



Highway Infrastructure Asset Management Strategy



this is **Redcar & Cleveland**

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Author(s)	Michael Kay and Gareth Hurndall
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Checked: Name and Signature	Simon Houldsworth 
Authorised: Name and Signature	Simon Houldsworth 
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Foreword

The This Highway Infrastructure Asset Management Strategy explains how Redcar & Cleveland Borough Council will apply its approved Highway Infrastructure Asset Management Policy to the management of highway infrastructure assets.

It brings together the strategic approach, asset management framework and supporting plans that will help the Council provide best value for money while meeting the needs of residents, businesses and visitors in support of:

- Keeping the highway safe to use
- Assist in regeneration
- Promoting social inclusion
- Protecting the health and safety of the community and the environment

The Council recognises the importance of a well-managed highway network. Roads, footways and associated assets that are safe, serviceable and sustainable support movement, access, local pride and wider Council priorities. This strategy sets out how available resources will be directed to manage those assets in line with the approved policy.

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Purpose of this Strategy

This document provides the strategic route map for applying the approved Highway Infrastructure Asset Management Policy. It explains the framework, priorities and supporting plans used to manage highway service assets within the Council's stewardship.

As Local Highway Authority, the Council has a duty of care under the Highways Act 1980 to maintain the safety and accessibility of highway infrastructure maintained at public expense and the Highways Act requires that the Council has made reasonable provision for its upkeep and safety.

This strategy defines the commitment of all highway asset owners to deliver their service outcomes against the Council's key objectives, plans and priorities as denoted in the **Council's Corporate Plan 2024-2027**.



The strategy supports the Council's Corporate Plan 2024-2027 priorities by contributing to a safe, serviceable and sustainable highway network that enables access to services, supports economic activity, protects communities and helps maintain a clean and tidy borough.

In highway infrastructure terms, those priorities are underpinned by the delivery of a safe, reliable and sustainable network that enables Council, partner and emergency services to operate effectively. The council believes this can be achieved by delivering on the following, interdependent, priorities.

- Start life well
- Live and age well
- Prosper and flourish
- Clean and tidy

We will achieve this by:

- Employing the principles of asset management reflective of adopting a risk-based approach to service delivery.
- Setting out the pre-requisites for an effective delivery of an asset management approach to the maintenance and management of the Highway Services Assets.
- Providing the high-level understanding of the processes required to deliver an effective service.
- Providing a value-for-money outcome by considering whole life costs, associated risks.
- Aligning with the Council's objectives, strategies, and vision for its citizens.

1.0. Introduction

The approved Highway Infrastructure Asset Management Policy sets the Council's commitment to a risk-based asset management approach. This strategy explains how that commitment will be translated into practical planning, investment, delivery and performance management across highway service assets.

The strategy will cover a five-year period from 2026 to 2030, and reviews of both the policy and strategy will be undertaken every two years, to reflect changes in legislation, practice, and ongoing work in partnership with our stakeholders.

It describes how asset management plans, framework processes and procedures will support the safe, reliable and sustainable operation, maintenance and enhancement of the highway infrastructure, using available resources to meet current and future customer needs.

A suite of Highway Infrastructure Asset Management strategies and plans will set out the aims and objectives for each of the main asset groups comprising:

- Carriageways and footways
- Structures
- Traffic management and management of electronic traffic equipment
- Street lighting
- Street furniture
- Winter service
- Drainage

1.1. The importance of the Highway Infrastructure

The local highway infrastructure network is the largest and most visible asset the Council is responsible for, with a replacement value of approximately £1.46 billion (2025), and is used every day by residents, businesses, and visitors, providing a vital contribution towards the economic, social and environmental well-being of the area.

The carriageways and footways provide key links across the Borough, and they connect to areas both within and outside the Borough boundaries. They provide and support the continuity of service delivery and transportation needs, and they promote and help protect the health, safety, well-being and social inclusion of the local communities, and of the environment.

The highways infrastructure comprises of the following:

- 704 km of carriageway network
- 272 Bridges and culverts
- 82 retaining walls
- 22,674 streetlights
- 32,129 road gullies
- 531 Traffic signal heads
- 70 Pedestrian crossings

The highway infrastructure also supports wider Council outcomes, including regeneration, social inclusion, education, employment, recreation, health and access to services.

To support these outcomes, highway infrastructure assets must be maintained and managed effectively through a consistent, risk-based and value-for-money approach.

1.2. The Case for Asset Management

Asset management provides a structured approach to managing highway service assets through longer-term planning, risk management, performance monitoring and efficient allocation of resources. It supports stronger funding decisions, clearer communication with stakeholders and a better understanding of how highway assets contribute to local economic, social and environmental outcomes.

The approach combines asset data, condition information, risk, lifecycle planning, performance and available funding to support informed investment decisions. The emphasis is on planned, timely and proportionate interventions that reduce reliance on costly reactive repairs where possible.

The Council's approach to asset management has been developed using the recommendations set out in the Highway Maintenance Efficiency Programme (HMEP) Highway Infrastructure Asset Management Guidance Document (2013), and it aligns with the best practice recommendations set out in the Code of Practice - Well-managed Highway Infrastructure (2016) which requires local highway authorities to adopt a risk-based and integrated asset management approach to maintaining the highway infrastructure.

This approach supports best value and helps maintain a highway environment that is safe, accessible and resilient for customers.

1.3. Key Drivers for Highway Services Asset Management

The following denote the key drivers that reflect the need for the implementation of an asset management approach to highways infrastructure asset delivery:

- Support the Council vision in delivering Council goals objectives and priorities
- Provide a safe and reliable network via a risk-based approach to service delivery
- Comply with legal duties including Highways Act 1980, Traffic Management Act 2004, and Equalities Act 2010
- Meet national policy, guidance, and codes of practice
- Manage stakeholder expectations
- Long-term improvements to the condition of the network
- Understand future demands on the highway services assets
- Make the best of financial constraints
- Deliver efficiency and value for money
- Enable whole government accounts and local financial reporting

1.4. Highway Infrastructure Asset Management Framework

It is important to understand how the Highway Infrastructure Asset Management Strategy is supported by the plans, processes and procedures that define the activities required to manage and maintain the extensive range of highway services assets that comprise the highway network.

The Highway Infrastructure Asset Management Framework establishes the context for Highway Asset Management, and the following diagram illustrates the framework model as a whole which provides context and an overview of the dependency of interrelated areas of work in delivering the strategic approach.

Highway Infrastructure Asset Management Model

Redcar & Cleveland's asset management model provides the link between policy, governance, strategic planning and operational delivery. It is intended to ensure that service outcomes remain fit for purpose and reflect the Council's priorities, stakeholder needs and available resources.

The Strategy model is based on the HMEP "Highway Infrastructure Asset Management Guidance Document" as shown in the framework below: -



Governance

The Governance quartile depicts the overarching governing factors that underpin the processes, approach and delivery of Highways Asset Management for Redcar and Cleveland Borough Council.

This includes:

- Applying national and local transport policies and strategies, corporate plans and directives, industry guidance and good practice initiatives
- Utilising the guidance provided in the Highways Code of Practice
- Adopting a risk-based approach to service delivery
- Following legal requirements
- Operating within funding provisions and affordability constraints
- Using the best information available from the provision of supporting data
- Consideration stakeholder expectations and interactions
- Promoting carbon reduction and sustainability

Planning

The Planning quartile describes the key activities and processes used to implement the strategy through policy alignment, performance management, data, lifecycle planning and forward works programming.

Policy	The approved policy sets the Council's commitment, vision and key principles on a risk-based approach for highway infrastructure asset management.
Strategy	This strategy explains how the policy will be delivered through the framework, supporting strategies and continuous improvement.
Performance	Levels of service are being developed for highways infrastructure asset management with targets and performance measured and reported. Service levels will be monitored and reviewed annually against defined targets and measured performance criteria, and if necessary, affordable and feasible, service delivery operations will be adjusted to achieve better compliance.
Data	The provision, availability and utilisation of good quality data underpin our approach to planning and delivering robust asset maintenance management services and risk-based priority works programmes.
Lifecycle Planning	The development of lifecycle plans for all major highway asset groups, including expected future performance based on different investment scenarios and desired levels of service. These will be used to inform on works programming decisions and planning for funding investment needs as they are further developed for each major asset.
Works Programme.	Annual and forward works programmes will be developed within budget and resource constraints, informed by lifecycle planning, asset condition, performance, risk and value management considerations.

Enablers

Enablers are a set of activities that support the implementation of the Highway Asset Management Framework.

Leadership and Organisation.	Senior leadership will promote understanding of the policy and strategy, support informed investment choices and encourage an asset management culture across the organisation.
Risk Management	Risks to operational objectives and service priorities will be identified, assessed and managed within available resources, funding provisions and Council policy direction.
Asset Management Systems	The strategy for the use of different asset systems to support the data and information to enable asset management. We shall adopt robust asset management systems and principles to facilitate service functionality, identify priority investment needs, consider 'invest to save' initiatives, determine budget needs and invoke procurement processes.
Performance Monitoring	Benchmarking and collaboration with other authorities to promote and support performance monitoring in order to review condition trends and establish a culture that thrives and attains continuous improvement.
Implementation	The delivery of highway asset maintenance management services is made from a position of knowledge and informed choices and is achieved through the appreciation, adoption and implementation of robust asset management principles.

Delivery

Prioritised works and services shall be delivered via Highways Framework contracts, and we shall engage in robust cost-effective procurement processes for the programmed delivery of works and services in order to secure their correct, timely and quality delivery and to ensure value for money.

Procurement will be through the industry standard competitive tendering and framework arrangements in accordance with the Council's financial and procurement procedure rules and they shall be inclusive of collaboration and alliance initiatives with other Local Authorities in order to secure best value services and economies of scale.

Various modes of service delivery may be used reflective of the nature of the works, the capabilities of the Highway Authority and the resources it can offer at any point within the year.

- **In House** - Use of the internal provision of highway services and staff remaining within the employment of the Highway Authority.
- **External Sub-Contractor & Multiple Providers** - A highway authority managed contract with various specialist organisations to ensure the delivery of relevant highway maintenance service elements for a defined task or period of time.
- **Framework** - The Highway Authority will use framework contracts for the provision of particular works and services where appropriate.

1.5. Strategy Outcomes

The strategy promotes an integrated asset management approach to highway infrastructure, and it provides:

- Long term improvements to the condition of the network
- A case to support funding opportunities
- Better communication with stakeholders

However, the delivery of the strategy will be dependent on funding and consequently strategy outcomes will be based on the following headline approaches:

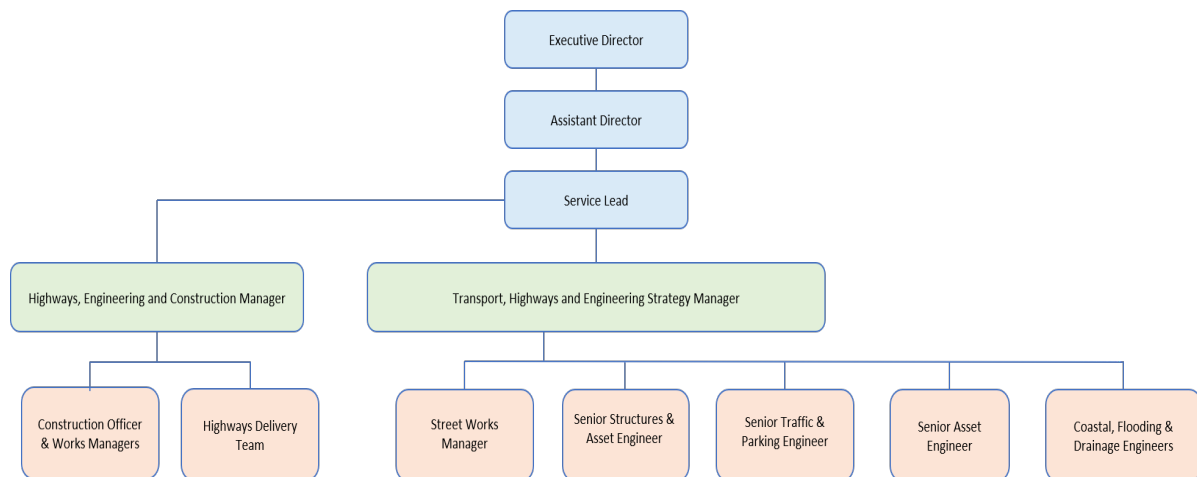
- **Preventative** - management of the assets to prevent further deterioration through a combination of planned and reactive maintenance, whilst maintaining a safe and reliable network. This strategy may often rely on a more reactive approach to service delivery.
- **Structural** - Planned management of the assets to prevent further deterioration and where possible restoring assets their original condition.
- **Resilience** - Both the preventative and the structural maintenance approaches support asset lifecycle resilience, alongside asset safety, serviceability and sustainability measures. They promote the successful delivery of planned maintenance regimes thereby reducing the magnitude and need for reactive maintenance measures.

2.0. A Strategic Approach to Asset Management

2.1. Leadership and Organisation

Leadership has a strong influence on the culture and behaviour of all organisations. Clear direction and priorities will ensure that both significant and relatively minor decisions taken across the organisation support a consistent approach to delivery of the business objectives. Such decisions will include appropriate investment decisions to meet the asset management strategy.

Strong leadership is embedded within the highway division, and it is led and supported by the following key positions within the Highway Management Structure shown below.



It is the responsibility of the asset owners for each service area to ensure that plans, processes, and procedures are implemented in line with the Highway Infrastructure Asset Management Policy and Strategy.

2.2. Risk Management

A risk-based approach has been adopted for the delivery and management of highway infrastructure services. Risks to operational objectives and core priorities will be identified, assessed and managed within available operational and funding resources.

Risk management supports proportionate decision-making by considering the likelihood and consequence of asset failure, service disruption or safety impacts. This enables resources to be directed to the areas of greatest need and supports a shift towards planned, cost-effective maintenance where feasible.

The active use of risk management in the assessment of safety defects undertaken during safety inspections of the highway assets makes use of a real-time 'on site' assessment. This approach prioritises those with the most serious risks and consequences, with the remaining defects being scheduled for rectification through planned works, thereby reducing costs and ensuring a more effective and managed repair. Highway Safety Inspectors are currently provided with additional training in Risk Management.

Safety inspection risk assessments are based on the:

- Correct evaluation of the risk posed to highway user by defects or deficiencies in the highway asset
- Ability or effectiveness to manage the risk within available resources
- Value for money

A risk register has been developed for highway services and includes mitigation and control measures. The resilient network is considered within risk management due to its relevance to safety inspections, maintenance priorities, flood risk, transportation services and critical infrastructure.

Further work will assess risks across key asset groups to support a coordinated programme of risk-based maintenance and to inform planned maintenance priorities.

2.3. Competency, Skills and Training

Competent, well-trained staff will be responsible for delivering an asset management-led delivery of the strategy and the Council will ensure that they have the appropriate skills, and that relevant training and accreditation are in place. Generic asset management and more bespoke attributes and skills required will be identified in competency frameworks for both individuals and disciplines and assessed using a skills matrix, reviewed during the annual review process. Support and / or training requirements will be identified and prioritised through the review process.

The Council operates a training plan for its operational staff which provides clear guidelines as to the qualifications and toolbox talks required for the safety and effectiveness of the operational workforce. It also provides an annual appraisal for all staff to discuss targets and training opportunities. The strategy, plans, processes, and competency frameworks will be set out in the 'Competency, Qualifications and Training Strategy'

2.4. Asset Management Systems

Given the diversity of highway services assets and their individual maintenance requirements, the Council's current asset management systems comprise a number of separate systems that effectively manage the individual asset groups, i.e., structures, highway and footway, street lighting, traffic signals. These individual systems will be linked through the common referencing of assets and association with a common highway network which supports an integrated approach to asset management.

Data relevant to the highway network and its Asset Register is held in the accredited UKPMS Asset Management System to manage highway and transport assets, customer services, maintenance, and performance. The accredited UKPMS Asset Management System, together with other asset group management systems, is used to manage assets and monitor performance across the Highway division.

2.5. Asset Inventory

Good asset management relies on an understanding of the extent, location, condition, value and maintenance requirements of its highway services assets. Asset inventory and their related attributes providing data to assist in:

- The management of the asset
- The programming of planned and reactive maintenance
- Asset history, (including interventions, service history, costs, inspections, and customer enquiries)

The Council has completed a gap analysis of the accuracy, completeness, and currency of its highways infrastructure asset inventory and as referenced in the 'Risk Register' they have established a programme of data audit, capture and updates as set out in the 'Highway Infrastructure Data Management Strategy and in the 'Asset Inventory Strategy'.

Current data associated with the following asset inventory is held in the Local Authorities asset management systems and is regularly audited and updated using, service inspections and a rolling programme of asset capture surveys:

- Carriageway & footway - location, lengths/widths, condition (via Annual Engineering Inspection - AEI), SCRIM (Sideway-force Coefficient Routine Investigation Machine via Skid Resistance survey)
- Street lighting - location and condition
- Structures - location and condition
- Improvement and resurfacing schemes (held digitally and on hardcopy records)
- Inspection surveys.

2.6. Data Management

Good asset management relies on accurate, appropriate, and current data in order to inform effective decision making. The Council has developed a 'Highway Infrastructure Data Management Strategy' and 'Asset Inventory Strategy' which outlines the approach to managing all data associated with the highway services assets and networks, highlighting the importance of regular data audits and cleansing to ensure data reliability. The 'Data Management Strategy' sets out a hierarchy for data using a risk management approach to identify importance relating to business needs. It also sets out processes to be followed by data owners with regards to data accessibility and currency, data collection, frequency of collection and updating, data management and disposal.

2.7. Environmental Management

Managing an asset as diverse and extensive as highway services assets, particularly where the assets often reside in both urban and rural areas and conservation areas, requires a sound environmental management system which regularly audits the environmental risks posed by the asset. At present the Council has an ISO14001 Environmental Management Accreditation to manage their environmental responsibilities although many of the environmental issues are linked to the health and well-being of the citizens of Redcar & Cleveland and the Council's workforce are included in regular health and safety inspections.

2.8. Communications

For this strategy to succeed it needs to be communicated clearly both internally to ensure maximum value, and externally to ensure a shared understanding of the Council's approach to asset management and where maintenance works are planned.

The 'Highway Infrastructure Communications Plan' sets out who the Council's stakeholders are, how dissemination and receipt of information will be managed, and it defines the levels and modes of communication informing stakeholders of planned and reactive work relevant to the network hierarchy.

2.9. Network Hierarchy & Resilient Network

The network hierarchy recognises that maintenance and management of highway infrastructure services assets is based on risk reflective of:

- The volume of traffic using particular roads
- Their importance in delivering the Council's aims and objectives
- The consequences of failure of certain routes or items of infrastructure
- The impact on the economy and communities

The Council has developed a Maintenance Hierarchy Strategy and a Resilient Network Strategy to apply appropriate levels of service and maintenance responses to different parts of the network, based on use, importance, risk and resilience.

At its highest level, the network hierarchy and resilient network identify key routes serving businesses, communities, services and links with adjoining authorities. These routes will be prioritised for planned and reactive maintenance and during adverse weather or other emergent events where resources allow.

The resilient network includes assets where failure would result in significant impact to the local economy or to critical infrastructure, and these have been identified and prioritised in the Highway Maintenance Resilient Network Policy and Strategy documents which are further supported by the Highway Risk Management Policy and Strategy documents.

2.10. Service Levels

Levels of Service provide a simple means of describing the standard to which highway services assets will be managed and maintained and aligned to the Council's objectives in ensuring safety, serviceability, and sustainability.

Service Levels can identify what the service might look like, what might be expected in terms of performance, safety and reliability and it will provide the Council a standard to measure delivery against, helping to promote a more efficient and effective delivery of the service. Levels of Service must take account of statutory duties and requirements, national and regional guidance, the volume and type of traffic using the network and the risk to the service user and to the Authority.

More detail of the Levels of Service associated with each of the highway services asset groups and the associated performance targets can be found in the 'Highway Services Levels of Service and Performance Management Strategy'.

2.11. Performance Management Monitoring

The measurement of performance is key to the efficient, effective and value for money management of the highway services assets.

The Council already measures performance and has several KPIs associated with the safety inspection of its assets. We use these to ensure all highway services assets are managed efficiently and effectively. Progress will be continually reviewed to ensure that performance is at the forefront of the Council's stewardship of the highway network.

The Council will be developing further performance measures targets and KPIs to monitor the effectiveness of this 'Highway Infrastructure Asset Management Strategy'.

The Council will ensure frequent performance reviews are undertaken with the asset managers and that strategies are put in place to ensure performance targets are met and these will be set out in the 'Highway Services Levels of Service and Performance Management Strategy'.

The Council also participates in national highway and transport satisfaction surveys to understand the levels of satisfaction with the Council's service delivery, the factors of importance to them and the key issues of users. The Council makes active use of the information returned through citizens surveys, satisfaction surveys and focus groups as well as customer enquiries linked to the reporting of defects to actively challenge and amend its processes to be more effective and meet stakeholder expectations.

Survey responses also help in the targeting and publishing of information clearly, ensuring customers are well informed about the performance and processes of services and influence the Council's levels of service and priorities.

2.12. Performance Measures and Targets

Performance measures, targets and the current performance data are used at different levels to ensure that appropriate action is taken to ensure an environment of continuing improvement. The Council already has leadership and management-led performance measures and targets used to manage the performance of the service. Measures and targets are set at three levels to ensure that they are most appropriate to the strategic, tactical, and operational delivery of the service.

Strategic (Council / Department) - high level understanding of the performance of the network audits Highway Services Assets. Members, Department Directors and Department management teams, much more about general direction and trends.

Tactical (Department / Division) - an understanding of infrastructure asset group and key service delivery area performance for discussion at highway management team meetings.

Operational (Division / Group / Team) - a granular and more specific understanding of the performance data which affects the daily outputs of staff, reasons for poor performance and look to make improvements through training support, changes to delivery processes or mechanisms.

Measures and performance targets will be considered not only in terms of quantities, (i.e. no of km/m² of roads resurfaced), but also in terms of performance coefficients, (i.e. no of km/m² of roads resurfaced/£ spent) and this begins to look at the effectiveness of the Council's strategies.

Understanding performance is key to the management of the highway infrastructure asset and a value for money approach. Levels of Service, Performance Measures and Targets will be set out in the Performance Management Frameworks appendices to the 'Highway Services Levels of Service and Performance Management Strategy'.

2.13. Best Practice - Collaboration and Knowledge Sharing

The Council will continue to share knowledge and good practice with neighbouring authorities and relevant professional groups to support continuous improvement in highway asset management.

The Council also benchmarks its services against the delivery of similar services with other local authorities and meets regularly to discuss and share good practice.

3.0. A Strategic Approach to Ensuring a Safe and Reliable Network

3.1. Safety Inspections

Safety inspections provide a method of frequently assessing the safety of highway services assets and in particular, the risk of a defect associated with a highway infrastructure asset affecting network users. Safety inspections differ from service inspections and condition surveys which assess the condition of highway services assets so as to understand the network condition, its financial needs and to inform planned maintenance programmes.

Safety inspections are undertaken for highway services assets within the following main asset groups:

- Carriageways (including on-road cycleways)
- Footways (including shared use)
- Structures
- Drainage
- Street lighting
- Traffic management and management of electronic traffic equipment
- Street furniture (including pedestrian barrier / restraint system and traffic signs)
- Trees and verges

The Council is the Local Highway Authority and as such under Section 41 of the Highways Act 1980 they have a statutory duty to maintain highways maintainable at public expense.

Safety inspections identify, assess, record, and prioritise the repair of defects which may present an immediate danger or significant inconvenience to users of the highway and include the condition of all highway services assets. Safety inspections may also identify defects of a lesser risk for potential inclusion in the identification of future planned maintenance or to promote a more detailed investigation.

The Council's response to defects identified during safety inspections are risk assessed in terms of their significance, i.e., the likely impact and the probability of an incident arising from the defect.

The Council's network maintenance hierarchy is based on the importance and usage of routes and is key to the delivery of the Council's risk-based approach to safety inspections and priority maintenance needs. The Council has set its own standards for the frequency of highway safety inspections, and these have been determined using the network maintenance hierarchy, with the most used roads and footways having the highest inspection frequency.

Footway and cycleway hierarchies often differ from adjacent carriageway hierarchies and therefore safety inspection frequencies for carriageways, footways and cycleways may vary and are specified in the 'Redcar & Cleveland Highway Safety Inspection Manual'.

3.2. Reactive Repairs Management

Reactive repairs will be carried out by the Council's 'in house' contractor and are generally undertaken in response to instructions from:

- the highway safety inspector
- the maintenance manager / owners of the asset groups
- public enquiries / reports

However, there are occasions when repairs are undertaken on a programmed 'find and fix' basis, often after particularly adverse weather events have occurred.

Reactive patching and minor repairs will be undertaken to ensure that highway surfaces are maintained in a safe and serviceable condition.

In conservation areas, or where there is a need to protect and retain historic surfaces and features, temporary repairs will be followed up with a permanent repair on a 'like-for-like' material basis.

Key to the management of reactive repairs will be the completion of records that identify:

- the gang which undertook the repair
- how the repair was carried out
- date and time of repair
- the extent of reactive work undertaken

The Council is working towards closer monitoring of reactive maintenance repairs to provide information to support planned maintenance initiatives to promote the long-term asset performance of the highway and in support of defending third party claims.

3.3. Skid Management

There is an established relationship between wet-road skid resistance and the frequency of skid related accidents, significant reductions in accidents can be achieved by improving skid resistance at some wet-road accident locations.

Skid surveys are carried out using a "Sideways-force Coefficient Routine Investigation Machine" (SCRIM) and are referenced to the Council's survey network in providing an assessment of skid resistance on wet roads. The skid resistance of the road surface is then compared with minimum investigatory levels assigned to the particular road section site category.

All 'A' classified roads are surveyed annually; the remaining classified and unclassified roads will be skid tested and investigated on an ad-hoc basis of need where significant accident clusters are identified.

The Council's approach to skid resistance is set out in the 'Tees Valley Highway Infrastructure Asset Management Group Skidding Resistance Policy.

3.4. Winter Service

In the event of severe weather warnings, the Council will identify appropriate resources to ensure an efficient, timely and effective response.

Where forecasts or ice monitoring stations indicate the potential for ice formation, precautionary salting will be carried out on the defined primary network. Secondary network treatment will be undertaken in accordance with the Redcar & Cleveland Winter Service Plan and available resources.

The amount of salt used will be the minimum possible to achieve adequate treatment and to minimise the adverse effects of salting on the environment.

Salt bins (where provided) will be maintained as set out in the 'Redcar & Cleveland Winter Service Plan'.

3.5. Adverse Weather

In recognition of climate change, in particular the increased risk of heavy rain, flood or strong winds, extreme winter weather and increasingly hot summers, and reflective of the role of the Council as both Highway Authority and Lead Local Flood Authority, the Council is developing processes to ensure the availability, reliability and safety of the highway infrastructure network during times of:

- Intense / prolonged rainfall
- Winter ice and snow
- Groundwater, surface water (pluvial) and river (fluvial) flooding

In addition, to support the management of extreme adverse weather events the Association of Directors of Environment, Economy, Planning & Transport (ADEPT), has published a guidance document for highway asset and network managers entitled Local Highways Climate Adaptation Guide. The guide sets out how to assess the risks that climate change poses to highway infrastructure assets, as part of both a wider climate adaptation assessment and a transport asset management plan.

The guidance provides direction and recommendations on climate adaptations and resilience options based on three practical guides:

- Guide 1 on how to update a resilient route network,
- Guide 2 on how to undertake a local risk assessment and
- Guide 3 on how to update an asset management plan for climate adaptation.

This new guidance will be evaluated within the review period of the next HIAMS, and it shall be adopted and applied as appropriate, reflective of climate change infrastructure adaptations for Redcar and Cleveland local service delivery demands.

4.0. A Strategic Approach to Delivering a Sustainable Network

4.1. Asset Condition Surveys

In addition to safety inspections the Council has a programme of asset condition surveys that assess the condition of highway services assets to:

- Understand the asset condition
- Identify assets requiring maintenance
- Plan potential interventions / treatments required to:
 - prevent further deterioration
 - restore the asset's functionality
 - identify the required finance
 - inform planned maintenance programmes.

Asset condition surveys are undertaken for infrastructure assets within the following main asset groups:

- Carriageways (including on-road cycleways)
- Footways (including shared use)
- Structures
- Street lighting
- Trees
- Drainage

The Council's programme of asset condition surveys, assessment and recording of asset condition provides a framework for identifying planned maintenance of the highway so as to maintain it in a safe and serviceable condition and to promote asset sustainability.

Condition surveys are undertaken using the network maintenance hierarchy, based on the importance and usage of routes. The Council has set its own frequency of asset

condition surveys, and these have been determined using a risk-based approach based on the network maintenance hierarchy.

4.2. Lifecycle Planning

As recommended by current national guidance and good practice, the Council makes use of lifecycle planning to identify:

- Likely maintenance requirements and potential treatment milestones
- The budgetary requirements to achieve the maintenance proposals
- Condition projection modelling

Lifecycle planning considers the whole life maintenance needs of the asset and the costs of maintenance interventions over that period, taking account of:

- The treatment lives of maintenance interventions
- Treatment intervention milestones
- The relative cost of treatments
- Levels of Service

This approach enables alternative maintenance strategies to be evaluated based on:

- Meeting the Levels of Service
- Funding provisions/availability
- Required service lives

This ensures the maintenance undertaken is the most effective and timely for the asset, the asset group and the users of the highway network and is affordable and within the available budget. The Council's approach to lifecycle planning is set out in the 'Highway Infrastructure Lifecycle Planning and Prioritisation Strategy'.

4.3. Design

Planned scheme designs will be specified by the maintenance manager / asset owners. They will include an assessment of the options to deliver the required outcomes based on the risk of each improvement option/treatment/cost. Those responsible for the designs will liaise with those responsible for construction to ensure the most effective designs and contractual arrangements are in place to secure the maximum effectiveness, longevity, and value for money design solutions. Designers shall be encouraged to adopt the use of sustainable, environmentally friendly, low carbon and readily available products, materials and processes.

4.4. Works Programme - Forward Works Plan

This strategy supports the development of one, three and five years forward works plans, initially focused on carriageways and progressively extended to other highway infrastructure and transport assets.

The strategy also provides clear indications as to the nature of planned maintenance required to maintain the network, i.e., structural, preventative and resilient maintenance needs by considering asset condition and lifecycle costs against the provision of the desired Levels of Service, the available budget, and the ability to deliver the required maintenance.

The Forward Works Plan is primarily focused on the carriageway asset group, with programmes being developed for footways, road gullies, structures, and traffic signals. The remaining assets comprising, pedestrian barriers and vehicle restraint systems are being identified and surveyed to be incorporated in time.

The Forward Works Plan will:

- provide a work bank that can be prioritised in the Council's annual works programme within the available budget
- show the individual asset group and collective works required over the 1, 3 and 5 years forward works plan
- identify the current levels of maintenance backlog
- indicate how these will continue to grow if expenditure does not meet the plan requirements
- enable the timescale of the plan to be adjusted to best tackle the maintenance required to reduce the backlog and provide the agreed Levels of Service subject to funding provisions, affordability and resource availability.

The prioritisation of the schemes identified within the forward programme will be determined annually reflective of available budget, asset condition and risk.

5.0. Making the Best of Finance and Delivery

5.1. Asset / Cross-Asset Prioritisation and Budgeting

The Council recognise that the current budget allocation is insufficient to manage the existing and growing level of maintenance backlog, and the recommendations of a lifecycle planned approach to the maintenance of the highway services assets.

It has reviewed the existing classified road network and has created a more manageable network maintenance hierarchy which reflects the importance of routes and their use and adopts a risk-based approach to the allocation of Levels of Service and associated performance and targets.

Procedures to determine highway infrastructure asset maintenance priority and budget needs should not exclusively be applied to individual highways infrastructure assets based on their funding availability. For example, instances may arise where it becomes apparent that the maintenance of a highways structure may require funding from the highways budget to be diverted in order to address greater critical maintenance needs impacting on the general safety and serviceability of the network. Whilst such circumstances tend to be irregular, flexibility in the allocation budgets and the movement of funds between budget heads should be permitted reflective of the prevailing circumstances and the priority needs of the network.

As a consequence, a consideration of cross-asset prioritisation will be utilised to understand the budgetary and maintenance requirements of all highway services assets and how best to maintain the infrastructure assets in a safe, reliable, and sustainable manner.

Cross-asset prioritisation relies on each asset owner understanding the maintenance needs of their asset stock and planning how this can be managed as budgets rise and fall to support the needs of other asset groups.

5.2. Works Delivery

Whilst certain works are delivered 'in house', procurement frameworks are also available to assist in achieving economies of scale for the delivery of design and construction services. This approach and the use of outcome-led / negotiated contracts ensure that annual works for highway services assets can be delivered 'in year' in the most efficient and effective way and offer value for money within budget availability.

6.0. Improving the Environment

6.1. Safety Audit

The Council has an active approach to the safety audit of highway works. The safety audits apply both to improvements promoted by the Council and also those to facilitate private developments, often developer funded. Safety audits will be undertaken based on a risk assessment of the location, usage, and the likely effects of the proposed improvements on the existing infrastructure.

6.2. De-cluttering

The Council has an active decluttering process to ensure that highway services assets are either removed or not scheduled for future replacement where they are no longer required or have been superseded.

Opportunities will be taken during highway improvements, maintenance interventions and asset condition inspections to assess whether assets remain necessary for safety, serviceability or statutory reasons, and to remove redundant assets where appropriate to reduce long-term maintenance liability.

Highway service assets in sensitive environmental locations, including conservation areas and other protected landscapes, will be reviewed with relevant environmental management colleagues.

6.3. Carbon

Measures will be employed to reduce the Council's carbon footprint for the maintenance of the highway services assets by employing measures to:

- Make use of cold mix carriageway and footway treatments
- Use recycled and recyclable materials
- Provide fuel efficient fleet and tools
- Adopt efficient routing of services for reactive management repairs, inspection/survey and for monitoring the delivery of winter services, etc.
- Invest in future innovative treatments.

6.4. Air Quality

Redcar and Cleveland Council has a statutory duty to carry out a periodic review and assessment of air quality and reporting findings in an Annual Status Report (ASR).

Poor air quality is a significant public health concern, especially for the young, the elderly and people with existing respiratory and heart conditions.

Air quality monitoring is undertaken at a static site in Redcar where concentrations of nitrogen dioxide, sulphur dioxide, ozone and particulates are measured on a minute-by-minute basis and compared with health-based standards. Nitrogen dioxide monitoring is additionally carried out at various sample sites across the borough and is reported in the ASR.

7.0. Meeting Government Requirements

7.1. Infrastructure Asset Valuation

The Council will make an annual return of its year end accounts in accordance with good practice provisions via 'Whole of Government Accounts'. This includes an assessment of the replacement cost of its highway infrastructure assets and the current depreciated cost of the assets. The Council will ensure it has sufficient knowledge of its highway infrastructure assets to be able to identify the extent of each asset group and its replacement cost to provide a gross replacement cost.

By regular inspection, survey and employing lifecycle planning to understand the backlog, condition, and cost of maintenance treatments it will be possible to identify an asset depreciated replacement cost, understand annual and accumulated depreciation and compare this with the annual spend on highway infrastructure maintenance thereby providing a more accurate reflection of the trend in deterioration or improvement and the real cost of re-establishing a well-managed highway network.

7.2. National Data Sets

The Council is required to return data sets to central government for benchmarking purposes and to identify the effectiveness of the Council's highways maintenance grant expenditure.

Using a systematic approach to the processes required to support the strategy supplemented by more granular performance management information detailing efficiency and effectiveness, data can be provided to support national data sets for condition, efficiency, value for money and customer satisfaction.

7.3. Incentive Fund

The Department for Transport have introduced an incentive element to highway maintenance funding requiring each local highway authority to make a self-assessment of its performance level in delivering against questions related to asset management, data, customer, delivery, etc. This strategy sets how the Council will manage its highway services assets and provides confidence that it is addressing all the Incentive questions at the highest level.

7.4. Code of Practice

The 'Highway Infrastructure Asset Management Strategy' sets out Redcar & Cleveland Council's approach to meeting the Code of Practice - Well-managed Highway Infrastructure (2016). It references documents, which will complete the framework and processes, thereby enabling the highway services assets to be maintained using a risk-based lifecycle approach to future maintenance and service delivery.

7.5. DfT Local Highways Maintenance Transparency Report

Redcar & Cleveland Council must submit and publish an annual Highways Transparency Report detailing network condition, preventative maintenance and pothole repair strategies to assist the public to understand how their highway networks are maintained and funded and how climate resilience and adaptations is being addressed.