*

The RIS3 water quality programme was considerably larger than in previous Road Periods. Due to this, we considered that planning for RIS3 should be more advanced and robust. We suggested that the ORR might seek to monitor NH's progress on outfall verifications; development of a more structured programme; and the formation of a delivery model.

The proposed increase in volume and lack of preparedness at the time of our 2024 review, indicated that NH might not be ready to deliver on schedule. As the expected delivery profile was back-end loaded, we noted that any delay could risk delivery in RIS3, and push work into the next Road Period.

##### *High level approach to costing*

There were also risks related to the high-level approach to costing. Water quality schemes tend to be bespoke and involve stakeholder engagement and planning risk

. NH was developing standardised designs for RIS3, including costs for mitigations that could be undertaken within the highway boundary (referred to as contained mitigation sites). Although this might have provided more certainty to cost estimates, it was unclear how well it would reflect the different types of interventions required and the complexity of works to be undertaken, particularly for mitigations that extended outside the highway boundary (extended mitigation sites). We believed that more could be done to develop a bottom-up approach to scheme estimation that reflected these aspects of the programme.

##### *Focus of the PI*

We found that monitoring the PI alone would not be sufficient for monitoring progress, as the RIS2 PI measure did not reflect the volume of work to be undertaken (its focus being on kilometres of water courses, not high-risk outflows, mitigated). We indicated that the ORR would require additional information to monitor progress against the planned work and the PI. We thought there might be a case to amend the PI to better reflect the programmatic nature of the work (which NH indicated it was considering), and perhaps for it to have greater status in the performance specification given the associated expenditure.

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<sup>1</sup> National Highways (2024), *Draft Strategic Business Plan: Section A: National Programmes* (p.13)

<sup>2</sup> The length of watercourse enhanced is also to be shadow reported by NH as part of this PI. This was also the PI that applied in RP2. Section E - Refreshed - Performance - Annex 5. Being Environmentally Responsible, p. 25.

## What has changed between the interim dSBP and 2025 dSBP?

### Stage of plans

NH’s plans have progressed materially since the interim dSBP. Through ongoing technical assurance, 90% of assets were reviewed at the time of dSBP submission, resulting in 183 confirmed high-risk outfalls and an updated estimate of 249 outfalls likely to require mitigation once assurance is complete.<sup>3</sup> NH has since used this to develop a high level pipeline view of the 2030 Water Quality Programme, which seeks to mitigate 118 outfalls in RP3 with indicative timelines. Delivery appears to remain somewhat back end loaded, with approximately 56% of mitigations being constructed in year 3 or later.

### Size of programme

In the 2025 dSBP, NH has set a reduced delivery target of 110–130 outfalls — less than half of the 254 outfalls committed to in the 2024 dSBP.<sup>4</sup> The estimated cost of the programme has also risen from £127.5m to £159m despite the number of mitigation commitments falling. NH has told us that the reduced ambition of the programme is due to a material increase in the estimated unit cost of mitigation activities. The updated mitigation cost per asset has risen to £900,000 – £1.2m.<sup>5</sup> Table 1 summarises these changes.

Table 1: Changes made to the water quality programme

Factor	Interim dSBP	2025 dSBP
National programmes - “high risk outfalls”	£127.5m (reduced from £138m)	£159m
Mitigation commitment	All confirmed high risk sites, which was estimated at the time to be 254	110-130
Estimated mitigation cost per asset	£350,000 – £450,000	£900,000 – £1.2m
Verification completed	12% of outfalls	90% of outfalls <sup>6</sup>

Source: National Highways

### Approach to costing

NH’s initial approach to costing was based on a flat ‘per outfall’ cost based on a small sample of projects undertaken as part of Designated Funds delivery between 2015 and 2022. At the time this was the only historic cost data available to NH.<sup>7</sup>

In the 2025 dSBP, NH sets out three range estimates for the 2030 Water Quality Programme by estimating costs across three treatment scenarios (the ‘do minimum’, ‘do something’ and ‘do max’ treatment scenarios). The RIS3 budget is derived from modelling the cost of the three different treatment types. The overall approach to pricing has not fundamentally changed (i.e. it remains top down), but NH considers it now has a greater understanding of the additional controls and measures required for each site. This has resulted in it materially increasing the estimated cost per mitigation unit from £350,000 – £450,000 to £900,000 – £1.2m per asset (an increase of more than 250%).

<sup>3</sup> Following a review of a draft of this report, NH provided some updated figures on water quality. NH has indicated that at the end of November 2025, 1,236 sites have been validated and verified; 94% of those have been through Technical Assurance; 182 sites have been published as and confirmed as high priority. NH expect the high priority sites to rise to around 250.

<sup>4</sup> National Highways (2024), *Draft Strategic Business Plan: Section A: National Programmes* (p.13)

<sup>5</sup> When we asked why the proposed £159m exceeds the top-end estimate (£1.2m × 130 sites = £156m), NH explained that the total programme cost also includes a risk premium. However, this was not further explained.

<sup>6</sup> Following a review of a draft of this report, NH provided some updated figures on water quality. NH has indicated that at the end of November 2025, 100% of the 1,236 sites have been validated and verified; 94% of those have been through Technical Assurance.

<sup>7</sup> National Highways (2025) “ORR Efficiency Review – Water Quality” 23<sup>rd</sup> September 2025

### *Focus of the PI*

In RP2 and the interim dSBP, the PI metric focused on the length of watercourse enhanced. NH has now updated the PI so that it will report on the total sum of all outfalls/ soakaways mitigated. NH will ‘shadow report’ length of watercourse enhanced alongside this new measure. We consider the revised PI to be a positive development.

### **3.4. RE-ASSESSMENT OF THE DELIVERABILITY OF NH’S PLANS**

In the 2025 dSBP, NH outlined that since the interim dSBP it has completed a comprehensive validation, verification, and technical assurance process for 90% of outfalls. This has provided a much deeper understanding of the complexity, constraints, and practicalities associated with the estimated 249 outfalls requiring mitigation.<sup>8</sup>

NH states that there is variation in mitigation approaches and constraints. While some high-risk outfalls may be dealt with in the highway boundary (contained mitigation sites), others will require comprehensive engineering solutions, requiring land take, monitoring and/or offsetting – particularly for outfalls at legally designated sites.

NH explained that expectations for what counts as an acceptable mitigation approach have increased. Engagement with other government agencies has confirmed the need for a more robust value for money process at legally designated sites, and more generally across the programme. NH considers that this more robust process, which provides greater programme assurance and involves pursuing a more representative range of solutions, has contributed to cost increases.<sup>9</sup>

We asked NH to provide an update of its plans for improving water quality. NH has set a reduced delivery target of 110-130 outfalls, based on the availability of funding in RIS3.<sup>10,11</sup> It has established a pipeline of 118 schemes to be completed in RP3, with the remaining high-risk outfalls requiring mitigation addressed in future road periods.<sup>12,13</sup> It indicated that its current proposal is to mitigate these 118 outfalls through a mix of both simple and complex treatments and that delivery will be structured in tranches with a focus on scalable, repeatable solutions which can be used to inform future tranches. The pipeline of work for these 118 schemes is outlined in Figure 2 below.

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<sup>8</sup> Following a review of a draft of this report, NH provided some updated figures on water quality. NH has indicated that at the end of November 2025, 100% of the 1,236 sites have been validated and verified; 94% of those have been through Technical Assurance.

<sup>9</sup> National Highways (2025) “ORR Efficiency Review - Water Quality” 23<sup>rd</sup> September 2025

<sup>10</sup> RFI0053

<sup>11</sup> National Highways (2025) “ORR Efficiency Review - Water Quality” 23<sup>rd</sup> September 2025

<sup>12</sup> RFI0053 & National Highways (2025) “ORR Efficiency Review - Water Quality” 23<sup>rd</sup> September 2025.

<sup>13</sup> Other sources have also referred to 110 assets, instead of 118 schemes. RFI078

Figure 2: 2030 Water Quality Programme – scheme pipeline view (March 2025)

Pipeline	Tranche	Scheme	Asset Nos.	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30
SES	1	A27 Fontwell roundabout A27 Fontwell West	15	Scheme Identification & Preliminary Design	Detailed design	Construction			
		A45 River Nene	21	Scheme Identification & Preliminary Design	Detailed design	Construction			
		A14 Grand Union	1	Scheme Identification & Preliminary Design	Detailed design	Construction			
	2	A343 Pillhill Brook	2		Scheme Identification & Preliminary Design	Detailed design	Construction		
		A414 Madam's Wood	2		Scheme Identification & Preliminary Design	Detailed design	Construction		
		M6 Perry Reservoir	1		Scheme Identification & Preliminary Design	Detailed design	Construction		
		M1 Hartwell	1		Scheme identification	Preliminary design	Detailed design	Construction	
		M2 Rakewood	1		Scheme identification	Preliminary design	Detailed design	Construction	
		25/26 Continued	47		Validation Verification/TQC	Detailed design			
	3	25/26 Extended Impact	13		Validation Verification/TQC	Preliminary design	Detailed design	Construction	
Additional Rapid Tool sites		TBC		Risk assessment (22,000) assets	Validation Verification/TQC	Preliminary design	Detailed design	Construction	
OD	Existing	A30 Indian Queens	1	Preliminary design	Detailed design	Construction			
		A30 Redtake Farm	1	Preliminary design	Detailed design	Construction			
		M5 Tickenham Road	1	Preliminary design	Detailed design	Construction			
		M5 River Culm	4	Detailed design	Construction				
		A47 North Tuddenham	1	Detailed design	Construction				
		M6 O'fall Ref 9172	1	Preliminary design	Detailed design	Construction			
		M6 Lancaster Canal	5	Preliminary design	Detailed design	Construction			
MP		Opportunities to be identified	-						
3 <sup>rd</sup> Party		Opportunities to be identified	-						

Source: National Highways

NH provided a snapshot of its Tranche 0 (Existing) and Tranche 1 Primavera programme, which is still in development. Current timelines are based on 'contained' schemes – those with sediment-type failures that can be readily mitigated within NH's existing land holdings. NH explained that current timelines may change once options are finalised, particularly where schemes develop into more complex 'Extended' solutions.

This is particularly relevant for Tranche 2 schemes, which are in the early stages of preliminary design and still undergoing option reviews. At this stage, NH is unable to confirm preferred options or whether additional land or land access will be required but expects this information will be available in early RIS3.

NH also provided cost estimates for the sites it intends to deliver in Tranche 1 stating that these are predominantly “contained” sites, often grouped in large clusters:

- £2 million for River Nene (21 assets)
- £2.5 million for Fontwell West (6 assets)
- £1.3 million for Grand Union (1 asset)

NH states that while Tranche 1 provides valuable cost intelligence and informs programme-wide forecasting, it is important to note that ‘contained’ schemes are likely to fall at the lower end of the cost per outfall range. They may not fully reflect the complexity or cost profile of later tranches, which are expected to include a broader range of scheme types and delivery challenges.<sup>14</sup>

## Our view

The planned programme, despite being less ambitious than what was proposed in the interim dSBP, remains more ambitious than the work undertaken in RP2 to improve water quality. Over RP2, NH mitigated 71 outfalls/soakaways, improving 41.6km of waterbody. Since the publication of its water quality plan in 2023, NH has delivered 8 schemes, mitigating 43 high risk assets – 39 in 2024/25 and 4 in 2025/26.<sup>15</sup> NH also addressed 56 outfalls over the course of RP1.<sup>16</sup>

At the interim dSBP submission, we were concerned that NH was not ready to deliver a sizeable programme, as it was still in development. NH has now developed a pipeline programme of a 118 of schemes,<sup>17</sup> however we note this programme remains indicative and there is a material likelihood of timelines extending as options are finalised, particularly for the more complex ‘extended’ sites which are back-loaded in the current delivery plan. This presents a material risk that delivery of some sites will not be completed in RP3 and be pushed into future road periods.

Given its work in RIS2, we expected NH to have secured (or be close to securing) financial approvals, landowner and stakeholder agreements, and clear start of works timelines for at least the first year of RIS3. NH has provided only high-level design and construction timelines for Tranche 0 (Existing), Tranche 1 and Tranche 2:

- For Tranche 0, some schemes have completed design or are already in construction, with others due to complete design in 2025/26 and 2026/27.
- For Tranche 1 and Tranche 2, the design for all schemes will take place in 2026/27 with construction in 2027/2028.

Start and end dates are only available for a limited number of Tranche 0 and Tranche 1 schemes in the Primavera programme. The ORR should ensure that NH is making progress on the more complex schemes so that they can be completed within RP3.

Across Tranche 0 and Tranche 1, schemes were grouped into delivery clusters where appropriate to optimise value, reduce programme interfaces, and minimise network disruption. The focus for these Tranches is to maximise programme pace and momentum. For the remaining sites (Tranche 2 onwards), focus has turned to optimisation and maximising environmental outcomes. Sites are undergoing enhanced environmental review before being confirmed for progression into preliminary design. This review aims to ensure that mitigation is both appropriate and proportionate and allows NH to maximise environmental benefits.

As schemes are assessed, the Water Quality Working Group (WQWG) keeps a flexible list of project candidates so that if a candidate is delayed or a better environmental outcome can be achieved elsewhere, a ready alternative

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<sup>14</sup> RFI060

<sup>15</sup> We note this differs to published data, which included 8 schemes over RP2 and the interim period, addressing 44 assets. The length of watercourse enhanced was 39km over 2020/21 to 2022/23. ORR, *Table 4: Delivering Better Environmental Outcomes, England, April 2020 to March 2023*. Available [online](#).

<sup>16</sup> National Highways (July 2020) “*Strategic Report 2020: Our journey so far*” available at [nationalhighways.co.uk](https://nationalhighways.co.uk).

<sup>17</sup> We note that RFI078 indicates a pipeline of 110 assets, not 118.

can be switched in. NH believes this approach will support steady delivery while being flexible to maximise programme opportunities and manage delivery risks.

Overall, our view is that NH has scaled back delivery as a result of increased costs, but the basis of these changes is unclear and unjustified in the dSBP. At this stage, the ORR might wish to challenge NH to do more and should monitor developing plans closely not least given the back-end loading of the programme and the completion of simpler schemes earlier in RIS3. Whilst doing this creates an opportunity to develop and plan more complex schemes, it is essential that NH develops momentum in these activities if it is to deliver the schemes planned for this roads period.

### **3.5. RE-ASSESSMENT OF THE ROBUSTNESS OF COST ESTIMATES**

#### **Evaluation of NH's approach to cost estimation**

Between the interim and 2025 dSBP, NH materially increased the estimated mitigation cost per asset from £350,000 – £450,000 to £900,000 – £1.2m per asset. As a result of this cost increase, NH reduced the delivery target from all high-risk outfalls (estimated at 254 at the interim dSBP) to between 110-130 outfalls in RP3. NH's delivery pipeline identifies 118 schemes will be mitigated in RP3, less than half of the high-risk outfalls identified.

Based on a simple calculation of the number of planned treated outfalls divided by the £159m budget for RIS3, this creates a range of £1.2m-£1.4m per asset, based on NH's mitigation target of 110-130. This is higher than the £900,000 – £1.2m range stated by NH. NH has advised this is due to the inclusion of a risk allowance; however, no further information was provided to us - such as how the magnitude of this risk allowance was determined.

Cost estimates have increased due to a change to NH's cost estimation approach between the interim and 2025 dSBP. NH's approach to cost estimation for the 2030 Water Quality Programme in RP3 now uses three treatment scenarios to calculate a cost per site range, which is then applied in the 2025 dSBP. Table 2 sets out these scenarios and how the cost per site varies by each. In all three scenarios the same number of sites are treated, but the level of treatment increases. For example, in the “*do minimum*” scenario, NH would implement site improvement at an average cost of £900,000 per site, whereas in the “*do max*” scenario it would carry out full treatment at each site at an average cost of £1.2m per site.

NH has stated that its preferred mitigation approach is the “do something” approach which applies a mixed treatment approach at an average cost of £1.0m per site, within the constraints of the funding envelope.<sup>18,19</sup> However, NH has not explained whether this approach of partial treatment will comply with its legislative requirements, or under what basis it does so. We also note that the “*do something*” scenario would align to a programme budget of £110-130 million to deliver 110-130 mitigations, well below the £159m budget.

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<sup>18</sup> RFI0053

<sup>19</sup> National Highways (2025) “ORR Efficiency Review - Water Quality” 23<sup>rd</sup> September 2025

Table 2: NH cost estimate approach by scenarios<sup>20</sup>

Scenario	Sites	Cost	Cost per site
<b>Do minimum</b>	250 (site improvement rather than full treatment)	£217.8	£0.9m
<b>Do something</b>	250 (some fully treated and others partially)	£251.3m	£1.0m
<b>Do max</b>	250 (fully treated)	£293.8m	£1.2m

Source: National Highways<sup>21</sup>

NH also provided some cost information by treatment type (see Table 3). However, no further detail was provided, and it is unclear how this has been used to inform the average cost per site that NH has provided to us.

Table 3: Cost per mitigation by treatment approach

Proposed treatment approach	Cost per mitigation
<b>Vortex separator and monitoring</b>	£0.5m
<b>Solution based on necessary works and offsetting</b>	£1.0m
<b>Complex schemes such as pond in third party land</b>	£2.0m

NH has stated these cost estimates remain subject to ongoing review and assurance as its delivery framework is fully embedded and the associated survey scheduling and road space management processes stabilise. Material changes arising from those processes may necessitate movement within the planning range, with refinements governed through established programme controls and decision forums to ensure traceability from source data to any subsequent adjustment of the planning range.<sup>22</sup>

NH states that increased cost per capital upgrade reflects complexity of delivery. As the funding envelope has not increased proportionally, this has necessitated a more targeted allocation of capital upgrades to sites where the environmental benefit, deliverability, and value for money are greatest. NH explained that cost data in this area remains limited, both in terms of the unit cost of the solution, and associated requirements (i.e. traffic management and preliminaries). We asked NH to provide more detail to underpin its unit costs, and NH indicated that despite collaborating closely with its commercial teams to develop a range of solution types and extensive engagement, it has not been possible to derive meaningful insights from historic major project improvement schemes delivered to date, primarily due to challenges in extracting unit rate costs in a consistent and reliable manner. NH also indicated that it has not undertaken external benchmarking, as its priority is to understand performance within its own operating environment. To date, evidence has been drawn from a limited number of retrofit projects delivered through Designated Funds.<sup>23</sup>

Historical project cost data (Table 4) and early cost estimates for Tranche 1 (Table 5) do not support the high-cost range used in the dSBP:

- The average cost per outfall across RP2 and the interim year is £326,000, approximately £574,000 below the low point of NH’s estimate range.

<sup>20</sup> National Highways has not specified the price base of these figures. We discussed this in the workshop on 23/09/25 and when asked National Highways were unable to confirm.

<sup>21</sup> National Highways (2025) “ORR Efficiency Review - Water Quality” 23<sup>rd</sup> September 2025

<sup>22</sup> RFI078

<sup>23</sup> RFI078

- Early estimates for Tranche 1 schemes vary and suggest that the average cost per outfall is approximately £207,000, nearly £700,000 below the low point of NH's estimate range. If we were to apply this average cost to NH's range of 110-130 outfalls, the total cost would be £23.2m-£27.4m.

Table 4 - Analysis of RP2 and interim year outfall cost estimates, £m

Scheme	Number of assets	Delivery period	Scope type	Delivery time	Cost	Grouping	NH stated average cost of grouping	Average cost per asset	Difference to NH grouping estimate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9) (6) ÷ (2)	(10) (9) (8)
M65 Dunkenhalgh	1	RP2	Extended	2 years	£0.63	Do-Max	£1.20	£0.63	-£0.57
A595 Moresby Hall Attenuation	1	RP2	Extended	3 years	£1.47	Do-Max	£1.20	£1.47	£0.27
A27 Wild Park Rainscape	3	RP2	Extended	6 years	£2.39	Do-Max	£1.20	£0.80	-£0.40
M3 discharge into Thorpe Park SSSI	33	RP2	Contained	7 years	£3.00	Do-Max	£1.20	£0.09	-£1.11
M25 J26-J27 Brookhouse Brook	1	RP2	Extended	9 years	£2.60	Do-Max	£1.20	£2.60	£1.40
A47 North Tuddenham	2	RP2/Interim Year	Contained	3 years	£1.70	Do-Something	£1.00	£0.85	-£0.15
M6 Lancaster Canal Outfalls	2	Interim Year (in progress)	Contained	2-3 years	£1.31	Do-Something	£1.00	£0.65	-£0.35
M5 River Culm	1	Interim Year (in progress)	Extended	4-5 years	£1.28	Do-Max	£1.20	£1.28	£0.08
<b>All schemes</b>	<b>44</b>	-	-	-	<b>£14.37</b>	-	<b>£1.18</b>	<b>£0.33</b>	<b>-£0.86</b>

Source: CEPA analysis of National Highways data provided in RFI078.

Table 5 - Analysis of Tranche 1 outfall cost estimates

Scheme	No. of outfalls	Total cost	Avg cost per outfalls	Difference to NH range
River Nene - Vortex separators	21	£2m	£0.095m	-£0.805m
Fontwell West - Grass V-channel	6	£2.5m	£0.416m	-£0.484m
Grand Union - Vortex separators	1	£1.3m	£1.300m	+£0.400m
<b>All schemes</b>	<b>28</b>	<b>£5.8m</b>	<b>£0.207m</b>	<b>-£0.693m</b>

Source: National Highways

NH has suggested that Tranche 1 schemes are not a comparable to the remaining pipeline of projects for RP3. Specifically, the treatment required at all Tranche 1 scheme is sediment only so whilst these sites are contained the mitigation required is also less complex. Other contained sites are likely to be more difficult. NH also notes that the cost of traffic management and preliminaries for scheme construction is a sizeable proportion of the overall cost. Due to this, Tranche 1 schemes which have been clustered to include multiple different assets have been able to deliver economies of scale which may not be repeatable across the programme.

## **Our view**

We highlighted in our 2024 report that NH acknowledged past experience showing that mitigation costs can vary from £50k to over £1m, depending on site constraints, the complexity of the solution and the potential for delivering other benefits, such as biodiversity enhancement.<sup>24</sup>

In our view, the top-down estimate approach used by NH remains an imprecise way of estimating costs, and scope remains unclear. There does not appear to be any cross-check from bottom-up estimates. For example, it is unclear whether the cost estimates from specific schemes have been used to verify the approach. While we appreciate that the schemes included in RP3 may be more complex and costly than past projects, or the simple projects that have been costed in more detail within Tranche 1, the magnitude of the cost increase projected by NH remains unjustified. It also remains unclear what number and mix of treatment types were used to determine the cost estimate range across each treatment scenario and the basis for this, which makes it challenging to assess whether a range of £900,000 – £1.2m is appropriate.

If it is an appropriate range, considering likely costs and uncertainty, then it is unclear under what basis an additional risk premium has been applied to the overall programme budget. Based on the insufficient supporting evidence provided to date, we recommend the ORR obtains more information from NH to justify the increased unit costs and/or asks NH to either increase the number of mitigations for the budget allocated or reduce the budget allocation for water quality.

As previously recommended in 2024, to improve the approach to cost estimation, we suggest that NH utilises more complete information on costs to develop bottom-up estimates of schemes, collected within a database of schemes undertaken to date. This database would include costs for different types of solutions and the components of each water quality project. As a minimum, this exercise could be done for a few illustrative benchmark schemes that best reflect the known pipeline of schemes identified for RIS3. Unit costs or a range of costs can be obtained for commonly used pollution prevention and treatment solutions, such as detention basins, grassed surface water channels, infiltration basins, swales, and wetlands. This database of costs would better reflect the mix of different types of solutions likely to be used in upcoming schemes, providing a more nuanced cost estimate. NH has indicated that it recognises the value in developing a database, but it asserts that it does not yet have sufficient data to do this, despite RIS3 being the third roads period in which outfall mitigation is a feature.

In 2024, NH told us that its technical partner would develop a standardised design palette during 2024/25 for the RIS3 programme, which would involve costing designs that can be easily implemented for outfalls where mitigation can be undertaken within the highway boundary (contained sites). This was aimed at speeding up delivery and rationalising costs.

In September 2025, NH published a Preliminary Design Playbook and Design Palette Technical Note. The playbook sets out the approach the Water Quality Technical Partners are using to develop preliminary design solutions aimed at mitigating the risk of pollutants in highway surface water runoff entering downstream water bodies. The design palette technical note provides standardised options to support design teams in producing efficient and consistent designs. This technical note outlines the methodology used to develop the design palette and introduces a mitigation selection decision tree to help identify the most suitable solution for each site. Together, the playbook and the design palette guide designers to a preferred option, which is then refined through site-specific application. These tools are useful but do not replace detailed site-specific design. They support the optioneering process and

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<sup>24</sup> RFI058 (2024)

identification of a preferred design that NH then takes through preliminary design and cost estimation. The provisional costs estimates are used for VfM analysis and selection of the preferred option. However, further detailed design, site investigation, and environmental assessments are still required. There is also no cost data linked to the different options included in the tools.

In conclusion, despite further progress on developing the programme and approach, we are concerned the cost estimation methodology remains overly reliant on top-down estimates that seem unrelated to the actual costs of previous mitigation projects. NH proposes an approach that utilises a mix of site improvement and full treatment, without rationalising this approach or considering its efficiency.

NH has stated previous project examples are not comparable to the pipeline of mitigation projects for RP3 and are not a good basis in isolation to estimate likely programme costs. We consider that the evidence provided by NH to date is insufficient to justify the magnitude of the increase in costs per mitigation within the 2025 dSBP. There is a substantial risk that the programme is overpriced and/or under ambitious for the budget and number of mitigations currently proposed. Alongside monitoring the further development and momentum of the programme of interventions we suggest that the ORR should continue to monitor NH's approach to cost estimation.

### 3.6. EXAMINATION OF POTENTIAL ISSUES AND RISKS

Table 6 summarises the risks to the delivery of the water quality programme identified by NH and its proposed mitigations.<sup>25</sup>

Table 6 - Risks to delivery and mitigations of the water quality programme

Theme	Risk	Mitigations
<b>Available land space to retrofit appropriate design solutions</b>	Many high-risk sites required third-party land to retrofit suitable solutions, which delayed or prevented delivery. Partnerships with local authorities, landowners, and environmental bodies were essential but introduced complexity.	Early engagement with landowners and stakeholders to resolve access and land issues. Use of partnership models to share data, align objectives, and create mutual benefits (e.g., Environment Agency, local authorities, Canals and Rivers Trust). Where land agreements were not feasible, alternative solutions such as offsetting or partial mitigation within the highway boundary were considered.
<b>Programme constraints</b>	Road space booking, operational constraints (e.g., RP3 programme), and coordination with other works affected delivery timelines.	Programme governance through the Water Quality Working Group with delegated authority. Use of a standardised design palette and decision tree to streamline delivery. Bundling with other schemes to improve efficiency and minimise customer impact.
<b>Increased cost of mitigations</b>	Costs per outfall increased (from £350–450k to £900k–1.2m) due to greater complexity, land needs, and requirements for offsetting and monitoring at designated sites. Funding constraints limited full mitigation of all high-risk sites, making prioritisation essential. Designated sites (SSSIs, SACs) required stringent mitigation, further raising costs.	Partnership working to deliver efficiently. Value management to optimise funds. Prioritisation based on risk, deliverability, and environmental benefit. Early engagement with statutory bodies to define mitigation and monitoring requirements. Use of offsetting and monitoring where full mitigation was unfeasible. Ongoing review of funding and delivery volumes for flexibility.

<sup>25</sup> RFI054

Theme	Risk	Mitigations
<b>Supply chain risks</b>	Limited resource availability, long product lead times, and contractor capacity created potential bottlenecks given the required delivery scale and pace.	Early engagement with suppliers and contractors to secure capacity and manage lead times (e.g. supplier engagement events). Standardisation and repeatability to achieve economies of scale. Contingency planning for resource shortages.
<b>Ongoing maintenance and renewals</b>	Insufficient planning for maintenance and renewals risked undermining long-term water quality benefits.	Integration of maintenance and renewals into programme design. Use of asset management systems for performance tracking and intervention scheduling. Collaboration with operational teams to ensure sustainability. Robust monitoring strategy including field and automated sampling, and citizen science where suitable. Evaluation of system efficacy and feedback into future design and delivery.

Source: National Highways<sup>26</sup>

## Our view

In our 2024 report, we stated that NH was aware of the risks detailed above and was seeking to address them. For example, NH told us that it was targeting a small number of complex sites in 2024/25 to identify potential strategies for delivery and was planning to explore alternative delivery options for outfalls beyond its land with environmental regulators. NH advises that it has undertaken these activities and that these have informed the dSBP, although we have not seen direct evidence of this. Considering the size of the programme, the risks in Table 6 are important for the ORR to monitor. Additional information will be required to do this effectively. Consequently, there may be a case for the water quality PI to have greater status in the performance specification.

### Unmitigated risks

There are significant risks and uncertainties related to NH's programme. In our 2024 report, we identified the following risks and have subsequently re-assessed them:

- **Identification of high-risk outfalls:** NH was undergoing the verification of outfalls. NH has now completed 90% of outfall mitigation verifications and identified the 118 schemes it intends to deliver in RP3.<sup>27</sup> As a result, this specific risk no longer remains.
- **Reliance on stakeholders:** Delivery depended on cooperation with stakeholders and landowners, which sometimes slowed progress and added pressure toward the end of RIS2. This risk continues to pose potential issues for RP3, and the ORR should closely monitor NH's progress.
- **Complexity of projects:** NH had not yet fully considered the balance between outcomes and project complexity. As simpler outfalls were addressed in RP2, the organisation had limited understanding of the more complex work required in RIS3. NH has made demonstrable progress in this area, having completed 90% of the surveys to identify the outfalls requiring treatment in RIS3. This should provide greater clarity on the level of complexity associated with projects within RP3. However, the impacts of this work on the programme are not well explained in the dSBP, and we note that NH continues to target easier sites whilst

<sup>26</sup> RFI054

<sup>27</sup> Following a review of a draft of this report, NH provided updated figures on water quality. NH has indicated that at the end of November 2025, 100% of the 1,236 sites have been validated and verified; 94% of those have been through Technical Assurance and subject to level 4 independent technical assurance undertaken by the Chartered Institute of Water and Environmental Management (CIWEM).

pushing more complex work into the later years of the RIS. As we indicate above, the ORR should monitor the momentum that NH is creating in its plans to address these more challenging sites.

### **3.7. REVIEW OF WATER QUALITY PLAN TO ENSURE PROPER MAINTENANCE OF TREATED OUTFALLS**

In the water quality workshop, NH indicated that newly mitigated areas would not require maintenance in RP3. In response to an RFI requesting evidence to support that assertion, NH provided a more qualified response. NH has indicated that maintenance requirements for newly treated water quality solutions will vary by solution type. According to NH, its approach is risk-based, solution-specific, and focused on maintaining asset performance efficiently and safely, in line with published guidance and contractual requirements.<sup>28</sup>

NH has also indicated that for some solutions, such as ponds and other passive features, maintenance may not be required within the RP3 period, but for other solutions, maintenance will be required. These requirements will be managed in accordance with CG 701 and CG 801, which set out NH inspection and maintenance standards.

NH maintenance activities are prioritised using a risk-based approach and delivered in line with available budgets. This ensures that resources are directed to where they are most needed to maintain performance and safety.<sup>29</sup> In our view, a good asset manager develops solutions with maintenance in mind making whole life cost a part of the selection of solutions. NH appears to be saying it will do what it can for the maintenance budget that is available which may mean that some outfalls are not adequately maintained. As we have not been provided with a plan for maintenance, we have been unable to assess whether its approach is appropriate or proportionate.

### **3.8. SUMMARY OF CEPA'S ASSESSMENT OF THE WATER QUALITY PLAN**

*Table 7 – Summary of CEPA's assessment of the water quality plan*

Issue	Progress	Importance	Rationale
Deliverability	AMBER	HIGH	The planned programme, despite being lower than at the interim dSBP, represents a step up from the work undertaken to improve water quality in RP2. NH has now developed a pipeline of 118 schemes for mitigation in RP3, but this remains indicative and there is a material risk of non-delivery, particularly for more complex mitigations that fall in the back end of the road period. The first tranche of schemes may not fully reflect the complexity or cost profile of later tranches, which are expected to include a broader range of scheme types and delivery challenges, and these are back-end loaded in RP3.
Approach to cost estimation	AMBER	HIGH	NH continues to apply a top-down approach to cost estimation, and we have not been provided with the underlying data to understand the build-up of the unit costs. At this stage, NH should have sufficient information for the cost estimates to have some bottom-up substantiation. Estimated cost per asset have increased by over double from the interim dSBP without sufficient evidence to underpin the estimates.
Achievability of PI and risks	AMBER	HIGH	Significant risks persist—third-party land, road-space/programme clashes, supply-chain capacity, and

<sup>28</sup> RFI078

<sup>29</sup> RFI078

Issue	Progress	Importance	Rationale
Plan for maintaining recently mitigated outfalls	<b>AMBER</b>	<b>MEDIUM</b>	<p>higher per-site costs. There may be a case for giving the PI a greater weight in the performance specification given the related expenditure.</p> <p>NH has indicated that maintenance requirements for newly treated water quality solutions will vary by type, and it will use a risk-based, solution-specific approach. While some passive features may not need maintenance within RP3, other activities will be managed per CG 701 and CG 801, prioritised by risk and with regard to budget to maintain performance and safety. We have not seen any plan for maintaining newly treated outfalls in order to provide a view on whether NH's plans are appropriate or proportionate.</p>

## 4. BIODIVERSITY

### Key findings

- We believe there is further opportunity for NH to strengthen the integration of its biodiversity strategy within core operations. While progress has been made over several years of experience and learning, some aspects of the overall approach could benefit from greater coherence and deeper embedding into delivery and decision-making processes. However, the overall biodiversity programme has become more structured and mature, with improvements in planning, governance, and operational readiness that indicate stronger foundations for future delivery.
- The number of biodiversity units targeted has dropped from the interim dSBP while total costs have remained broadly unchanged between the interim dSBP and dSBP, aside from inflation adjustments. NH has explained that the reduction in biodiversity units is in part attributed to the removal of the 1% degradation of the soft estate assumption and also excludes the biodiversity units for Major Projects which has not yet been determined for RIS3. The Major Projects omission and the changes to how biodiversity units are measured makes like-for-like comparisons between RP2 and RP3 challenging.
- NH's cost estimate for 'no net loss' is within a reasonable range, albeit towards the top-end of external ranges for NSIP project biodiversity costs based on a 2021 Defra report. More recent benchmarks however do suggest that NH's BU cost estimate is below the lower end of the range. Nevertheless, this represents a substantial increase compared to average costs in RP2. On balance, considering the rising demand for BUs and the cost variations associated with different habitat types, NH's cost assumptions for the biodiversity KPI appear reasonable.
- In the interim dSBP, NH adopted a 2% fixed overlay to account for biodiversity costs in enhancement schemes. NH has indicated that this overlay has been removed and replaced with scheme specific uplifts, it has not yet demonstrated how it will adapt its standard design, construction, and maintenance practices to achieve biodiversity gains without relying on a fixed 2% cost overlay. NH should provide supporting evidence to the ORR for the scheme specific biodiversity costs it has allocated to enhancement schemes, and the accompanying methodology prior to the start of RP3. In principle, we think scheme specific uplifts is an appropriate shift in approach compared to a blanket overlay.
- We remain of the view that NH has provided a limited evidence base for soft estate renewals and maintenance expenditure but agree with NH's decision to remove the 1% degradation assumption from its soft estate maintenance fund. NH has refocused its renewals spend to prioritise the increasing risk of Ash Dieback disease and other tree risk and have indicated it is not funded in RP3 to go beyond the safety bare minimum. Maintenance funding is expected to maintain the soft estate so that there will be no net loss of biodiversity.
- NH has made progress in improving the deliverability of its biodiversity KPI, having completed feasibility assessments for 850 BUs in RIS3. The programme should be deliverable, given that the changes to the metric reduce the target compared to RIS2 and the greater delivery through third parties. However, we would expect plans to be more advanced at this stage given its experience in this area over the last ten years, whilst noting challenges faced by NH in terms of changes to the biodiversity metric and the multiple revisions to the RP3 Major Enhancement Programme.
- NH continues to focus heavily on off-network sites for biodiversity delivery, raising questions about the strategic fit of such projects. NH however state that this is a strategically aligned process and the only viable route to deliver high-quality, long-term habitats.

### 4.1. SCOPE OF ASSESSMENT FOR BIODIVERSITY

We were asked to:

- Evaluate investment plans in soft estate maintenance and renewal and determine whether there is regional accountability for biodiversity outcomes.
- Assess the incorporation of biodiversity mitigation and net gain requirements into enhancement project cost estimates, using benchmarking and comparable evidence where available.

- Review the credibility of a 10% net gain on Nationally Significant Infrastructure Projects (NSIPs).
- Advise on the RP3 biodiversity KPI—metric robustness, ambition vs. deliverability, and whether a metric linked to the condition of the existing estate can be robustly measured.
- Identify any gaps or risks in NH’s ambition to achieve ‘supporting nature recovery’.
- Test the existence of an integrated biodiversity strategy across:
  - Maintenance and renewal of the existing soft estate.
  - Mitigation of biodiversity impacts from enhancement projects.
  - Biodiversity-related activities delivered through Designated Funds and National Programmes.

## **4.2. DEVELOPMENT OF NH’S PLANS SINCE THE INTERIM dSBP**

### **Interim dSBP findings on biodiversity**

At the time of the interim dSBP, NH had identified a pipeline of potential schemes that could meet, and potentially exceed, its RIS2 biodiversity target. For RIS3, the proposed biodiversity target was lower than that set for RP2. This reduction reflected a revised assumption about the expected deterioration of biodiversity across the soft estate. Specifically, it was assumed that NH would use its soft estate maintenance budget to prevent biodiversity loss in areas that remained in a maintainable condition. Where evidence suggested that maintenance was not taking place, the biodiversity target might have needed to increase to account for additional deterioration.

This change also meant that the biodiversity KPI would focus on parts of the soft estate where biodiversity loss was occurring. As a result, the KPI target for RP3 was set at 2,500 biodiversity units (BUs). Given NH’s prior performance and the proposed lower target, we considered the proposed RIS3 target achievable.

NH also reported separately on its commitment to deliver a 10% biodiversity net gain (BNG) for all Nationally Significant Infrastructure Projects (NSIPs) covered by the Environment Act 2021. This applied to new RIS3 enhancement schemes from 2025 onwards. A higher target of 15% net gain was set for the Lower Thames Crossing. In addition, NH aimed to achieve a 10% habitat unit gain across all RIS3 enhancement schemes.

At the time of reporting, there was no developed programme of work to support delivery of these commitments. NH informed us that it had an indicative pipeline of projects with existing partners capable of achieving the RP3 target. However, BUs had not yet been allocated to specific projects, as the final composition of the programme portfolio was undecided.

Cost estimates for BUs were based on a high-level approach and therefore carried a degree of uncertainty. External benchmarks indicated a wide variation in estimates, depending on habitat type, and the external market was still adjusting to the recent introduction of mandatory BNG. We suggested that as NH’s planning matured, there might be potential to reduce the cost of delivering BUs.

Overall, the interim dSBP did not clearly link cost, schedule, and performance. We concluded that significant acceleration in planning would likely be required for NH to deliver the full programme within the RIS3 period.

### **National Highways’ 2025 dSBP**

NH’s RIS3 ambition is to be ‘Supporting Nature Recovery’, which it defines as improvements in biodiversity delivered by NH exceeding the loss through construction interventions, renewals, and natural degradation of habitats. The ambition is made up of two separate targets:

- No net loss over RIS3 on the existing soft estate, equal to delivery of 2,000 BUs (i.e., excluding BUs delivered on enhancement schemes)— this is the proposed KPI.
- 10% BNG on all NSIPs as required by the Environment Act 2021, starting from November 2025.

NH is required to deliver biodiversity improvement for two reasons: first, as a result of carrying out ‘development’, which necessitates BNG associated with planning/consenting; and second, to align with government objectives (largely captured in the Environmental Improvement Plan 2023). Other responsibilities related to biodiversity exist in respect of compliant land management in NH’s capacity as a landowner.

NH’s approach to biodiversity improvement is captured across four swim lanes:

- **Major enhancements:** 10% BNG required across NSIP—governed by planning/consenting legislation.
- **Designated funds:** Capturing nature-based solutions and landscape-scale connectivity. No specified contribution to KPI.
- **OMR:** Safety-led soft estate interventions (associated with maintaining sites to support core function). NH is aiming to achieve no net loss.
- **National Environment Programme:** Centred on: (1) SSSI improvement; and (2) biodiversity/nature recovery. KPI delivery is anticipated through (2) of this swim lane.

## What has changed in the 2025 dSBP?

There are a number of areas where NH has changed its approach to biodiversity between the interim dSBP and the 2025 dSBP. These are listed below:

- **Reduction from 2,500 to 2,000 BUs:** NH states that this reduction is required for four reasons.
  1. Stricter application of the metric, shifting from a flexible approach to a more formalised one where metric rules (e.g., trading rules, like-for-like replacement) are now being embedded in statutory BNG and must be applied more rigorously in RP3, reducing the yield of “cheap” units and making delivery more costly per unit.
  2. The removal of ‘low-hanging fruit’ in RP2 as lower-cost and easier interventions have already been delivered. Future delivery will focus on more complex or higher-value habitats, naturally reducing volumes for the same budget.
  3. The RP3 funding context creates constraints on the number of units that can be delivered, resulting in fewer BUs than in RP2.
  4. Market pressures caused by maturity in the biodiversity market. As BNG is now a statutory requirement for town and country planning (as per Town and Country Planning Act 1990) demand has increased across England, constraining the market meaning NH cannot deliver the same scale of units at previous prices <sup>30</sup>
- **Removal of 1% degradation assumption for soft estate:** NH has removed the previous uniform 1% per-year degradation assumption for its biodiversity baseline, citing a lack of evidence base.
- **Soft estate renewals funding reprioritisation:** NH has refocused its renewals spend to prioritise the increasing risk of Ash Dieback disease, with 90% of funding for Ash Dieback, 8% for other tree risk, and 2% for grassland restoration, landscape renewal, forward visibility, and wildlife housing. The reason for the reprioritisation is that condition data has improved and is indicating an increasing risk of spread of Ash Dieback disease.
- **Removal of the 2% overlay on NSIP enhancement projects:** NH has indicated that it has removed the 2% overlay and replaced it with scheme specific uplifts. We were only told of this change after we produced our draft report, we therefore have limited information on their new scheme specific uplift approach.

<sup>30</sup> RFI024

## RIS3 biodiversity funding

NH's RIS3 funding for biodiversity will come from several sources. £46m will be allocated to 'no net loss' from the National Programmes, while other improvements will be funded through other swim lanes.

Table 8 below summarises the expected biodiversity spend in RIS3. Overall, NH's cost estimates remain consistent with the interim dSBP when accounting for inflation, with one notable exception: a £29m increase in Designated Funds for landscape scale connectivity and nature-based solutions. NH tells us that the Designated Funds however are not primarily for biodiversity, instead biodiversity will be a secondary benefit.

Table 8- Breakdown of National Highways biodiversity spend between interim and 2025 dSBP

Swimlane	Interim dSBP	2025 dSBP
National Environment Programme: SSSI Improvement	£22m	£25m
National Environment Programme: Improve biodiversity and nature recovery	£37m	£46m
Soft estate renewals	£165m	£170m
Soft estate maintenance	£67m	£67m
Designated funds: Landscape scale connectivity and nature-based solutions	£135m	£164m

Source: National Highways

### 4.3. EVALUATION OF INVESTMENT PLANS IN SOFT ESTATE MAINTENANCE AND RENEWAL

#### Soft estate maintenance

NH included £67m to cover maintenance of the soft estate at the interim dSBP stage. NH estimates that 80% of the soft estate is in 'maintainable' condition, meaning that "*the plots are performing their intended function, e.g., species-rich grassland has not developed into scrub and can be maintained in line with standard*".<sup>31</sup> Maintenance funding is expected to maintain these areas so that there will be no loss of biodiversity.

For the 20% of the soft estate not in maintainable condition (or more than 20% if NH does not deliver planned maintenance activities), NH previously applied a 1% degradation assumption, which required it to deliver sufficient new/improved habitat each year to prevent biodiversity loss. NH has since removed the 1% deterioration assumption. It stated that the assumption was contentious through RP2 and not well evidenced, with some use as an incentive for NH to keep the existing soft estate in a maintainable condition, recognising the 'natural degradation' of biodiversity.<sup>32</sup> We continue to support the removal of the 1% assumption, as it lacked sufficient evidential basis and risked weakening the link between achieving the target and delivering genuine biodiversity improvements on NH's own land.

NH states that its estimation of maintenance need is built bottom-up, combining asset inventory data with maintenance activity unit rates, using contracted Maintenance and Renewals (M&R) rates within each region. NH's methodology and modelling approach has not changed between the interim dSBP and dSBP. Changes to inputs have also been limited to data updates i.e. asset inventory, historic annual expenditure, and maintenance activity unit rates.

<sup>31</sup> RFI029 response

<sup>32</sup> Discussed in the NH workshop on 8<sup>th</sup> September.

## Soft estate renewals

In the interim dSBP, a new soft estate renewals line was included with the aim of reverting soft estate assets that are not currently in maintainable condition back into their intended maintainable condition. Interventions were targeted at assets in the worst condition category and where they offer the greatest reduction in safety risk. In its 2025 dSBP, NH has changed its approach, reallocating soft estate renewals funding to focus on the increasing risk of Ash Dieback spread.

NH has stated that the £170m of funding will be split as follows:

- 90% to address the risk of Ash Dieback spread.
- 8% for other tree risk particularly where the canopy is large.
- 2% for grassland restoration schemes, landscape renewal, forward visibility, and wildlife housing.<sup>33</sup>

The reason for the reprioritisation of funds is improvements in condition data, which indicate an increasing risk associated with the spread of the disease. NH is of the view that there is insufficient funding to cover all condition five assets that have currently been identified as high-risk and has therefore had to prioritise its approach in line with available funding.<sup>34</sup> NH views Ash Dieback as rapidly escalating safety risk across the SRN. It also states that where removal of ash takes place, a combination of replanting and natural regeneration, as appropriate, will be implemented to support long-term ecological recovery and resilience.<sup>35</sup>

NH provided its expected unit rates in the table below. These have been derived using known M&R and Strategic Development Fund (SDF) rates from recently delivered schemes.

*Table 9: Unit rates for renewals activities*

Renewal activity	Unit	Unit rate
<b>Individual trees (Ash Dieback)</b>	Number	£312
<b>Individual trees</b>	Number	£256
<b>Grassland restoration and scrub</b>	M <sup>2</sup>	£3.418
<b>Species rich grassland</b>	M <sup>2</sup>	£5.056
Additional access arrangements, specialist equipment and traffic management would be an extra over.		

*Source: National Highways, RFI022*

NH has provided a limited evidence base through this process for the shift in soft estate renewals expenditure to focus almost exclusively on Ash Dieback disease. While NH has said that it has undertaken surveys which indicate the disease is spreading across the network, creating a significant risk of tree failure into live traffic if unmanaged, it has not shared those results.

NH is also currently working on a consistent approach nationally to tree inspection and tree risk creating a bespoke version of THREATS (Tree Hazard: Risk Evaluation and Treatment System) and it is also working to establish a national digital hazardous tree layer in NH's EnvS database, through which the spread and treatment of Ash Die

<sup>33</sup> RFI022

<sup>34</sup> NH tree condition grades: 1 = very good/vigorous (healthy structure, no significant defects); 2 = good (minor defects only); 3 = fair (noticeable defects or reduced vitality—remedial works advisable); 4 = poor (significant defects/decline—priority works to make safe or reduce/remove); 5 = very poor/dead/dangerous (urgent action to make safe or remove). Note: grades describe condition, not risk.

<sup>35</sup> RFI077

Back can be tracked. These advancements should be able to provide a clearer picture going forward of the scale of the problem.

## **Regional accountability for biodiversity outcomes**

Soft estate maintenance costs are estimated by combining asset inventory data with the maintenance activities set out in the GM701 standard and the regional M&R contract unit rates. Operations regions manage the needs across the asset base both proactively and reactively. NH explained that maintenance expenditure for individual asset classes or asset types (including soft estate) may vary from the asset class estimates produced for the RIS3 dSBP case. However, NH states it will seek to keep the network safe within the constraints of the overall RIS3 maintenance settlement by taking a risk-based approach to maintenance across all assets.

For renewals, NH has used the updated condition surveys for Ash Dieback and applied expert judgement as to the activities required to manage this risk during RIS3. This strategic analysis has been reviewed and validated with Operations and NH's Soft Estate Virtual Team. Regional teams are in the process of developing their annual plans and these will be finalised as part of the ongoing internal annual business planning process. These are not yet complete but are set to fit within the overall dSBP expenditure envelope.<sup>36</sup>

NH stated that schemes will be collated and managed using the Capital Delivery Management Tool. It holds regular national quarterly environmental tier 3 group meetings with all regional Environmental Managers, and bi-weekly virtual team meetings within each region to discuss, manage, and monitor work. NH is working to develop a consistent approach for tree inspection and data collation to track the spread of Ash Dieback.<sup>37</sup>

However, we have not received or had visibility of NH's regional delivery pipeline and have received limited information on the governance processes and structures underpinning regional delivery. As the programme develops, the ORR should seek further clarity on the regional delivery pipeline and processes for regional delivery.

### **4.4. ASSESSMENT OF INCORPORATION OF BIODIVERSITY MITIGATION AND NET GAIN REQUIREMENTS INTO ENHANCEMENT PROJECT COST ESTIMATES AND A REVIEW OF THE CREDIBILITY OF A 10% BNG ON NSIPs**

For Major Projects with a start of works in RIS3, NH previously indicated it intended to apply a 2% cost overlay to account for the potential costs to achieve the 10% BNG. The recent government consultation proposes the regulations only apply to NSIPs with a DCO granted after May 2026, although the consultation response has not yet been published.<sup>38</sup> The number of BUs that will be delivered in each Major Project is not yet known. In an RFI response, NH has told us that a budget uplift for the 10% BNG "*in line with market rates has been built into the RP3 major projects programme.*"<sup>39</sup>

NH has indicated that the 2% overlay has been removed since the interim dSBP and replaced with scheme specific uplifts. NH provided examples of these specific uplifts, detailing the following associated biodiversity costs:

- A46 Coventry Junctions: £0.6m
- A52 Nottingham Junctions: £0.4m.
- A46 Newark Bypass: £4m.
- M60/M62/M66 Simister: £1.7m.

We have no information on how these four scheme uplifts have been estimated. We are also unable to confirm whether the 2% overlay has been fully removed across all the Major Projects with start dates in RIS3 as we only

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<sup>36</sup> RFI077

<sup>37</sup> RFI022

<sup>38</sup> DEFRA (2025) *Consultation on Biodiversity Net Gain for Nationally Significant Infrastructure Projects*, available at [link](#)

<sup>39</sup> RFI029

have the four examples provided. If it has been fully removed, we think in principle this is positive progress. NH however should provide evidence to the ORR of the scheme specific biodiversity costs it has allocated to enhancement schemes, and the accompanying methodology prior to the start of RIS3.

We reiterate the hypothetical analysis undertaken for our 2024 report on the interim dSBP to illustrate the point that the 2% overlay implied an opportunity for efficiency. We used three RP2 Major Project schemes and calculated the unit cost of a BU using the 2% cost overlay. The resulting illustrative unit costs varied significantly and are well above both the benchmark of £33,000 (set by NH in the dSBP) at £55,692 per BU.

*Table 10: Hypothetical illustration of the 2% cost overlay using RP2 Major Projects*

Major project	Cost estimate (£m)	2% of the cost estimate (£m)	Biodiversity units	Cost per BU (£000)
<b>A428 Black Cat – Caxton Gibbet</b>	1,036	20.7	404	51,238
<b>A66 NTP</b>	1,595	32.0	839	38,141
<b>A417 Air Balloon</b>	540	10.8	139	77,698
<b>Average</b>				<b>55,692</b>

Source: CEPA analysis

To illustrate the magnitude of the 2% cost overlay on enhancement projects, Table 11 outlines the total expenditure associated with the five enhancement schemes with a “start of works” date in RIS3. Enhancement project cost estimates total £2,158m for these five schemes over RIS3. Based on this assumption, the 2% cost overlay applied to enhancement projects results in a £43.16m of funding for RIS3 to account for biodiversity. We have added the two scheme specific uplifts provided by NH to further illustrate the difference between the 2% uplift previously assumed and the scheme specific uplifts now being used by NH. In both cases, these uplifts are lower than the 2% previously used by NH, but the difference is notable particularly for the M60/M62/M66 Simister Island scheme where the uplift accounts for 0.08% of the total enhancement scheme.

*Table 11: Calculation of 2% cost overlay to account for biodiversity costs on enhancements schemes in RIS3*

Enhancement scheme with SoW in RIS3	RIS3 expenditure (£m)	2% cost overlay (£m)	Scheme specific uplifts (£m) <sup>40</sup>
<b>M54-M6 Link Road</b>	420	8.40	-
<b>A38 Derby Junctions</b>	357	7.14	-
<b>M60/M62 /M66 Simister Island</b>	218	4.36	1.7
<b>A66 Northern Trans-Pennine</b>	950	19.00	-
<b>A46 Newark Bypass</b>	213	4.26	4.0
<b>Total</b>	<b>2,158</b>	<b>43.16</b>	-

Source: CEPA analysis

<sup>40</sup> Provided by NH on 25<sup>th</sup> November 2025 in response to issued draft report.

Experience from the construction and housing sectors suggests that the most effective approach to delivering biodiversity improvements is to integrate them during the design phase. This allows for more robust, bottom-up costing and ensures that biodiversity outcomes are embedded from the outset. Box 1 below provides examples of this approach:

### Box 1 - Examples of bottom-up costing from other sectors

#### Howes Green

The Howes Green eco-community in Cambridge, designed with nature as a central organising principle, is projected to achieve a 92% biodiversity net gain through interconnected meadows, wetlands, and tree corridors planned from inception rather than retrofitted into leftover spaces.<sup>41</sup> The Greater Cambridge Shared Planning Service explicitly recommends this “design-first” approach, noting that biodiversity objectives are most effectively achieved “through the form and design of development in the first instance” rather than through later additions or off-site compensation.<sup>42</sup>

#### Queen Elizabeth Olympic Park

The development of the Queen Elizabeth Olympic Park (formerly the 2012 Olympic site) is another example which demonstrates how embedding biodiversity objectives from the outset can yield superior environmental, economic and delivery-efficiency outcomes. The masterplan required the creation of some 45 hectares of new wildlife habitat, including wet woodland, reed beds, species-rich grassland and connected green corridors, and integrated these ecological goals into the earliest design and planning phases.<sup>43</sup> From an efficiency and cost perspective, linking the remediation, landscaping and infrastructure design meant that habitat creation and flood-mitigation features could be delivered in parallel with the major works rather than added retroactively, avoiding later costly interventions and securing long-term management from day one, and providing additional environmental benefits.<sup>44</sup>

#### HS2

HS2 developed its own biodiversity metric (an adaptation of Defra’s pilot metric) together with Natural England to quantify losses and gains in “biodiversity units” based on habitat type, condition and risk multipliers. This metric has been used iteratively during route selection and design to influence alignment choices and the location of cuttings/embankments, and shape the design and extent of habitat creation, woodland planting, grassland corridors and water bodies alongside the route. HS2 is a clear example where biodiversity accounting and the mitigation hierarchy were embedded from feasibility / option appraisal onwards in a transport context.<sup>45</sup>

<sup>41</sup> JTP Architect (2023) *Green light given to a nature-inspired community at Howes Green*. Available at [link](#)

<sup>42</sup> Greater Cambridge Shared Planning (2024). *Biodiversity Net Gain Pre-Application Advice Note*. Available at [link](#)

<sup>43</sup> “London 2012: Park life” – ISEP Global article.

<sup>44</sup> RICS Construction Journal. “Queen Elizabeth Olympic Park: creating a sustainable community”. Available at [link](#)

<sup>45</sup> HS2 (2019) *No net loss in biodiversity calculation – methodology and results*. Available at [link](#)

NH did not provide BUs by individual enhancement project; instead, it reported the units delivered under wider RIS2 enhancement programmes, as shown in Table 12 below.

Table 12: Delivery of BUs in enhancement programmes in RIS2

Enhancement programme	Units delivered	Total cost (£)	Cost/unit (£)
OD Enhancement Programme	2,101	25,719,905	12,243
MP Enhancement Programme	1,067	15,474,469	14,500
LTC Enhancement Programme	150	859,987	5,746
SES - Network for Nature (RP2 Units)	2,316	7,214,870	3,115
SES - Meadow Makers	706	8,023,811	11,363
<b>Total</b>	<b>6,340</b>	<b>57,293,012</b>	<b>9,037</b>

Source: National Highways (RFI077)

Based on £14,118m planned enhancement spend in RIS2 and £57m spent on BUs, a simple calculation suggests that BUs equalled 0.4% of total enhancement spend in the period.<sup>46</sup> This is a significantly lower value than the 2% overlay which NH applied to major project enhancement schemes.

NH stated the following key learning points on enhancement biodiversity costs. First, there is a need for a mechanism to avoid cost escalations mid project; and second there is a need for long-term management and monitoring process and a clear understanding of whole life costs at the planning stage of a project. We are of the view that NH should implement this learning into enhancements and biodiversity projects and demonstrate to the ORR how this was done.

#### **4.5. ADVICE ON RP3 BIODIVERSITY KPI - METRIC ROBUSTNESS, AMBITION VS. DELIVERABILITY AND WHETHER A METRIC LINKED TO THE CONDITION OF THE EXISTING ESTATE CAN BE ROBUSTLY MEASURED**

In the 2024 interim dSBP, NH had adopted a benchmark cost of £33,000 per BU for the improvements delivered as part of the ‘no net loss’ target.<sup>47</sup> This was close to double the average cost per BU in RP2 (£17,040), based on 68 projects funded through the Designated Funds.<sup>48</sup> In its 2025 dSBP, NH notes that the RIS3 benchmark cost is a mid-point between the market value reported by Defra and the highest Local Planning Authority tariff it has experienced, which can be high in areas with a significant amount of development.<sup>49</sup>

To counter rising costs, NH plans to improve efficiency by delivering BUs through third-party organisations with which it already has established relationships. For example, under the Networks for Nature programme, the Wildlife Trust has committed to keeping the cost per BU aligned with the actual cost of works delivered, rather than charging market rates.<sup>50</sup> During RP2, using third-party delivery resulted in significantly lower unit costs—typically between £5,000 and £15,000 per BU—compared to the average cost of £20,000 to £23,000 per BU for other delivery methods.<sup>51</sup> By continuing this approach, NH expects the average cost in its current pipeline to align with

<sup>46</sup> DfT (2020) *Road Investment Strategy 2: 2020–2025*, available at [link](#)

<sup>47</sup> National Highways (2024), *Draft Strategic Business Plan: Section C: Investment Plan Analysis*. (p.114)

<sup>48</sup> RFI059 response (2024)

<sup>49</sup> National Highways (2024), *Draft Strategic Business Plan: Section C: Investment Plan Analysis*. (p.114)

<sup>50</sup> RFI142 (2024)

<sup>51</sup> National Highways (2024), *Draft Strategic Business Plan: Section C: Investment Plan Analysis*. (p.114)

the £20,000 to £23,000 per BU range, which is substantially less than the approximate £40,000 per BU seen in the open market. NH considers this a major value-for-money improvement.

Overall, NH’s cost estimate of £23,000<sup>52</sup> per BU is broadly in line with external benchmarks from the Defra 2021 Nationally Significant Infrastructure Assessment Report, though it sits at the higher end of the range. In contrast, the October 2025 BNG Pricing Report has a range of £25,465 to £203,861 across all regions in England and intervention types. The upper bound of this range applies to watercourses and the lower bound to hedgerows, demonstrating that BU prices are heavily dependent on the type of intervention.<sup>53</sup> Using these more recent costs, NH’s BU cost estimate lies below the lower end of the range. Absent a granular pipeline of interventions by type for RP3, we cannot assess how NH’s **overall** cost estimate compares with benchmarks.

Table 13 however compares NH’s average procurement prices from current tenders with the costs in the BNG Pricing Report. This comparison suggests that NH is securing biodiversity units at prices significantly below the benchmarks for BUs in England.

Table 13: Comparison of NH procured BU pricing and external benchmarks

Habitat type	NH procurement price (£k, mid-point of range)	BNG pricing report October 2025 (£k, mid-point of range) <sup>54</sup>	Variance
Heathland / scrub	13	29	-55%
Individual trees	24	30	-19%
Woodland & forest	17	36	-52%
Hedgerows	13.5	27	-51%
Wood-pasture and parkland	31	No comparator benchmark	-
Higher cost interventions *	56.5	43 **	32%

Source: RFI025 from NH, and Biodiversity Units UK

\* i.e. Lowland mixed deciduous woodland & replacement of felled woodland.

\*\* This figure is based on only “mixed deciduous woodland” because there is no comparator for “replacement of felled woodland” in the Biodiversity Units UK dataset.

Nevertheless, NH’s unit cost estimate represents a substantial increase compared to average costs in RP2. Considering however the rising demand for BUs, the cost variations associated with different habitat types, and NH’s individual habitat type cost comparison with benchmarks, NH’s unit cost assumptions for the biodiversity KPI appear reasonable, if not low.

NH explained that there is a difference in the number of BUs that are deliverable under two maintenance scenarios – 15 and 30 years. It states that 2,000 BUs are deliverable under the 30-year maintenance scenario (full metric compliance) at £23,000 per unit. However, under the 15-year maintenance scenario (working towards full metric compliance) more units are deliverable, at 2,800 at a lower unit cost of ~£17,000 per BU.<sup>55</sup> The implication of this is that under the 30-year maintenance schedule for which the biodiversity KPI uses, the cost of BUs is increased. As a result, comparisons with earlier road periods may no longer represent a like-for-like assessment and could undermine the cost comparability between periods.

<sup>52</sup> £46 million fund allocated for the KPI and NH’s target of 2,000 BUs, the average unit cost is £23,000

<sup>53</sup> Biodiversity Units UK (2025) *The BNG Report Pricing & Key Insights October 2025*. Available [online](#).

<sup>54</sup> Biodiversity Units UK (2025) *The BNG Report Pricing & Key Insights October 2025*. Available [online](#).

<sup>55</sup> RFI010

We have evaluated NH’s readiness to implement its biodiversity programme from the first year of RIS3 onwards, considering both risks associated with delivery and the overall deliverability of the planned projects. In terms of ‘readiness’. We looked for an emerging pipeline of projects, i.e., named schemes with proposed designs and costings, as well as progress negotiating with stakeholders where doing so is necessary.

At this stage of the planning cycle for RIS3, and with the experience that NH has in delivering biodiversity improvements, we would have expected to see mature plans and a pipeline of projects for RIS3. The updated proposed delivery profile increases from 100 BUs in year 1 to 600 in year 3, this is a change from the flat delivery profile outlined in the interim dSBP throughout RIS3 but more closely aligns to the back-ended spending profile of the Environment National Programmes and Designated Funds (See Table 14).

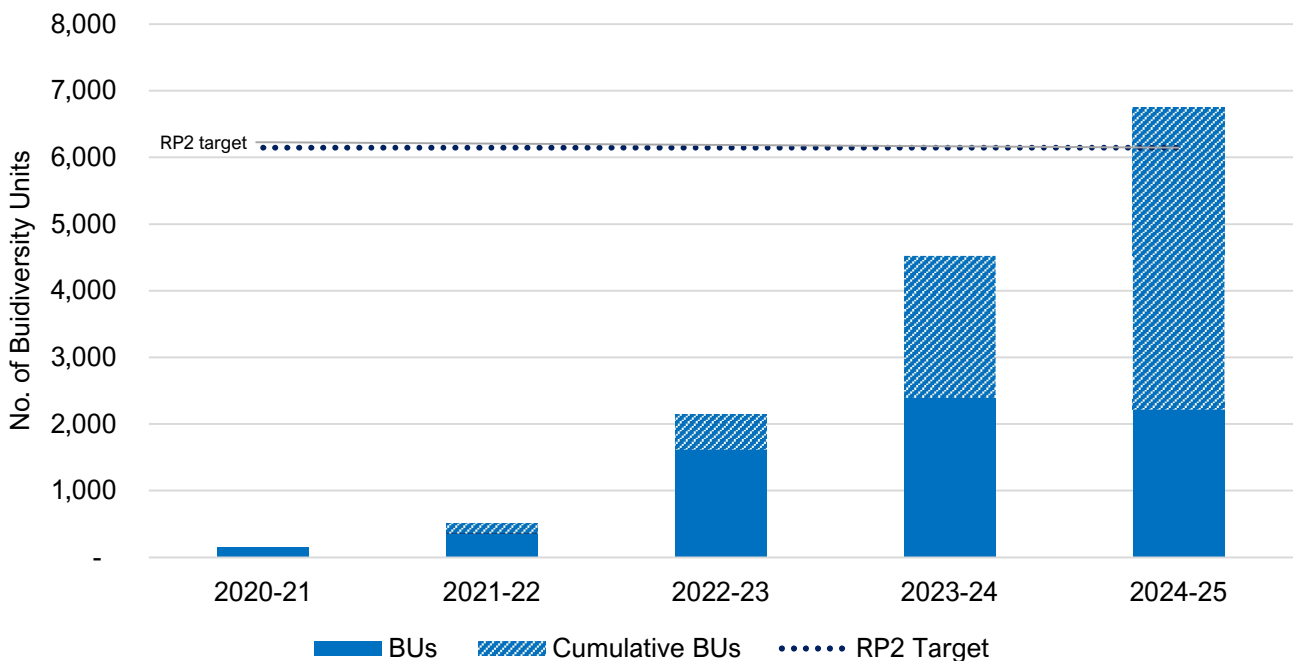
Table 14: Comparison of BU delivery profiles

Bus	Year 1	Year 2	Year 3	Year 4	Year 5	Total
2025 dSBP	100	300	500	500	600	2,000
interim dSBP	500	500	500	500	500	2,500
RIS2	147	354	1,622	2,389	2,221	6,733

Source: National Highways

NH now has 10 years’ experience of delivering biodiversity improvements, which is reflected in its RP2 performance. Its’ delivery of BUs exceeded its RP2 target, as seen in Figure 3 below, albeit after intervention from the ORR mid-way through the Road Period.<sup>56</sup> NH delivered more BUs in Years 4 and 5 of RP2 than in any previous reporting year. This demonstrates that it can take time for NH to generate delivery momentum, and the ORR should be aware that momentum may need to be regained given the lack of an existing plan.

Figure 3: Analysis of RP2 delivery of biodiversity units



Source: CEPA analysis of National Highways

<sup>56</sup> National Highways (2024), *Performance Specification Update to dSBP*, 2<sup>nd</sup> April 2024 (Section A.6).

Going into RIS3, NH has completed feasibility studies for 850 BUs (primarily in off-site locations), which it states will make up the first tranche of delivery. Feasibility studies and options-to-buy are being procured via the Social Enterprise DPS which offers a compliant, pre-procured supplier base with a track record in BUs and embeds social value that lowers costs compared with open-market. We would expect the remaining assessments to be completed promptly to avoid bunching delivery toward the end of RIS3 and ensure deliverability. NH has not provided a schedule of the remaining feasibility assessments. It has also only provided an indicative programme of BU delivery. NH has revised the delivery target downwards to 2,000 BUs citing that this reflects stricter application of the metric; new statutory requirements, no more 'low hanging fruit'; funding constraints; and market pressures. The 2,000 BUs required to deliver no net loss on the existing soft estate is significantly lower than the RP2 biodiversity target of 5,540 BUs (but which included BUs delivered by Major Projects in connection with the RIS2 enhancement portfolio). We conclude that overall programme readiness has improved from the interim dSBP, but given NH now does this routinely, we would have expected plans to be more advanced.

#### **4.6. GAPS AND RISKS IN NH'S AMBITION TO ACHIEVE A NET POSITIVE OUTCOME FOR NATURE**

Diversified delivery has benefits, but to achieve a successful outcome there is a need to agree plans, land access agreements, maintenance regimes and funding contributions. NH told us that it actively manages these risks and that "third-party delivery is a deliberate and proven strategy" which provides flexibility, and lower unit costs.<sup>57</sup> If managed poorly, dependence on third parties could result in NH falling behind its planned delivery profile early in RIS3. Although delivery on the operational estate may be less complex, we are similarly concerned that early progress will be limited due to the current lack of named schemes and feasibility studies. Additionally, given the focus on maintenance of the existing soft estate, we suggest that the ORR will need to consider how it monitors NH's delivery of environmental maintenance activities going forward, to ensure that biodiversity is not being lost.

In addition to the risks related to this outcome area, we have evaluated the deliverability of the KPI target. Based on current RIS2 performance and the lower RIS3 target, the RIS3 target should be achievable. However, NH has not yet provided a clear sequencing plan that demonstrates how and when individual biodiversity projects will be delivered in line with the overall targets. Without this information, there remains a degree of uncertainty around whether the programme is achievable within the current Road Period.

#### **4.7. DOES NH HAVE AN INTEGRATED BIODIVERSITY STRATEGY?**

The ORR asked us test whether NH has an integrated biodiversity strategy across:

- Maintenance and renewal of the existing soft estate.
- Mitigation of biodiversity impacts from enhancement projects.
- Biodiversity-related activities delivered through Designated Funds and National Programmes.

Although NH has built up ten years of experience and learning, there is still scope for further integrating its biodiversity strategy into core operations. Elements of the overall strategy would benefit from greater coherence, and fuller embedding within core delivery and decision-making processes. In contrast, the construction industry has demonstrated that meaningful biodiversity outcomes can often be achieved at low or negligible additional cost by adapting standard practices. We examined three case studies - the Howes Green eco-community in Cambridge, the Queen Elizabeth Olympic Park in London; and HS2 - where biodiversity objectives were embedded at the earliest stages of design and planning, demonstrating how early integration of ecological goals can deliver significant environmental enhancements and economic efficiencies. Given NH's extensive experience in this field,

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<sup>57</sup> Comments provided by NH in response to the November 2025 draft report issued to NH.

we consider that it should continue to refine its approach and incorporate best practices from others, thereby maximising both the efficiency and environmental impact of the biodiversity programme.

NH's overall biodiversity programme does show signs of maturity, particularly in relation to planning, governance, and operational readiness, which provides a stronger foundation for future delivery. There is evidence of improved structure and oversight compared to earlier stages of the programme. However, while the programme's delivery readiness has improved, the overall ambition has reduced. Specifically, the total number of BUs planned for delivery has been scaled back, and the 1% loss assumption previously applied to soft estate maintenance has been removed. Despite this reduction in scope, the total estimated costs of the programme have remained broadly consistent with earlier forecasts, when adjusted for inflation. This is notable given that the assumed cost per BU has increased, which would typically suggest a need for either additional funding or a reduced programme scale. NH has opted for the latter and stated that costs per BU have increased as a result of quotes from third party delivery bodies, also stating that previous costs were based on RP2.

Of additional concern is NH's continued focus on delivering biodiversity improvements almost exclusively through off-network sites. While off-site delivery can be a practical means to secure biodiversity gains, over-reliance on this approach raises several strategic and operational questions. One particular question is whether off-site biodiversity enhancements - particularly when detached from the highway network - should remain within NH's funding envelope, or whether they could be more appropriately delivered in partnership with or delegated to other organisations.

Furthermore, NH has not yet provided a clear sequencing plan that demonstrates how and when individual biodiversity projects will be delivered in line with the overall targets. Without this information, there remains a degree of uncertainty around whether the programme is achievable within the current Road Period.

#### 4.8. SUMMARY OF CEPA'S ASSESSMENT OF THE BIODIVERSITY PLAN

Table 15: Assessment of National Highways biodiversity plans

Issue	Progress	Importance	Rationale
Approach to cost estimation	AMBER	MEDIUM	<p>NH's cost estimate for 'no net loss' is within a reasonable range, albeit towards the top-end of external ranges for NSIP project biodiversity costs based on a 2021 Defra report. More recent benchmarks however do suggest that NH's BU cost estimate is below the lower end of the range. Nevertheless this represents a substantial increase compared to average costs in RP2. On balance, considering the rising demand for BUs and the cost variations associated with different habitat types, NH's cost assumptions for the biodiversity KPI appear reasonable.</p> <p>On Major Projects, NH should provide evidence to the ORR of the scheme specific biodiversity costs it has allocated to enhancement schemes, and the accompanying methodology prior to the start of RIS3. ORR may wish to monitor NH's progress of costing the gains from Major Projects.</p>
Readiness and deliverability	AMBER	HIGH	<p>NH has produced an indicative pipeline of projects, and began carrying out feasibility assessments. We conclude that NH should have made further progress in preparation for delivering its biodiversity programme. The programme should be deliverable due to previous experience and the reduction in ambition.</p>
Achievability of KPIs and risks	AMBER	MEDIUM	<p>The KPI is achievable, subject to the risks identified above. The ORR should note that we have identified risks related to working with partners which (whilst essential to deliver better VfM and better outcomes) if not addressed early may lead to a deterioration in NH's readiness to deliver.</p>
Integration of biodiversity strategy	Amber	HIGH	<p>Despite several years of experience and learning, and BNG represented in statutory requirements and the KPI, there are still concerns about the coherence of NH's overall biodiversity strategy. In our view, it is not yet fully embedded within core delivery and decision-making processes. If not addressed, this may lead to inefficiencies and reduction in the impact of the biodiversity programme.</p>

Source: CEPA analysis of National Highways provided data

## 5. NOISE

### Key findings

- NH has considerable experience in delivering this programme and will have learned lessons from previous road periods. However, how this learning has been applied is unclear. The information provided to date is high-level, and in some places, contradictory and unsubstantiated.
- In the absence of a long-term delivery plan, it is unclear how NH intends to deliver against this metric or whether its approach is efficient.
- NH's delivery ambition has materially reduced compared to previous periods, while estimated costs per household have increased without sufficient substantiation.
- Due to budget constraints, the delivery plan for RP3 will not encompass all identified schemes and will include some degree of prioritisation, based on the outcomes of feasibility studies. NH has stated that schemes providing the best outcomes to meet the KPI target in RP3 will be prioritised.

### 5.1. SCOPE OF ASSESSMENT FOR NOISE

We were asked to:

- Review NH's noise mitigation plans and cost estimates and consider whether they compare favourably with benchmark evidence from RP1 and RP2.
- Consider how NH is prioritising its investment to treat the worst-affected households and deliver mitigation in a cost-effective manner.

### 5.2. CONTEXT

Noise from vehicles using the SRN can affect the quality of life, health, and wellbeing of those who live close to the network. Although NH does not have a legal obligation to reduce noise, it has a role in delivering the UK Government's 25 Year Environment Plan and 2019 Noise Action Plan.<sup>58</sup> DfT has also set a strategic objective for NH to achieve through RIS3 to improve environmental outcomes.

Over the past two Road Periods, NH has been working to mitigate the impact of noise on local communities through its Designated Funds. It has several levers at its disposal:

- **Road surfaces:** The main source of noise on high-speed roads is the pavement-tyre interface. NH can address this by installing lower-noise asphalt surfaces when it resurfaces sections of the network.<sup>59</sup>
- **Noise barriers:** These are fences which block or extend the path length of noise between the SRN and nearby properties. They can be effective at reducing noise in areas close to the SRN but are less effective the further away the area is from the carriageway.
- **Noise insulation:** Where it would be uneconomic (because of the low number of affected properties) or practically infeasible to install noise barriers, NH offers to insulate houses with upgrades to windows and ventilation systems, which can reduce the exposure to noise inside the property.

<sup>58</sup> Section C - Refreshed - Analysis - Value for Money - C.1 Investment Plan Analysis, p. 128.

<sup>59</sup> Resurfacing only counts towards the Noise KPI when it is funded via the Designated Funds (now the National Programme), where it is used to bring forward resurfacing to provide earlier benefits to local communities.

Over the course of RP1, NH mitigated 1,174 Noise Important Areas (NIAs), exceeding the target of 1,150.<sup>60</sup> Mitigation was predominantly delivered through double glazing of affected properties, with the remainder delivered through resurfacing, noise barriers, bypasses or a combination of these approaches.<sup>61</sup>

For RP2, the reporting metric was amended to focus on the number of households mitigated within NIAs. NH mitigated 7,776 households, exceeding its target of 7,500 households, through a combination of resurfacing, noise barriers and upgrading insulation at affected properties.<sup>62</sup> NH told us that mitigation in RP2 was predominantly delivered through resurfacing, with the remainder delivered through noise barriers and noise insulation.<sup>63</sup>

### **5.3. INTERIM DSBP FINDINGS ON NOISE**

NH had considerable experience in delivering noise mitigation, but it was behind on delivery against its RP2 target of mitigating 7,500 households: 38% of the target needed to be mitigated in the final 18 months of RP2. NH should at that stage have understood the risks and challenges to the programme, but it had not yet developed a detailed plan for RIS3 which meant that any specific challenges had not yet been documented as far as we could see. The lack of a more detailed plan meant that we concluded there was not a clear line of sight between the plan, its cost, and impacts on the target.

Cost estimation relied on a top-down figure of £7,200 per household, which was built on experience from RP1 and RP2. NH noted that the programme would be limited by the budget allocation, resulting in a proposed RIS3 target of 6,250 households. We thought there was scope to apply a modest efficiency challenge, which would have facilitated NH to deliver a higher target of around 6,430.

Given NH's experience in noise reduction, it should have aimed to plan a continuous programme (as opposed to treating each five-year period in isolation) and considered synergies with other funding areas. It was hard to understand why there was no detailed plan for ongoing activity that NH had been working on for many years. Its approach might have led to back-end loading of the RIS3 programme, with a risk that work would not be completed on time—a challenge facing NH at that time. Better planning would also have presented the opportunity to coordinate noise works with wider resurfacing works in the RIS. Accordingly, we recommended that the ORR do more to ensure that NH could hit the ground running at the start of RIS3.

### **5.4. APPROACH TO NOISE MITIGATION FOR RP3**

For RIS3, NH is proposing that noise reduction will be funded via a dedicated National Programme rather than through use of Designated Funds. NH has explained that in RIS3 National Programmes will be used to target legal or corporate requirements, with Designated Funds focused on other activities.

In the 2024 interim dSBP, NH proposed £45 million to mitigate 6,250 households in NIAs throughout RP3. This target was also proposed as a performance indicator (PI) rather than a KPI as in previous road periods.

In the 2025 dSBP, this has been amended to £52 million to mitigate noise for 4,500 – 5,500 households in NIAs through RP3.<sup>64</sup> This target is now proposed to remain a KPI, as in previous road periods.

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<sup>60</sup> Noise Important Areas are designated by Defra based on strategic noise mapping exercises to identify residential locations along the SRN with the highest levels of noise.

<sup>61</sup> Mitigation through double glazing and resurfacing accounted for 66% and 25% respectively. ORR (2020), *Annual Assessment of Highways England End of Road Period 1 2015-2020*, 21 July, p. 23.

<sup>62</sup> ORR (2025), *Annual Assessment of National Highways' performance: End of the second road period April 2020 to March 2025*, 17 July, p. 27.

<sup>63</sup> Approximately 56% were mitigated through resurfacing, with the remaining households mitigated through either noise barriers or noise insulation. We note this captures most households mitigated during RP2 (7,583), but not all. See RFI 47.

<sup>64</sup> Section E - Refreshed - Performance - Annex 5. Being Environmentally Responsible, p.4 and RFI 1079.

In the 2025 dSBP, NH also says it will minimise air, water, and noise pollution through more cross-cutting environmental approaches. This includes working collaboratively to research and develop innovative design solutions and mitigation techniques, such as changes to construction materials, and identifying opportunities to improve noise mitigation through a strategic urban study.<sup>65</sup> In relation to noise specific activities, NH indicated that the 26/27 programme has not yet been finalised through current business planning round/exercise, but contains proposed noise research projects on road surface noise measurement and innovative design of noise barriers and bunds. In addition, NH is represented on the board of [Noise Network Plus](#), a cross-university academic group project focused on reducing noise and its impacts. The noise network will fund new ideas, the closing of evidence gaps and feasibility studies for future projects.<sup>66</sup>

## **5.5. HOW DO NH'S NOISE MITIGATION PLANS AND COST ESTIMATES COMPARE WITH BENCHMARK EVIDENCE FROM RP1 AND RP2?**

### **Reduced ambition for noise mitigation across road periods**

Compared to RP2, NH has steadily reduced its ambition to mitigate noise for households relative to the level of funding allocated.

In RP2, NH had a KPI target to mitigate noise for 7,500 households across NIAs. Funding was allocated from the Environment Designated Fund. While Designated Funds were not ringfenced for individual projects, £45 million was indicatively allocated to noise mitigation activities, based on an average cost per household of £6,000.<sup>67</sup> NH reported spending £54.4 million on noise mitigation across 7,583 households by March 2024, with an average cost per household of £7,175.<sup>68</sup> NH also advised that the remaining noise mitigation projects in RP2 were mainly resurfacing schemes, which could cause the average cost to fall slightly.<sup>69</sup>

In the 2024 interim dSBP, NH proposed to mitigate noise for 6,250 households across NIAs in RP3. Funding of £45 million was allocated through the Environment National Programmes. This budget reflected the same indicative funding allocation from RP2, but raised the estimated cost per household by 20% to £7,200. This increase reflected an adjustment for inflation and the need to enable challenging NIAs to be mitigated in RP3.<sup>70</sup> This also aligned with the actual cost per household in RP2.

In the 2025 dSBP, NH now proposes to mitigate noise for 4,500-5,500 households<sup>71</sup> across NIAs in RP3. Funding of £52 million has been allocated, reflecting a reduction in the number of households mitigated alongside a widening of the cost target.<sup>72</sup> NH stated that the average cost per household in RIS3 has been estimated at £10,000, materially higher than the estimated cost in the interim dSBP and RP2 estimates.<sup>73</sup>

The changes in targets and estimated costs of noise mitigation activities between RP2 and RP3 are summarised in Table 16.

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<sup>65</sup> Section A .7 - dSBP 2024 - Environmental Sustainability and Carbon, p. 31, 34 and 36.

<sup>66</sup> RFI079

<sup>67</sup> See RFI 27.

<sup>68</sup> National Highways also told us that the average cost increases to £11,431 if resurfacing is excluded – see response to RFI 47. The average cost of resurfacing is estimated to be £3,827, with resurfacing capturing 56% of all noise mitigation activities.

<sup>69</sup> This would not be a material change to the average cost estimated. If all remaining mitigation projects were resurfacing schemes, at £3,827 per household this would reduce the average cost across RP2 from £7,175 to £7,092.

<sup>70</sup> See RFI 27 and 28. Cumulative CPI inflation between 2020 and 2024 is equal to 20% so this adjustment is consistent with outturn inflation.

<sup>71</sup> RFI079

<sup>72</sup> See RFI 47. Based on RFI 1079, the upper bound of this target is 5,500 although this varies across the dSBP documents with both 5,000 and 5,500 used.

<sup>73</sup> See RFI 17.

Table 16: Summary of noise mitigation activities

	RIS2	2024 interim dSBP	2025 dSBP
<b>Target</b>	KPI: 7,500 HHs in NIAs	PI: 6,250 HHs in NIAs	KPI: 4,500-5,500 HHs in NIAs
<b>Budget</b>	£45 million (allocated) £54.4 million (actual)	£45 million	£52 million
<b>Average cost/ HH</b>	£6,000 (estimated) £7,175 (actual)	£7,200	£10,000

Source: CEPA analysis of dSBP documents. Budget and average cost for RIS2 captures actual costs of mitigation across 7,583 households. Budget is likely understated and average cost is likely overstated.

### Evaluation of National Highways' approach to cost estimation

NHs approach to cost estimation is unclear in the 2025 dSBP. £52 million is being sought to address noise mitigation for 4,500-5,500 households. This would equate to an average cost per household of between £9,454 and £11,555. NH has advised that an average cost per household of £10,000 was used to inform the cost allocation in the 2025 dSBP<sup>74</sup> This is materially higher than cost estimates in the 2024 interim dSBP of £7,200.

A cost estimate per household does not appear in the dSBP – only one reference to average costs has been identified, £7,200 - £8,000 per household, used to inform value for money in the investment plan.<sup>75</sup> This range does not align with the £10,000 figure provided by NH, or the £52 million budget. In RFI079, NH confirmed that its expected cost per household of around £9,500 to £11,500 based on historic costs uplifted.<sup>76</sup>

NH considers that the average cost per household in RIS3 will be higher than previous RIS periods due to recent periods of high inflation and greater complexity to mitigate the remaining households compared to previous RIS periods.<sup>77 78</sup> However, no evidence is provided to explain the jump from £7,200 to £10,000 or £9,500 to £11,500. For the interim dSBP, NH assumed the cost per household in RIS3 would be £7,200, 20% higher than in RIS2, due to inflation and to enable more challenging NIAs to be mitigated. This aligned with outrun inflation between 2020 and 2024. A cost estimate of £10,000 is almost 40% higher than what was estimated for the interim dSBP and 67% higher than estimates from RP2. Between April 2020 and October 2025, cumulative inflation has totalled 28%.<sup>79</sup> In RFI079, NH has reiterated that the increased costs are a result of (i) high levels of inflation during RIS2; and less challenging NIAs having been mitigated in RIS1 and RIS2, so NIAs requiring mitigation in RIS3 are likely to be more challenging and cost more to mitigate. However, no evidence to support this assumption is provided, for example a pipeline of more complex NIAs compared to previous periods.

In our previous report, we considered there was scope for NH to apply a modest efficiency challenge (0.5% efficiency saving per year), drawing on learning from implementing a noise mitigation programme in previous road periods. No efficiency reduction has been included in the 2025 dSBP. NH has indicated that efficiency in this area of the plan, is 'measured efficiency' proven by case studies etc and not embedded in post efficient funding. NH has since confirmed that efficiencies can be identified on a project-by-project basis, and we suggest that the ORR has regard to this in its monitoring.

<sup>74</sup> See RFI17.

<sup>75</sup> Section C - Refreshed - Analysis - Value for Money - C.1 Investment Plan Analysis, p. 130.

<sup>76</sup> RFI079

<sup>77</sup> Section E - Refreshed - Performance - Annex 5. Being Environmentally Responsible, p. 17.

<sup>78</sup> Section A.2 - Change Form - National Programmes, p. 5.

<sup>79</sup> Office for National Statistics (2025), *CPI Index*, released 22 October 2025. Calculation between April 2020 and August 2025.

The documentation does not identify how NH's other noise mitigation activities<sup>80</sup> will be funded. NH has now clarified that these other activities are likely to be progressed using Corporate Services Non-Pay Funding (SES R&D) programme which is funded on a yearly basis. The extent of the funding likely to be allocated to these activities remains unclear.

## **Evaluation of National Highways' plans**

NH does not have a documented delivery plan for the 2024 interim dSBP and this remains the case in the 2025 dSBP. NH has advised that the work to develop the RP3 noise mitigation programme is ongoing and scheduled for completion by the end of RP2.<sup>81</sup> The interim settlement with NH requires the production of a noise mitigation plan for implementation in RIS3.<sup>82</sup>

NH previously told us that it expects to deliver a broadly similar approach in RIS3 as it has carried out in RIS2, with a broadly similar mix of resurfacing, barrier and insulation schemes. We understand this approach predominantly used resurfacing, as roughly 56% of households were mitigated through this activity.<sup>83</sup> The 2025 dSBP does not expand on this, stating that delivery will include a combination of resurfacing works, installation of noise barriers, and a targeted noise insulation scheme.<sup>84</sup>

Given the ongoing requirement for noise mitigation activities, we consider that NH should adopt longer-term planning of these activities which can consider the potential synergies between closely related programmes, such as noise mitigation and resurfacing through the renewals budget. NH points out that it does align work in period, but our view is that the plan should not be constrained by period, rather it should be long term and adjusted for available funding. This could reduce the average cost of noise mitigation per household in future Roads Periods.

### **5.6. HOW IS NH PRIORITISING ITS INVESTMENT TO TREAT THE WORST AFFECTED HOUSEHOLDS AND DELIVER MITIGATION IN A COST-EFFECTIVE MANNER?**

We understand that NH is currently conducting feasibility studies across potential NIA schemes, which will inform its delivery plan for RP3. Due to budget constraints, the delivery plan for RP3 will not encompass all identified schemes and will include some degree of prioritisation, based on the outcomes of the feasibility studies. NH has stated that schemes providing the best outcomes to meet the KPI target in RP3 will be prioritised.<sup>85</sup>

NH has indicated that potential noise insulation will prioritise NIAs with the following characteristics:

- No potential for noise barriers.
- At least 40 properties for reasons of economic efficiency.
- Prioritised by high levels of deprivation.

As NIAs themselves identify those households most affected by noise from the SRN, NH stakeholders have previously agreed that any further prioritisation by NIA based on noise levels experienced is not required.<sup>86</sup>

The documentation does not identify how NH's other noise mitigation activities will be implemented although we note NH's involvement with Noise Network Plus which will provide grants to suitable projects.

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<sup>80</sup> Section A.7 of the dSBP notes a series of other activities related to noise mitigation, including work to minimise air, water and noise pollution through more cross-cutting environmental approaches. This includes working collaboratively to research and develop innovative design solutions and mitigation techniques, such as changes to construction materials, and identifying opportunities to improve noise mitigation through a strategic urban study.

<sup>81</sup> RFI 26 response

<sup>82</sup> Section E - Refreshed - Performance - Annex 5. Being Environmentally Responsible, p. 17.

<sup>83</sup> RFI 47 response. Proportion is backed out of cost estimates provided.

<sup>84</sup> Section A.2 - Change Form - National Programmes, p. 12.

<sup>85</sup> Section A.2 - Change Form - National Programmes, p. 13.

<sup>86</sup> RFI079

NH indicated that it has a commitment to prepare a mitigation plan in the interim year, and it indicated this is on track. In RFI079, it describes current progress as follows<sup>87</sup>:

- 12 potential barrier sites have been identified and initial value for money assessments are in progress. Suitable barriers will be taken forward for feasibility assessments.
- In RIS3, resurfacing schemes will 'upgrade' maintenance resurfacing schemes, to maximise efficiency. NH is currently examining the maintenance resurfacing programme to identify locations that are coincident with NIAs, to identify schemes that can be taken forward in RIS3.
- NH has updated the determination of the monetary benefits of noise insulation.

Potential noise barrier NIA mitigation locations have been initially identified with the following characteristics:

- Good prospect of a barrier providing a noise reduction.
- At least 60 properties to maximise monetary benefits.
- Good potential for buildability (e.g., sufficient space, no obstacles such as water courses etc).

Potential resurfacing locations will be identified using the maintenance resurfacing programmes as outlined above; NH is in the process of identifying the overlap between its resurfacing programme and existing NIAs.

We have not however, seen a developed plan at the present stage which means that we conclude that there are not yet clear links between costs, activities, outputs and outcomes but the steps that NH is taking should make that possible in due course. It is not clear to us why, given this is an area of significant prior experience, NH does not already have a long-term plan for NIAs that spans multiple control periods and that can be adjusted in light of RIS period funding availability. NH has advised that there are reasons for this – cost to prioritise, the potential for change in the NIA list and the potential for a new metric that could change its current prioritisation criteria. While we understand that aspects of the noise programme will change over time and that funding varies, NH is the long-term steward of the SRN, and we consider that it should have a longer planning horizon than a single five-year road period.

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<sup>87</sup> RFI079

## 6. AIR QUALITY

### Key findings

- NH has a series of obligations to ensure air quality is improved on the SRN. At the end of RP2, there were less than 20 road sections that exceeded relevant legal limits.
- At the point of the 2025 dSBP being shared, NH had two sections with mitigation measures in place, five sections with no viable measures and 12 sections with measures in development.
- Only one specific air quality project is currently in progress (Guildford – A3 footpath closure) and NH proposes no further projects for RIS3.
- NH considers its approach is appropriate based on its experience of investigating potential interventions. It advises that none of the options that it has explored present a feasible means of removing the issue on the sections remaining.
- It also advises that links in exceedance are reducing as the vehicle parc changes over time i.e. as more modern and electric vehicles replace older models. NH expects the number of links in exceedance to fall to one by the end of RIS3. On this basis NH concludes that there is no need to maintain the current KPI.
- We tend to agree with that analysis but note that NH may still need to work with local authorities on specific local air quality issues to which the SRN contributes. The DfT and the ORR should consider how this obligation should be monitored, if at all.

### 6.1. SCOPE OF ASSESSMENT FOR AIR QUALITY

We were asked to consider whether NH has provided sufficient evidence to support its approach of proposing no new air quality measures in RIS3 on the basis that further intervention options for Air Quality Management Areas (AQMA) have been exhausted.

### 6.2. CONTEXT

Air quality standards apply to the SRN in the form of prescribed limit values for PM<sub>10</sub>, NO<sub>2</sub> and PM<sub>2.5</sub>.<sup>88 89</sup> These include:

- NO<sub>2</sub> – a maximum annual mean concentration of no more than 40µg/m<sup>3</sup>; and an hourly mean concentration of 200µg/m<sup>3</sup> not to be exceeded more than 18 times a year.
- PM<sub>10</sub> – a maximum annual mean concentration of no more than 40µg/m<sup>3</sup>; and a 24 hour mean concentration of 50µg/m<sup>3</sup> not to be exceeded more than 35 times a year.
- PM<sub>2.5</sub> – a maximum annual mean concentration of 20µg/m<sup>3</sup>.

The UK has enacted legally binding targets to reduce PM<sub>2.5</sub>, including an annual mean concentration below 12µg/m<sup>3</sup> by 2028 and below 10µg/m<sup>3</sup> by 2040.<sup>90</sup> The Government identified 128<sup>91</sup> sections of the SRN that may exceed legal limits for NO<sub>2</sub>; in RP2, NH had a KPI target to bring NO<sub>2</sub> levels on these sections into legal compliance in the shortest time possible.

Under the Environment Act 2021, NH is designated a Relevant Public Authority and must act as an Air Quality Partner within the Local Air Quality Management (LAQM) framework.<sup>92</sup> This creates a duty to co-operate with local

<sup>88</sup> The Air Quality Standards Regulations 2010.

<sup>89</sup> The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020.

<sup>90</sup> Defra (2023) “Environmental Improvement Plan 2023: First revision of the 25 Year Environment Plan”.

<sup>91</sup> NH has indicated the final number was 143 sections of the SRN.

<sup>92</sup> Defra (August 2022) “Package of measures introduced to improve air quality” available at [gov.uk](https://www.gov.uk).

authorities, share evidence, and propose and deliver dated actions in Air Quality Action Plans where the SRN contributes to exceedances. In parallel, DfT has set a strategic objective in RIS3 for NH to improve environmental outcomes, which reinforces NH's obligation to plan, fund and implement practical measures that support compliance and reduce exposure on and around the SRN. In RIS3, NH also stated that as a designated Air Quality Partner, it would fulfil its obligation to support the meeting of a binding target to reduce NO<sub>2</sub> below a limit value of 40 micrograms by 2030 on the SRN.<sup>93</sup>

There is a requirement for NH to plan and deliver activities that improve air quality on the SRN, reflecting not only legal limits and statutory duties but also RIS3's strategic objectives and partnership commitments under LAQM.

### **6.3. INTERIM dSBP FINDINGS ON AIR QUALITY**

We acknowledged that NH had limited ability to control air quality; however, we noted that in the past it had explored options such as speed trials and a scheme to facilitate take-up of electric vans through grants. We understood that the former did not currently form a part of the RP3 programme.

NH proposed to allocate £11m from the Environment Designated Funds to air quality in RP3. There was no programme of planned schemes in place yet, as NH explicitly planned to react to requests from others, e.g., local stakeholders. A key issue was the potential for projects to be poor value. There was a need to be mindful when assessing options, which NH acknowledged.

We thought that the objective of air quality funding should have been confirmed given NH's limited ability to deliver meaningful progress towards the UK's air quality targets.

### **6.4. APPROACH TO AIR QUALITY FOR RP3**

In the 2025 dSBP no specific funding is allocated to Air Quality improvement both because exceedances are reducing as the vehicle parc changes over time i.e. as more modern and electric vehicles replace older models. On this basis NH concludes that there is no need to allocate even the £11m it had assigned in the interim dSBP.

NH has proposed that it will continue monitoring air quality through its network of air quality stations and work collaboratively on cross-cutting approaches to minimise air, water and noise pollution.<sup>94,95</sup> NH will retain a legal obligation to work with local authorities where the SRN contributes to local exceedances but it advises that engagement with them to date suggests that activity here will be limited for similar reasons.

As a result of the changing context, NH concludes that the Air Quality KPI is no longer necessary.

### **6.5. ASSESSMENT OF NH'S APPROACH**

#### **Significant progress has and will be achieved without further intervention**

The air quality KPI that applied in previous road periods was to meet the annual mean NO<sub>2</sub> limit value in the shortest timescales possible. Across RP1 and RP2, NH reviewed 143 links that were identified as potentially above legal limit values. NH's latest monitoring for 2024 shows a very significant reduction in the number of exceedances.<sup>96</sup> NH anticipates that, without intervention, the number of links above the NO<sub>2</sub> limit value will reduce to one by the end of RP3. This reduction is largely the result of external factors; the move to cleaner vehicles.<sup>97</sup> As NH is not proposing

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<sup>93</sup> Section C - Refreshed - Analysis - Value for Money - C.1 Investment Plan Analysis, p. 128.

<sup>94</sup> Section A.7 - dSBP 2024 - Environmental Sustainability and Carbon, p. 31.

<sup>95</sup> Section A.7 - dSBP 2024 - Environmental Sustainability and Carbon, p. 35.

<sup>96</sup> Section E - Refreshed - Performance - Annex 5. Being Environmentally Responsible, p. 20.

<sup>97</sup> Section E - Refreshed - Performance - Annex 5. Being Environmentally Responsible, p. 5.

to include funding or specific activities in RP3, it does not consider a KPI to be proportionate.<sup>98</sup> We tend to agree with this view.

### **Available interventions are ineffective and provide poor value for money**

After conducting trials such as reduced speed limits, barriers and measures to keep people away from pollution, NH has concluded there are limited opportunities to reduce exposure to air pollution through its interventions.<sup>99</sup> Accordingly it does not allocate funding to such activities. Given the reducing number of exceedances, we tend to agree that this is a sensible approach.

### **Interventions relating to PM<sub>2.5</sub> are outside NH's direct control**

NH also considers that there are limited opportunities to reduce road traffic PM<sub>2.5</sub> emissions, which are primarily non-exhaust emissions relating to brake and tyre wear as this is not within its control. PM<sub>2.5</sub> concentrations on the SRN are also showing levels below the 2040 target.<sup>100</sup>

We agree that it is appropriate for NH to have minimal activities in this space, given the SRN is already within targeted compliance and further interventions are outside its direct control.

## **6.6. SUMMARY**

Overall, we accept that NH has limited levers over air quality and that PM<sub>2.5</sub> interventions largely sit outside its direct control. We also agree that it is sensible to discontinue the current air quality KPI. We consider that NH should ensure that it is able to meet its obligation to work with local authorities should the need arise. The DfT and the ORR may wish to ask NH to disclose any such requests and its response to them.

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<sup>98</sup> Section E - Refreshed - Performance - Annex 5. Being Environmentally Responsible, p. 5.

<sup>99</sup> Section E - Refreshed - Performance - Annex 5. Being Environmentally Responsible, p. 4.

<sup>100</sup> Section E - Refreshed - Performance - Annex 5. Being Environmentally Responsible, p. 5.



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