



# **Leicestershire County Council**

## **Highway Asset Management Strategy**

## Highway Asset Management Strategy

### 1. Purpose

- 1.1. This document sets out the broad objectives and the strategic direction that the County Council will adopt in support of the principles set out in our Highway Asset Management Policy document.
- 1.2. In conjunction with the Highway Asset Management Policy, it informs the Highway Infrastructure Asset Management Plan (HIAMP) which sets out how we will apply and operate our asset management principles to ensure that our highway network remains safe, serviceable and sustainable for the benefit of our stakeholders, taking account of the available resources.

### 2. The Challenge

- 2.1. Leicestershire's highway network is a functional asset which faces continual pressure from increasing use and the impacts of weather. Deterioration of the many elements of this network is inevitable and the council must continuously make decisions about when, how and where to intervene and undertake repairs or renew the assets. These decisions are becoming increasingly difficult due to the challenging economic circumstances in which the council is currently operating.
- 2.2. Formalising a strategic approach to maintaining highway assets is therefore essential to ensure that appropriately informed, cost-effective decisions are made about the treatment strategies that we apply.

### 3. The Core Elements of Our Strategy

- 3.1. This document considers the strategic approach to nine core elements of our asset management plan. When considered together these strategies will ensure that we make the best possible treatment decisions and that the finite resources available to the council deliver the best possible outcomes for our stakeholders consistent with the County Council's statutory duties as Highway Authority.
- 3.2. The core elements are represented in diagram 3.1 overleaf.
- 3.3. The Highway Infrastructure Asset Management Plan(HIAMP) will provide further operational details about how we will apply our strategy for each of these elements.

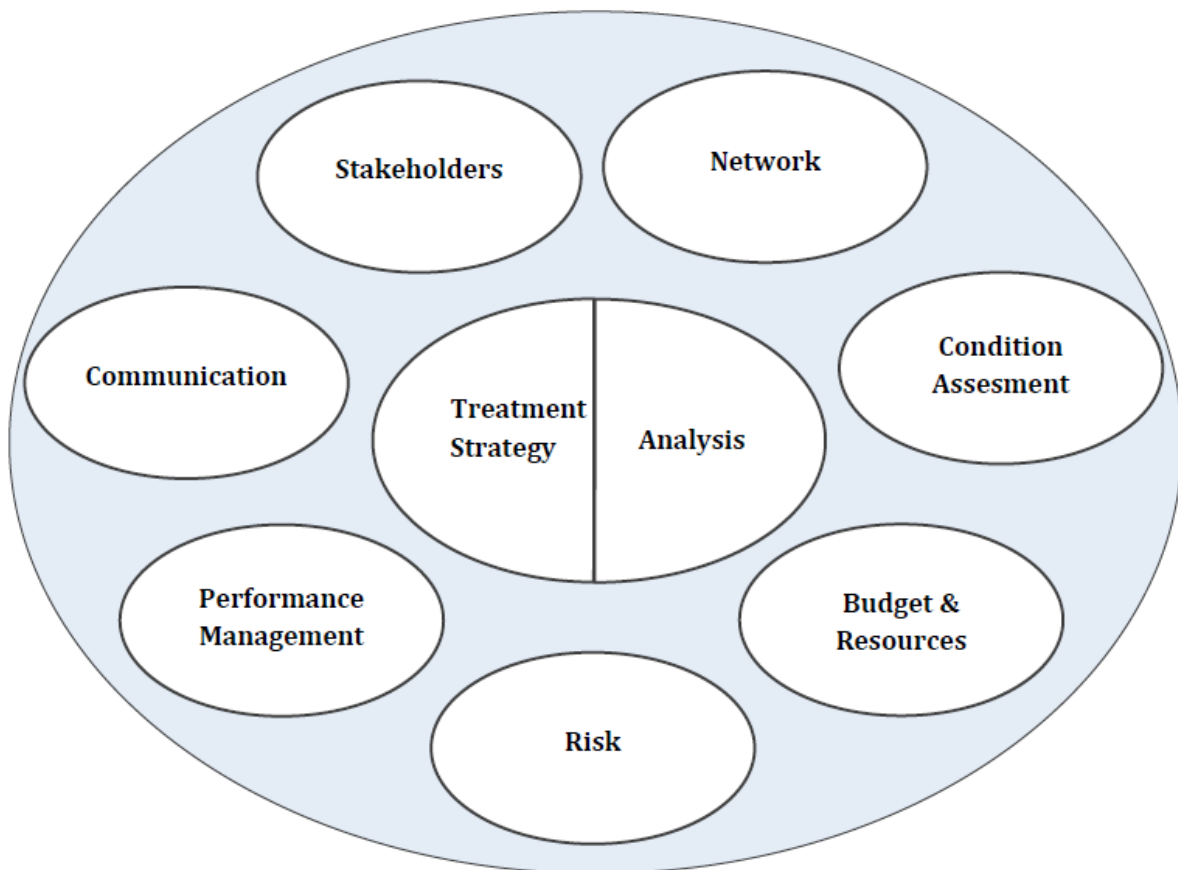
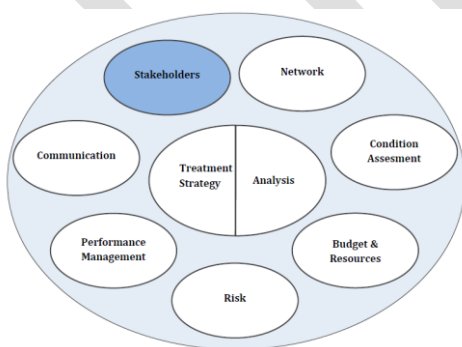


Diagram 3.1 Asset Management Strategy - Core Elements

## 4. Stakeholders



4.1. The principal purpose of asset management is to ensure that our network meets the needs and expectations of our stakeholders. It is therefore fundamental that we listen to and communicate with stakeholders on an ongoing basis.

4.2. As part of our current review of our highway maintenance strategy and policy we carried out a comprehensive consultation exercise with stakeholders during the summer of 2016 (through an online questionnaire and local workshops) to improve our understanding of stakeholder expectation about the network and its condition, the acceptance of current service levels and the support for proposed changes in delivery. This feedback has been used to support development of our strategies for each of our main

asset groups and will also be used as part of a review of network hierarchy to support an approach to risk and priority, in line with the risk-based principles set out in the new code of practice “Well-Managed Highways”

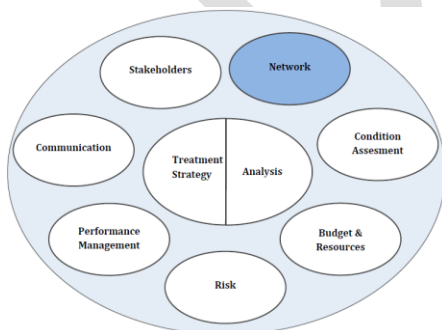
4.3. The council has subscribed to the annual NHT customer satisfaction survey since 2008 and it is our intention to continue this. We are developing a new reporting approach to ensure that we consider more carefully those areas where the survey demonstrates either

- that perception of our service is significantly below that of our peer authorities
- Or that perception of our service is significantly below a defined acceptable level
- Or that perception of our service has fallen significantly below our previous levels.

4.4. We have been managing our day to day customer enquiries since 2005 through the Confirm Highway Management System. More recently we have developed “dashboard” style reports for particular service areas which accumulate enquiries by type and area. We will extend this reporting to help us to identify both local and strategic weaknesses in the network or our service, for example by highlighting the levels of drainage related reports during a certain period or by locality.

4.5. We are investigating options to facilitate the involvement of our Parish Councils more directly into local maintenance. This may include a Highway Warden scheme which would strengthen communication and improve our awareness of and response to local concerns about service levels.

## 5. The Network



5.1. Understanding our network is fundamental to the delivery of strategic asset management and this begins with an inventory of our assets. The council holds a substantial amount of inventory data, particularly about our key assets; Carriageways, Footways and Cycleways, Structures, Street Lighting and Drainage. However there are some gaps in knowledge of our drainage assets and some of our secondary data, such as line-markings. We are also lacking current inventory data about some of our non-key assets such as bollards, fences and railings.

- 5.2. Work will be ongoing in reviewing our inventory and consolidating our Asset Register. The register will itemise what we will record, how we will collect and update, where and in what form the data will be held, who will have ownership, who will have access and to avoid collecting redundant data, how it will be used.
- 5.3. We are also undertaking a gap-analysis of inventory data, including a consideration of the value and priority for holding data about particular asset groups and the resources and costs involved in collecting and updating any data gaps. We will develop a clear strategy and timeline for updating and adding to our Asset Register, based on the current analysis.
- 5.4. We employ various hierarchies and network categorisations in the current management of our network. Sub-sets of road classification are used for reporting carriageway condition, calculating Depreciated Replacement Costs (DRC for the purpose of Whole Government Accounting) and for apportioning the annual maintenance budget. On the other hand, we use the current hierarchy that is described in the national code of practice “Well Maintained Highway Infrastructure”, for the purpose of categorising inspection frequencies on carriageways and footways, and for prioritising some treatments.
- 5.5. To support a clearer strategic approach and to conform to the new Code of Practice (Well Managed Highway Infrastructure published October 2016) we are reviewing our local road hierarchy to ensure that it reflects stakeholder expectations, levels of use and strategic importance. We will use this revised local road hierarchy to define our inspection frequencies, we will also use it to support an assessment of risk, to reflect network condition and to prioritise our treatments, including every treatment from our response to critical defects and the planning of major works programmes.
- 5.6. To develop treatment strategies and to monitor their effectiveness, we are also developing a classification of our network which takes account of the key characteristics that affect the deterioration of carriageways; commercial traffic volume, adequacy of foundation, carriageway width and the presence of edge restraint.
- 5.7. We are also developing our Resilient Network. During extreme weather, we currently focus resources on our Winter Maintenance network, which breaks the whole network down into four levels of priority. However, in July 2014 the Department for Transport published the ‘Transport Resilience Review – A review of the resilience of the transport network to extreme weather events’. This recommended that highway authorities should develop a “Resilient Network” which will receive priority through maintenance and other measures in order to maintain economic activity and access to key services during severe weather events. The new Code of Practice “Well Managed Highway

Infrastructure” extends the function of the Resilient Network to cover all disruptive events, not just severe weather. Following publication of the new code of practice which provides specific guidance about the identification of the Resilient Network we are now developing criteria for refining our Resilient Network.

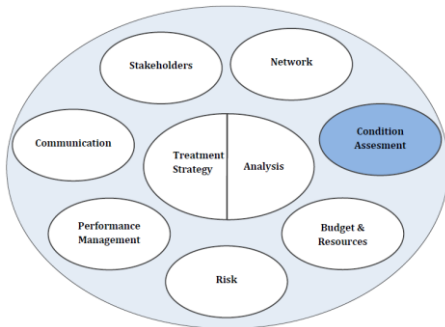
5.8. These three networks will be key factors in categorising risk and determining treatment priorities. For example, a treatment need on a network link that is identified as part of the Resilient Network and which is in the higher levels of the Local Road Hierarchy will be considered a higher risk than a similar need on a link that falls outside these categorisations.

5.9. These revised hierarchies and categorisations will also support our Network Management Plan and are being developed in step with a review of that same document.

5.10. The revised Hierarchies and categorisations are shown in the table below

<b>Hierarchy/ Classification</b>	<b>The Key Factors that Contribute to the Categorisation</b>	<b>How the Hierarchy or Categorisation will be Used</b>
Existing Road Classification Network	<ul style="list-style-type: none"> <li>• Unchanged (based on the strategic level of the links destination)</li> </ul>	<ul style="list-style-type: none"> <li>• For reporting and comparing condition data through national Performance Indicators and Whole Government Accounting/Asset Valuation</li> </ul>
Local Road Hierarchy	<ul style="list-style-type: none"> <li>• Traffic Volume</li> <li>• Strategic Purpose</li> <li>• Stakeholder Expectation</li> </ul>	<ul style="list-style-type: none"> <li>• For prioritising treatments and managing risk.</li> <li>• To establish inspection frequencies</li> <li>• To support our Network Management Plan objectives</li> </ul>
Carriageway Maintenance Homogenous Road Group Categorisation	<ul style="list-style-type: none"> <li>• Commercial traffic volumes</li> <li>• Adequacy of structural foundation</li> <li>• Carriageway width</li> <li>• Presence of edge restraint</li> </ul>	<ul style="list-style-type: none"> <li>• To develop, deliver and monitor treatment strategies appropriate to the characteristics of the network.</li> <li>• To support the management of risk</li> </ul>
Resilient Network	<ul style="list-style-type: none"> <li>• High level strategic purpose</li> <li>• Links to major infrastructure</li> <li>• Connectivity with other key transport networks</li> </ul>	<ul style="list-style-type: none"> <li>• To ensure that the network is resilient to severe weather and other major disruptive events</li> <li>• To support the management of risk</li> </ul>

## 6. Condition Assessment



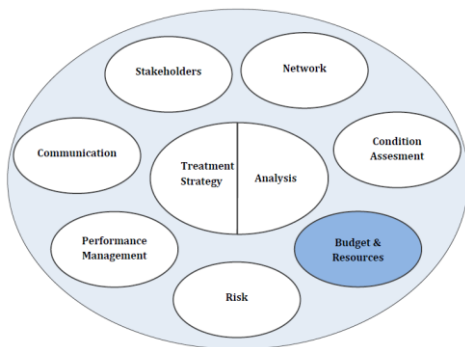
6.1. Monitoring the condition of our assets is a fundamental component of asset management in order to demonstrate the levels of service that we are delivering, identify trends in improvement or deterioration, identify priorities for focussing our resources, monitor the effect of our treatment strategies and provide the base

data required for lifecycle modelling and the calculation of Depreciated Replacement Costs (DRC).

- 6.2. We undertake comprehensive annual surveys to collect condition data about all of our carriageway and footway asset (SCANNER, Griptster and CVI), updating the data through a continuous four year cycle. This data is collected and analysed within the UKPMS framework. We have previously analysed this data using the UKPMS module licenced from the commercial provider “Yotta” but we have now transferred the data into the “Confirm” Highway Management System (HMS) which we also use for works issuing and recording of our scheduled safety inspections. Bringing these processes together within the same system will not only save us money by reducing licencing costs but will also improve the opportunities to link these data sets. We do not intend altering our current levels or methods of UKPMS condition collection.
- 6.3. Our Street Lighting inspections are already recorded in the HMS where we also hold all of the street lighting inventory and works records. Asset management relies on being able to make strategic links between condition, treatment and cost and holding this data within a single highway management system provides clear opportunities for analysis.
- 6.4. We undertake scheduled safety inspections of all highways except on our rights of way network and some of our unsurfaced minor roads, to identify and respond to deterioration that is likely to cause a significant risk to users. Once we have implemented the strategy for revising our network hierarchies and in order to develop our risk-based approach in line with the guidance provided in “Well Managed Highway Infrastructure”, we will revise and update the frequency of these inspections. Frequencies will be established in accordance with the level of risk associated with each level of the local network hierarchy ( see section 5) and aligned with the level of available inspection resource. This will help us to identify and respond more effectively to the most critical defects on the network.

6.5. We have recently modified the attributes associated with our inspection lengths so that safety inspections can also record an assessment of the need for various surface treatments to the footway and carriageway. This data will contribute to the process of identifying specific scheme locations by analysing coincidence with the UKPMS defect data.

## 7. Budget & Resources



7.1. The county council has been dealing with a difficult financial settlement since 2009/10 and diagram 7.1 overleaf shows the anticipated maintenance budget (revenue and capital sources combined) that will be available up until 2020/21. Whilst there have been some helpful initiatives from central government in recent years to ensure more certainty in future budgets, the uncertainties around the future of austerity and the Incentive Fund, Challenge fund and Pothole Fund, introduces a degree of risk to these projections.

7.2. In response to the economic pressures, the council has implemented clear financial direction through its Medium Term Financial Strategy (MTFS) which identifies efficiency savings and service reductions across all areas of service delivery, including highway maintenance. Some of the saving requirements identified in the MTFS are being delivered through a process of transforming the council's operating model. This process has reduced staff resource and in the short term some skill levels have been reduced as a consequence. This includes a recognised short-term reduction of skills and understanding in the area of strategic asset management which the council has addressed through the appointment of temporary specialist consultancy support. A review of highway maintenance strategy and policy is taking place and has established a specific project to deliver the recommendations of the HMEP asset management guidance document and the new Code of Practice "Well Managed Highway Infrastructure". One of the aims of this project will be to promote asset management knowledge and skills throughout the leadership, commissioning and delivery elements of the organisation.



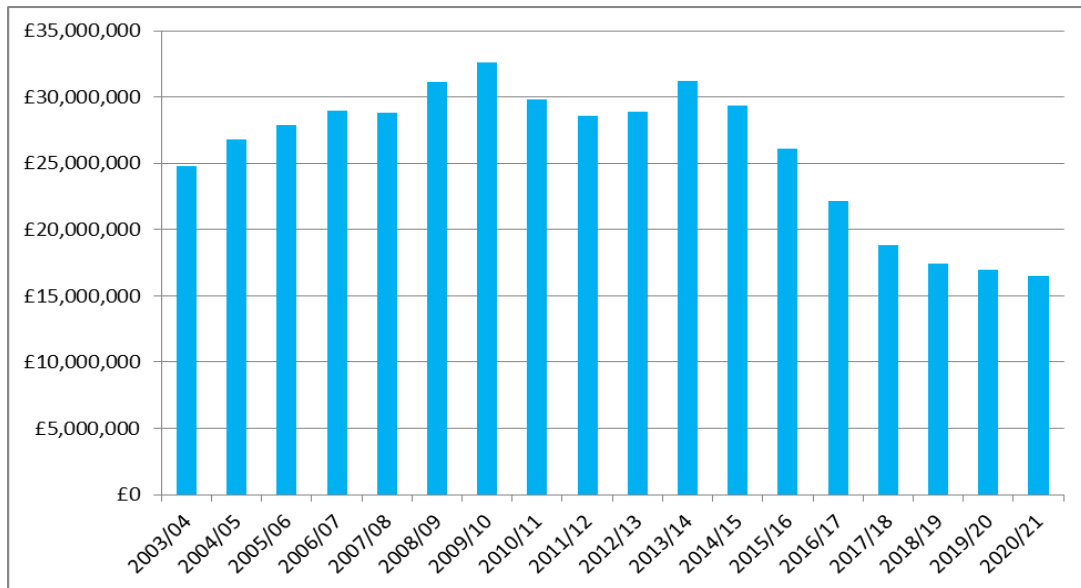
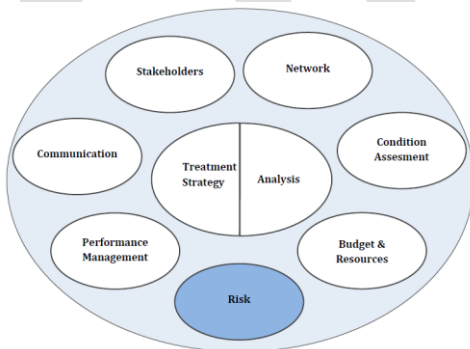


Diagram 7.1

7.3. The budget projection between 2010/11 and 2020/21 represents a reduction in real terms of 78% in spending power when inflation is factored in. This level of budget reduction will require a significant change of approach and is unlikely to be accommodated without an impact on service levels.

## 8. Risk

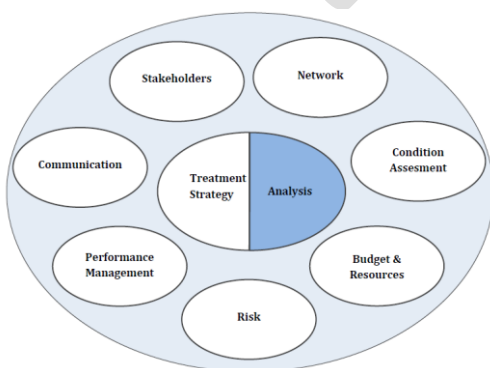
8.1. The analysis of risk applies to asset management from a variety of different perspectives ranging from the broad strategic and corporate risks, such as the loss of the asset or a significant change in the corporate budget to those affecting discrete processes or assets such as the risk that an individual defect might present to stakeholders.



8.2. Risk is present throughout asset management because of the extensive choices, often made without full understanding of the asset, how it will perform and the consequences of failure, combined with a variety of uncertain external factors influencing the performance of the network, including weather, changes in budget provision and political direction and the demand from other service areas.

- 8.3. It is not possible to eliminate all risk from asset management. This means that while some mitigation is possible, the usual approach will be to understand the degree of risk and its possible consequences and then balance this against the cost of reducing or eliminating the risk and the benefits of accommodating the risk.
- 8.4. Risks affecting our strategic objectives are managed throughout the departmental structure, beginning with Team Plans which document our key objectives in support of corporate strategy and include a monthly assessment of the likelihood of a risk occurring and the severity/impact of the consequences. The likelihood and severity are factored to provide a score which is subsequently converted to a RAG rating. Significant strategic or corporate risks are reported through the management chain and consideration given to further mitigation.
- 8.5. More specific risks associated with the maintenance of highway assets will be assessed against an understanding of the strategic importance of the asset or assets concerned. Fundamental to this will be the development of our local road hierarchy and our Resilient Network, both of which will reflect strategic significance. Risks will therefore be rated by considering the likelihood of the risk occurring, against the severity of its consequences but then further factored by the strategic significance of the asset. For example an identical pothole on two different carriageways, both carrying the same volume of traffic would have the same impact if a vehicle collides with it. However, it will have a higher priority on one of the carriageways if it is part of a link with more strategic importance.
- 8.6. As well as identifying our critical assets and developing our local road hierarchy, we will produce a risk register specific to asset management and report details of risks through our management structure on an exception basis.

## 9. Analysis (Life-Cycle Modelling)

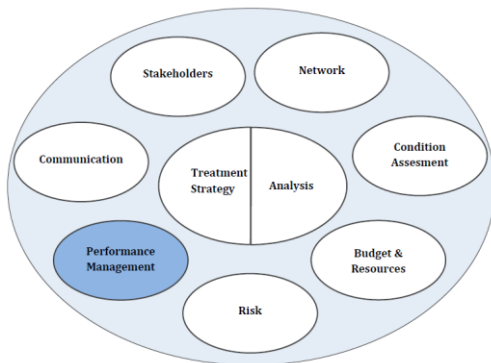


- 9.1. The county council has developed life-cycle plans for carriageways, footways, structures, street lighting and traffic signals. All of these are static assessments of the typical lifecycle that would be applied to these assets in optimum steady-state conditions. They do not include an input of actual budget or

consider how different treatments would be triggered by variations in condition. While these life-cycle plans provide a perspective on network need, they do not reflect our current budget levels or the frequency of treatment interventions and they do not include a dynamic assessment of the impact of treatments on condition.

- 9.2. We will continue to employ this straightforward but static analysis of lifecycle planning to many of our minor asset groups.
- 9.3. For all of our key assets, with the exception of drainage where we do not have enough reliable data about inventory or condition, we will develop, validate and apply dynamic life-cycling modelling techniques. We are currently developing a life cycle model for our carriageway asset using the HMEP Lifecycle Planning Toolkit and in due course we will develop models for the other key assets using the same facility.
- 9.4. These dynamic lifecycle models will allow us to model different scenarios in terms of the three-way relationship between condition, treatment and cost. For example we might model the consequences on condition if we continue with our current spend and compare this with the impact on condition if we apply the anticipated reducing budget. This analysis will be used to support our treatment strategies and to make decisions about the distribution of our budgets
- 9.5. Lifecycle models will not be used to identify specific schemes or programmes of work. Rather they are tools for testing and managing our treatment strategies and to provide evidence to support and make the case for the allocation of budgets.

## 10. Performance Management



- 10.1. We will include within the HIAMP a Performance Management Framework which will define the indicators that we will use to monitor, inform and develop the performance of our asset management policy and strategy. Many of these indicators are already measured but we will group them in the following way to manage performance through

consideration of levels and changes in Asset Condition, Customer Satisfaction, Communication and Asset Management Delivery.

10.2. Examples of the Performance Indicators that we will use in each of these categories are shown in table 10.1. Where appropriate, performance indicators will also be categorised to reflect performance in terms of maintaining safety, serviceability and sustainability

<b>Condition:</b>	Scanner and CVI Current Condition Indicators Bridge Condition Index Number of Defect Reports (Flooding, Potholes, Blocked Gullies etc) Depreciated Replacement Costs Number of Damage/injury Claims Environmental PI's
<b>Customer Satisfaction:</b>	National Highways and Transport Network (NHT) Customer Satisfaction Survey PI's Customer enquiries (by category) Feedback Forms via Letterdrops "A-Road to Zebras" public consultation feedback
<b>Communication</b>	Response Times (to enquiries) Communication Log (documenting Parish Newsletter articles, press releases,
<b>Delivery:</b>	Internal Asset Management Strategy/Delivery Profiles Climate Change adaptations/Carbon Reduction Strategy Budget/Spend Profiles unit costs Statutory Inspection Completion Decommissioning by type and quantity

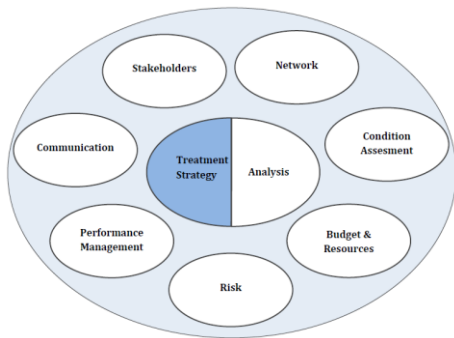
Table 10.1 example Performance Indicators

- 10.3. We also undertake benchmarking via a number of channels but primarily through our membership of the Midland Service Improvement Group (MSIG) and the Midlands Highways Alliance (MHA), which both comprise a consortium of local authorities from our region and beyond. These groups also provides opportunities for sharing knowledge and innovation.
- 10.4. The NHT survey provides a further opportunity to compare our performance with other authorities, as does the annual Asphalt Industry ALARM survey and the DfT's summary site showing the annual UKPMS condition returns.
- 10.5. The most recent condition indicators for our Key Assets are shown in Table 10.2, along with the Target bands that we anticipate working within as network condition declines.

PI	Description	2014/15	2015/16	2016/17	Target 2017/18-2020/21
Carriageways (All)	% of the classified road network (A, B & C class roads) where structural maintenance should be considered (SCANNER)	2%	2%	2%	6%
Carriageways (A Class Roads)	% of the principal road network (A class roads) where structural maintenance should be considered (SCANNER)	1%	1%	1%	2-4%
Carriageways (B Class Roads)	% of the non-principal road network (B class roads) where structural maintenance should be considered (SCANNER)	2%	2%	1%	4-6%
Carriageways (C Class Roads)	% of the non-principal road network (C class roads) where structural maintenance should be considered (SCANNER)	3%	2%	2%	6-8%
Carriageways (Unclassified Roads)	% of the unclassified road network where maintenance should be considered (visual inspection)	8%	7%	9%	9-13%
Footways	% of the footway network where structural maintenance should be considered (FNS enhanced Survey)	8.6%	3.8%	8.7%	TBC
Street Lighting Columns	% of street lighting columns needing replacement	16.21%	14.87%	13.53%	13.53%
Traffic Signals	% of traffic signal installations requiring complete renewal (age and fault history)	<4%	<4%	<4%	<4%
Bridge Spans	% of bridge spans with a BCIcrit value below 75	10.0%	10.0%	10.0%	10.0%

Table 10.2 Key Asset Condition PI's

## 11. Treatment Strategies



11.1. The significant reduction in the maintenance budget since 2010/11 (see section 7) will require the adoption of different treatment strategies from those previously applied to the network and it is anticipated that some service levels will need to reduce. It is important to recognise that the current condition of the network reflects the good level of

preventative treatment and renewals undertaken over the last ten to twenty years and the good overall condition that Leicestershire's road network was in at the beginning of the period of austerity. The consequences of the current levels of investment will not therefore manifest themselves fully for several years.

- 11.2. We will seek to maximise the serviceable life of assets and therefore reduce the frequency of asset renewals. We will do this by focussing on **Preventative** treatments such as surface dressing for carriageways, re-waterproofing decks and re-pointing brickwork and joints on structures.
- 11.3. To achieve the optimum whole-life cost from our assets, we will intervene with these treatments as late as possible, taking account of the risk and stakeholder tolerance of the decline in service level prior to treatment.
- 11.4. For our carriageway asset we will define our strategies for each road group by categorising the proposed treatments into five strategic types and presenting the strategy in the form of a bar chart showing the proportions of each type we anticipate applying. This will allow us to communicate our strategies in a clear way, to validate delivery of the strategy and to analyse its effectiveness in addressing the immediate safety and serviceability of the network, balanced with long-term sustainability.
- Treatment Type 1. **Reactive-Restorative** – Unavoidable, unplanned, immediate treatments necessary to restore a safe and serviceable condition. The repair is likely to be of limited life and have a poor whole life cost benefit eg pothole repairs. We will aim to minimise this type of repair but particularly on our unclassified network there will be an expectation that this type of repair will be required frequently due to the vulnerability of foundations and the lack of edge support and definition.
  - Treatment Type 2. **Planned-Restorative** – Scheduled repairs, required to restore local deterioration of the asset to maintain a serviceable condition. Intended to

extend the serviceable life and improve whole life cost. Eg planned patching which will be a cornerstone of our carriageway maintenance strategies in the foreseeable future.

- Treatment Type 3. **Preventative** - Intended to extend serviceable life and desirable to arrest or delay further deterioration of the whole asset eg surface dressing. This has long been and will continue to be the primary treatment that will ensure we maintain network condition cost-effectively and with an appropriate balance between considerations of immediate safety, mid-term serviceability and long-term sustainability.
- Treatment Type 4. **Improvement** – Intended to bring the asset to an improved level that is fit-for-purpose eg strip-widening to manage over-riding damage or deep reconstruction to ensure the foundation is fit for increasing traffic levels. This type of treatment usually has a high up-front cost but failing to upgrade carriageways that are no longer fit for purpose is likely to incur an even higher whole-life cost due to frequent requirements for Type 1 and Type 2 repairs.
- Treatment Type 5. **Renewal** – Full replacement of an asset deemed beyond a serviceable/maintainable condition and therefore at the end of it's lifecycle (example; full width resurfacing) We will aim to avoid premature renewal of an asset by continuing to maintain it in a serviceable condition where it can be shown that Treatment Types 1, 2 and 3 remain cost-effective.

11.5. Table 11.1 below provides a strategic overview of the broad approach that we will apply to each of our assets up until 2020/21.

**Table 11.1 Outline Strategy for Each Asset Group**

<b>Asset/Service Group</b>	<b>Outline Strategy and Service Levels</b>
Carriageways	We have maintained our carriageways to a high standard and while the unclassified rural network is showing some signs of increased deterioration, we still have a network that is in reasonable shape. However, the pressures on the minor rural network and the limited budget for surface renewals will now make it difficult to maintain good condition on the rest of the network. We will rely even more than we have in the past on carriageway patching and surface dressing to maintain serviceability and sustainability, applying treatments as late as possible without seriously compromising the surface condition. However, we anticipate an increase in pothole numbers at a time when we were looking to move away from reactive repairs and the costly

	<p>operation of our mobile road-menders. Developing the risk-based approach may help us to focus only on those defects that represent a significant hazard which may offset some of this concern but we have not yet quantified this benefit. Unfortunately, a large part of our unclassified road network has no formal construction. These roads have simple “evolved” over the years from their previous stone-picked base through to their initial surfacing, probably bound with coal tar. Many of these roads are no longer fit for purpose, lacking the strength, width and edge restraint required to capably carry the traffic loads they are subject to. Over time we have made inroads into these problems by strengthening, widening and sometimes by providing passing bays and installing kerbs on the insides of bends. However there is very little prospect that we will undertake much of this type of work in the foreseeable future and so these roads will be particularly vulnerable to rapid failure. We will consider carrying out additional inspections on these routes. Where we suffer any catastrophic failures we may have to consider temporary long-term closures or speed limits.</p>
Footways	<p>We will review and develop our footway hierarchy, in line with the new code of practice and develop our risk-based approach to prioritising repairs and renewals. Developing our current lifecycle plan to more effectively model the performance of the county’s footways is a key objective to inform future strategies and resource requirements. Our footway network is in reasonable overall condition but does show signs of its age and will continue to require an extensive programme of renewal to maintain a steady-state in the overall condition. We will continue to undertake slurry seal as a preventative treatment. We will specifically review the use of a small number of remote rural footways which are in poor condition but due to extremely low levels of use these are unlikely to be priorities for renewal. We will therefore designate an additional category within the hierarchy that reflects the low level of use and assigns maintenance standards comparable with our public rights of way network.</p>
Cycleways	<p>Cycleways are currently managed as an integral part of either our footway or carriageway assets. However, we are currently developing a separate inventory of cycle routes. This will allow us to understand the specific performance of the routes designated for cyclists, apply cyclist specific risk assessments and develop</p>



	<p>service levels appropriate to cycling. Whilst we will need to accommodate reductions in the budget the benefits of a more focussed and risk based approach will help us to sustain the overall service level.</p>
<p>Drainage gullies, catchpits and carrier-drains</p>	<p>Drainage is one of the few asset groups where we will be seeking to improve service levels above those that we currently apply. Stakeholders have indicated that improving the condition of highway drainage is a priority and better management of flooding is an essential part of improving resilience and sustainability of the network. We do not have a comprehensive inventory of all of our drainage items but a programme is in place to capture information about all of our culverts and we intend extending this to include catchpit details. With the exception of our carriageway gullies, where we have a comprehensive inventory and have been capturing data about detritus levels, we have very limited data about the condition of the drainage asset. In addition, most of our interventions other than routine gully cleansing, are reactive and in response to reports of flooding or blockages. To support the risk-based approach promoted by “Well Managed Highway Infrastructure” we are in the process of applying such an approach to gully cleansing, where the knowledge we have acquired about detritus build up will contribute to the assessment of risk. A targeted approach to gully cleansing, rather than the current prescriptive fixed frequency, regardless of risk, will help to improve service levels but is unlikely to provide cost savings in the short term due to the current backlog of this work.</p>
<p>Street Lighting Columns</p>	<p>We are currently undertaking a three year programme to upgrade all 68,000 of our lighting columns with LED lamps which will secure significant savings in our energy cost. However, we face a growing issue with a backlog of columns in need of structural renewal. A recent review of our testing techniques has suggested that we may be underestimating the number of columns in need of replacement. We are currently undertaking further analysis of the risks but it seems likely that the current renewal budget is not adequate. We will therefore consider a number of options to manage the risk and reduce the future financial liability.</p> <ul style="list-style-type: none"> <li>• in the short-term we will consider removing and temporarily capping unsafe columns</li> <li>• in the mid-term we will refine our testing processes and the criteria for renewal to see if we can extend the overall operational life of our stock without extending risk?</li> <li>• in the long-term by rationalising the number of columns</li> </ul>

	<p>through localised reduction as part of the ongoing renewal programme (although this is likely to have an up-front additional cost and viability will need to be considered on a case by case basis)</p> <ul style="list-style-type: none"> <li>• In the long-term by installing columns that have a longer design-life (again there would be an additional upfront cost).</li> </ul>
<p>Traffic Signals Signal junctions, ped. crossings, school flashing lights</p>	<p>Traffic signals are a key asset in terms of Network Management. We will continue to maintain the current service levels to ensure efficiency and reliability of the network. This will include completing a 3 year programme to upgrade the communications telemetry through which we control and receive system management data.</p>

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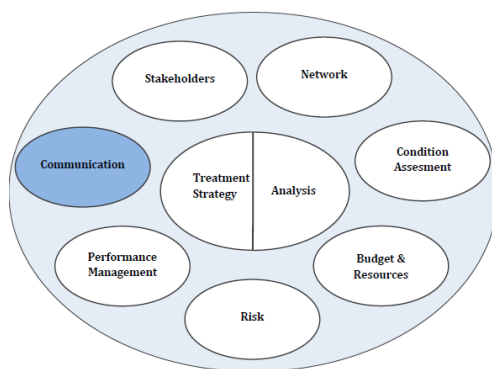
<p><b>Structures</b> Bridges, subways, culverts, retaining walls</p>	<p>Our structures concentrate the greatest amount of asset value into very discrete parts of the network and any failure is likely to be disruptive and costly to address. For this reason structures are designed as long-term assets and they require ongoing preventative maintenance to maximise their lifespan. We therefore consider that it is important to continue to maintain our structures in their current condition. We will continue to target that no more than 10% of our bridge stock has a Bridge Condition Index (BCI) less than 75 and we will target bridge repairs using a risk based approach that will consider safety, immediate serviceability, long term viability of the structure, network resilience and commercial traffic volumes (initially based on network hierarchy). Bridges are major assets when they come to renewal and we have two significant bridges currently in need of replacement. One is Cavendish Bridge on the B5010 at Sawley, currently reduced to a single lane and managed by traffic lights. The other is Zouch Bridge on the A6006 at Hathern which is a priority for replacement. Funding for the work at Zouch has been secured but we do not currently have a budget for the replacement of Cavendish Bridge. We have also identified problems with another key bridge between Barrow on Soar and Quorn in the north of the county. It is a key structure in terms of resilience, providing one of the few links across the Soar Valley when the flood plain fills and is therefore a priority for treatment as and when we are able to access or identify sufficient funding.</p>
<p><b>Safety Fencing</b></p>	<p>We have recently undertaken a comprehensive testing and inspection programme for all of our vehicle restraint systems and developed a programme of renewal. We will continue to apply a schedule of re-tensioning on a 2 year cyclical basis and undertake restorative repairs where accidents compromise the function of the restraint.</p>
<p><b>Road Markings</b></p>	<p>We have no inventory of our carriageway markings and no reliable assessment of their current condition. Stakeholders have indicated that markings are a key concern and so we will begin collating a full inventory, initially by estimation. Our safety inspections are now recording observations about condition and we expect that these measures, coupled with the development of a risk-based approach, will allow us to improve the condition of</p>

	those markings that support network safety.
Traffic Signs (illuminated)	We will establish clear criteria for responding to sign damage using a risk-based approach and clarify the timescale for repairing or decommissioning low-risk signs. With the exception of those damaged signs that we determine require a quick response, all other sign damage will be dealt with on an area-by- area basis. We will establish criteria for undertaking decluttering of redundant signs in parallel with scheduled sign maintenance.
Traffic Signs (non-illuminated)	The approach will be as for illuminated signs plus we will update our inventory data for this asset group to help us manage decluttering and maintenance
Street Furniture Guardrails, bollards	Over the years there has been an increasing proliferation of this type of feature throughout the network, often installed without a clear strategy. We have no inventory data about these assets and we do not currently capture maintenance costs. We will consider collecting this data and adding it to our HMS but we may do this on an estimated basis, rather than developing an item by item record. These items will be reviewed using a case by case risk-based approach leading to a register of locations where renewal is not required, making provision for subsequent decommissioning of the asset
Environmental Grass verges, trees, hedges, grip- cutting, flower and shrub beds	Maintenance of these assets contributes very little to the serviceability or sustainability of the network but there are aspects of safety and quality of life which need to be considered. Stakeholders acknowledge that these are not key assets but nonetheless expect that they are maintained to a high standard. We will endeavour to reduce the council's commitments in these areas by involving communities and particularly Parish Councils more directly in the upkeep of their local highways. These options will only be progressed when they can be demonstrated to be at least cost-neutral to the council
Winter Treatment	We currently treat 45% by length of the carriageway network on a precautionary basis in advance of any forecast of ice or snow. Footways are only treated when there is prolonged snow or ice.  This service is very highly valued by stakeholders. While we will annually review the route maps, we do not anticipate applying any overall reduction in service level at the current time.

11.6. We will develop and update a five year schedule of works to allow our strategy to be monitored and understood and to reflect the outcomes of lifecycle modelling.

11.7. We currently hold a database of potential major maintenance schemes and draw priorities from this list 18 months ahead of delivery. We are in the process of adapting this to provide a risk-based and fully costed list of scheduled works for all key assets. Lifecycle modelling will confirm the broad strategy within which scheme schedules are developed.

## 12. Communication



12.1. We recognise the importance of two-way communication with staff, elected member, senior officers and stakeholders to ensure that our asset management strategy is properly informed and that stakeholders understand our intentions and priorities.

12.2. We will include an Asset Management Communication Plan in the HIAMP which will describe how and what we will communicate with staff, stakeholders, members, other agencies, the media etc.

## 13. Strategy Review

13.1. This Strategy is aligned to our Asset Management Policy document and any changes in either document should take account of both.

13.2. This strategy document will be continuously reviewed and may be updated at any time. It will be fully reviewed at least every three years or earlier if there are significant changes in national policy or guidance that affects asset management.

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