Transport for Buckinghamshire

Highway Infrastructure Asset Management Strategy

Introduction

Buckinghamshire County Council's Strategic Plan (2015-17) recognises the importance of its highway infrastructure and the authority's Asset Management Policy and Strategy contribute to achieving the strategic objectives outlined in Plan:

- Improved Condition of Roads and Footpaths
- Improved Road and Rail Connectivity
- Protecting our High Quality Natural Environment
- The Creation of More Jobs for Local People
- Buckinghamshire Communities are Safe Places to Live

The County Council's Highway Infrastructure Asset Management (HIAM) Policy describes the principles adopted to achieve the authority's strategic objectives. This HIAM Strategy sets out how this Policy is achieved by taking a systematic approach that delivers most efficiently and effectively over the long term. It covers all maintenance activities and informs decision making in the Business Planning Process and in the Medium Term Financial Plan budget setting. It supports continuous improvement of Asset Management in the County.

The HIAM Strategy is one of the key strategic documents relating to the County Council’s Highway Services which are delivered through Transport for Buckinghamshire (TfB) - a partnership organisation between the County Council and its service provider Ringway Jacobs. The Policy and this Strategy forms part of our Highway Infrastructure Asset Management Framework which maintains a clear line of site from the objectives outlined in the Strategic Plan to the works programmes implemented and delivered each year as part of the Business Planning and delivery processes. This line of sight is illustrated below:

NB. The numbers in the diagram relate to the 14 recommendations from the HMEP Guidance

This document describes how TfB complies with national best practice and reflects the guidance provided by Highways Maintenance Efficiency Programme (HMEP) document ‘Highway Infrastructure Asset Management’ and the National Code of Practice ‘Well-maintained Highways’.
This strategy covers all highway infrastructure assets and individual asset plans also contribute to the overall framework. The Strategy serves as a basis for the development of detailed asset management planning and its implementation. This includes enabling the organisation, its technology and its processes, to adapt to change. It embeds a continuous improvement approach to highway asset management including how national and international developments and good practice are taken into consideration.

Delivery of this Strategy will be monitored and periodically reviewed and an implementation action plan is in place to drive improvements to support the delivery of the strategy. The action plan is the responsibility of the Asset Management Champion. The governance and review processes defined within this document ensure these priorities are considered in each action we take.

**Network**

TfB maintains and operates an Asset Management Information System (AMIS) which provides electronically recorded and stored information on the location and performance of highway infrastructure assets to support decision making and reporting. TfB holds all carriageway centrelines recorded by National Street Gazetteer (NSG) street names in its AMIS. The system records information against each street which is geo spatially plotted and available to all staff.

A network which meets the requirements of the UK Pavement Management System (UKPMS) aligns with the Local Street Gazetteer to record condition information. TfB reports the length of carriageways using the UKPMS Network Length.

<table>
<thead>
<tr>
<th>Road Class</th>
<th>Total Length (km)</th>
<th>Urban Length (km)</th>
<th>Rural Length (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>418</td>
<td>174</td>
<td>244</td>
</tr>
<tr>
<td>B</td>
<td>152</td>
<td>70</td>
<td>82</td>
</tr>
<tr>
<td>C</td>
<td>826</td>
<td>366</td>
<td>460</td>
</tr>
<tr>
<td>U</td>
<td>1803</td>
<td>1300</td>
<td>503</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3199</strong></td>
<td><strong>1910</strong></td>
<td><strong>1289</strong></td>
</tr>
</tbody>
</table>

All assets, customer enquiries and works orders are recorded against the relevant streets in the Gazetteer. Some footways running between streets have their own network entry. The Gazetteer is updated as new roads are constructed and named by the relevant District Council. Streets are added to the Network when they are formally adopted as Public Highway. An update protocol ensures the network is maintained to include all adopted streets within the County and informs the National Street Gazetteer (NSG). Assets associated with the new network are then added to the inventory and are included in inspection and survey schedules.
Inventory

To best manage the highway asset, a high level of understanding is necessary to enable fully informed management decisions to be made. TfB maintains a register of all important highway assets that are held electronically in the AMIS. They are spatially located and referenced to the relevant street in the network.

Each asset has a range of attributes held depending on their operational requirements. The inventory contains sufficient data to allow reporting of the annual Whole of Government Accounts (WGA) valuation of the transport assets complying with the requirements of the Code of Practice on Local Authority Transport Infrastructure Assets. TfB identifies additional data needs through operational reviews and requirements for the annual WGA valuation.

An Asset Data Management Plan (ADMP) records the assets, their associated attributes and describes the update protocols in place to keep the inventory current. The register is updated regularly as assets are installed, removed or repaired.

The following Highway Infrastructure Asset groups are held in the AMIS:

<table>
<thead>
<tr>
<th>Asset Group</th>
<th>Asset Types</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carriageways</td>
<td>Hierarchy</td>
<td>Strategic Route, Local Access Road, etc.</td>
</tr>
<tr>
<td>Footways</td>
<td>Hierarchy</td>
<td>Local Access Footway, Primary Walking Route etc.</td>
</tr>
<tr>
<td>Drainage</td>
<td>Type</td>
<td>Gullies, Chambers, Pipes etc.</td>
</tr>
<tr>
<td>Structures</td>
<td>Type</td>
<td>Bridge, Retaining Walls etc.</td>
</tr>
<tr>
<td>Street Lighting</td>
<td>Type</td>
<td>Columns, Illuminated Signs, Bollards etc.</td>
</tr>
<tr>
<td>Intelligent Traffic Systems</td>
<td>Type</td>
<td>Traffic Signals, Pedestrian Signals, Information Systems equipment etc.</td>
</tr>
<tr>
<td>Cabling</td>
<td>Asset Group</td>
<td>Street Lighting, Traffic Signals, Traffic Counters etc.</td>
</tr>
<tr>
<td>Road Markings</td>
<td>Type</td>
<td>Arrows, Speed Roundels, Hatching, Centre Lines etc.</td>
</tr>
<tr>
<td>Non-Illuminated Signs</td>
<td>Type</td>
<td>Blue Regulatory, Speed Limit, Chevron etc.</td>
</tr>
<tr>
<td>Non-Illuminated Bollards</td>
<td>Type</td>
<td>Edgeliner, Jubilee etc.</td>
</tr>
<tr>
<td>Fencing and Railing</td>
<td>Type</td>
<td>Safety Fence, Pedestrian Rail etc.</td>
</tr>
<tr>
<td>Trees</td>
<td>Size</td>
<td>Large, Medium etc.</td>
</tr>
<tr>
<td>Landscaping</td>
<td>Type</td>
<td>Verge, Planting etc.</td>
</tr>
<tr>
<td>Gritting Items</td>
<td>Type</td>
<td>Grit Bins, grit heaps etc.</td>
</tr>
<tr>
<td>Kerbs</td>
<td>Type</td>
<td>Setts, Blocks etc.</td>
</tr>
<tr>
<td>Traffic Calming</td>
<td>Type</td>
<td>Pedestrian Refuges, Speed Humps etc.</td>
</tr>
<tr>
<td>Cycle ways</td>
<td>Hierarchy</td>
<td>Part of Carriageway, Open Spaces etc.</td>
</tr>
</tbody>
</table>
Hierarchy

In order to represent our assets’ contribution to the Authority’s corporate objectives, the County’s Highway Network is assigned a hierarchy category. Following the recommendations and principles of the guidance document “Well Maintained Highways”, the entire network is categorised as outlined in the table below. The hierarchy dictates the safety and condition survey regimes and influences the prioritisation of works programmes.

<table>
<thead>
<tr>
<th>Hierarchy Category</th>
<th>Hierarchy Name</th>
<th>Hierarchy Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Carriageways:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Strategic Route</td>
<td>The most heavily trafficked A Roads</td>
</tr>
<tr>
<td>3a</td>
<td>Main Distributor</td>
<td>The remaining heavily trafficked A Roads</td>
</tr>
<tr>
<td>3b</td>
<td>Secondary Distributor</td>
<td>Lightly trafficked A Roads, all B Roads, heavily trafficked C Roads and all traffic-sensitive Streets.</td>
</tr>
<tr>
<td>4a</td>
<td>Local Inter-connecting (Link) Road</td>
<td>Remaining C Roads and non traffic-sensitive bus routes.</td>
</tr>
<tr>
<td>4b</td>
<td>Local Access Road</td>
<td>Roads providing local access.</td>
</tr>
<tr>
<td><strong>Footways:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Primary Walking Route</td>
<td>Main shopping areas and busy urban areas</td>
</tr>
<tr>
<td>2</td>
<td>Secondary Walking Route</td>
<td>Medium use through local areas/shopping centres</td>
</tr>
<tr>
<td>3</td>
<td>Linked Footway</td>
<td>Local access through urban areas/busy rural footways</td>
</tr>
<tr>
<td>4</td>
<td>Local Access Footway</td>
<td>Low usage estate roads and cul-de-sacs</td>
</tr>
<tr>
<td><strong>Cycleways:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Cycle Lane</td>
<td>Part of the carriageway adjacent to the kerb</td>
</tr>
<tr>
<td>2</td>
<td>Cycle Track</td>
<td>A route for cyclists not contiguous with the public footway or carriageway</td>
</tr>
<tr>
<td>3</td>
<td>Shared Cycleway/Footway</td>
<td>Either segregated by a white line/other feature or unsegregated</td>
</tr>
</tbody>
</table>

The allocation of roads within the hierarchy is regularly reviewed and revised to reflect local factors and influence to best represent the network’s contribution to the corporate objectives. This includes identifying those assets which are critical to the operation of the network.

**Performance Management Regime**

A Performance Management Regime is a set of performance measures and a monitoring regime that support the implementation of this asset management strategy, associated works programmes and drives continuous improvement. Performance measures are reported on a regular basis and the Regime is clearly documented, together with relevant action plans to achieve the desired performance.
The Regime’s performance measures are designed to assess the contribution investment in the asset has on meeting the Council’s Strategic Objectives:

- Improved Condition of Roads and Footpaths
- Improved Road and Rail Connectivity
- Protecting our High Quality Natural Environment
- The Creation of More Jobs for Local People
- Buckinghamshire Communities are Safe Places to Live

The performance of each asset is assessed through a set of performance indicators. Each performance indicator has a target that describes the level of performance (levels of service) required from each asset to meet Corporate Objectives and informs the investment required to meet those levels of service.

The performance management regime is developed to understand which assets are most critical in meeting corporate objectives. Asset criticality is assessed in a variety of ways including the recognition of traffic loading by prioritising the busiest routes, and by location - for example prioritising assets that provide critical access to major centres of economic activity. This information is used to support Council members in deciding the allocation of funding and priorities for investment.

Carriageway criticality is represented by the Maintenance Hierarchy which sets higher standards for maintenance and condition for the most critical routes that provide key transport corridors across the County and contribute to a thriving economy.

In support of this Strategy, a suite of performance measures demonstrate the link between the Corporate Objectives through the Levels of Service to our maintenance operations and works programmes. They measure progress in the achievement of the objectives and are used to monitor the success of the strategy and take the actions necessary to deliver it. The suite of performance measures are detailed in the Performance Management Plan.

For each performance measure a desired and a minimum performance target is set. These are then used to review current and desired performance to identify performance gaps, actions plans to close those gaps and to inform budget setting. Periodic monitoring of these measures allows for performance below or above the desired levels to be recognised and appropriate action taken. An improvement plan is maintained, actions taken and updated in order to address the performance gaps.

TfB communicates the levels of service and the relevant performance measures to key stakeholders as part of the Asset Management communication plan. This includes reporting of the measures themselves and the associated targets. It also includes feedback to and from elected members and the public. Performance targets and progress towards them are reported through monthly monitoring meetings.
Risk management is embedded at all levels of TfB from business planning and service delivery to the setting of objectives and targets. Risks associated with performance gaps are identified as part of all decision making. Risk registers are created, updated and reported through monthly review meetings and mitigation actions are identified and progressed. Risks are scored and escalated to senior management in accordance with BCC’s Operating Framework.

**Condition Assessment**

Knowledge of the asset, its condition and performance is vital for making the right investment decisions necessary to close any performance gaps identified through the Performance Management Regime. Each asset has different inspection requirements and where appropriate the collection of condition data complies with nationally published guidance. This allows TfB to report to National Government information required under the single data list and for the Whole of Government Accounts.

Condition data is stored electronically in TfB’s AMIS and is checked and validated in accordance with the Asset Data Management Plan (ADMP). The ADMP also details the Condition data collected, its survey coverage and frequencies.

**Data Management**

Effective asset management and its implementation relies on systems to support decision making. The right systems and well maintained and audited data are key to effective reporting and monitoring of asset performance.

TfB utilises and maintains sustainable IT systems necessary to deliver the Asset Management Strategy and continually reviews the adequacy of those systems. Data is held centrally in the AMIS or, where required, on separate systems with links and processes to ensure that any shared data is maintained across systems. Access and editorial rights to the data is controlled centrally through strict login and password protocols.

The data held in the system includes:

- Customer Contact data and correspondence
- Street Gazetteer and Network information
- Asset data and parameters
- Inspection records
- Condition information
- Works Ordering and completion
- Maintenance histories

Asset data is managed in accordance with the Asset Data Management Plan (ADMP). The ADMP is a data catalogue of the information held and is used to identify future inventory collection priorities required to inform the Business Planning process. It records the controls and processes for updating and maintaining the data held. The ADMP ensures that TfB has
sufficient inventory information to comply with the Whole of Government Accounts valuation requirements.

**Life Cycle Planning**

TfB uses Lifecycle planning principles to identify the long term investment requirements for the major asset groups in order to inform the setting of performance targets to meet Corporate Objectives. The Lifecycle plans are used to inform the allocation of budgets through the Business Planning and Medium Term Financial Planning processes, assisting in making the case for investment where required. They are regularly updated and reviewed against performance achieved to improve predictions and reliability. The outputs from the Lifecycle Plans are used to inform key stakeholders including elected members through the communications plan. Works programmes for asset protection and renewal are developed to deliver the required performance for the money invested.

Lifecycle Plans are used to predict long term future performance of highway infrastructure assets for different levels of investment and different maintenance strategies. The plans determine the level of investment required to achieve the required performance to meet the corporate objectives at the minimum cost over the lifecycle. Where data is not available a risk based approach is adopted to budget setting.

By comparing predicted performance against desired targets across all asset groups, decisions can be made to distribute investment between the assets in order to best achieve the corporate objectives for the budget available.

The Lifecycle plans follow the principles outlined in the Highway Maintenance Efficiency Programme’s Guidance on Asset Management and use the toolkits available in order to provide reliable outputs.

**Works Programming**

The works programmes developed for each asset group are the outcome from the asset management planning process. Works programmes are therefore aligned to the strategy and optimised to achieve the performance targets and deliver the best value for money. Lifecycle plans and their investment strategies are used to identify maintenance strategies. These set the optimum balance between protection treatments and those focussed on asset renewal.

For each asset group candidate schemes are identified, assessed, prioritised and optimised to create 4-year forward programmes to achieve the corporate objectives and associated performance targets whilst delivering the best value for money. This aligns with the County Council's Medium Term Financial Plan.

Candidate schemes are identified from a range of sources:

- Asset condition data and associated software tools used to analyse this data.
- Stakeholder needs including engagement with elected Members.
- Other surveys, for example safety inspections
• Local knowledge from operational staff
• Complaints and injury claims
• Meeting other transport and corporate objectives for example in association with development or improvement schemes.

For all asset groups, schemes are prioritised using multi-criteria analysis for inclusion in the works programmes for each year. This prioritisation considers the corporate objectives and associated performance targets and gaps. The contribution each scheme or collection of schemes will make in achieving those targets and addressing performance gaps determines their priorities. For locally important assets without a strategic role such as Hierarchy 4b Local Access Roads, the County Council follows its “Think Councillor” approach and is guided by the Local Member in determining the prioritisation of schemes.

In order to achieve the greatest efficiency, programmes are optimised. The 4-year programme for each asset group is reviewed with our Supply Chain and opportunities for long term integration and collaborative working are identified and exploited whenever possible to deliver efficiencies and minimise the occupation of the network. Schemes in the forward programme are plotted and recorded in the AMIS and communicated to stakeholders through the communications plan.

**Scheme Delivery**

Delivery is planned to efficiently and sustainably implement the plans and programmes once determined. Efficient and effective delivery achieves our objectives, manages risk and reduces uncertainty.

Business plans are used to set out the annual activities to be undertaken for each asset group detailing how maintenance is carried out. The delivery of the annual works programmes is monitored through monthly challenge meetings and performance measures are identified and reported relating to programme delivery and cost outturn.

Collaborative working with Supply Chain Partners provides Early Contractor involvement in the design and procurement process. Target costing is used where practical to drive efficiency and value for money and to share in the benefit of those efficiencies. Performance measures and targets are also set to drive a sustainable approach to delivery.

The annual programme of works is developed within the following principles:

• To minimise disruption on the network
• Maximise opportunities for collaborative working between works programmes
• Offer the opportunity to integrate larger and smaller scale works.
• To provide collaboration opportunities for smaller scale maintenance minimising the number of road closures and reducing traffic management costs (“Fence to Fence” approach).

Coordination meetings are held with all operational teams. The Streetworks team controls network occupation through the booking of road-space for all activities on the network.
Communications Strategy

A Communications Strategy ensures relevant information is provided to key stakeholders to inform the setting of performance targets, budgets and in making key decisions. The strategy outlines how TfB promotes communication both in providing information to key stakeholders and receiving feedback. It covers communication inside the service, across the authority and with external stakeholders such as the public and parish councils. The plan lists the key Stakeholders, the channels of communication used, and contains an annual communications action plan.

A comprehensive website contains information on our policies and plans, activities undertaken and the works programmes for current and future years. It provides the opportunity for feedback and for reporting issues, defects and problems using online tools. Programmes of works are also communicated through regular member updates and the Local Area Forums.

The Asset Communication Plan details how we engage with Members, District, Town, Parish Councils, the public, businesses and other stakeholders in communicating our approach to asset management. This engagement includes information on budget setting and the service levels and performance targets set. It also sets out how direct engagement takes place with Members to provide them with information and the opportunity to inform and influence our strategies.

The National Highways and Transport (NHT) Customer Satisfaction Survey and other surveys are used to ensure Member and public views are analysed and used to shape strategic planning and transport services. Individual feedback is also received on larger maintenance schemes which is used to inform and improve scheme delivery. The plan is a live document and is regularly reviewed to reinforce and develop communication of this Asset Management Strategy.

Competencies and Training

Successful delivery of the service relies on competent personnel and it is important that the accountabilities for asset management are clearly defined. Annual staff appraisals and associated training plans ensure that asset management understanding and knowledge is continually enhanced, key staff members are identified and achieve recognised qualifications and certificates. As a minimum, TfB requires relevant staff to undertake the HMEP e-learning toolkit for Highways Infrastructure Asset Management.

The business planning and monitoring process ensures that adequate resources are allocated to asset management activities and that recruitment, where required, has the appropriate focus.

Best practice is developed and implemented to make best use of the following opportunities:

- Highway Maintenance Efficiency Programme (HMEP)
Close links to professionals within the industry are maintained. Meetings of an Asset Management Discipline group consisting of representatives from Essex Highways, East Cheshire Highways and Transport for Buckinghamshire are held every quarter. This shares good practice and knowledge identifying opportunities for efficiency savings by collaborative working and the sharing of resources. It also seeks to identify a consistent approach to asset management across the three authorities.

**Continuous Improvement**

Asset Management practice and the availability of guidance data is constantly developing. In order to deliver continuous improvement TfB has identified performance gaps between current practices and the recommendations of the HMEP Highway Infrastructure Asset Management Guidance. An improvement plan has been developed to deliver, improve and refine the strategy and is regularly monitored. The improvement plan is focussed on improving TfB’s maturity as assessed by the Local Highway Maintenance Capital Funding Self-Assessment Questionnaire for the Incentive Fund and ultimately to achieve ISO 55000 certification. TfB is also a member of the National Highways and Transportation’s (NHT) Cost, Quality and Customer (CQC) Efficiency Network.

An Asset Management Forum drives continuous improvement and provides a scrutiny role ensuring that the improvement plan is delivered and appropriate resources are allocated to deliver real, measurable and tangible benefits.

This Forum is chaired by the Highway Infrastructure Asset Manager who is responsible for producing an Annual Performance Report and reviewing and updating the Improvement Plan, detailing progress and identifying targets and actions for the coming year. The Forum is responsible for reviewing emerging guidance from bodies such as HMEP and SE7 and to identify emerging technologies and innovations ensuring that they are captured and adopted where appropriate. The Highway Infrastructure Asset Manager also engages with the Asset Management Discipline Group and liaises with a critical friend to review the improvement plan and ensure that wider developments, opportunities and lessons learned are captured and exploited.

Delivery of this Strategy is the responsibility of the Highway Infrastructure Asset Manager supported by Senior Management. This Strategy will be reviewed regularly to allow informed decisions to be made in order to accommodate any changes in funding and priorities within the longer term forecasts. It is anticipated that significant changes to the Strategy will not need to be made even if major changes in available budget occur.