

Highway asset management policy and strategy

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Version: 4.0 (published)

Last updated: September 2022

Last reviewed: September 2025

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Executive summary

We have a policy and strategy for managing its highway assets. The Department for Transport (DoT) has prescribed that all highway authorities should have a policy and strategy approved by their executive.

The policy details the vision for the council’s highway service which is as follows:

- manage the highway asset to help deliver the council’s corporate priorities
- promote sustainable modes of transport with suitable highway infrastructure
- create safer streets through the latest street lighting technology, traffic safety measures and a reduced number of potholes and footway defects
- deliver a vibrant street scene using sustainable materials where possible

The asset management strategy (AMS) includes aims to:

- to understand the needs of the highway users in Luton and raise the profile of the service through a robust communication plan
- utilise a data led approach to make investment decisions and bid for internal and external sources to maximise available sources of funding for highway maintenance

- use lifecycle planning principles for maintaining carriageway, structures, traffic signals, and street lights - this involves examining the lifecycle of the highway asset and intervening at the right time using cost efficient materials to optimise the life of that asset
- use a risk based approach: targeting resources to areas of the highway where there is higher usage, and therefore more likely consequence of highway asset failure

1.0 Introduction

We're the highway authority with the responsibility of maintenance of management of the public highway within the borough of Luton. The AMS prescribes our approach to highway maintenance over the next two years.

1.1 Profile of Luton

- Luton is an urban authority located approximately 30 miles north of central London.
- The town has excellent communication links.
- Central London is 25 minutes away by train from the town's three railway stations
 - Luton
 - Luton Parkway
 - Legrave)
- There' also direct rail access:
 - to the south of London
 - to the north
 - through Eurostar connections at St Pancras, to destinations including Paris and Brussels
- Luton is on the M1 motorway with the M25 only 10 minutes away. This provides road access to Milton Keynes, Northampton and, via the M6, Birmingham.
- North and south road links are also facilitated by the A6 and the nearby A5.
- East-west road links are provided by the A505 that provides access to the A1 and to the rest of the eastern region.
- Luton has its own international airport that provides flights to Europe and beyond. It's served by the A505 dual carriageway linking the M1 with the airport with the continuation to the borough boundary with Hertfordshire as the route leads to the A602 and the A1.

1.2 Profile of Luton's assets

Luton's highway assets have a critical role in ensuring that the town functions effectively. Luton

has:

- 58km of classified roads (A,B,C)
- 401km of unclassified roads
- 780km of footway
- 18,500 street lighting columns
- 183 structures of bridges and subways
- 22,000 rain gullies
- 95 traffic light installations
- 70km of cycle network

Luton's highway network is an urban environment and whilst there are a wide number of transport modes in use, there is a high reliance on the motor vehicle.

Highway infrastructure asset management guidance defines asset management as 'a systematic approach to meeting the strategic need for the management and maintenance of highway

infrastructure assets through long term planning and optimal allocation of resources in order to manage risk and meet the performance requirements of the authority in the most efficient and sustainable manner.’

This document sets out our asset management policy and strategy to confirm our commitment to highway infrastructure asset management.

These principles will enable long term management of highway assets through a set of aims and objectives that are achievable from available budgets. This approach will help the service achieve our corporate aims and objectives for the population of Luton.

2.0 Asset management framework

This document forms part of the asset management framework that interlinks our plans and policies with the user’s expectations to form our approach to maintaining our highway network.

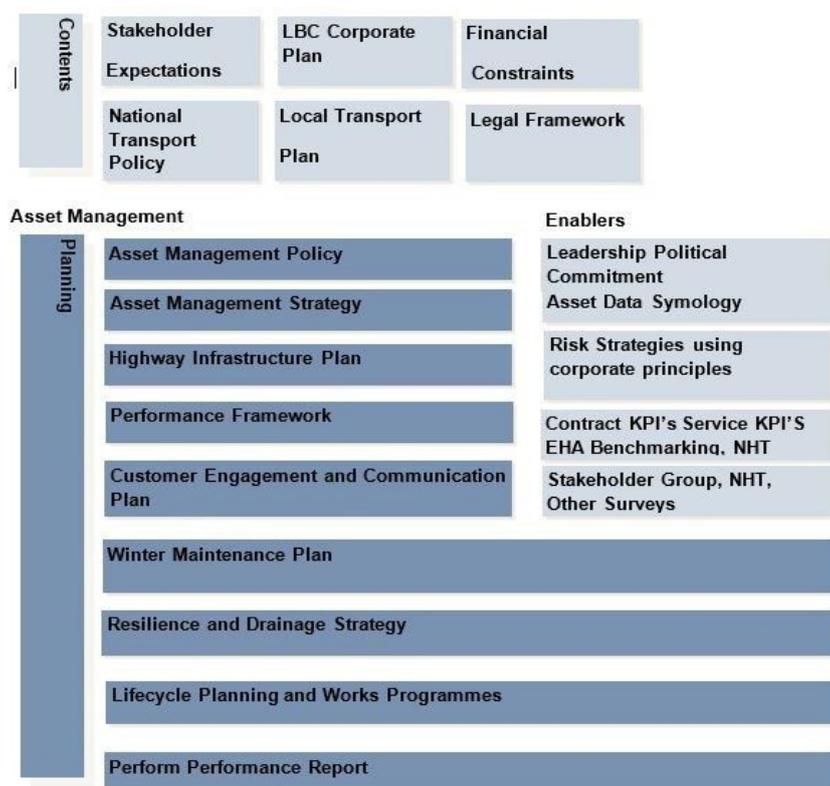


Figure 1: asset management framework

This image and lists illustrate:

- the components that form the framework that enables the assets to be maintained in a systematic way
- the framework in which the service operates

Contents:

- stakeholder expectations
- corporate plan
- financial restraints
- national transport policy
- local transport plan
- legal framework

Asset management planning:

- asset management policy
- asset management strategy
- highway infrastructure plan
- performance framework
- customer engagement and communication plan
- winter maintenance plan
- resilience and drainage strategy
- lifestyle planning and works programmes
- performance report

Enablers:

- leadership political commitment asset data synology
- risk strategies using corporate principles
- contract KPI services, KPIs, EHA benchmarking and NHT
- stakeholder group, NHT and other surveys

3.0 Asset policy

Our vision is to ensure that the highway is an accessible, safe, vibrant environment that promotes sustainable transport, and the economic growth of Luton.

This vision supports our mission of enabling Luton to be proud, vibrant, ambitious, and innovative.

We have a vision for Luton for the next five years where we'll deliver high quality services to improve the life opportunities for its people and work with our partners to ensure Luton is dynamic, prosperous, safe and a healthy environment.

Luton celebrates its diversity and vibrancy and will come together to build sustainable communities and provide strong leadership and a voice for the town.

Our asset policy is to support this mission of maintaining the highways by using recognised asset management principles and a risk based approach.

This approach will target resources on the highway where there is higher usage. It's also our policy to:

- promote sustainable modes of transport with suitable highway infrastructure
- create safer streets through the latest street lighting technology, traffic safety measures and reduced potholes and footway defects
- deliver a vibrant street scene using sustainable materials where possible

4.0 Asset strategy

We have a corporate plan from 2021 to 2025. These are our set of strategic priorities to achieve this plan.

- Securing a strong economic recovery from COVID-19, which protects jobs, incomes and business and enable us to build a more inclusive economy
- Protecting the most disadvantaged in our town by prioritising services and interventions that focus on prevention alleviate the impact of poverty and reduce health inequalities
- Making Luton a child-friendly town where our children and young people grow up feeling happy, health and secure, which a voice that matters and the opportunities they need to thrive.

- Becoming a greener and more sustainable town, to meet our long- term ambition to be carbon neutral and climate resilient by 2040
- A strong and empowered community supporting fairness, equality and local pride and speaking with a powerful voice.
- Supporting safe, strong and cohesive communities
- Integrated efficient and digital service – striving for ‘one Luton approach’

Our asset management strategy is to enable the service to contribute to our corporate strategic priorities.

Our approach to maintenance is formed through understanding members of the public’s needs and managing their expectations through a clear communication strategy. The aim is to raise the profile of the service with both members of the public and councillors so that the importance of a well-maintained highway infrastructure is understood.

The strategy prescribes a risk-based approach that targets resources and shorter response times to areas of the network where there is higher usage. Lifecycle planning will inform preventative maintenance strategies for carriageways and street lighting to ensure the optimum levels of maintenance are achieved within the budget settlements

4.1 Meeting the corporate priorities

To ensure strategic priorities are met, the highway asset management strategy has a set of aspirations.

A well-managed highway is an integral component in delivering these strategic priorities. Our aim is to have a functioning highway that will promote connectivity and economic recovery, which will protect jobs incomes and businesses.

The public realm can enhance the quality of Luton’s infrastructure, which makes the community have pride in their local areas and Luton in general. We can help make Luton a child friendly town and reduce health inequalities by installing infrastructure that promotes sustainable modes of transport. Walking and cycling are two good examples.

We’re promoting innovative lighting as an attribute that helps create a vibrant environment where business can thrive. We’re using energy efficient and smart technology in street lighting design, to protect and enhance the infrastructure. In turn, this should:

- encourage the vulnerable to feel safe at night
- empowering people to travel, work, and play during the evening
- support safe, cohesive communities

4.2 Strategic aims

We have a set of aims to realise our corporate priorities. These are as follows:

- adopt a communication strategy that:
 - raises the profile of the service
 - increases public satisfaction by engaging stakeholders to enable the highway service to understand their priorities
- manage the highway maintenance and improvement contract, providing innovation and investment to improve Luton’s highway assets
- update the inventory on the condition of Luton’s highway assets, enabling:
 - the creation of evidence-based programming via life cycle planning
 - the adoption of lifecycle principles that will enable Luton’s highway service to adopt preventative strategies and optimise maintenance budgets

- utilise condition data to substantiate additional funding needs from sources such as the Department for Transport (DfT) challenge fund
- adopt a risk-based approach for highway maintenance and improvement, ensuring a safe highway through targeted investment
- adopt the latest street lighting technology to provide a well-lit and energy efficient highway
- promote highway infrastructure that enhances the built environment and promotes safer streets and offers a quality of life through greater access for walking and cycling
- develop a robust highway drainage strategy to mitigate against flooding, thus ensuring resilience of key strategic highway networks against extremities of weather
- produce a performance framework for the highway service that enables continual improvement, underpinning the approach to highway asset management
- utilise the NHT performance framework from 2020

4.3 Tactical objectives

We have a set of tactical and operational objectives measured in our highway performance framework to deliver the corporate priorities:

- guarantee all available DfT incentive funding from 2019
- achieve 1 stream of funding from the challenge bid stream for Luton for highway improvement from 2018
- intelligent asset data to be stored and updated on Symology by highway contractor per year
- reduce carbon on the contract delivery by 5% per annum
- recycle 95% of all highway materials per year
- 30% of all materials used sourced from recycled materials by December 2018
- 75% of supply chain within a 30 mile radius by April 2019
- to achieve higher than average National Highways and Transportation (NHT) survey satisfaction on key performance indicators per annum by 2019
- reduce the average age of street lighting stock to 20 years by 2019
- remaining key assets to be collected and updated by the contractor by February 2018
- submit a capital bid for the rights of way improvement plan to encourage access to the surrounding countryside and encourage walking
- maintain the percentage of roads requiring structural maintenance on the principle road network at 2%
- reduce the percentage of roads requiring structural maintenance on unclassified road network to 10% by 2025
- reduce the level of amber roads on the main road network to 10% by 2025
- reduce the level of amber roads on the unclassified road network to 30% by 2025
- undertake an audit of routes for potential cycle ways to public transport hubs and the Inspire sports centre

4.4 Operational objectives

- Reduce the number of potholes year on year by 5%
- Respond to carriageway and footway defects within two working days
- Repudiate 85% of insurance claims
- Repair 90% of reported defective street lights within 5 working days
- Reduce the number of reported flooding incidents on the resilient network by 30% in 2018
- Undertake an audit of all cycleway infrastructures to ensure consistency of the user.

4.5 Asset management structure

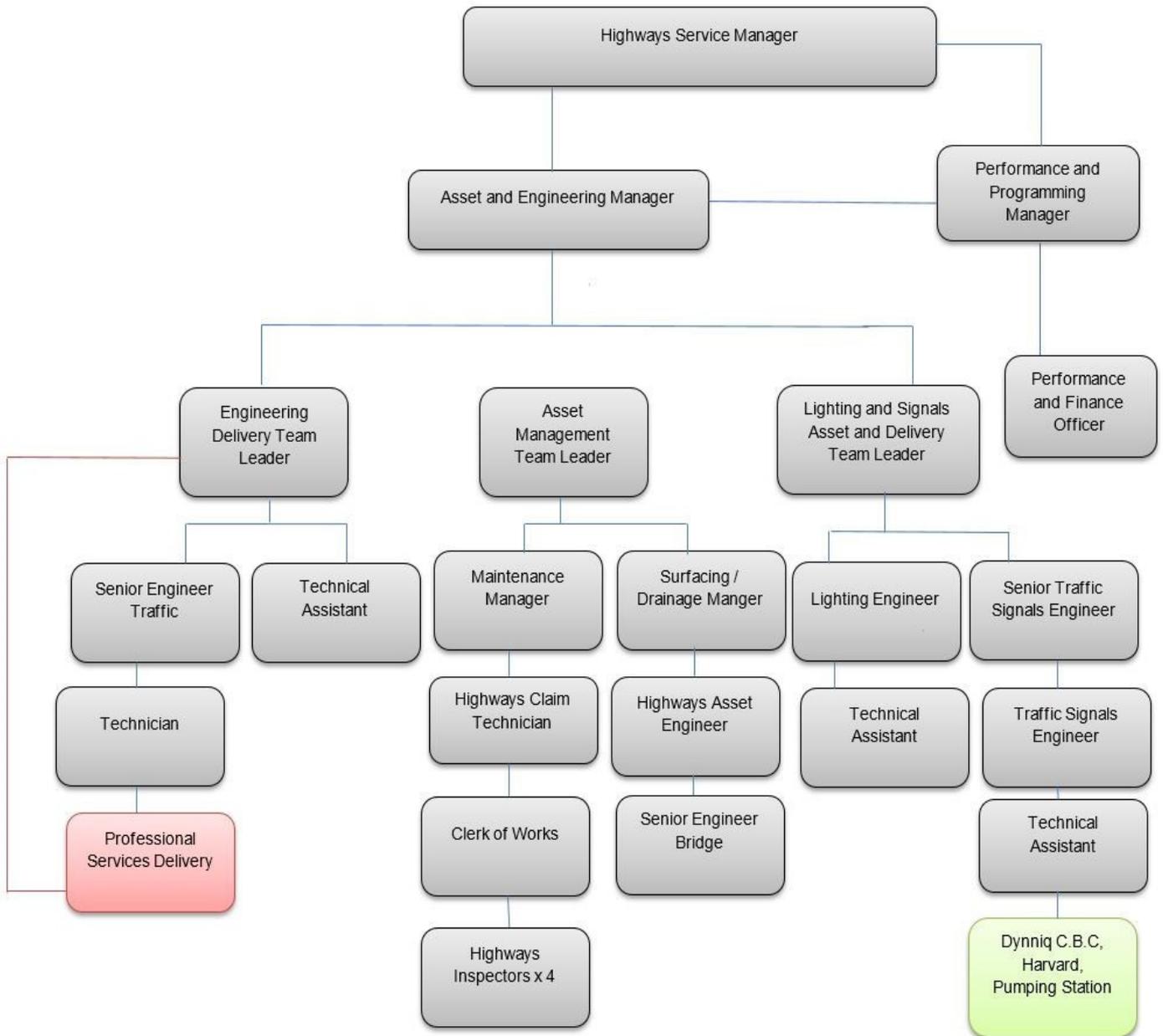


Figure 2: the structure for managing Luton Council's assets

4.6 Asset inventory

Highway assets have been identified and divided into key asset groups and components, as described in the table below.

Asset hierarchy	Asset type	Asset groups	Asset record database
Critical	Carriageway Surface	Concrete Flexible Composite Anti Skid	Symology
Critical	Footway	ASP Paving, Modular, Asphalt	Symology
Critical	Drainage	Pipes, Chambers, Interceptors, Bore Holes, Catch Pits, Inspection Covers	As built, network limited
Critical	Gullies	Kerb Side, Aco Drainage , Safety drainage Carriageway	Map 16
Critical	Structures	Bridges Culverts Retaining Walls Subways Tunnels	Amex
Critical	Integrated Traffic Systems	UTC Traffic Signals, Variable Message Signs	Imtrac
Critical	Street Lighting	Lamp Columns Illuminated Bollards Illuminated signs	Symology
Critical	Road Restraint Systems	Boxed, tensioned , un-tensioned	Symology
Functional	Traffic Measures	Roundabouts Speed Tables Road Humps Speed Cushion Pedestrian Crossings Non illuminated signs Traffic Island Safety Cameras	Symology
Functional	Road Markings Furniture	Traffic Signs and Regulations and General Directions 2016 Bollards Bench Planter Bus shelter Bus stops Pedestrian Guard rails Street Name Plates	Symology

4.7 Asset data management

We've adopted a data led approach to managing our assets, with our critical assets defined according to the following:

- ownership
- condition
- material
- service life
- gross replacement costs
- direct replacement costs
- customer satisfaction data

Our highway contractors, Volker Highways, have collected the major assets including their condition and ownership.

The contractor logs the data into Symology's database, which is updated by the contractor on a monthly basing using their Insight mobile system. The data is held in the Oracle database which is backed up by Civica, (Luton Council's IM service providers).

Licences are granted for viewing the data, with associated passwords.

Volker Highways asset team has permissions to update the asset attributes and condition.

The data is displayed in our corporate GIS system, Cad Corp, and managed by the asset management engineer.

This data will enable the asset team to make informed decisions based.

4.71 UKPMS carriageway surveys

United Kingdom Pavement Management System (UKPMS) condition surveys are carried out on the carriageway network using two survey types:

- surface condition assessment of the national network of roads (SCANNER) machine survey assessing ride quality, cracking, crazing, rutting and range of defects
- coarse visual inspections (CVI) undertaken by two personnel on a driven survey according to defined criteria

4.72 Footway surveys

The service procures a footway management survey (FMS) of our prestige and primary walking routes every two years, and all other footways every four years. The survey captures:

- the construction of the footway
- the overall condition
- whether it is major or minor defect
- the cause of the defect - for example: tree roots or extent of vehicle damage

The FMS surveys allow the asset manager to assess the overall condition of the network, aiding planned programmes of maintenance.

The data is used to ascertain asset performance and develop strategies through lifecycle plans, which create schemes for the integrated transport works programme.

4.73 Street lighting

The Street Lighting team utilises Symology to record various elements of the lamp column:

- structural condition
- age
- type
- height
- predicted lifespan

The team organises structural tests of columns that:

- are over 20 years old
- have had their guarantee period expires

This results in approximately 1,500 columns being tested per year.

The Street Lighting team will use this data to generate scheme which are based on lifecycle plans. The processes have been developed using the advice from the lighting professionals technical report 2022.

4.74 Structures

The highway structures are maintained using AMEX, an asset management database for highway structures which:

- records condition
- produces lifecycle plans
- prioritises schemes for the integrated transport works programme

The Structures team uses AMEX to determine:

- condition
- location
- age
- type
- maintenance regime

4.8 Performance framework

We have an embedded performance framework to measure its asset strategy objectives, contract performance and local transport plan (LTP) objectives.

The performance framework is designed to facilitate continuous improvement, with a dashboard of performance indicators. The indicators report the asset condition, service provision.

The indicator data will be collected and presented to the highway's senior management team on a quarterly basis.

If there's a performance issue, then the team manager will produce a plan for corrective and preventative action.

An annual service performance report will be published and sent to all highway stakeholders and the council's executive, together with the integrated transport works programme.

The report will detail condition of the assets and benchmark service provision indicators against the NHT survey indicators. This is to assess the performance of the service against perception from members of the public. Recommendations for improvement will be made following the findings, and this will inform the asset and the customer and communication plan for the coming year.

The performance team will manage the indicators and present the report.

The asset manager will be responsible for managing improvement. The improvement plan will include reviewing the measures and targets of in the performance management framework as well as revising the asset management policy and strategy.

4.9 Stakeholders and communication

One of the principal objectives of this strategy is to adopt a communication plan that raises the profile of the service, and enable the highway service to understand the priorities of the public. The objective of the plan is to increase the level of public satisfaction for highway maintenance to 60%.

4.91 Stakeholders

All the documents and strategies within the asset management framework have been formulated in consultation with the highway stakeholders. The following is a definitive list of our stakeholders.

- Bedfordshire Fire and Rescue
- East of England Ambulance Service

- Bedfordshire Police
- Bedfordshire Prepared
- Luton Civil Protection
- Network Rail
- London Luton Airport
- PSV operators
- utilities
- term maintenance contractors
- highway service contractors
- Luton BID
- local businesses
- neighbouring authorities
- community groups
- elected members

4.92 Communications plan

The defined response times and tolerances for repair of highway defects is communicated to the public via our website, social media, and our electronic newsletter. A copy of the annual service performance report and the integrated transport works programme will be published and sent to all stakeholders, including Luton's Highway Service's portfolio holder and the council's executive.

This will raise the profile of the service, highlight the challenges the authority faces and obtain member support for improvement of highway infrastructure.

Members of the public are consulted on proposals on all major schemes using a designed leaflet.

Luton's term maintenance contractor notifies major schemes which include resurfacing works to all affected residents, businesses and transport operators in the form of a leaflet. A feedback section is included to ascertain satisfaction with the delivery of the works.

4.93 Feedback and surveys

The NHT survey is a questionnaire sent to a representative sample of the public in Luton. The survey measures perceived performance, service provision, and the public's priorities.

An annual survey is undertaken with members of the public who contact the council with a highway query or request. The purpose of the survey is to ascertain the level and satisfaction for response including the time frame and level of feedback.

Figure 4: Luton Councils Highway Services stakeholders

Together with our contractor, we have a dedicated Customer Service team who deal with phone calls, emails and web-based enquiries that are logged onto the APP database with predefined time frames for responses and feedback.

4.94 Campaigns

We have a series of campaigns to raise the profile of the service. These campaigns are designed to inform members of the public of:

- what the authority is doing in terms of repairing potholes
- our preventative approach to carriageway maintenance
- the role of highway inspectors
- our street lighting plans
- our winter service plan

4.95 eNews and social media

We'll contribute to the council's electronic news bulletins, sent to signatories in Luton. These contributions will highlight highway related issues. The bulletin will also include an article on areas of service provision, information that promotes response times and repair. The bulletin will advertise upcoming road works and provide contact information for Luton's highway service.

4.96 Contractor branding and engagement

The term maintenance contractor will support the communications strategy by branding their vehicles with the Luton logo. They'll also help raise the profile of the service by supporting community-based projects.

In addition, the contractor will attend area forums and council exhibitions.

4.10 Strategy for individual assets

Our highway assets have been divided into asset groups, broken down into asset components and activities. The spending needs of each asset group can be assessed in terms of meeting our asset objectives. These are measured by the performance key performance indicators (KPIs).

These spending needs can be compared to current budgetary settlements and customer satisfaction and priorities.

Where there's a shortfall in budgetary allocation, the service will adopt an investment strategy to help meet the objectives. This will involve:

- placing capital bids to our executive
- making a case for funding streams from the DfT, such as the Challenge Fund

If additional resources are not available, objectives will need to be modified, and customer expectation managed through a robust communications strategy that ensures the public understand the funding challenges we experience.

4.11 Luton's highway infrastructure asset management plan (HIAMP)

Our HIAMP will detail how the strategy for Luton's assets is implemented. The plan will also:

- use asset management principles and risk-based approach
- realise highway policy aims and asset management objectives
- detail policy for each asset type
- detail the strategy for maintaining the individual asset

4.12 Risk-based approach

Our strategy for managing its highways' assets is based on the principles of risk-based approach that target available resources using a hierarchical approach. This is determined by the strategic importance to the council and its level of usage.

The strategic and main distributor carriageways form the resilience network and have the highest priority for maintenance and the prestige and primary walking routes similarly for footway maintenance.

4.13 Lifecycle planning

Figure 5 below illustrates our service approach to lifecycle planning. We've procured systems that use current condition data of the network to prescribe different deterioration matrices according to various strategies and funding scenarios. This optimises the best available strategy to meet the

asset objective, within the budgetary settlement. The strategy will also indicate the budgetary implications for meeting prescribed targets.

The systems:

- log the treatments used
- predict the service life of the treatment
- predict when intervention is required, using the best available treatment to prolong the life of the asset

The system will generate schemes for engineering assessment to form the five-year integrated transport works programme. The unclassified network schemes will undergo a further prioritisation through the scheme priority matrix (SPM) which weights according to:

- condition
- hierarchy
- usage
- number of reported potholes
- accident data

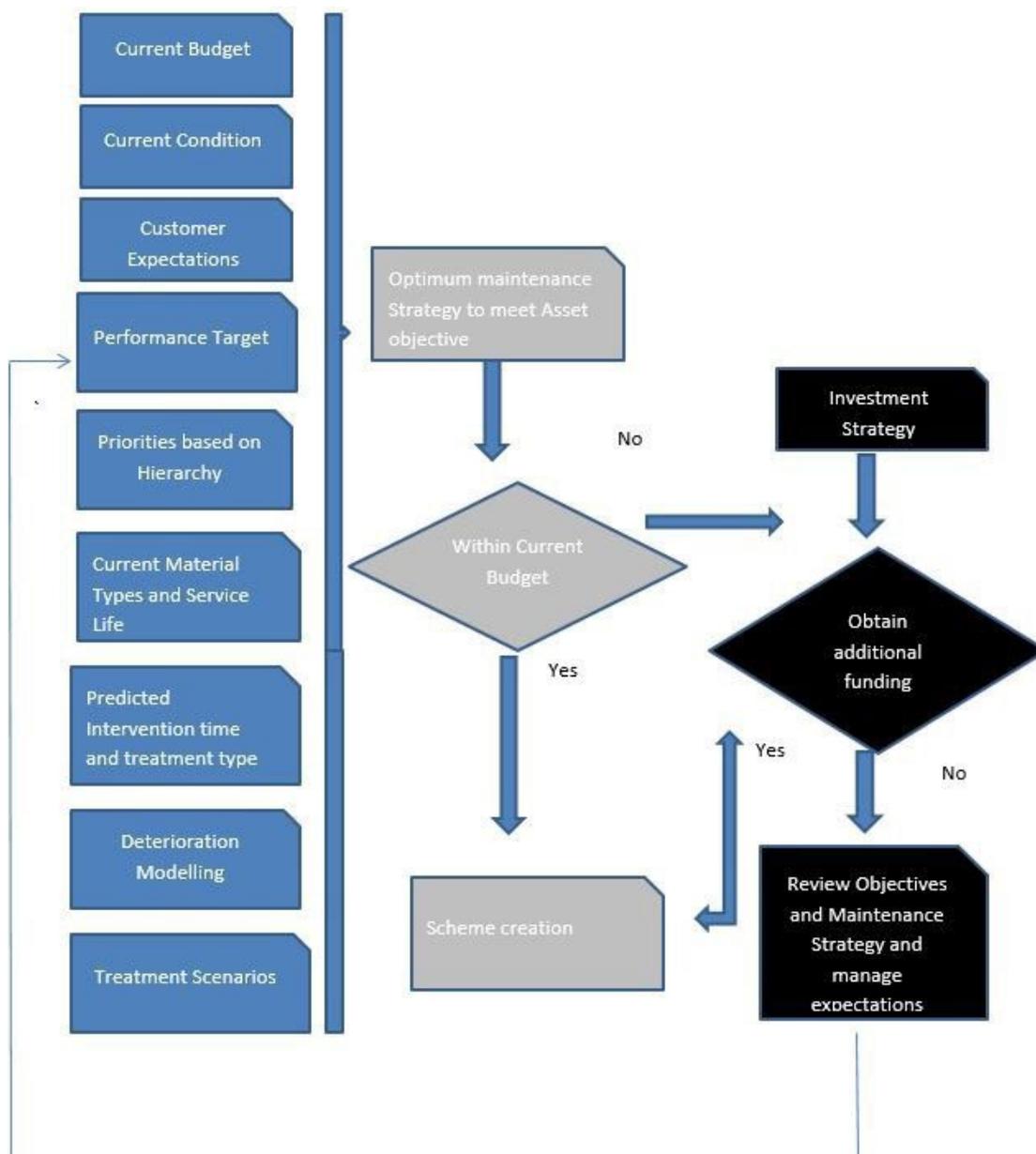


Figure 5: lifecycle flow chart

4.14 Levels of service

We use the following four levels of service to maintain our highway assets:

- customer service
- network safety
- network serviceability
- network sustainability

4.14.1 Customer service

We have a dedicated customer service centre that deals with telephone, online, and e-mail enquiries related to the highway network. The enquiries are logged onto a database with a prescribed set of action times. We then respond to the query and provide feedback to the member of public.

We'll respond to emergencies within 2 hours of receipt of report. We'll respond to all other highway faults within a set of prescribed time responses based on a working day which is Monday to Friday from 9am to 5pm.

4.14.2 Network safety

The safety of the network is ensured through regular highway inspections by our team of four highway inspectors. They use a defined risk-based approach designed to establish the level of risk on site with the appropriate response to mitigate the risk.

4.14.3 Network serviceability

The service inspection will include identifying safety defects. In addition, combinations of highway service inspections ensure the highway is available, and reliable for the users:

- New Roads and Street Works Act 1991 (NRSWA) inspections
- United Kingdom Pavement Management System (UKPMS) surveys

This data informs the asset team leader who'll compile planned works programmes to manage highway condition, achieve resilience, and ensure that the highway functions as an integrated network.

4.14.4 Network sustainability

UKPMS data will be utilised to inform lifecycle planning which optimises resources and minimises cost over time. Network sustainability will also be achieved through the LTP priorities and the integrated transport works programme.

4.15 Type of works

We have adopted the following types of work for maintaining the highway. See 4.15.1 to 4.15.3.

4.15.1 Reactive

Reactive works include all category one, two and three defect priorities. These are designed to remedy safety defects defined according to the risk defect matrices detailed in the HIAMP.

4.15.2 Routine

Routine works are usually generated from safety and service inspections, dependant on the defect tolerance or location and will be right first-time permanent repairs. They'll be usually either category 4 or 5 response times or planned works. They may include planned patching programmes and include the annual street maintenance programme.

Other examples of routine works include:

- painting of street furniture programmes
- cyclical road marking

- sign replacements

4.15.3 Programmed

Programmed works are designed to improve the asset condition, provide for a sustainable highway, and are a major contributor to the asset management strategy in meeting the corporate objectives. For the major assets the programme is driven by lifecycle principles.

The majority of the budget is allocated to program works with capital carriageway preventative maintenance.

4.16 Critical assets

The highway assets on the resilient network have been designated as critical highway assets and are geographically displayed on the GIS Cad Corp system. This has been defined in line with the service’s resilience strategy. We have a set of critical structural assets and drainage assets that have been deemed vital for the continued economic activity of Luton.

4.17 Financial planning

Funding for the highway assets is funded through four streams:

- DfT capital allocation
- Luton Council revenue allocation
- DfT bids such as the incentive fund and challenge fund

The structural and preventative maintenance programmes are funded through capital allocations, reactive, and routine maintenance funded through revenue streams.

Relevant condition data of the assets is helping the service to establish our performance requirements. The data will provide evidence to support the need for additional funding streams from the DfT and from Luton Council from April 2018, as the emphasis changes to incentivised funding and needs-based budgeting.

4.18 Gross replacement and depreciation costs

Whole of Government Accounts (WGA) has a set of requirements for the way the value of the highway asset is reported to HM Treasury in the authority’s audited accounts. The current information has not been audited but a date of 2018 has been suggested as the date when highway infrastructure assets will be fully reported within the authority’s accounts.

For this to be achieved there is a clear need for accurate and detailed inventory information and performance data, which will inform the understanding of network deterioration, and the adoption of preventative maintenance strategies.

The figures for the major assets are as follows:

Asset	Gross replacement costs	Depreciated replacement cost
Carriageway	£615,000,000	£590,000,000
Footways	£147,000,000	£52,284,650
Structures	£128,173,000	£76,506,000
Street Lighting	£24,201,800	£13,958,680

Figure 6: Gross Replacement and Depreciated Replacement Costs

4.19 Sustainability

We'll deliver more sustainable highway infrastructure as part of our corporate commitment to enhance the natural and built environment.

In conjunction with our highway contractor, we have a target to adopt an environmental management system such as ISO 14000 by 2022.

Our activities should also contribute to sustainable consumption and production, contribute towards energy efficiency and help in the global objective limit the effects of climate change.

The performance framework prescribes that the contractor has a carbon management plan in place by December 2018, with a stated aim of reducing carbon by 5% by December 2019.

Materials will be utilised that enhance the built and natural environment with the use of more expensive and natural materials reserved for the prestige walking routes and conservation areas to enhance the public realm.

4.20 Risk management

Our HIAMP assesses and mitigate risks for individual assets. We have a risk register for risks associated with the highway service and the associated plans for mitigation. The risk register uses the corporate JCAD system for assessing probability against impact. Our risks feed into the corporate risks.

A review of the register and the mitigations are held quarterly with a view of updating the risk register. Risks include:

- severe weather
- industrial action
- terrorism
- air disruption
- major transport accident
- information management failure
- industrial accident
- asset failure

Risk assessments have been undertaken to assess the impact and likelihood, and put in place mitigation measures.

4.21 Future maintenance

When designing a scheme, the life cycle of the assets within the scheme should be considered. Figure 7 on page 17 highlights the principles of future maintenance when designing a scheme.

Once the scheme has been delivered, all the as-built drawings need to be sent to the asset management officer to enable the records to be embedded in the asset management system, and displayed in Cad Corp.

4.22 Best practice

We're committed to best practice in asset management and are a member of the Eastern Highways Alliance best practice and benchmarking groups, to benchmark standards and data and share best practice. We also:

- attend the Chartered Institute of Public Finance and Accountancy (CIPFA) asset management seminars to keep up to date with the latest information

- share best practice with other local authorities

Issue	Check	Action
Scope and scale		
Intended life of scheme	Is the scheme long life or temporary and likely to be affected by future redevelopment?	Choose materials relevant to the life of the scheme
Nature of scheme	Is the scheme a prestige or routine project?	Choose materials relevant to the life of the scheme
Scope of scheme	Has the scheme been valued managed?	All significant schemes should be valued managed
Use of scheme	Is the scheme subject to heavy duty traffic use?	Select durable materials to mitigate against these effects
Cost of scheme	Have the costs of future maintenance been calculated in future budgets?	Identify any extraordinary maintenance costs and report these alongside construction costs.
Design aspects		
Pedestrians and Cyclists	Do footways and cycle routes fit the actual paths used?	Redesign to reflect actual paths to avoid erosion and later replacement.
Heavy goods vehicles	Is footway paving likely to be over ridden by HGV or other parked vehicles?	Use heavy duty paving or convert to asphalt to avoid frequent replacement
Grassed and planted areas	Are they a size and position to be effectively maintained?	Redesign or remove to avoid future poor appearance
Trees	Have trees been selected and positioned to avoid future problems with roots obstruction or leaf fall?	Reselect or reposition
Traffic sign	Can traffic signs be reflectorised as opposed to illuminated	Maximise use of reflective signs to reduce energy costs
Maintenance operations		
Specialist materials	Materials standard or specialist?	Ensure available stock of specialist materials in the future
Durability of materials	Does the durability of the materials provide substandard oblique, sufficient or excessive life?	Select materials relevant for the life of the scheme.
Failure mechanism	How will material approach the failure condition- slowly/quickly	Programme safety and service inspections on basis of risk assessment
Life extension	Processes available to extend service life?	Investigate cost benefit of using life extension products
Replacement practicability	Difficulties in replacing failed sections?	Undertake risk assessment and plan for likely difficulties
Replacement cost	Is the cost of replacement likely to be disproportionately high?	Consider alternative materials
Reuse and recycling		
Reuse and recycle	For a short life scheme. Scope for reusing/recycle materials?	Choose reusable materials where possible

Figure 7: future maintenance needs checklist

References

- Well Managed Highway Infrastructure – UKRLG
- HMEP/UKRLG Highway Infrastructure Asset Management Guidance Luton Highway Infrastructure Asset Management Plan

- Luton Communications Plan Luton Resilience Plan
- Luton Winter Service Plan

Review process

The asset management strategy is reviewed annually in following recommendations from the annual service performance report.

Version	Date	Amended by	Change	Next review
1.1	16 August 2018	Mark Aaronson	Approved by Executive	July 2022
2.0	12 August 2020	Mark Aaronson	No major changes	July 2022
3.0	6 July 2021	Mark Aaronson	Amber condition roads target set	July 2022
4.0	6 July 2021	Mark Aaronson	Corporate priorities Updated	July 2022