



Highway Infrastructure Asset Management Strategy

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Executive Summary

In November 2015 the County Council adopted its first Highway Infrastructure Asset Management Policy and Strategy. These documents described how all highway infrastructure assets are managed in a coordinated and strategic fashion by Transport for Buckinghamshire.

This Strategy was produced with clear intent to contribute to achieving the objectives outlined in the Strategic Plan and was revised in 2017 to align with the new strategic plan. The Strategy is regularly reviewed and this latest revision adopts several amendments required to keep the strategy live and up to date. The revision also references the accreditation of the Asset Management Framework under ISO 55001 and clarifies the scope of the strategy.

This Framework describes how the activities, processes and documents of TfB interact. The Framework has been communicated to staff and stakeholders to raise awareness and understanding as part of ongoing training. The scope of this strategy covers the five main highway infrastructure assets (carriageways, footways, structures, street lighting and Intelligent Transport Systems) with individual asset plans contributing to an overall framework. The scope of this strategy does not include day to day operational management and reactive maintenance of the highway network which is set out in the Highway Services Policy

The Strategy includes a Performance Management Framework (PMF) of indicators. The PMF provides a clear line of sight from the Council's Strategic Objectives contained within BCC's Strategic Plan 2017-20 to the implementation of works programmes. Asset Management Objectives are used to assess levels of service against which performance of the assets can be measured. The strategy also details how it will be governed, monitored and improved and how risks to its delivery will be managed.

The main changes to the strategy in this February 2019 version include:

- a. Reference to the ISO 55001 Certification and associated auditing,
- b. Reference to the Highway Services Policy
- c. Clarification of the scope of the strategy as identified in the ISO assessment
- d. Full integration of the risk based approach and Well Managed Highway Infrastructure Code of Practice,
- e. Addition of a section on innovation,
- f. Inclusion of the revised governance arrangements (Strategic Transport Infrastructure Board etc.)
- g. Reference to the importance of Historic Value and maintenance of consistency of character.
- h. Footway condition survey regime amended.

Introduction

Transport for Buckinghamshire (TfB) operates an Asset Management Framework that is accredited to ISO55001; the International Standard for Asset Management. The accredited Asset Management Framework allows TfB to effectively and efficiently manage Buckinghamshire County Council's 3,200km of highway assets, its most valuable asset, at £4.6bn. It provides a transport network for both commercial and private users and is critical in supporting the three main Aims of the County Council's Strategic Plan (2017-20):

- Safeguarding our vulnerable
- Creating opportunities and building self-reliance
- Ensuring Buckinghamshire is thriving and attractive

Transport for Buckinghamshire (TfB) translates these three Aims into five Asset Management Objectives (AMO) to provide a clear line of sight between the Council's aims and TfB's activities;

- AMO1:** Maintain a safe network
AMO2: Manage highways effectively and efficiently
AMO3: Maximise network availability
AMO4: Optimise the use of and protect the availability of natural resources
AMO5: Improve accessibility for all

The Asset Management Objectives support the County Council's Strategic Objectives as shown in the following matrix:

		AMO1	AMO2	AMO3	AMO4	AMO5
Safe-guarding Our Vulnerable	Support our most vulnerable adults to lead independent lives	✓				✓
Creating Opportunities and Building Self-reliance	Improve community safety and reduce crime and the fear of crime	✓				✓
	Continue to improve the health and wellbeing of our residents and address major health risks	✓				✓
	Support our voluntary community sector to develop our communities to help themselves	✓	✓			✓
	Empowering communities to deliver and prioritise their services including devolving assets and services to town and parish councils where it makes sense to do so	✓	✓	✓		
Ensure Buckinghamshire is Thriving and Attractive	Repair our highways (roads, footpaths, street lights, bridges and drainage) as effectively and as speedily as possible.	✓	✓	✓	✓	✓
	To work with the England Economic Heartland / Local Enterprise Partnership's and other partners to maximise investment in the County, to deliver, manage and maintain local services and strategic infrastructure including digital highways, in line with changing demands.	✓	✓	✓		
	Enable the right conditions and incentives to attract new and growing businesses to Buckinghamshire, driving economic growth.		✓	✓	✓	✓
	Enable the right conditions to attract people to live, learn and work in Buckinghamshire.	✓	✓	✓		✓
	To improve the connectivity and reliability of Buckinghamshire's transport network to stimulate economic growth and promote more sustainable travel.	✓	✓	✓		✓
	Promote and encourage sustainable approaches to the use of natural resources and waste, improving our natural environment, water management, biochemistry, recycling and animal welfare.		✓	✓	✓	

TfB's Highway Infrastructure Asset Management (HIAM) Policy describes the principles adopted to achieve the authority's strategic objectives. This HIAM Strategy sets out how the Policy is to be achieved by taking a systematic approach to deliver the Objectives 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 will support continuous improvement of Asset Management in the Organisation.

The HIAM Strategy is one of the key strategic documents relating to the County Council's Highway Services. These services are delivered by Ringway Jacobs represented in Buckinghamshire by TfB that consists of Ringway Jacobs staff and a commissioning client consisting of BCC staff.

This document describes how TfB undertakes a risk-based approach based on an understanding of the highway network, the potential risks and an appreciation of their likely significance. TfB will ensure it meets its Statutory Obligations as set out in the Highways Act and complies with national best practice and guidance provided by Highways Maintenance Efficiency Programme (HMEP) document '*Highway Infrastructure Asset Management*' and the National Code of Practice '*Well-managed Highway Infrastructure*'.

The scope of this Strategy is for the development of detailed asset management planning and implementation for the following five main highway infrastructure asset groups:

- Carriageways
- Footways
- Street Lighting
- Structures
- ITS

The scope of this strategy does not include day to day operational management and reactive maintenance of the highway network which is set out in the Highway Services Policy as seen in the diagram to the right.

The certified asset management approach outlined in this strategy enables the organisation, its technology and its processes, to adapt to change. It embeds a continuous improvement approach to highway asset management including how best practice, national and international developments and are taken into consideration. Other Assets may be added to the scope of this document as data or resource becomes available, in addition Drainage Assets have a separate strategy.



Delivery of this Strategy will be monitored and periodically reviewed. Implementation action plans will be adopted to drive improvements to support the delivery of this Strategy. The action plans are the responsibility of the Highway Infrastructure Asset Manager. The governance and review processes defined within this document will ensure these priorities are considered in each action that is taken.

Successful delivery of this strategy will ensure that TfB's Asset Management Objectives will be met, therefore contributing towards achieving the Council's Strategic Aims of: safeguarding our vulnerable; creating opportunities and building self-reliance; and ensuring Buckinghamshire is thriving and attractive.

Risks and Opportunities

This Strategy provides the organisation with an opportunity to determine external and internal issues that are relevant to its purpose and that affect its ability to achieve the intended outcomes of its asset management system. TfB has therefore undertaken a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis to help determine its ability to deliver the Asset Management Objectives.

The SWOT analysis tabulated below is a record of the risks and opportunities pertaining to TfB's ability to deliver its five Asset Management Objectives.

This analysis informs the development of a SWOT Action Plan to take advantage of the organisation's internal strengths and external opportunities and develop actions to resolve the impediments arising from its weaknesses and external threats. The SWOT Action Plan is guided by the Strategic Transport & Infrastructure Board and is subjected to the Contract Management Review. The AMB monitors implementation of the SWOT actions and in so doing supports the continual improvement process to develop its asset management processes and activities to better deliver its objectives.

Arising from the SWOT analysis the following high-level actions were considered necessary, to be addressed through appropriate means, including improvement plans.

1. Improve focus on technology and the utilisation of technology to improve environmental standing and improve the capability of the organisation;
2. Resolve lack of staff resilience by recruiting high quality staff to help address weaknesses.
3. Consolidate service provision to focus on the delivery that we have promised;
4. Improve the relationships within TEE and with BCC Corporate Teams to help influence development of the contract;
5. Develop connection between BCC and TfB communication teams to improve effective communication;
6. Ensure shareholders are proper strategic partners to the Council;
7. Develop joint TfB / Client approach to support member management through appropriate communication;
8. Key staff to develop strategic thinking within the organisation;
9. Develop committed long term, four-year budgets;
10. Remove blockages from technology to enable full utilisation of systems;
11. Make the most of England Economic Heartlands and LEPs with help from Strategic Partners.

As part of TfB's drive for continuous service improvement, an Improvement Plan has been developed to draw together all the improvement projects that are focussed on the TfB service. This plan has been categorised into a number of key areas that include Customer, Service Efficiency Optimisation, Service Specific Improvements and Future Improvements.

The Improvement Plan addresses SWOT actions 1, 3, 5, 7, and 10. The remaining six SWOT actions, being more strategic in nature as compared with the service delivery actions in the Improvement Plan, are to be addressed by the Operational Management Board (OMB). The OMB will consider the issues and requirements necessary to pursue these actions and develop appropriate measures to be address them.

	Helpful	Harmful
Internal	<p>Strengths:</p> <ul style="list-style-type: none"> • ISO55001 Certified Asset Management System (All) • RJ profit locked into Contract, aims to maximise efficiency and gains (All) • Governance of contract (All) • Expertise of the people and capable staff (All) • Integrated organisation (All) • Internationally renowned Shareholders (All) • Ability for Council to use the contract to procure and adjust existing and additional services (All) • Notional 4-year budgets (however focus on annual budgets) (All) • Excellent relationship with supply chain (All) • Working towards BS11000 (AMO2) • Alignment of budgets and targets (AMO2) • Zero based annual plans (AMO2) • All staff have a copy of "Our Plan (AMO2)" • Stakeholder engagements (All) • Clear highway maintenance strategy (AMO1) • Good quality of workmanship (AMO1) • Permit scheme (AMO3) • Network hierarchy (AMO2) • Gold standard gazetteer (AMO2) • Ability to enforce action upon utilities (AMO3) • Recycle 100% of road stone waste (AMO4) • Amount of energy efficient lighting (AMO4) • General Waste management (AMO4) 	<p>Weaknesses:</p> <ul style="list-style-type: none"> • Lack of clarity of RJ and BCC priorities (All) • Ability to generate efficiency (All) • Systems and IT – lack of enabling systems to drive efficiency and IT blockers (All) • Misconception and lack of clarity around finance management, terms, fees, disallowed costs, gain share etc. (All) • Lack of fixed long-term budgets (AMO2) • Competing demands within the council (All) • Limited communication between HQ (BCC corporate) and TEE (AMO2) • Disconnect between different delivery services (AMO2) • Boundaries of current contract need to be understood (All) • Inconsistent interpretation of "Our Plan". (All) • Inconsistent filtering of messages through the organisation (All) • The organisation needs greater strategic focus (All) • Budgets becoming more capital focused because of revenue pressure (All) • Lack of expertise of either an individual or gang (All) • Lack of dilapidation models (AMO1) • Depot operational model (AMO2) • Lack of definition of and execution of benchmarking (All) • Lack of resilience – budget linked, lack of staff and operatives (All) • Ability to prove value for money (All) • Resilience of network (All) • Poor collaborative working within road closures, especially involving external utilities (AMO3) • Lack of consultation and awareness of developments (AMO2) • Capacity to innovate (All) • Lack of clear and understood environmental plan and performance measures (AMO4) • Contract- focus on maintenance not improvements (AMO2) • Lack of long-term plan to improve accessibility (AMO5)
External	<p>Opportunities:</p> <ul style="list-style-type: none"> • Flexible contract with ability to change it over time (All) • Utilisation of longer term budgets (AMO2) • Unitary (All) • England's Economic Heartland (All) • Brexit (All) • HS2, East West Rail Link (All) • Local Government Enterprise Partnerships (All) • Stakeholder engagements (All) • Shareholders to showcase their abilities. • Utilisation of IOT and smart data (AMO2) • Self-service – digitalisation – becoming personable (All) • Utilisation of future technology (AMO2) • Develop partnerships with technology companies (AMO2) • Reduce, reuse, recycle (AMO4) • Aylesbury Garden Town (All) • Devolution (All) 	<p>Threats:</p> <ul style="list-style-type: none"> • Market has changed since initial contract and Client / RJ reluctance to adapt contract to current market (All) • Customer expectation gap (All) • Different customer groups with different demands (All) • Brexit – change of culture and embedded processes (All) • HS2, East west rail link (All) • Visibility of Local Government Enterprise Partnerships (All) • Change in political leadership (All) • Lack of understanding of the value of Education, Training, Publicity for stakeholders. (All) • Most of budgets becoming more capital focused because of revenue pressure (AMO2) • Lack of specific experts in local market for recruitment (AMO2) • Ageing Assets (AMO1) • Utilities conforming and complying with regulations (All) • Growth within the county (All) • Asset not set up for aging and growing population (All) • Adapting to future technology (All) • Un-notified developments (All) • Traffic growth (All) • Increasing material costs and energy prices – budgets struggling to keep up (AMO2) • Ability to adapt existing infrastructure (AMO5) • Digitalisation - impact on satisfaction levels and isolation (AMO5)

Asset Management Framework

The HIAM Policy and this HIAM Strategy form part of the Highway Infrastructure Asset Management Framework that is accredited to ISO55001 the International Standard for Asset Management. The Framework maintains a clear line of sight from the objectives outlined in the Council's Strategic Plan to the works programmes implemented and delivered each year as part of the Business Planning and delivery processes. The Framework reflects the four themes of the ISO55001 Standard; Context, Alignment, Enablers and Continual Improvement.

BCC's Strategic Plan (2017-2020) sets the Council's three main aims and a number of corporate objectives supporting those aims. This Strategic Plan and BCC's Transport, Economy, Environment Commercial Plan together with Ringway Jacobs' corporate Asset Management Policy and Strategy inform TfB's 'Our Plan' which serves as a go-to guide, a mission statement and the teams directory – not just for TfB but for our stakeholders, supply chain and, valued Members.

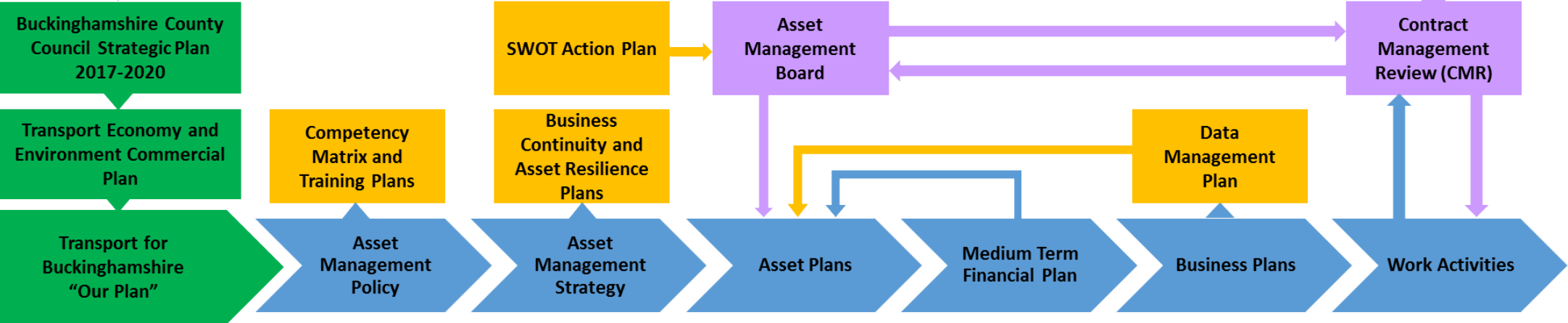
These five contextual documents inform the Asset Management Policy which establishes what the organisation is setting out to do and aligns with the overarching Strategy, which describes how the Policy will be achieved. A series of aligned Asset Plans emanate from the Strategy leading ultimately, to the works activities specifically planned to deliver the organisation's objectives.

Enabling plans and frameworks, particularly the Communications Strategy and Plan and Performance Management Framework, ensure the organisation is aware and can contribute to achievement of the objectives. Similarly, Stakeholders are kept informed of progress and achievements.

Finally, governance arrangements ensure the Asset Management Framework will be successful in delivering the objectives and embeds processes to promote continual improvement in the operation of the organisation.

The effectiveness of this Asset Management Framework is continually monitored through an internal audit programme against the requirements of ISO55001. Non-conformance against the standard will result in a corrective action being raised and an appropriate owner assigned to maintain the effectiveness of the Asset Management System.

Communications Strategy and Plans



Performance Management Framework

- Context
- Alignment
- Enablers
- Continual Improvement & Governance

Network

TfB currently 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 efficient and effective 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.

To ensure the network continues to meet the requirements of the UK Pavement Management System (UKPMS) all condition information will be aligned with the Local Street Gazetteer. TfB will continue to report the length of the carriageway network using the UKPMS Network Length.

The carriageway network length is categorised against both traditional road classes and maintenance hierarchies. The maintenance hierarchies enable a risk-based approach to maintenance delivery.

Road Class	Total Length (km)	Urban Length (km)	Rural Length (km)
A	414	171	243
B	146	67	79
C	810	359	451
U	1810	1300	510
Total	3180	1897	1283

Maintenance Hierarchy	Total Length (km)	Urban Length (km)	Rural Length (km)
2	184	62	122
3a	207	106	101
3b	501	284	217
4a	642	301	341
4b	1646	1144	502
Total	3180	1897	1283

All assets, customer enquiries and works orders will continue to be recorded against the relevant streets in the Gazetteer. Footways running between streets may have their own network entry.

TfB currently maintains the Local Street Gazetteer to the NSG Gold Standard and it will be ensured that this standard is maintained through continual updates. The Gazetteer will be updated as new roads are constructed and named by the relevant District Council. Streets will be added to the Network when they are formally adopted as Public Highway. An update protocol will ensure the network is maintained to include all adopted streets within the County and will inform the NSG. Assets associated with the new network will be added to the inventory to be included in future inspection and survey schedules to ensure effective monitoring of the network continues.

Inventory

To effectively and efficiently manage the highway asset, a high level of understanding is necessary to enable fully informed management decisions to be made. TfB will continue to maintain 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 ensuring compliance with the requirements of the Code of Practice on Local Authority Transport Infrastructure Assets. TfB will identify additional data needs through operational reviews and the requirements for the annual WGA valuation.

The current 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 will continue to be updated regularly recording when assets are installed, removed or repaired.

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

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

Assets within scope of this Strategy

Hierarchy

In order to represent each 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-managed Highway Infrastructure", the entire network is categorised as outlined in the table below. The hierarchy enables a risk-based approach by dictating the safety and condition survey regimes and influences the prioritisation of works programmes allowing TfB to efficiently maintain a safe network.

The allocation of roads within the hierarchy will be regularly reviewed and revised to reflect local factors and influence to best represent the network's contribution to the Council's Strategic Objectives. This will include identifying those assets which are critical to the operation of the network to maximise availability of the network. The allocation of Hierarchy is carried out using a route-based approach following the guidance below.

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

The highway network is constantly changing; the hierarchy assignments will undergo a continuous review and updating process. The network will be reviewed through the following means:

- New and Adopted Streets
- Changes in use or traffic flows
- Applications for change to the hierarchy categories

New and adopted streets will be assigned a hierarchy category consistent with adjacent streets in accordance to a route-based approach. Changes in use or traffic flows will prompt a review of the road and associated route's hierarchy. Local Area Technicians and Local Members may apply to change the hierarchy of a section of the carriageway. This will be dealt with in the same way as for newly adopted streets.

Performance Management Framework

The Performance Management Framework (PMF) 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 will be reported on a regular basis and the methodology for recording and reporting has been clearly documented.

The PMF has been developed to provide a clear line of sight from the Council's Strategic Objectives contained within BCC's Strategic Plan 2017-20 to the implementation of works programmes. The Asset Management Objectives will be used to assess levels of service against which performance of the assets can be measured.

In working towards achieving these Assessment Management Objectives, the PMF includes numerous indicators to monitor the performance of each Objective. These indicators are SMART (specific, measurable, achievable, relevant and time bound). The indicators monitor both Outputs – volumes of work achieved (leading indicators) and resultant Outcomes – benefits achieved from the work achieved (lagging indicators).

The performance management framework has been developed to understand which areas of the service are most critical in meeting the asset management objectives. The indicators within it will be used to measure progress in the achievement of the objectives, to monitor the success of the strategy and to enable actions to be taken as necessary to deliver it.

Each indicator has a performance target. Targets will be used to review current and desired performance to identify performance gaps, create action plans to close those gaps and to inform budget setting. Periodic monitoring of these measures will allow for performance below or above the desired levels to be recognised and appropriate action taken.

Planning to achieve the targets is carried out as part of the annual business planning process. The available funding allocated through the Medium Term Financial Plan (MTFP) is used to inform the setting of targets. These targets are then approved with the sign-off of the Business Plans.

TfB will communicate the levels of service and the relevant performance indicators to key stakeholders as part of the Asset Management Communication Plan. This will include 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 will be reported through the production of quarterly dashboards.

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 will be identified as part of all decision making. Risk registers will be created, updated and reported through monthly review meetings and mitigation actions will be identified and progressed. Risks will be scored and escalated to senior management in accordance with BCC's Operating Framework.

Communications Strategy

A Customer and Communications Strategy and Plan ensures relevant information is provided to key stakeholders to inform the setting of performance targets, budgets and in making key decisions. The current communication strategy outlines how TfB promotes engagement 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 Communications Action Plan lists the key Stakeholders and the channels of communication used as well as defining how the strategy will be delivered.

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 on information published and TfB will continue regular engagement with the public through social media. There are also comprehensive tools for reporting issues, defects and problems. These tools are easy to use and will allow TfB to react to local issues that are affecting residents. The tools allow for the reporting and tracking of a defect to ensure the public is able to report issues and see what actions are taken. Local residents reporting of issues allows TfB to ensure that safety and accessibility concerns are addressed efficiently and effectively. Programmes of works will also be communicated through regular member updates and the Local Area Forums.

The current 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 Transportation (NHT) Customer Satisfaction Survey and other surveys will continue to be 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 will be used to inform and improve scheme delivery. The Asset Communication Plan is a live document and will continue to be regularly reviewed to reinforce and develop communication of this Asset Management Strategy.

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 Framework. Each asset has different inspection requirements and where appropriate compliance on the collection of condition data with nationally published guidance will be ensured. This will allow TfB to report to National Government information required under the single data list and for the Whole of Government Accounts. The collection of condition data will also allow TfB to identify issues on the highway such as areas susceptible to wet-weather skidding so maintaining a safe network.

Condition data will continue to be stored electronically in TfB's AMIS and checked and validated in accordance with the ADMP. TfB will endeavour to ensure that the annual regimes of data collection are undertaken to guarantee asset data remains up to date. Survey frequencies are set using a risk-based approach meaning the highway is managed efficiently and effectively and fleet use is optimised, minimising TfB's use of natural resources. Survey frequencies are subject to change, surveys and their need are continually review and updated as required.

Asset Group	Criticality	Inspection/Survey	Frequency	Condition related Indicator
Carriageway	Strategic Routes and Main Distributors	SCANNER	2-year cycle	% Principal roads where structural maintenance should be considered.
		Griptester	Annual	% Principal roads network Grip Test survey below level in current year
	Secondary Distributor	SCANNER	2-year cycle	% Non-principal classified roads where structural maintenance should be considered.
		Griptester (part)	3-year cycle	
	Local Inter-connecting Road	SCANNER	2-year cycle	% Non-principal classified roads where structural maintenance should be considered
Local Access Road	Coarse Visual Inspection (CVI)	2-year cycle	% Unclassified Roads requiring structural maintenance	
Footway	Primary and Secondary Walking Routes	Detailed Visual Inspection (DVI)	2-year cycle	% footways requiring structural maintenance
	Linked, Local Access and Remote Footways	Footway Network Survey (FNS)	4-year cycle	None
Structures	All	General Inspection (GI)	2-year cycle	Critical element score of bridge stock condition Parapet & Deck integrity
	All	Principal Inspection (PI)	6-year cycle	
	Weak Bridges	GI/PI as reqd.	As Reqd. dependent on condition	Average score of bridge stock condition
Street Lighting	All Steel columns and illuminated signs	Structural Test	At 25 years, then as determined by test result	None
	All Concrete columns	Visual inspection	No specific frequency	None
	All Electrical Components	Electrical test	6-year cycle	None
Intelligent Traffic Systems	All Signal Junctions	Traffic Management Act Site Reviews	5-year cycle	None
	All Traffic System Posts	Structural Test	At 25 years, then as determined by test result	None

Condition data is also used to inform the Medium Term Financial Plan through Lifecycle planning. Using the condition data gathered above the percentage of each asset in Very Good, Good or Fair condition is assessed and modelled. Targets for delivery are set and monitored in the Performance Management Framework.

Data Management

Effective asset management and its implementation relies on systems to support decision making. The right systems coupled with well-maintained and audited data are key to reporting and monitoring of asset performance, the efficient delivery of services and best use of natural resources.

TfB will continue to utilise and maintain sustainable IT systems necessary to deliver the Asset Management Strategy and will continually review the adequacy of those systems. Data is currently 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 are 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 will continue to be managed in accordance with the Highway Infrastructure Asset Data Management Plan (ADMP). The ADMP is a data catalogue of the information held and will be used to identify future inventory collection priorities that will be 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.

Long Term Planning to Meet Future Demands

TfB will continue to utilise Lifecycle Planning principles to identify the long-term investment requirements for the major asset groups. The investment requirements identified will be utilised to ensure that TfB will deliver the Asset Management Objectives and therefore contribute towards the Council's Strategic Objectives. The Lifecycle Plans will be used to inform the allocation of budgets through the business planning and Medium Term Financial Planning processes and to assist in making the case for investment where required. Lifecycle plans will be regularly updated and reviewed against performance achieved to improve predictions and reliability. The outputs from the Lifecycle Plans will be used to inform key stakeholders including elected Members through the Medium Term Financial Plan which allocates funding across all corporately owned assets including Schools and Public Buildings. Works programmes for asset protection and renewal will be developed to deliver the required performance for the Capital invested while optimising materials used and so minimising the carbon footprint of the works.

Lifecycle Plans will be used to predict long term future performance of highway infrastructure assets for different levels of investment. Different treatment strategies will be developed to guide effective and efficient maintenance to optimise the use of materials. The plans determine the level of investment required to achieve the desired performance in accordance with the Council's Strategic Objectives at the minimum cost over the lifecycle.

By considering the highway as an integrated set of assets and comparing predicted performance against desired targets across all asset groups, decisions will be made to distribute investment between the assets to best achieve the Council's Strategic Objectives for the budget available.

TfB will combine the results of the Lifecycle Planning with the asset prioritisation processes to endeavour to maintain the highway network against increased future demands. Consideration will be given to local developments and nationally significant projects such as High Speed 2, the Western Rail Link to Heathrow, the East West Rail Link and the M4 Smart Motorway. This will ensure Buckinghamshire remains attractive and thriving.

The Lifecycle plans will continue to follow the principles outlined in the Highway Maintenance Efficiency Programme's Guidance on Asset Management.

Works Programming

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

For each asset group candidate schemes will be identified, assessed, prioritised and optimised to create 4-year forward programmes. These programmes will contribute towards achieving the Asset Management Objectives and associated performance targets whilst endeavouring to deliver the best value for money. This continues to align with the County Council's Medium Term Financial Plan.

Candidate schemes will be 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 to address community needs;
- 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 will be prioritised using multi-criteria analysis, as set out in their respective prioritisation plans, for inclusion in the works programmes for each year. This prioritisation considers the Asset Management Objectives and associated performance targets and gaps. The contribution each scheme or collection of schemes will make in achieving the Asset Management Objectives 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 will continue to follow its "Think Councillor" approach and will be guided by the Local Member in determining the prioritisation of schemes.

In order to achieve the greatest effectiveness, works programmes will be optimised. The 4-year programme for each asset group will be reviewed with our supply chain and opportunities for long term integration and collaborative working will be identified and exploited whenever possible to deliver efficiencies, optimise the use of resources and minimise the occupation of the network. Schemes in the forward programme will be plotted and recorded in the AMIS and communicated to stakeholders through the Communications Plan.

Scheme Delivery

Scheme Delivery will continue to be planned to efficiently and sustainably implement the scheme delivery programmes once determined through optimisation of material use and collaborative working. Efficient and effective delivery contributes towards achieving the Asset Management Objectives, manages risk and reduces uncertainty.

Business plans will be 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 will be monitored through monthly challenge meetings and performance measures in the PMF will be reported relating to programme delivery and cost outturn.

Collaborative working with Supply Chain Partners will provide Early Contractor Involvement in the design and procurement process. Target costing is to be used where practical to drive efficiency and value for money and to share in the benefit of those efficiencies while optimising the use of natural resources and minimising network occupation. Performance measures and targets will also be set to drive a sustainable approach to delivery. The annual programme of works will be 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);
- To maintain the historic value and consistency of character of the environment.

Coordination meetings will be held with all operational teams. The Streetworks Team will continue to control network occupation through the booking of road-space for all activities on the network.

Risk Management of Critical Assets

TfB will take a three-step approach to dealing with the risks associated with highway infrastructure assets. The three steps are:

- Determining Levels of Investment;
- Prioritisation of Works;
- Contingency Planning.

To inform Investment Levels TfB will continue to undertake Life Cycle Planning to advise the budgets required to reach desired performance. These Life Cycle Plans will also determine assets to be targeted for treatment to ensure the most efficient application of treatments to minimise the potential for sub-optimal performance.

Prioritisation ensures that schemes are carried out in locations that have the highest benefits. TfB will continue to ensure that multi-criteria analysis is carried out to meet the Asset Management Objectives and to minimise risk. Multi-criteria analysis is essential as it considers the hierarchy of the road amongst other factors such as flooding and maintenance history. The hierarchy sets higher standards for maintenance and performance for the most critical routes that provide key transport corridors across the County, ensuring risk is minimised.

Although TfB will minimise risk as far as practicably possible through investments and prioritisation, incidents may still occur, in which case TfB will invoke contingency plans.

TfB's Business Continuity Plans set out the response to emergency situations that may impact key receptors across the network. The Business Continuity Plans will be used in any situation that requires immediate response on the highway infrastructure network. By following the guidance set out in the Business Continuity Plans any situation will be responded to with appropriate resources to minimise any impact.

In addition to the above measures TfB will also react to hazards appearing on highway infrastructure assets to mitigate safety risk and address accessibility issues. Regular inspections ensure that TfB is aware of the condition of the assets on the highway infrastructure network. TfB's 'Report It' tool allows members of the public to report any defects they may see. TfB's Highway Safety Inspection Policy sets out inspection frequency and defect response times.

Competencies and Training

In order to manage its Highway Assets as effectively and efficiently as possible, TfB considers it is essential to have an organisational structure that facilitates implementation and delivery of asset management by appropriately empowered and competent staff. Investment in staff development will support overall improvement in the implementation and delivery of this Strategy therefore, supporting subsequent business benefits. The business planning and monitoring process will ensure that adequate resources are allocated to asset management activities and that recruitment, where required, will have the appropriate focus.

TfB has considered the requirements and guidance contained within the Institute of Asset Management Competency Framework and developed a RACI matrix (Responsible, Accountable, Consulted, Informed) that aligns 27 competence units within 7 roles to the key organisational roles in TfB.

The RACI sets out which key organisational role has the Responsibility and Accountability for each of the competence units to discharge all 7 roles required to become “Proficient to Advanced” in asset management practice. The RACI then considers which key organisational roles should be Consulted and Informed in relation to the 27 competence units. The RACI will then be used to inform the training and development requirements for each of the key organisational roles within TfB.

The Training and Development Plan for asset management ensures that all staff have the appropriate competencies in line with their responsibilities and accountabilities set out in the RACI. TfB makes use of suitable training opportunities for its staff including attendance at conferences and industry groups as well as formal training programmes. The Personal Development Review process ensures individual training and development plans are developed for all staff involved in implementing asset management in TfB.

Close links with professionals in the industry are maintained through regular meetings with other Local Authorities to share good practice, knowledge and identify opportunities for efficiency savings by collaborative working and sharing of resources.

Continuous Improvement

Asset Management practice and the availability of guidance is constantly developing. In order to deliver continuous improvement, TfB will identify performance gaps and align itself with best practices. An improvement plan has been developed to deliver, improve and refine the strategy and this will continue to be regularly monitored. The improvement plan is focussed on advancing TfB's maturity beyond ISO55001 and to continue the success in the Local Highway Maintenance Capital Funding Self-Assessment Questionnaire for the Incentive Fund. TfB is also a member of the National Highways and Transportation's (NHT) Cost, Quality and Customer (CQC) Efficiency Network.

TfB creates a culture of continuous improvement by encouraging innovation to improve the way it delivers its service to benefit the people of Buckinghamshire. TfB adopts innovation and best practice from inside and outside the organisation including from other industries by:

- Risk assessing services that would most benefit from innovation;
- Having robust tools and processes that capture innovations;
- Prioritising and driving delivery of key innovations;
- Identifying and allocating resources to delivery key innovations;
- Providing forums/space/opportunities for sharing best practice and innovations both internally and external.

Innovations will have cashable or non-cashable benefits to the organisation. The total amount of cashable benefits will form a performance indicator used to drive innovative practice that delivers benefits.

An Asset Owners' Forum (AOF) will be chaired by the Highway Infrastructure Asset Manager to align best practice across the five major asset groups. This Forum will be a platform for knowledge sharing within the organisation and to offer support to ensure effective asset management.

The six-weekly Strategic Transportation and Infrastructure Board (STIB) engages senior decision makers with Highway Infrastructure Asset Management. The Asset Management Board (AMB) meets quarterly to review progress on the continual improvement of asset management in TfB and to review the PMF. The AMB offers guidance to ensure that TfB's Highway Infrastructure Asset Management continues to align with BCC's Corporate Objectives.

The Highway Infrastructure Asset Manager will continue to engage with an external Asset Management Discipline Group within the Midlands Highway Alliance. This group reviews emerging guidance from bodies such as HMEP etc. and identifies developing technologies and innovations ensuring that they are captured and adopted where appropriate.

TfB will continue to liaise with industry experts 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 the Senior Management Team which is accountable for its implementation. 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 be required even if major changes in available budget occur.