ICE submission to the Transport Committee inquiry on strategic road investment

February 2023

Introduction

Established in 1818 and with over 95,000 members worldwide, the Institution of Civil Engineers exists to deliver insights on infrastructure for societal benefit, using the professional engineering knowledge of our global membership.

This response has been informed by ICE Fellows.

It focuses on three key strategic questions the Committee has outlined relating to strategic road investment.

For more information, please contact:

Laura Cunliffe-Hall, Policy Manager, ICE
policy@ice.org.uk

Summary

The intention behind the Road Investment Strategy (RIS) was to set the direction of travel for the Strategic Road Network (SRN) and ensure the successful delivery of faster and more efficient projects through a long-term programme with stable funding and a spending plan.[1]

With 4,400 miles of road to maintain and upgrade, ensuring that the right capacity is available, and downtime for roadworks is reduced, is critical to the economy. Congestion negatively affects productivity, the environment, and quality of life. Entire sectors and communities depend on it for continued prosperity, meaning that upgrading and maintaining the network is essential.

As identified in ICE's previous paper on RIS1, RIS1 was developed with swift progression from concept to commencement – this approach has filtered into both RIS2 and RIS3,[2] meaning that the successive road investment strategies have struggled due to the lack of a robust, long-term programme approach. RIS1 over-promised and was a victim of too many project announcements, whereas RIS2 incorporated certain lessons from RIS1 but did not have the long-term flexibility to adapt to the changing environment projects were required to operate within.

Of the 112 RIS1 schemes, 12 had been dropped, 55 completed, and 45 rolled forward to RIS2. Only five new schemes were proposed: the Lower Thames Crossing, the A66 Northern Trans-Pennine upgrade, the A46 Newark Bypass, the A417 Air Balloon dualling (Gloucestershire), and the M60 / M62 / M66 Simister Island junction upgrade north of Manchester.[3]

[1] Department for Transport (2014) Road Investment Strategy: 2015 to 2020
[2] ICE (2020) Civil engineering insights on the UK's first Road Investment Strategy
[3] BDB Pitmans (2021) Road Investment Strategy 2 survives legal challenge

Each RIS has therefore focused on the delivery of a specific set of projects. However, the long-term duration of development stages in the course of a project lifecycle has led to projects being pushed back into future RIS periods and highlights why a longer-term lens and framework is needed than the five-year period spanning each RIS.

This is emblematic of a wider structural issue within National Highways' organisation, which is too project-focused with insufficient holistic planning to provide contingency at a programme level.

National Highways requires additional resource to enable the successful delivery of the roads investment programme. Currently, the organisation requires further experience and competence to support the delivery of big projects. This is emblematic of a wider skills shortage within the construction and infrastructure sector which means competition for talent is high.[4]

ICE is ready to support the Committee and National Highways in addressing these challenges and moving towards a more robust and mature programme to ensure the successful delivery of vital road infrastructure.

What lessons from RIS2 need to be incorporated into RIS3 to ensure it is achievable and delivers on policy objectives?

Lessons applied from both RIS1 and RIS2 must be incorporated into RIS3 – primarily focusing on what an achievable and deliverable programme looks like.

The next road investment period should see the prioritisation of efforts to improve delivery, preparation, and planning. Insufficient focus on these aspects of the strategy has negatively impacted the delivery of both RIS1 and RIS2.[5]

RIS2 was impacted by three of the following factors:

1.) Smart motorways

Smart motorways provided a particularly key lesson from RIS2 – safety considerations prevented the programme from delivering on RIS targets and prevented the new standard of motorway that had been intended when RIS2 was being developed.[6] In January 2022 government announced it would pause the roll-out of 11 all lane running (ALR) smart motorway schemes yet to start work until five years of safety data has been collected.[7]

Lack of contingency and in-depth forward planning to create more contingency within RIS2 meant that once the pause took place, there were not sufficient schemes that could be accelerated and take the place of the smart motorways due to the rigid programming approach of National Highways.

Asset and maintenance activity must become a priority in RIS3 to ensure the lessons learned from smart motorways are incorporated.

Immediate and future road operations improvements can be made through the application of innovation and technology in areas such as road traffic optimisation, carbon emissions reduction, recovery services planning, and accurate risk prediction. Prioritisation of innovation and technology improving this activity will ensure greater success in RIS3 and deliver objectives relating to safety, network performance, and making the SRN a technology-enabled network.[8]

2.) Inflexibility of the PFI funding model

The PFI funding model was axed in the October 2018 Budget which meant that National Highways lost £4.9m allocated for developing PFI business plans for the A303 Stonehenge and Lower Thames Crossing, according to accounts ending for

[4] Balfour Beatty (2017) The Road to Growth: Skills for the Highways Sector
[5] ICE (2020) Civil engineering insights on the UK's first Road Investment Strategy
[6] ORR (2022) Annual Assessment of National Highways' performance April 2021 to March 2022
[7] Ibid.
[8] National Highways (2021) Developing the third Road Investment Strategy

the financial year ending on 31 March 2019.[9] This also negatively impacted the delivery of both of these projects that were key to RIS2 – better protections must be put in place to ensure projects are not similarly affected by policy changes to funding in the future.

However, the inflexibility of PFI as a funding model had already impacted the delivery of projects within RIS2 due to the complex and long-term nature of projects in conjunction with the increasing costs and charges associated with PFI projects.[10]

RIS3 requires more flexible funding to ensure project costs do not continue to escalate, particularly when accompanied by delays in the consenting system for DCOs.

3.) DCO delays

In RIS2, National Highways has a total of 33 schemes that require DCOs. In the ORR's 2020-21 assessment, the risk that delayed DCO planning consents posed to National Highways' start of work commitments for its large and significant enhancement schemes was emphasized,[11] and was also flagged in its 2021-22 assessment as posing an ongoing problem affecting the delivery of the road investment programme.

The way RIS2 was envisioned (again partly due to the swift initiation of RIS1 without sufficient long-term strategic overview), meant that once DCO delays threatened the programme, there was limited contingency to pivot to focus on other priorities. The consequences of this were that when issues arose, the programme would be subject to lengthy pauses.

In other words, if plan A was paused, there would not be a plan B or C to fall back on, therefore DCO delays stalled the programme and prevented the certainty that the civil engineering sector requires from a strong and reliable pipeline of projects coming through. As previously highlighted, this reinforces the problem with the conception of the RIS being conceived as a series of projects rather than a realistic programme.

Safety or environmental challenges that delayed projects within RIS2 also became the subject of widespread national and media scrutiny. With funding and budgets increasingly stretched and "little financial headroom" available,[12] there is an urgent need for the spend and scale of projects to be proportionately costed from the outset and to provide contingency when legal costs, consultancy, and supply chain costs continue to spiral during pauses due to DCO delays.

Looking ahead to RIS3

RIS3 is also likely to be heavily affected by current inflationary pressures. A realistic programme with flexibility to cushion these pressures will go some way to mitigating the challenging economic circumstances and delivering the outcomes promised within the RIS, rather than the overpromising that marked both previous RIS programmes.

A thorough review of project planning must improve processes in the future, ensuring that the impacts of Brexit and the Covid-19 pandemic are properly assessed and considered. Current project planning within the RIS is too high-level in the early stages. This adds further costs to estimates and needs to be reviewed and improved upon.

Digital tools allow us to design in greater detail at the early stages of projects and must be implemented and used to greater effect within RIS3. From a productivity viewpoint, more could be done at an earlier stage in the project lifecycle on surety with design cost and fix to prevent projects from dragging on for years, frustrating teams and stakeholders.

Projects that have been at the Stage 0 point and have been planned for almost a decade have now been delayed well into the RIS4 period. The level of projects required needs a focus on delivery for more than two RIS periods and will take 30 to 40 years, and will continue to face delays. To mitigate the negative impact of these delays, a longer-term and more

[9] HMT (2018) Budget 2018: Documents
[10] Commons Library (2018) Goodbye PFI
[11] ORR (2021) Annual Assessment of Highways England's Performance April 2020 to March 2021
[12] Transport Committee (2023) Oral evidence session: Strategic road investment

detailed design process is needed, which will provide a positive and cost-efficient improvement within future RIS programmes.

Whether the Government's current and forthcoming roads investment programme is meeting the current and future needs of consumers and business

Currently, the RIS programme is not meeting the needs of consumers and businesses, whether within project catchment areas, or more widely. This must be addressed within RIS3.

Many projects within the RIS will require key investment to provide an economic stimulus benefitting both businesses and members of the public, however, this is not necessarily always articulated clearly by National Highways and by extension, the government.

RIS3 must deliver more benefits on the ground for communities impacted by projects and expectation management must be carried out more effectively through the ways projects are communicated to audiences. Limiting misconceptions around projects and highlighting the benefits of projects will be significant – otherwise public discourse can shift and add a greater level of risk to the consenting process or construction programme of projects and create further delays. For example, road investment is often seen as a 'bad investment' from an environmental perspective and mistrust can worsen if consumers and businesses feel misled by unconvincing 'greenwashing'.

The issues with inaccuracies predicting the spend required for RIS3 and the curtailed delivery of projects means that there will likely be a scaling back of projects for RIS4 that will have at least a 5-10 year impact on consumers and businesses. The lesson is therefore clear that projects need an accurate level of spend to be predicted from the outset to ensure the needs of consumers and businesses are met.

Currently, the restrictions of project benefits and small-scale reactions from project teams mean that there is a needs gap between what stakeholders expect and what they receive. Within RIS3, the big southern projects with ongoing asset maintenance upgrades have not applied these lessons learned from RIS1 and RIS2 and have continued to generate issues around expectation management.

When it comes to expectation, there is also a gap between policy development and lived experiences of the SRN for road users – the travel pattern changes expected as a result of the COVID-19 pandemic have failed to shift, and we have not yet experienced the expected increase in the EV fleet and members of the public with increasingly stretched finances in a cost of living crisis would struggle financially to afford to buy an EV or charging facilities. The current and forthcoming roads investment programme must take the realistic needs of all users into account, with lessons needing to be learned at a systems level rather than a project to project around making future roads and improvements fit for purpose for communities.

There is a gap that must be addressed between the high-level strategic ambitions of the government and lived experiences of users regarding congestion and affordability of vehicular and public transport.

Moreover, there must be more emphasis placed on the coherence of the SRN from the perspective of the user. There needs to be a greater understanding of how users access and understand it, as much of the network is used for 'hop on and hop off' short trips and they see roads as functional pieces of infrastructure, rather than understanding why specific roads are or aren't part of the SRN.

National Highways and government also need to focus on improving their engagement with businesses concerned with the logistical impacts of projects, particularly with key stakeholder groups such as LEPs, chambers of commerce, and organisations like the FSB and CBI. The needs of users and businesses are considered too late in the lifecycle of project development, often once a route has already been designed, with the voice of businesses needing to be heard earlier in the process of major schemes such as the A66. Otherwise, users and businesses involved too late in the project lifecycle can feel that their needs are secondary rather than primary in the delivery of projects.

More investment in forthcoming RIS programmes is required, rather than diminishing returns compared to RIS1 and RIS2, to ensure projects are 'shovel ready' at the end of 2030. Otherwise, the expertise and competence required for successful delivery will be transferred over to competing projects and some projects in areas that need better transport links will continue to be left behind.

ICE's work on this has highlighted that a more consistent portfolio approach would better satisfy the needs of consumers and businesses,[13] delivering projects together rather than as multiple individual projects.[14]

While this approach maintains some flexibility around poor-value projects, the long-term benefit of individual projects is undermined by others not going ahead.

Whether the Government's roads investment programme aligns with other policy priorities, such as decarbonisation, levelling up, productivity, and growth

There is a lack of alignment between the roads investment programme and other key policy priorities that must be better integrated into the development of future programmes. Better whole-life, social and environmental value should be integrated into National Highways' development of projects.

Unlocking infrastructure is one of the key components to accelerate the pace of change and help bridge regional divides and ensure policies like levelling up are successfully delivered. However, there must be a clearer alignment between levelling up, net zero, and the roads investment programme.

National Highways previously have been almost 'apologetic' in how key road schemes are communicated to the public. Rather than telling a false environmental story where projects are more vulnerable, projects should also focus on telling key social and economic stories, instead of over-focusing on the environment to their detriment. Lessons can be learned from HS2's narrative, which has been proactive around minimizing environmental impact but also telling a wider story around regeneration, construction, and generating jobs for young people.

As identified by the Road Investment Scrutiny Panel earlier this year, there must be a demonstration of the consistent and competent application of carbon valuation in appraisal to ensure that decisions on future road investment are in step with the net zero transition.[15] Social, cultural, and environmental value needs to be better accounted for in the built environment, especially as climate change becomes an increasingly important factor in long-term maintenance and whole-life costs.[16] National Highways also has differing dates for specific net zero goals which can generate mixed messaging both internally and externally, with corporate emissions estimated to reach net zero by 2030, maintenance and construction by 2040, and road user emissions by 2050.[17]

The role of EVs in decarbonization is also key and must be a transition led by National Highways. The road investment programme must focus on questions such as: how can National Highways provide the SRN with inductive loop charging design facilities to accelerate decarbonisation from the position the SRN is currently in? And how can we make this tangible for road users and bring them on the journey from where they are now? This story has not yet been told in RIS1 and RIS2.

At a programme level, objectives must be set to challenge the programme on how decarbonization, levelling up and productivity targets will be achieved through delivery before initiation, with specific resource assigned to addressing these

---

[13] National Audit Office (2019) Improving the A303 between Amesbury and Berwick Down
[14] ICE (2020) Civil engineering insights on the UK's first Road Investment Strategy
[15] Road Investment Scrutiny Panel (2023). Key questions for road investment and spending. A report prepared with support from the Rees Jeffreys Road Fund, University of the West of England, January.
[16] ICE (2020) Civil engineering insights on the UK's first Road Investment Strategy
[17] National Highways (2023) Net zero roadmap

questions. This ensures questions are not then answered inconsistently on a project-by-project level with one project focusing on businesses, and another on the environment, but are instead focused holistically at a programme level.

The metrics that will ensure the programme is contributing to decarbonization and levelling up goals can be tested with local partners to ensure targets are hit in different ways and National Highways can insulate themselves against where they are most vulnerable.

Schemes have progressed rapidly in terms of environmental mitigation compared to 20 years ago, but this must be reviewed in more detail. Moving forwards, it will be important to review outcomes and if environmental and social value and productivity growth have been measured, rather than the same metrics of time and cost. This is also a lesson for the infrastructure sector as a whole. Often road investment can be seen as a last resort, but it could be the most appropriate investment for a community. Gathering this evidence and data would provide a helpful template for future projects to follow in forthcoming road investment programmes.

National Highways must also work jointly with Local Authorities to ensure regions are levelled up and address pinch points affecting investment, rather than thinking in a silo revolving around the SRN.

Within the RIS3 programme, major projects such as Stonehenge and the Lower Thames Crossing are based in the south, leaving questions around the lack of commitment to the north and midlands and the sentiment that projects are being done 'to' people and not 'for' them. MPs in the Midlands and the North have highlighted the need for 'urgent intervention' to ensure projects in their region reach completion.[18] This disparity undermines the levelling up policy and highlights the need for greater alignment.

The need for a National Transport Strategy to align the RIS programme with other policy priorities

The fragmentation of transport planning and functions between different bodies fails to produce coherently planned transport networks and services. Fragmentation undermines the achievability of long-term national priorities, such as net zero, climate resilience, and levelling up, however a National Transport Strategy for England could join up these disconnected strategies and should be developed to be outcomes-focused, place-based, and user-centered.[19] This means first understanding the needs of users – both people and freight – before developing the right infrastructure solutions, which has been identified within this submission as one of the lessons that need to be learned from previous road investment programmes.

A strategy should also identify the outcomes required from transport to meet long-term national objectives, such as net zero, climate resilience, and levelling up. This will involve considering the role of behaviour change and modal shift.

It could address how existing transport bodies, such as National Highways and Network Rail, should evolve, where the balance of investment should sit and challenge existing ways of working, such as how the road investment programmes are currently developed. It will also need to identify and address risks to delivering transport projects such as skills shortages to ensure higher levels of future productivity and growth and ensure successful delivery.

[18] Midlands Connect (2023) MPs gather in Westminster to rally behind A50/A500 road improvements
[19] ICE (2023) ICE Presidential Roundtable Summary: A national transport strategy for England – What does it look like and what value would it add?