

# Our Approach to Asset Management

May 2022



# Foreword

Asset management is our core business, it is the service we provide to maintain, operate, and enhance England's strategic road network, safely, reliably and effectively for all our customers – making a real difference. We manage 4,300 miles of road, over 20,000 structures, 12 road tunnels, as well as drainage, earthworks, and technology equipment. Our customers rely on our roads to travel 95 billion miles every year, and our work helps unlock housing and employment sites across the country.

One of our main priorities is managing these assets effectively and efficiently, to deliver the outcomes our customers and stakeholders want. By adopting an asset management approach, we can align our strategy and planning activities to create, maintain, operate, and renew all of the assets that make up our network. Asset management links all our activities, and supports our three imperatives: Safety, Customer Service, and Delivery.

Good asset management is about understanding our customers and stakeholders, identifying what they need and then using our assets effectively to deliver the right level of service. We want to understand what satisfies our customers, and what we can do to influence this. Our vision is to create an approach and establish ways of working that make sure all our asset management activity is aligned by following the key principles set out in our asset management policy. We work across the whole asset lifecycle; understanding that asset decisions we make may affect future service provision. This means that we plan and account for emerging and evolving challenges around customer expectation, climate change and new technology. This approach sets out how we make sure that the decisions we make are framed by this lifecycle perspective.

Everyone at National Highways is involved in asset management. Our ambition is to connect our activities better, so that we work together to deliver and continuously improve the service we provide. This might mean changing the way we design and build new assets, engage with our customers, clean signs, manage incidents or replace assets.

Since the beginning of the second road period we have continued on our journey to increase our asset management maturity, and our organisational objectives have developed significantly in light of Covid-19 and the government's carbon plans. This document replaces the Asset Management Strategy published in 2020 and restates our commitments and helps to continue our journey as an asset management organisation which is fully focused on safeguarding the future of one our nation's most important assets.



A handwritten signature in black ink that reads "Mike Wilson". The signature is written in a cursive style.

**Mike Wilson**

Chief Highways Engineer, National Highways

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# 1. Introduction

We connect the country – by enhancing, operating and maintaining our strategic road network across England, therefore we are an asset management company. We provide a service to our customers and communities that delivers safe, comfortable and reliable journeys which supports the economic growth of our nation. This service is delivered through well-maintained highways managed in the most efficient and resilient manner, by making best use of our resources within our available funding. Our asset management strategy was published in 2020. Since then, we have improved our organisational capability in asset management. This approach to asset management replaces this strategy, as it reflects our increased maturity and sets out how we will deliver the activities we have committed to complete for second road period (RP2). In doing so, we will continue to mature capability through building on the good progress made in the first road period (RP1) and the start of RP2.

The activities described in this approach will support our asset management policy. By promoting collaboration and consistent ways of working and as one company along with our supply chain, we will deliver our priorities.

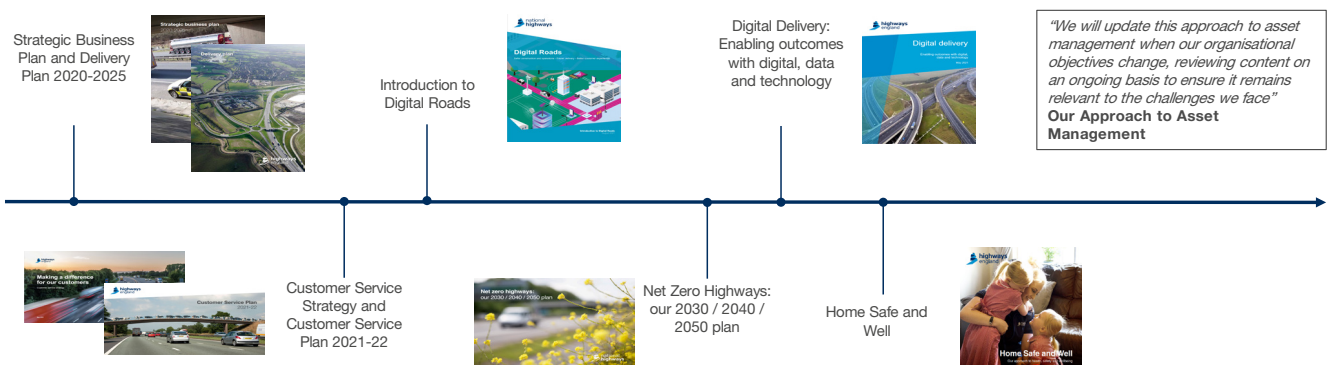
## A landscape for change

The recent pandemic has been challenging for the UK, bringing national resilience to the forefront. We recognise the increasing requirement to mitigate the impact of climate change and deliver a resilient network that secures the service our customers expect. Advances in digital technologies provide significant opportunities for us to deliver more robust decisions, maximising the use of our data and information.

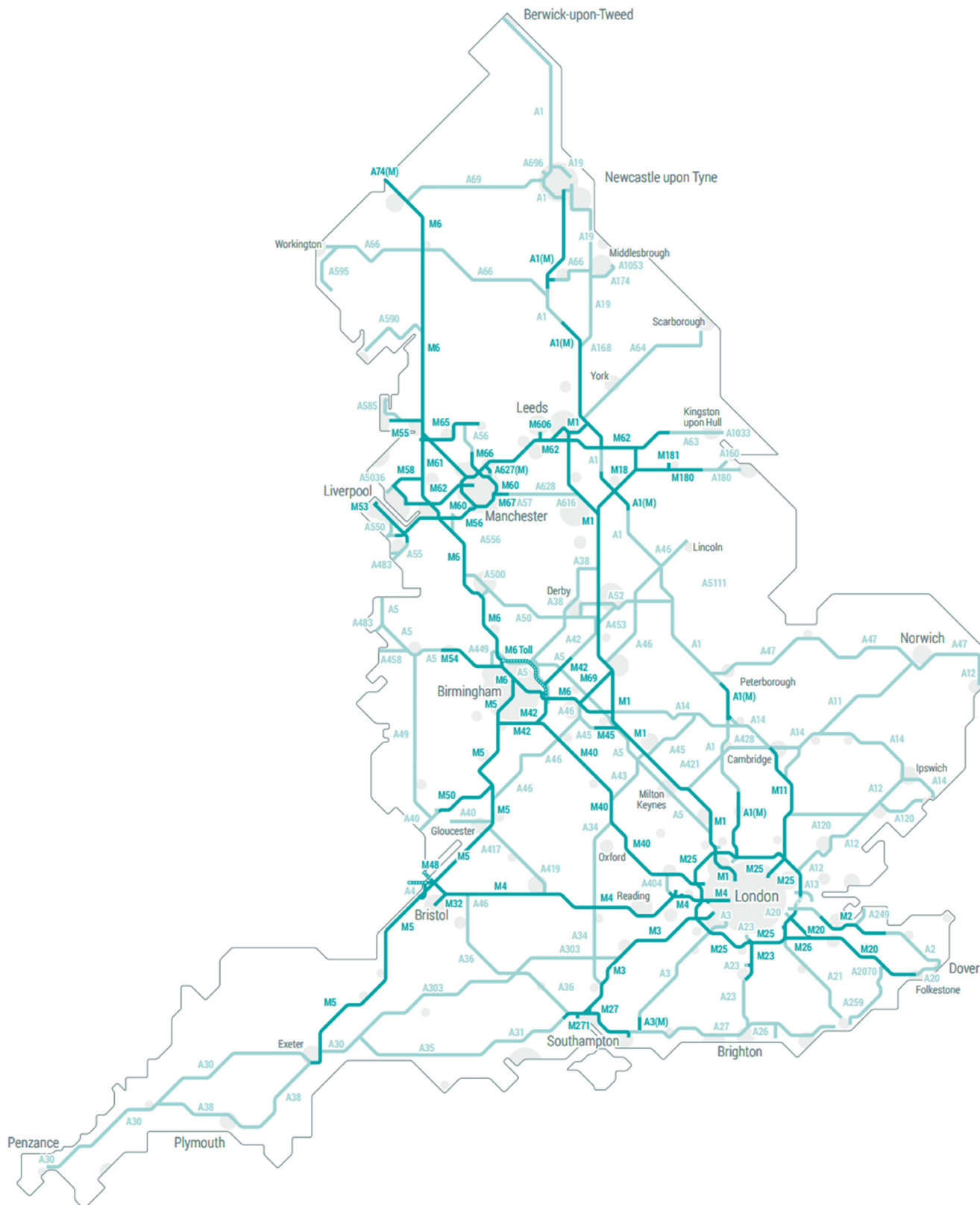
Our response to these challenges has been set out in our respective strategies; Net Zero highways, digital roads, and our customer service plan. Good asset management will support the delivery of these strategies, as well as our home safe and well vision. The emerging drivers for change are summarised below:

## Drivers for change

- **Customer expectations** – Increasing demand for the network to provide a service to customers, whilst managing disruption in line with our Licence expectations.
- **Adapting to climate change** – Increasing need to provide a service that responds to climate change through a network that is resilient to more frequent and extreme weather events, including flooding.
- **Digital technology** – Maximising the opportunities provided by digital technology to manage information and data, improving our capability to predict and manage the performance of our assets. Ageing assets – An Increasing challenge to maintain performance whilst ensuring safety of an ageing asset base.
- **Capability** – Attracting and retaining a skilled workforce to build our capability within the growing infrastructure sector.
- **Affordability** – Maximise the opportunity to deliver a whole life cost approach that includes preventative treatments within our funding constraints that will improve our long term affordability.
- **Environment** – Meeting our challenges for net zero, biodiversity, and air quality in a sustainable way.



# Our road network is essential to the growth, wellbeing and balance of the nation's economy





4,300 Miles



>20,000 Structures



12 Road tunnels



1.35 Million drainage points



12,864 Kms vehicle barriers



121,746 Lights



13,588 Kms geotechnical



70,000 Road sensors



Ancillary assets



## 2. Focusing on our customers

### During RP2 we will:

#### **Maintain the performance, integrity and resilience of our assets to deliver the service to our customers**

Our approach to asset management is centred on providing the right level of service to our customers, within the funding we are provided. Good asset management will support this by balancing our investment, performance and risks whilst maintaining the integrity and resilience of our assets to changing demands. The introduction of the new ride quality metric will enable our asset management decisions to be more focused on customer needs.

There are a number of ways described below that will support delivery of this approach. These have been developed and agreed with senior stakeholders from our company and cover the full extent of asset lifecycle.



Maximise the use of our data, asset management systems and digital technology to make intelligence led decisions

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Standardise our asset management processes, to support consistent decisions

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Developing our whole life cost approach

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Manage asset risks effectively and consistently on our network

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Enable our Net Zero commitments through our asset management decisions

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Mature our asset management capability in line with our licence requirement

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Embedding asset management

# Maximise the use of our data, asset management systems and digital technology to make intelligence led decisions



The decisions we make are informed by robust and readily accessible asset data and information. Our asset management systems provide a repository for this data and information to support the enhancement, operation and maintenance of our assets. Through the production of our asset management systems strategy and governance of our asset data, we will consolidate our systems to provide a common environment for the management of our data, minimising duplication. During RP2, we will embrace digital technology to support the delivery of our digital roads strategy.

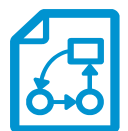
## What we are doing:

- Delivering an asset management systems strategy, enabling us to rationalise existing systems, to provide greater accessibility to data, supporting more consistent decisions.
- Delivering a supporting roadmap that details a technical and commercial plan for the existing systems landscape.
- Improving our asset data governance and establishing clear data requirements that support our asset management processes.
- Introducing predictive maintenance concepts through trialling digital technology and modernising the way we undertake our asset inspections and monitoring.

## Case Study 1

During RP2 we have set out principles in our asset management systems strategy for how we will develop our technology systems to support the company's evolving asset management activities. The strategy will inform business decisions about the procurement, replacement, renewal, and retirement of asset management systems. Our roadmap will set out specific plans for rationalising, consolidating and investing in our systems.

# Standardise our asset management processes, to support consistent decisions



We have defined responsibilities for our end-to-end asset management activities across the company. This has been agreed with our Asset Management Steering Group (AMSG). Our asset management catalogue (Figure 1) describes a suite of key documents, including our policy and approach, that will steer our implementation of a consistent approach to asset management. The catalogue has been developed to provide a clear line of sight from our strategic commitments to delivery. We are developing standardised processes that support a consistent approach to asset management activities including decision making and assurance. During RP2 we will embed the asset management catalogue alongside the governance and assurance needed to apply the respective documents and processes consistently across the company.

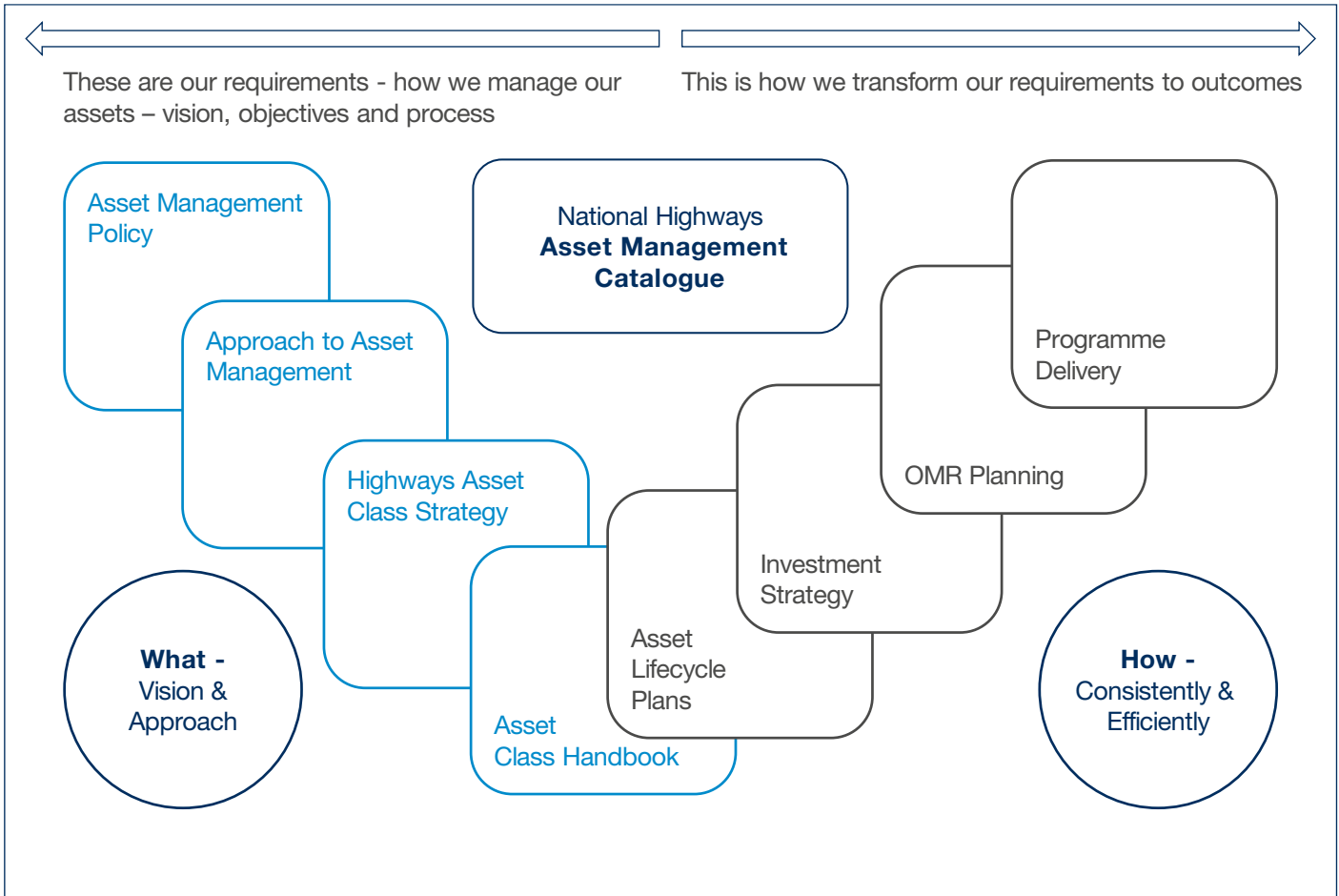
## What we are doing:

- Setting the direction for a consistent approach to asset management through standardising and maturing our guidance and processes.
- Implementing our asset class strategies, and defining specific, measurable, achievable, realistic, time bound (SMART) actions which translate our strategic objectives into tangible actions for managing our assets.
- Agree ownership of the SMART actions and ensure these are funded to support the delivery of our asset management commitments. These are funded to support the delivery of our asset management commitments.



## Case Study 2

We are producing a set of asset class strategies and handbooks for each of our key assets. Our asset class strategies set out our objectives for each of our key asset classes and the handbooks will provide guidance to enable consistent decision making across our end-to-end asset management lifecycle to support on-the-ground delivery.



**Figure 1** Our asset management catalogue

## Developing our whole life cost approach



National Highways has an established approach to whole life cost in line with our Licence requirements. Affordability challenges can constrain our ability to adopt a whole life cost solution for each scheme due to short term financial pressures. However, we recognise that maturing our whole life cost capability can minimise the impact of our maintenance and renewals costs and enable value for money decisions. Decisions based on whole life costs can reduce the number of repetitive interventions on the network and thereby minimise disruption to our customers. Targeted preventative

maintenance has an important role to play as intervening early to treat defects can prevent more costly repairs in the long term. This approach will also minimise the impact to the service caused by larger programmes of works that may result from assets that have deteriorated beyond their service lives. This was a key lesson learnt from closure of the A52 Clifton Bridge in 2020/21. We will make effective use of our available resources to provide a service to customers that demonstrates value for money, through whole life decision making.

## What we are doing:

- Developing consistent guidance for whole life decision making across all asset classes, which will be implemented across the business.
- Developing lifecycle plans aligned to our asset classes that describe our lowest whole life cost requirements.
- Providing guidance on adopting preventative maintenance where funding allows.
- Defining a clear case for RIS3 investment for Operations, Maintenance and Renewals (OMR).

### Case Study 3

Guidance on making whole life cost decisions is included in our standards and technical documentation. The benefits of whole life considerations can only be fully realised if we have a common understanding of what whole life means and a consistent approach to developing solutions for all our key assets. We have worked with the business to agree a common set of terminologies which was recognised by ORR in their deep dive into whole life cost. Our RIS3 investment case and narrative balances cost, economic benefits and impact on customers through whole life decision making.

## Manage asset risks effectively and consistently on our network



Asset failure is a corporate risk, which, together with other asset risks, must be managed effectively. This must be done in a way that minimises the impact to our customer service and environment, whilst ensuring the safety of our road users, our people and our supply chain. Our approach to managing risks should be supported by proactive measures and informed by the data we hold on our assets and their performance. This will be achieved through our intelligence led approach, using our data and information to make evidence-based decisions. During RP2 we will review our inspection and maintenance requirements to develop our risk-based approach to prioritising maintenance decisions in a consistent way.

### What we are doing:

- Developing guidance for a risk based approach to prioritising routine and cyclical maintenance activities based on their impact to delivering a safe, serviceable and sustainable service to our customers.
- Aligning how we manage our asset related risks and their mitigation measures across the company.
- Supporting the development of the investment case for RIS3 by better understanding the relationship between investment, asset risk and customer service.

### Case Study 4

A task force team was established to develop guidance for a risk based approach for routine and cyclical maintenance. It's aim was to enable funding to be directed to those areas which will have the biggest impact on the delivery of the service. Another key output was establishing affordability and performance baselines to understand the true cost of actual maintenance to deliver the service, moving from an input to outcome based approach, evidencing the investment case and informing our approach to maintenance.

# Enable our net zero commitments through our asset management decisions



National Highways has set out an ambitious programme for achieving net zero carbon emissions. Asset management has a key role to play in supporting the delivery of net zero initiatives being implemented across the company. This will be achieved through research into new materials that will enable us to adopt low carbon solutions for maintenance and renewals. Further research to support this is planned by our recently established Carbon Team. We also recognise the opportunity to include carbon as part of the asset management whole life decision making process supported through improved data and information through our digital roads strategy. Our asset class strategies will set out how this will be achieved for each asset.

## What we are doing:

- Implementing the actions in our asset class strategies to support our net zero ambition.
- Supporting the business to incorporate carbon in our approach to whole life cost decision making.
- Implementing the actions in our carbon action plan regarding low carbon material.

## Case Study 5

We have published a new specification for the use of warm mix asphalt in our road pavements. Warm mix asphalt is manufactured at temperatures typically 40°C lower than traditional hot mixtures, reducing energy consumption and CO2 emissions during its production by around 15%. The lower temperatures mean it emits less fumes that contain volatile compounds which improves safety for roadworkers. Shorter cooling times before roads are open to traffic allows longer working periods to lay the material within road closures and improves productivity. The material can also be recycled back into road pavements reducing landfill waste. Warm mix asphalt has been adopted in operations and we are already realising the benefits.

# Mature our asset management capability in line with our Licence requirement



In accordance with our Licence, our long-term approach to asset management is aligned to the principles of ISO 55000:2014 Asset Management – Overview, principles and terminology. We continue to develop our capability in accordance with its requirements and in line with international standards and good practice.

## What we are doing:

- Building a detailed benchmark of our asset management capability against the requirements of ISO 55001.
- Communicating the importance of asset management in National Highways to our stakeholders and supporting the development of capability through improved skill, processes, systems and tools.
- Investigating the benefits of seeking certification to ISO 55001.

## Case Study 6

The Asset Management Transformation Programme has been established to improve our asset management capability. This includes embedding governance within our business and establishing a roadmap for activities that will be delivered based on the original RP2 commitments. We have also conducted an initial benchmark study to understand how best to mature our asset management capability in line with international standards and good practice.

## Embedding asset management



Good practice asset management organisations have a common culture, developed through a set of shared values.

We are working to mature and transform our company to one where we share a common culture and mindset. During RP2 we will continue to develop our asset management capability. Our people should know their role and have the required skills and tools that they need to deliver effectively. A direct 'line of sight' between our delivery and our strategic objectives will allow staff to see what role they play in the asset management lifecycle. We will support them to understand why a task is important, not just when and how to do it, and to identify new and better ways of achieving our goals through a culture of continuous improvement.

### What we are doing:

- Communicating and embedding our asset management policy and approach to asset management to all parts of the company.
- Aligning our company around our single approach to asset management and the principles that guide our decision making.
- Supporting through a training programme to increase the capability of our people and improve our maturity as an asset management company.
- We are developing ways to equip our people with the asset management skills they need to fulfil their roles, in partnership with the HR led capability improvement programme.

## Case Study 7

We have updated our asset management policy to define our expectations through a series of key principles. This approach and policy has been communicated internally through various channels including the asset management transformation portal which informs colleagues across the business about asset management activities. We have a communications strategy for our transformation programme and will conduct change impact assessments to support embedding asset management across the company.



# 3. Adopting a single approach to asset management

We know that we make the best asset management decisions when we share common objectives and work together. We will create a rich culture and establish ways of working that make sure all our asset management activities are aligned by following the key principles set out in our asset management policy namely:

## Focus on customer service

Our road network delivers the right service to our customers and communities, whilst safeguarding the integrity of our assets.

## Align our strategic plans and delivery

We have published a long-term vision for our strategic road network and will deliver our programmes of works aligned to the road investment strategy and the delivery plan in line with our imperatives and organisational commitments of safety, customer, digital, and carbon.

## Empower and connect our people

We empower our people by providing them with the right capability, training, and skills. A consistent asset management culture is promoted within the company through regular communication.

## Manage our asset risk effectively

We manage our asset risks through appropriate mitigation and controls supported by our policies, standards, and governance. Intelligent use of data informs our management of risk and resilience to events that impact our network, including climate change.

## Consider the whole life of the asset

Our decisions are underpinned by whole life cost considerations. Through enhancement, operations and maintenance we consider value for money and long-term affordability on the service that our assets provide to our customers. This considers the impact that we have on the environment including meeting our Net Zero commitments.

## Make efficient use of available resources

We understand the current and future needs of our assets allowing us to make efficient, appropriate, and timely interventions to optimise cost, risk and performance.

Our people understand the role of our assets in delivering a service and feel personally responsible for their part in delivering the same. We will empower our people by providing them with the right capability and training to promote a consistency and embed good practice culture.

We deliver asset management across National Highways through linking our strategic objectives to tangible plans. Our asset class strategies support our approach to asset management and provide our people with a consistent set of objectives for each asset class to be delivered during RP2 (and beyond). Our Asset Management Transformation Programme will deliver capability improvements throughout RP2 that will allow us to achieve our ambition.



# 4. Delivering our approach

Asset management is delivered across our organisation and is intrinsic in everything we do as a company. Our people and supply chain have a role to play. Our asset management capability enables our teams to make safe, reliable, and effective decisions providing the right levels of service to our customers. Through our business as usual activity we continuously improve our capability. However, we recognise that we also need to transform the way we work to mature our approach in line with good practice and other asset intensive organisations. As such, we are maturing our capability through a number of transformative cross-cutting programmes. Our Asset Management Transformation Programme will deliver the roadmap of activities that will help us realise our ambition and ways of maturing our asset management capability. These activities have been included in our business planning process. This is how we will ensure the delivery our RP2 commitment to improve our asset management capability in line with ISO 55000. Delivering asset management is at the centre of what we do every day. Therefore asset management is one of the four core priorities for National Highways alongside carbon, digital and environment. The Asset Management Transformation Programme and our business as usual activities both have a key role in supporting the delivery of these core priorities and are also aligned to a number of other transformative programmes as described below:

## **National Highways 2025**

Our organisational plan for 2025 is a cross-cutting programme that sets out how we will deliver our strategic business plan and delivery plan for 2020-2025. It brings together under one umbrella the various change strategies and programmes across our business.

## **Operational Excellence 2025**

Operations Directorate is transforming the way they work with others. To deliver our operations more efficiently, we have created an integrated transformation programme. We will build on our strong RP1 foundation and prioritise our change activity focusing on a limited number of areas which will have the biggest positive impact on the business.

## **Major Projects Delivery Transformation**

Our Major Projects Directorate have established a transformation programme to address the development ambition throughout RP2. We will deliver safe and efficient solutions that will enhance the delivery of major enhancements by developing sustainable capabilities in digital construction and project delivery.

## **Digital Roads Strategy**

Our Digital Roads strategy outlines the way in which we will deliver a safe, integrated and connected road network through digital, data and technology, supporting our objective of maximising the use of our asset management systems and data to enable intelligent decision making.

## **Research and Innovation Strategy**

Research and innovation has a key role to play in supporting the development of our asset management capability. During RP2, we will continue to collaborate with research institutions, academia, infrastructure operators, industry, and with other road authorities, for example through the Conference of European Directors of Roads (CEDR). This activity is essential for us to continue to benefit from learning good practice from around the world. Our own breakthrough innovations usually come about from our capital programmes and projects, combined with the incremental improvements we discover in our day-to-day delivery. We will establish a process to formalise and embed 'learning from experience' and breakthrough innovations, so that adoption of change is delivered in a controlled way.

# 5. Governance

National Highways has established strong governance to provide strategic oversight and to monitor asset management delivery across the organisation. The creation of a single forum for asset management decision making has provided consistency and control to the delivery of our service, whilst providing visibility, rigour and direction in achieving our strategic ambition and objectives.

At National Highways asset management is governed by the Asset Management Steering Group (AMSG), which is a sub-group of the Executive Committee. The Asset Management Steering Group is accountable for the end-to-end asset management approach across National Highways and oversees and holds to account the change activity associated with delivering our RP2 ambition and objectives. The Asset Management Steering Group reports directly to ORR for the delivery of the Asset Management Transformation Programme and periodically reviews its own performance, constitution and terms of reference.

## Review of Our Approach to Asset Management

Our AMSG owns the approach to asset management and is responsible for delivery of our asset management commitments over RP2. This approach will guide our company and our people to ensure that the day-to-day asset management activities we deliver are aligned

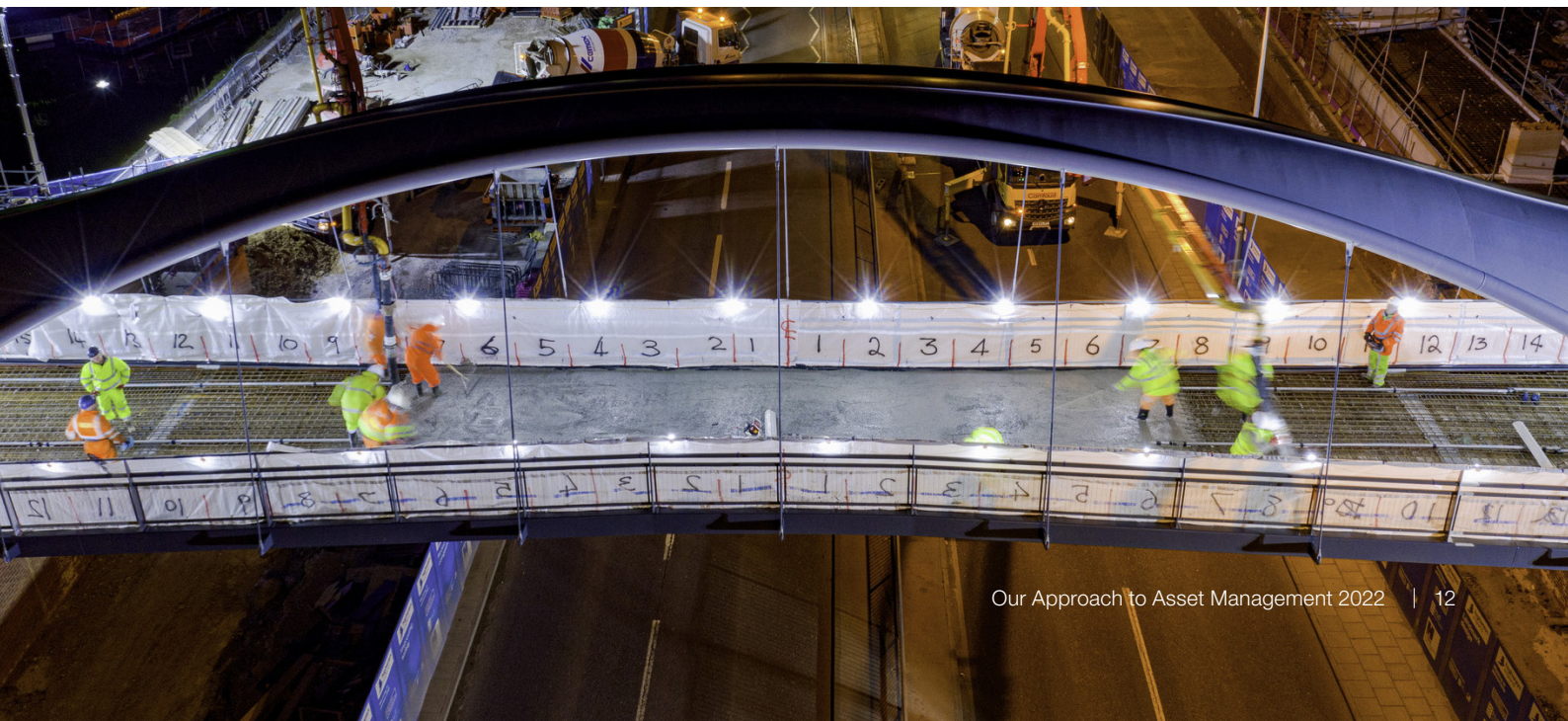
to our strategic objectives. This creates a line of sight between our RP2 commitments, our strategic objectives and our delivery plan that sets the foundation for our asset management governance. We will update this approach when our organisational objectives change and review it on an ongoing basis to ensure its content is still relevant to the challenges we face.

## Communication

Our Approach to Asset Management will be communicated to our people and wider stakeholders to build a shared vision and understanding of our future as an asset management organisation.

Delivering asset management improvement and building capability is not a one-off task. We will establish mechanisms to review and improve our asset management performance, and actively share what we're doing with our stakeholders, customers and colleagues.

By effectively communicating with our stakeholders and our people, in ways relevant to them, we can better understand each other and build a shared culture. Our asset management communication will be two-way. We will listen to our stakeholders and customers, to make sure that we understand our audiences nationally, regionally and locally, reflecting their feedback in our asset management approach.



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