

Scottish Trunk Road Network Asset Management Strategy

November 2018



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Foreword

The trunk road network in Scotland is the most valuable single asset for which Scottish Ministers are responsible for. The network's current value exceeds £23 billion, but it is vital to recognise that its value to Scotland's economy and way of life is many times greater. A recent study identified that the network added £1.38 billion to the economy each year. As well as enabling economic stability and growth at local and national levels through access to markets and employment, it also connects communities to essential local services.

To ensure that the network is able to serve this function, it has to be safe, resilient and in the best condition possible with the funding available. Asset Management is integral to achieving this and Transport Scotland, along with its supply chain, has successfully embraced this approach. We do, however, need to continually improve in order to ensure that we maximise the effectiveness of the investment in the network.

We aim to be a world class asset management organisation and this Strategy describes how we plan and deliver enhancements to achieve this outcome. This requires commitment from our staff, suppliers and other stakeholders to embed the practices and processes of asset management into their day-to-day roles. To measure and monitor our success we have committed to regular audits of our asset management regime against the international standard ISO 55000. These take place biennially and the outcomes are reported to senior management to ensure that any necessary alterations to the asset management regime can be implemented at the earliest possible opportunity.

As with our other asset management documentation, I would welcome comments on this Strategy to ensure that it continues to remain relevant to our stakeholders.



Hugh Gillies
Director of Roads
November 2018

1 Introduction

Strategic Context

Our Trunk Road Network **Asset Management Policy** confirms our commitment to asset management and states how our approach supports the delivery of the Scottish Government's Purpose and Strategic Objectives.

This Asset Management Strategy builds on the progress we have made to date, and sets out how our Asset Management Policy will be delivered through enhancements to our procedures and practices. It is informed by the adoption of asset management principles, understanding asset management as part of a framework with local and national influences, and establishing specific performance standards which align to our corporate priorities.



Finally, our **Road Asset Management Plan** (RAMP) reflects our Strategy and describes in detail how we deliver asset management at an operational level. We published our first RAMP in 2007 and committed to a programme of ongoing improvements to our asset management practices. Our most current RAMP, published in 2016, demonstrates how these improvements have been embedded in our organisation and supply chain. Through the Strategy we will maintain our focus on improving and embedding our asset management regime to ensure that we continue to achieve enhancements and retain our position as a recognised leader in asset management.





The Scottish Trunk Road Network

The Scottish trunk road network is a fundamental part of the transport system in Scotland. It is therefore essential that it is effectively maintained and efficiently managed to ensure it supports the Scottish Government's Purpose **to create a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth.**

In order for the trunk road network to fulfil its potential, it is vital that it is appropriately maintained. This includes not just carriageways and footways, but also bridges, lighting, traffic signs, drainage networks and much else besides. The Scottish Government and Transport Scotland are committed to ensuring the trunk road network is maintained in a manner that supports its vision, aims and objectives.

The trunk road network is comprised of route corridors that are considered to be of strategic importance to the economic stability and growth and social wellbeing of Scotland. The trunk road network is vital because it connects our cities, rural communities and the ports that serve the islands.

Our Assets



545km
motorways



592km
dual carriageways



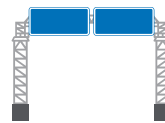
2,381km
single carriageways



2,035
bridges



8,050
culverts



489
gantries



872km
footways



65km
cycle facilities



12,224km
road markings



30,800
reflective road studs



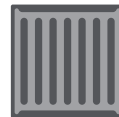
24,555
lights



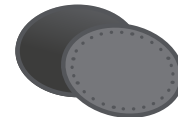
109,783
unlit road signs



5,524
lit road signs



94,376
gullies



63,902
manholes



12,170
trees



36,265m²
grass



3,001km
fences



1,956km
safety barrier



2,233
traffic signals



4,491
bollards

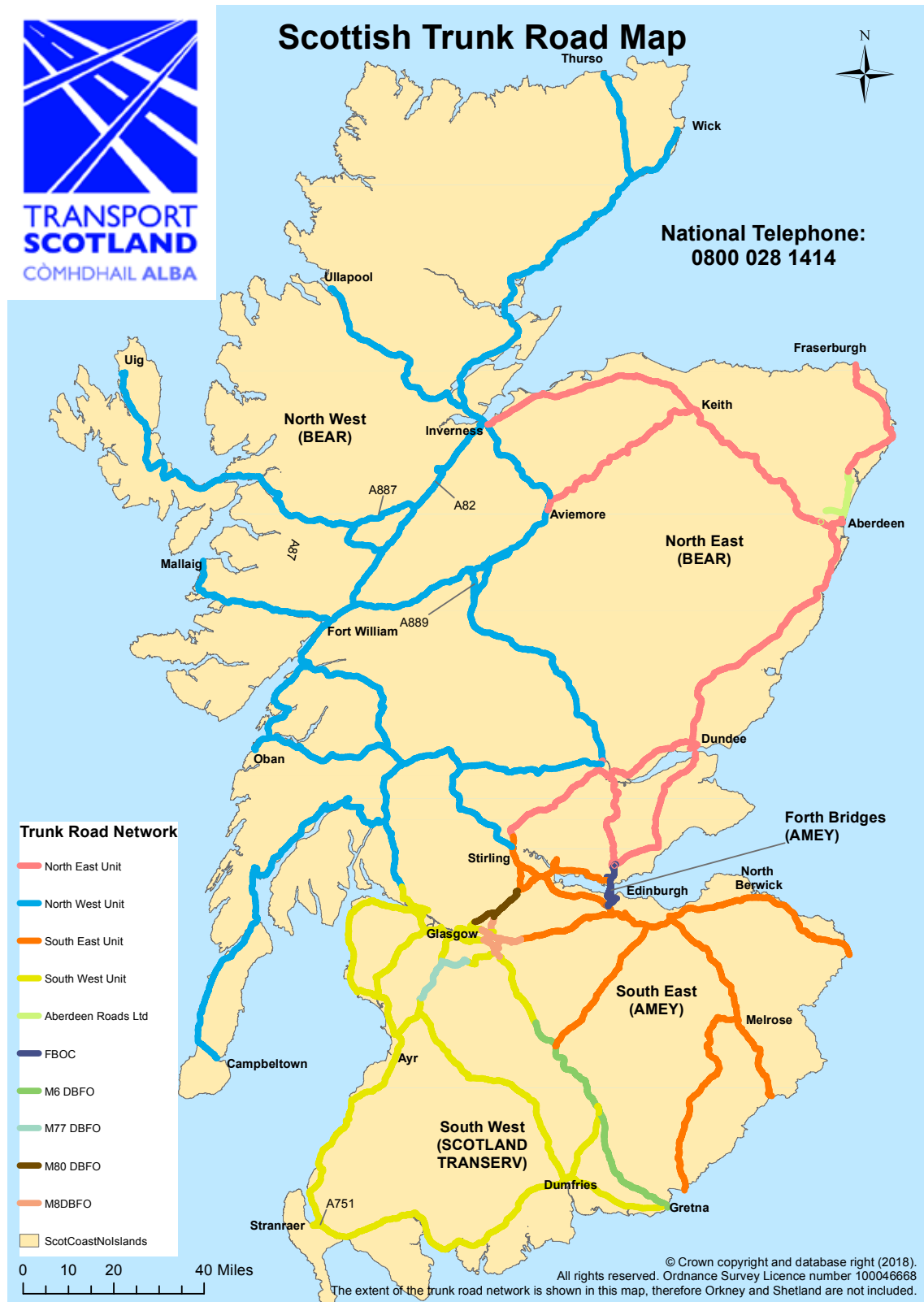


189
weather stations



155
footbridges

Scottish Trunk Road Network Map



2 Delivering Asset Management

Everyone throughout our supply chain is responsible for effective asset management. We have existing structures and roles and strong leadership to facilitate this.

Our Structure and what we do

The Roads Directorate is responsible for a wide range of functions which deliver asset management on the Scottish trunk road network. A number of teams with highly skilled members undertake these activities with the common purpose of achieving our Asset Management Objectives. These teams are managing high profile contracts and identifying and capitalising on opportunities to improve the way that asset management is delivered within Transport Scotland and amongst stakeholders.

Stakeholders and our supply chain are integral to the success of asset management in Transport Scotland. We carefully manage the relationships we have with our stakeholders to ensure that these deliver the services and behaviours that are essential for effective asset management.

Commitment from our Leadership

Asset Management is recognised as a priority at all levels within Transport Scotland, with the Chief Executive and Directors making a commitment, through the Asset Management Policy, to enhance our asset management procedures and practices.

Asset Management Steering Group

To ensure that our asset management procedures and practices continue to reflect the needs of Transport Scotland and our stakeholders, our approach to asset management is directed by the Asset Management Steering Group.

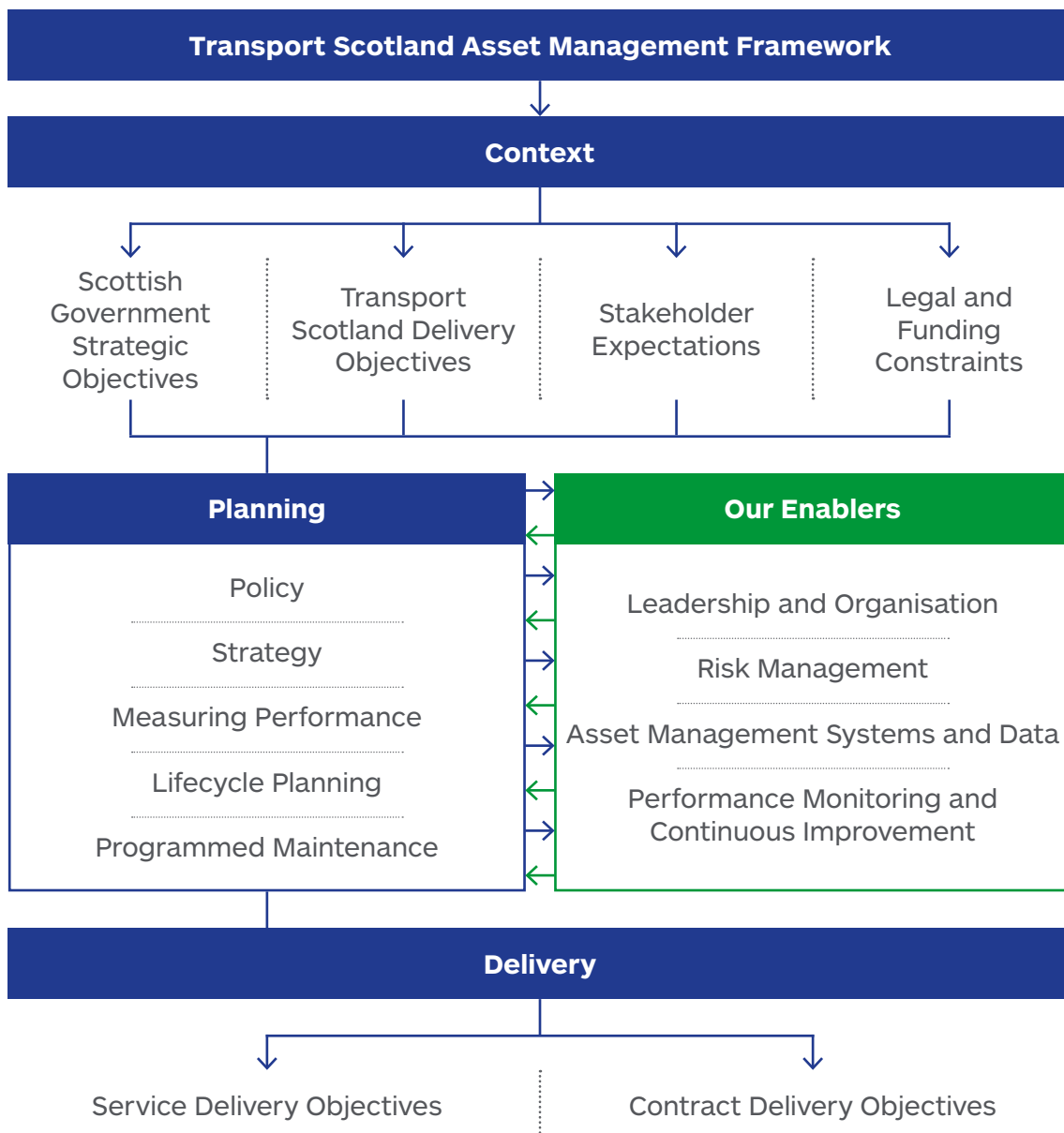
The Group is supported by the Director of the Roads Directorate and is chaired by the Head of Asset Management and Procurement. It meets formally every six months to receive feedback from Transport Scotland's Asset Management Team and sets their future priorities. The purpose of the Group is to endorse and review the Asset Management Policy, Asset Management Strategy, RAMP and the Asset Management Objectives. It also reviews the results from the biennial ISO 55000 gap analysis to ensure compliance and mandate continuous improvement activities.

3 Our Asset Management Framework

Our Asset Management framework is based on best practice in the roads sector and comprises the range of activities and functions required to deliver a world class service.

We are constantly looking to improve our approach and are seeking accreditation with the International Standard ISO 55000.

Our Asset Management Framework defines all the activities and processes necessary to develop, document, implement and continually improve our asset management regime. The four main aspects of the Framework are summarised here, with each element described in more detail within the RAMP.



Context

Asset Management is influenced by several factors. These include the boundaries and scope of legal requirements and the objectives of the Scottish Government and Transport Scotland. In addition, our stakeholders have expectations of the trunk road network, and management of these is an important part of our asset management regime. Funding is also a crucial factor in our approach to asset management, as we seek to maximise the effectiveness of investment. Together, these factors dictate the activities of the asset management regime.

Planning

Planning is crucial for effective asset management and we demonstrate this through our Policy, which shows a leadership commitment to asset management, and this Strategy. Planning also comprises our other key asset management processes, such as Performance Management (see Chapter 4) and our approach to long-term planning for asset maintenance and investment to maximise the benefits to road users. These set out when planned maintenance is predicted to be required, the likely investment needs at this stage, and how these requirements are prioritised. Combined, each of these elements are our long-, medium- and short-term approach to asset planning.



Our Enablers

Enablers are the series of activities that implement our Asset Management Framework. They provide a means of developing organisational leadership and the adoption of an asset management culture to ensure that our approach is understood and embedded by our staff and our supply chain (see Chapter 7). Our approach to managing risk ensures that potential barriers to the delivery of the Asset Management Framework are controlled proportionately. The use of asset management systems and the data they contain (see Chapter 6) allow us to understand the performance of our assets, procedures, and practices and subsequently support our decision making process. This is achieved through ongoing detailed performance monitoring (see Chapter 4) and benchmarking to ensure that improvement actions and continuous enhancements are focused to achieve real outcomes. The collection of all these processes create an effective set of enablers to our asset management framework.

Delivery

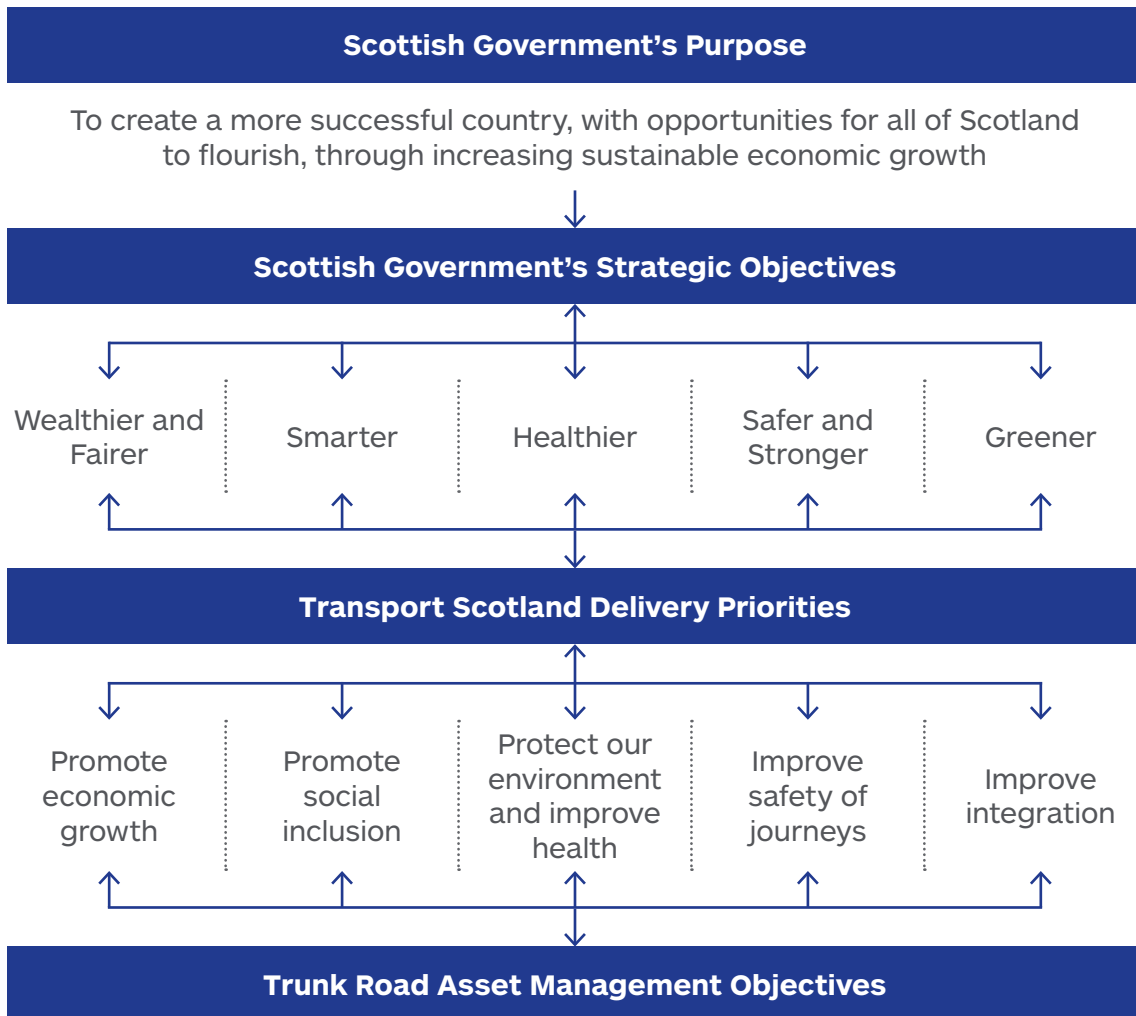
Delivery is a key component of our asset management framework and is a culmination of the context, planning and enablers. Most of our asset management processes have been embedded into and are delivered through our Operating Company Contracts. We have established a range of objectives and measures which define how we expect our supply chain to focus their activities on delivering success for customers. We regularly take the opportunity to review these objectives to ensure continued alignment with the context of the Framework.



4 Our Asset Management Objectives

Our Asset Management Objectives reflect our business responsibilities and activities, and enable alignment with our priorities, the Scottish Government’s Strategic Objectives and Purpose.

By measuring our performance against asset management objectives, we can provide a meaningful picture on how we achieve priorities for our stakeholders.



Trunk Road Asset Management Objectives



Customer Care and Travel Information

To provide customers with up-to-date reliable travel information and support the level of satisfaction in trunk road services.



Safety

To provide a road network that is safe for all users, seeking to continually reduce risk and casualties.



Resilience and Prosperity

To provide consistent, predictable and reliable journeys for the movement of people and goods. To minimise disruption caused by roadworks, unplanned incidents and severe weather conditions.



Condition

To measure and maintain our trunk road assets in a condition that meets the needs of our users, but which is also affordable.



Value for Money and Innovation

To make economic and efficient use of available resources for road maintenance and foster innovation in all aspects of work.



Accessibility and Integration

To provide a network that is accessible to all users, with improved connectivity to ensure that traffic moves freely and quickly around Scotland.



Sustainability

Reduce carbon and waste and enhance environments.

Our Asset Management Objectives will be fully reflected in the new Network Maintenance Contract Objectives to ensure that our supply chain understand and deliver on these. Contract performance monitoring is being designed to fully align with these Objectives.

How we measure performance against our objectives

Our Performance Management Framework (PMF) provides a tangible link between our strategic priorities and objectives, and performance measures and targets, i.e. linking strategic goals to operational performance measures/targets. This includes criteria and measures that reflect the priorities of our customers, enabling their levels of satisfaction and expectations to be captured and included within the PMF.

Regular monitoring of the network and supply chain is carried out by Transport Scotland and the Performance Audit Group. In addition, our management team review our performance in achieving the targets in each Objective at the end of each measurement cycle.

What plans do we have for the future?

The current PMF contains targets for three years, 2018 to 2020, to coincide with Transport Scotland’s current Corporate Plan. Targets will be reviewed annually to take account of performance trends and any emerging risks and opportunities.

During 2020, we will undertake a comprehensive refresh of the PMF to take account of new policies and priorities of both the Scottish Government and Transport Scotland. This will enable the existing set of measures to be reviewed and targets reset to ensure that these remain relevant and realistic, whilst continuing to reflect our aims for the trunk road network.

To enable more effective performance monitoring and reporting, we are also developing a PMF dashboard. This will allow our staff to measure and report performance at strategic and operational levels and make more informed decisions through understanding their potential impact on performance.



5 Stakeholder and Communications

We are working towards becoming an increasingly customer-focused transport service.

We are seeking to enhance the service provided to our stakeholders by improving our understanding of their priorities.

WHO ARE OUR CUSTOMERS AND STAKEHOLDERS?

The trunk road network has a wide variety of customers including drivers, communities which the trunk road passes through, transport industry bodies and utility companies.

We have several stakeholders, including Scottish Ministers, neighbouring roads authorities and our supply chain. It is our responsibility to ensure that relationships are constructive and all parties collaborate in achieving the asset management objectives.

UNDERSTANDING OUR CUSTOMERS

Transport Scotland has been engaging with our customers through a series of road user perception surveys for over a decade now. These surveys have provided us with a broad range of views and opinions to inform the management of the trunk road network, and identified current road user priorities and satisfaction levels. This enables us to ensure our business aims, objectives and targets continue to align with your priorities and expectations.

COMMUNICATING WITH OUR CUSTOMERS

Effective communication is crucial to ensure that customers understand our priorities and are aware of any potential impacts on their use of the trunk road network. This needs to be done in a clear, consistent and constructive way which is relevant to a range of customers with a number of different requirements. We have built up an extensive network of contacts who have interests in the trunk road network, such as transport groups, local authorities and community councils, and use this to ensure that our messages reach the required audience.

OUR PLANS FOR THE FUTURE

We know that effective engagement is key to us achieving our asset management objectives. We already use a wide range of methods – including social media, press releases and community engagement events, to communicate with our customers and stakeholders. We are developing a Customer Strategy which will set out how and when we engage with our stakeholders. This will ensure that customers receive information that is appropriate to their needs and at a time which gives sufficient notice to respond accordingly. It will also help our customers to understand how best to contact us.

6 Our Approach

DATA



Data is essential for us to deliver effective asset management using an evidence-based approach to enable informed decision making, visualise performance and manage risks.

We are looking to enhance our capability in capturing and managing data, in order to improve its quality and efficiency.

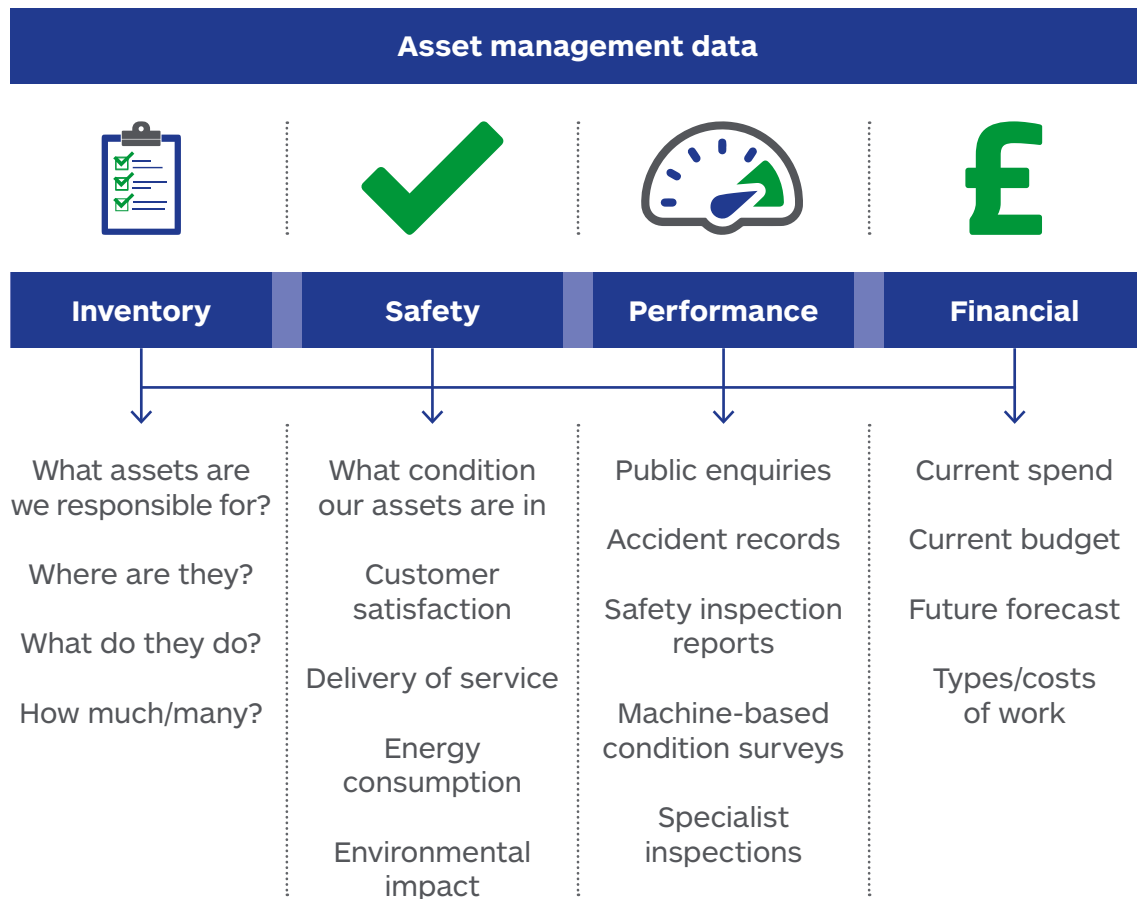
Why is data important to us?

Data is critical for us to understand our asset and how we can best manage it for the benefit of Scotland. We can transform data into valuable information and ultimately knowledge about the assets we are managing, which can be used to:

- Describe the asset and how it is performing;
- Support effective asset planning and decision making;
- Inform decision making related to asset maintenance or replacement;
- Communicate with suppliers, customers, communities and other stakeholders;
- Identify and manage risks, turning them into opportunities where possible;
- Determine long-term investment requirements; and
- Support us in our continuous improvement plans.



What types of data do we have?



How do we manage data?

Data is an asset, just like our roads and bridges, so it must be managed carefully. To support this, our Information Strategy:

- Defines how Transport Scotland collates, maintains and utilises asset information;
- Records the approach to defining information requirements, accounting for the benefits and costs of collecting and maintaining information;
- Documents committed and proposed improvements to asset information;
- Demonstrates how information supports our asset management objectives;
- Assesses the risks of not having, or not maintaining, asset information; and
- Demonstrates suitable arrangements are in place for data security and protection.

Data quality is also important, so our supply chain is required to have certified quality management systems in place. We regularly audit the quality of data we receive from suppliers and encourage continuous improvement through training and support. Our future plans are based on opportunities identified and lessons learnt from our current processes.



The security of our data is paramount. To ensure this, we have robust security and information assurance practices, which support the confidentiality, integrity and availability of data and systems. This includes our responsibilities under the General Data Protection Regulations (GDPR).

What plans do we have for the future?

In an increasingly digital world, there are opportunities and challenges for Transport Scotland to improve the availability, quality and confidence in our data, whilst reducing the associated costs. We are already working on several improvements, such as:

- **enhancing our requirements for data management** within our supply chain to enhance accountability for the provision of accurate and meaningful data;
- **developing our capabilities in data analytics** to add value to the existing data held within our systems and use this to support decision making; and
- **trailing innovative technology** to improve the safety, quality and efficiency of data collection, leading to a better understanding of our assets.

Our Information Strategy is updated regularly to ensure that it continues to direct Transport Scotland towards better use and understanding of our data and incorporates technology improvements we make.



TOOLS

We have tools in place to manage our extensive asset databases, and support our decision making.

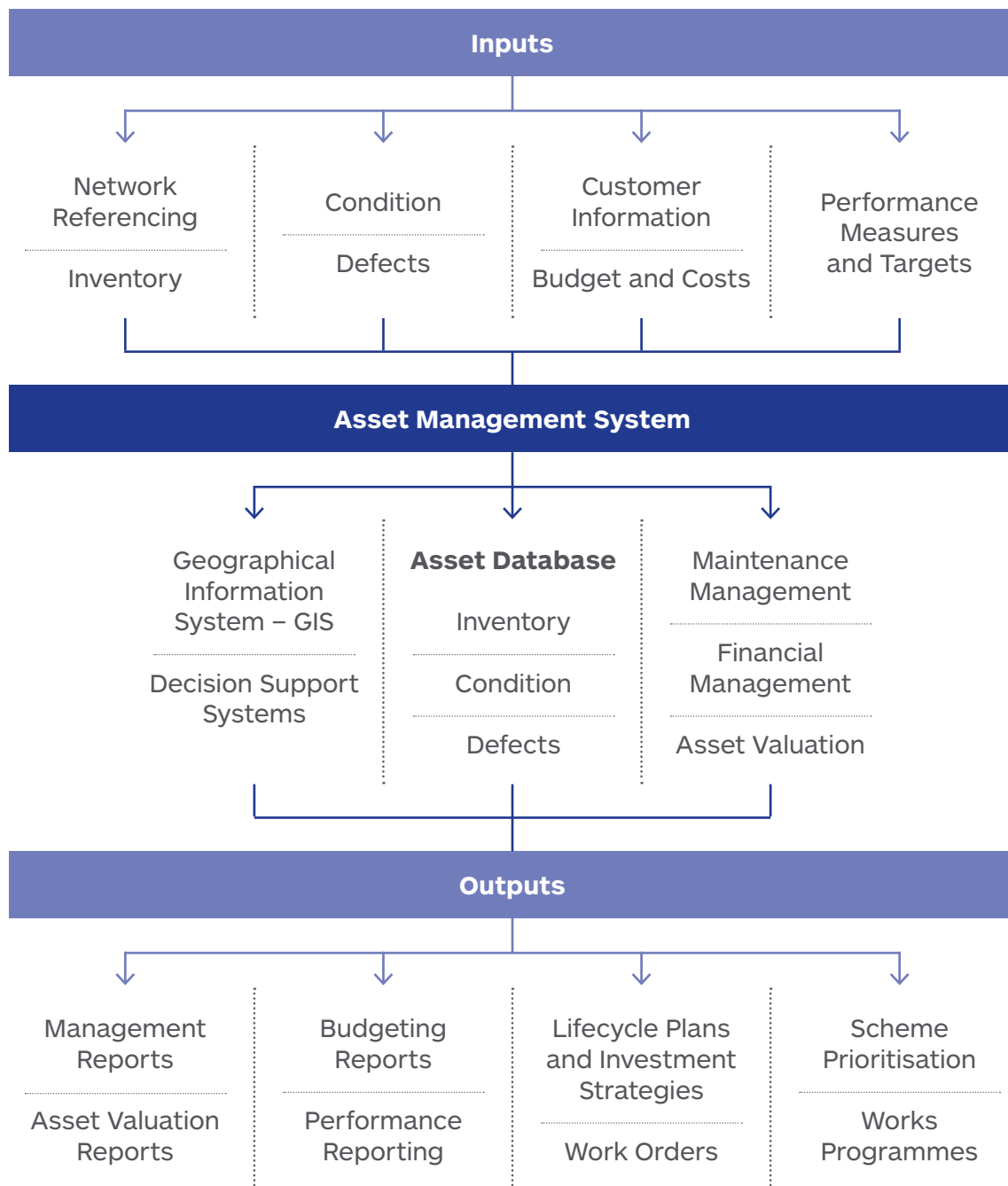
We will continue to integrate and enhance our digital tools.

Managing data, making sense

Our asset management systems allow data to be processed and analysed using integrated software, decision support tools and engineering knowledge, to provide information on location and performance of trunk road assets. This enables us to make informed decisions on asset investment and report performance in a meaningful way.

What systems do we have?

Managing a complex set of assets and functions requires a broad range of specialised systems. The diagram below provides an overview, along with examples of the outputs that inform our processes and wider decision making.



A key component of this is our Integrated Road Information System (IRIS), a Geographical Information System (GIS) map-based asset management system linking condition data with inventory, accidents, structures, drainage, construction, customer services, routine maintenance, works ordering/payment and street lighting. By managing our data more efficiently in this holistic way it enables improved investment decisions.

How do we use our tools effectively?

We recognise the importance of competent staff to ensure that our asset management systems are accessible to those involved in managing the trunk road assets, and to ensure they have the information and data required to undertake their role effectively.

What plans do we have for the future?

We are creating a new platform for our asset management system, which is being developed through understanding our user's requirements. This will incorporate best in class solutions to enable greater access to information including interfacing with supply chain systems and sharing of data to support informed decision making.

We have a roadmap for improving and developing our tools, to take advantage of technology changes without disrupting day-to-day operations.



PROCESSES

We have developed a series of end-to-end processes that are embedded throughout our staff and supply chain.

We are enhancing our processes through a combination of integration across the Asset Management framework, aligning our digital approaches and learning from experience of ourselves and industry best practice.

Consistent and effective processes for asset management

We recognise that our asset management processes set out in the RAMP have to be effective to maximise the value from investment in trunk road maintenance. As part of the specification of our new Network Maintenance Contracts (NMC), which will commence from 2020 onwards, we have reviewed the processes upon which the successful delivery of the contract relies. This ensures that the processes are designed to deliver the objectives of the contract and, ultimately, our asset management objectives.

A consistent approach is vital for effective contract management – to enable our staff to understand their responsibilities we have developed a Road Asset Management Manual (RAMM) which defines how the RAMP is delivered.

The RAMM documents:

- The information, processes and technology required to support road asset management;
- The approach for the implementation and continual improvement of asset management processes and practices; and
- How ISO 55000 is embedded in the processes and practices of the Roads Directorate.

How we categorise our network

We have a defined hierarchy for our trunk road network, which considers current and expected use, resilience, and local economic and social factors such as industry, schools and hospitals. Having a well-defined and developed hierarchy enables us to prioritise our investments across the trunk road network.

What plans do we have for the future?

As part of the commitment to continual improvement, the RAMM and the procedures it contains will be reviewed and updated to take account of emerging Scottish Government and Transport Scotland corporate policies, best practice from elsewhere, changes in priorities and any technology impacts in how journeys are undertaken on the trunk road network.

In particular, we will align the specification for our Network Maintenance Contracts to align with the RAMM. We will share the RAMM with our supply chain to ensure that there is consistency across the asset management regime. We will use technology to make the RAMM more interactive and user-friendly and promote its use.

We are currently reviewing the trunk road network hierarchy to ensure that it continues to reflect the function of the network. In line with best practice, we will continue to regularly review the hierarchy so that investments are consistently correctly prioritised.

7 Our Resources

FUNDING

The trunk road network is the single most valuable public asset in Scotland and we will continue to manage it as such.

We will continue to use a data driven approach to make the case for future investment in the network, to ensure it remains safe, serviceable and sustainable, whilst supporting sustainable economic growth.

Our asset management approach helps us understand when and where to spend our budgets, to maximise the value to tax payers and customers.

What is the value of our assets?

Each year we provide the Scottish Government with a valuation of our trunk road assets to determine their current monetary value. All government departments are required to operate their finances using resource accounting with their accounts reflecting the value of the assets under their management. This demonstrates value for money through direct links between investment in the network and changes in asset condition and asset value. This provides a robust business case for maintaining and enhancing funding levels and facilitates informed discussions with Scottish Ministers and other stakeholders.



- To rebuild the network from new as of April 2018 would cost **£23.4 billion**
- To replace it in current condition as of April 2018 would cost **£17.4 billion**

The methodology used to calculate these valuations complies with the International Financial Reporting Standards as expressed in the Financial Reporting Manual (FRM).

How are we funded?

Investment in the trunk road network is funded by the Scottish Government through capital and revenue budgets which are set out in Spending Reviews.

We have been able to develop a clear, long-term vision for managing the trunk road network and articulating the associated funding requirements to support sustainable economic growth. This has enabled additional capital maintenance funding based on solid asset management principles, robust asset data and sound lifecycle plans. Our ability to demonstrate a business case with good quality evidence alongside a track record of delivering value for money was integral to securing this additional funding.

How do we invest in our network and services?

We use information about the condition of our assets to identify and prioritise schemes of work to maintain and improve our network. We have also developed a clear value-management process, which considers safety, journey time and reliability, environmental factors, and value for money. This approach aligns to international best practice, ensuring effective and efficient investment.

What plans do we have for the future?

We will continue to use data to make a robust case to maintain and enhance the funding provided for trunk road maintenance. In addition, we will continue to develop new processes which identify future funding requirements and the consequences on asset condition.



OUR PEOPLE

We recognise that our people are the core of Transport Scotland, and everything we do.

Our plans to develop our asset management capability are centred around developing the capacity and capability of our staff.

Who is responsible for delivering asset management?

Transport Scotland's senior management and staff understand the benefits of asset management and are proactively taking steps to further embed asset management in their processes. It is a significant achievement to have aligned the working practices of over 100 professionals with our strategic approach. This also extends into our supply chain, including contractors responsible for delivering operations on the network, and external suppliers providing specialised goods and services.

How do we engage with our people?

We have a well-developed embedment programme in place to continue our asset management journey and ensure that the benefits of asset management are realised. This involves having a common understanding across our Directorate of our asset management improvement work, our Strategy, and delivery of our Strategy through our Road Asset Management Plan.

In 2017, Transport Scotland received sector-wide recognition of this embedment work, courtesy of the Chartered Institution of Highways and Transportation's Asset Management award. The focus on people was a critical factor in this success, in terms of upskilling and development of competences, and wider engagement with buy-in from all levels across the organisation and throughout the supply chain.



How do we develop our people and their skills?

The embedment programme has seen our staff and supply chain provided with appropriate asset management training and an understanding of the new tools and processes developed to support our long-term asset management strategy. We have a skills and competency framework for asset management roles, building on the Scottish Government's **Skills for Success Framework**. This aligns with ISO 55000 and the Institute of Asset Management (IAM) principles.

Support for our approach

The senior leadership team within the Roads Directorate supports the implementation of effective asset management and its key role in delivering Transport Scotland's priorities. They are committed to supporting the changes required within the organisation to ensure that asset management is fully and successfully embedded and continuing engagement with other road operators both in the UK and world-wide to share asset management knowledge and experience.

Our approach is to empower all our staff to carry out effective asset management. This culture is supported by senior management who promote the sharing of best practice and the identification of opportunities to improve the asset management regime. This fosters ownership and accountability across the teams delivering and enabling asset management. Staff throughout the organisation recognise the benefits of effective asset management, understand the achievements so far and continue to support further improvements.

Our future learning and development plans

Transport Scotland plans to build on the good work already done, developing the IAM competencies mapped to identified asset management roles, and tailored to our organisation. This will allow staff to further develop their capabilities in asset management, particularly those who join the organisation or from other roles within Transport Scotland.

8 Planning to Deliver Our Targets



We set clear targets for the delivery of our asset management objectives, which reflect our business responsibilities and align to our strategic objectives and priorities.

Our long-term plans will deliver a road network in a condition which will enable safe, reliable journeys, maximising opportunities in business, leisure and tourism to deliver economic opportunities which support a more socially cohesive and green Scotland.

How do we plan for the future?

Effective investment planning in our assets provides a road network in a good condition, providing safer and reliable journeys and improving opportunities for business, tourism and leisure. It supports the move to minimise the impact of our activities.

Transport Scotland takes a long-term, strategic approach to managing assets, which is defined as ‘lifecycle planning’ – provide the right level of service whilst minimising whole life costs. This includes developing individual lifecycle plans which represent the output of our lifecycle planning process, enabling asset management practices such as cost projection, performance management and risk management.

We look ahead to identify significant increases or decreases in funding needs and annual work volumes. As part of this we identify, develop and analyse several different investment scenarios for each of our three major asset types: Carriageways, Structures, and Network Assets.

How do we develop our plans?

Carriageways – our financial model has been specifically developed to perform predictive modelling, utilising existing survey data, to allow us to estimate the future maintenance requirements over several years for differing levels of funding or different road condition targets. The model has been used to assess potential future scenarios and forms an input into our Investment Strategy.





Structures – we use an industry standard bridge index which is calculated from inspection data and allows us to analyse and trend condition information. This helps us determine overall deterioration rates and sits alongside our planned inspection regimes, which more accurately determine actual defects, deterioration and remedial works, feeding into individual lifecycle plans.



Ancillary assets – we use data from detailed inspections and condition surveys to inform models which predict the future condition of ancillary assets (defined as all assets not classed as carriageways or structures). This allows the levels of funding required to achieve the outcomes of various scenarios to be predicted and reported.

How do we ensure value for money?

Lifecycle planning determines our investment requirements for our network, we then use a value management approach where appropriate to assess our options for carriageway and structures schemes. This ensures that funding is prioritised to the most deserving schemes with demonstrable maintenance needs that align with our strategic objectives.

Inception

Identify requirement for scheme, using inspections and assessments to determine future needs

Scheme Development

Technical workshops to review options and agree proposed approach

Scheme Submission

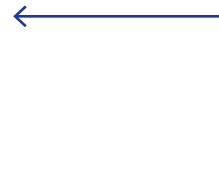
Agreed approach developed and submitted for approval by Transport Scotland

Value Management and Scheme Approval

Detailed 'value for money' scoring process ensures best value in delivered schemes

Scheme Delivery

Approved schemes are constructed in accordance with specification



Lessons Learnt

Lessons learnt used to update value management process to support assessment for future schemes



Our plans for the future

To optimise our available funding allocation across the trunk road network we will build upon our knowledge gained from lifecycle planning to further develop cross-asset modelling for our network. Prioritising the available funding by assessing the maintenance needs across the network will ensure that we further improve our decision making by investing in maintenance where there is greatest need. In addition, we have developed value management processes for ancillary assets which will be included in the Network Maintenance Contracts.

9 Managing Risk



Our corporate and asset management systems are aligned to manage risk and deliver a resilient and secure service.

We will continue to work towards achieving a more resilient trunk road network to improve safety and minimise impacts on customers.

How do we manage risk?

Risk is relevant to all parts of our business and a consistent and integrated approach is used across all Transport Scotland Directorates supporting the successful delivery of our strategic objectives.

Our corporate Risk Management Strategy aligns risk management across Transport Scotland, setting out a clear system for identifying, managing and mitigating risk. Critical risks are managed at a strategic level in the organisation, reflecting their importance.

The management of current and future risks associated with our assets are embedded within our overall approach to asset management. Strategic, tactical and operational risks are included, along with appropriate mitigation measures.

How do we work towards ensuring a resilient road network?

The focus of our resilience planning is more than the ‘day-to-day’ resilience of our network but includes how we manage incidents on the trunk road network to minimise any impact and enable an appropriate and timely planned response. This supports our aim of minimising disruption to road users and improving the safety of journeys on our network. We work closely with our Operating Companies, other transport operators such as Scotrail and agencies such as the Met Office and Police Scotland and contribute to the Scottish Government’s resilience response arrangements.

How are we managing key risks from our environment?

- We ensure natural and physical environments are protected, maintained and, where practicable, enhanced across all activities, including carrying out our statutory duties under legislation.
- We have developed our Climate Change Adaptation and Resilience Plans to minimise future disruption and ensure that the Scottish Trunk Road Network is resilient to the potential impacts of a changing climate. All of our activities are carried out in line with the current and future Scottish Climate Change Adaptation Plan (SCCAP). This work is supplemented with close co-operation with national and international research.
- Flood risk management – we work with other agencies such as the Scottish Environment Protection Agency and local authorities to support Local Flood Risk Management Plans. This is augmented by

our Disruption Risk Management process, which identifies risk areas, mitigation planning and improvements.

- Managing the impact of landslides and rock falls – whilst difficult to prevent, a programme of detailed research has allowed us to identify areas of concern and prioritise preventative or responsive actions.
- High winds – our major bridges are covered by high wind management plans which ensure the safety of users and minimise recovery times.
- Winter service plans are reviewed annually to ensure precautionary treatments and responses to snow and ice events can be deployed effectively.

What plans do we have for the future?

We use data to ensure that decisions are robust and transparent and will continue to take advantage of new sources of data to enhance our approach to managing risk. Our asset management approach is based upon our alignment with Transport Scotland's corporate objectives, legislative requirements, and corporate approach to risk and management of risk. We will continue to review this approach in line with Scottish Government requirements and best practice, making enhancements where these improve the management and monitoring of risk.

10 Continuous Improvement

We will continue our programme of asset management improvements by making the right decisions at the right time informed by good quality data, tools and systems.

By sharing knowledge and experience with other road operators we will continue to implement improvements to our trunk road network.

OUR ASSET MANAGEMENT IMPROVEMENT PROGRAMME

Our Asset Management Improvement Programme (AMIP) is now within its third phase. The scope of the AMIP has been influenced by ISO 55000 gap analysis and consultation with our stakeholders. To ensure that our asset management regime remains world class, we undertake a gap analysis against ISO 55000 once every two years. Phase three of the AMIP covers many of the aims set out within this Strategy including:

- **Asset Performance Management System (APMS)** — We are currently developing a replacement for IRIS, which will be deployed internally and amongst our supply chain. The specification for APMS is being developed through extensive consultation with users and will reflect a fundamentally new approach to the management of asset data. APMS will include improved analytics and interfaces to link with supply chain systems.
- **Development of a Customer Strategy** — We aim to improve our understanding of customer's priorities for the service offered by the trunk road network through new and innovative ways of engagement. This will build upon existing customer engagement tasks to set out how Transport Scotland engages with stakeholders who use, or are affected by the trunk road network and how their needs can be addressed as much as possible.
- **Enhancements to the Asset Maintenance Regime** — As part of our commitment to continual improvement, we will continue to review how we identify and prioritise schemes and the types of treatment we deliver. This includes an assessment of current and emerging products, techniques and processes to consider their suitability and effectiveness in relation to providing a better solution for Transport Scotland.
- **Information Management** — As well as developing APMS to be the primary asset information system for the trunk road network, we will continue to review how data is collected and used within the asset management regime. This will ensure that we continue to collect and manage data where there is a clear need for doing so and that its usefulness and availability is maximised.

COLLABORATION

We share the details of our improvement activities with other roads authorities to allow the entire industry to benefit from these enhancements. This includes regular collaboration meetings with strategic road organisations, such as Highways England, and the Society of Chief Officers of Transportation in Scotland (SCOTS). In addition, we regularly benchmark our performance against similar organisations to identify opportunities to learn from, and improve, our procedures and practices.

We provide funding for both the Scottish Road Research Board and the trunk road Innovation Fund. Both of these have led to significant enhancements to our asset management regime, including innovative new materials, safer and more efficient asset inspections, and a greater understanding of asset performance. Many projects have received industry recognition through awards and publication in journals to further awareness of this work amongst peers.

HOW TO PROVIDE FEEDBACK ON OUR STRATEGY

We actively want to hear your thoughts on this strategy document and the service we provide to you, our customers. For more information, please visit www.transport.gov.scot or contact info@transport.gov.scot.



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