

Halton Borough Council

Highways Asset Management Plan (HAMP)



Contents

Introduction

Chapter Strategy, Policy and Objectives

- 1** Organisational Strategy
- 2** Highway Asset Management Policy
- 3** Highway Asset Management Strategy
- 4** Highway Asset Management Objectives

Operational Plan and Procedures

- 5** Inventory and Condition
- 6** Valuation and Whole of Government Accounts
- 7** Levels of Service
- 8** Future Network Changes
- 9** Maintenance Processes
- 10** Risk Management
- 11** Life Cycle Planning
- 12** Funding
- 13** Performance Monitoring
- 14** Current Situation

Appendix Appendices

- 1** Abbreviations
- 2** Glossary Acronym Term Explanations
- 3** Questions in Self-assessment

Introduction

“What is, and why do we need Highway Asset Management?”

Highway asset management is a way of running the ‘business’ of operating a highway network. The 780 km highway network (593 km of roads plus 187km of independent footpaths) in Halton comprises a number of diverse assets which all need managing (see Chapter 2 P.9 for more details on Halton’s assets). An asset management approach will help the Council, as local highway authority, to understand the value of the highway asset and the costs linked with maintaining that asset to avoid further deterioration and therefore further building up of maintenance backlogs.

Highways are by far the most valuable asset the Council has (the WGA Gross Replacement Cost of this asset was estimated as £1.484 billion in 2014-15), and as such, managing the maintenance of this asset is crucial. One of the keys to improving value for money in highways maintenance is knowing and understanding when and how to intervene. By applying asset management principles and considering an asset over a whole life cycle, it is possible to select the best time to intervene. This will maintain condition and preserve the asset in an economically viable way.

Good asset management is about making best use of available funds. It also provides a clear evidence base to justify the need for investment in highway maintenance. Applying the principles of asset management will help the Council achieve a more structured long term approach to maintaining the network and to resist expensive, short-term actions.

Some of the potential benefits of adopting asset management practices are:

- Provides an audit trail
- Leads to consistency of practices
- Assists with managing public expectations
- Formalises document standards and processes
- Helps us provide an informed response to budget pressures
- Records what assets we have and what condition they are in
- Allows us to understand how much infrastructure is aged and the risk associated with it
- Acknowledges that future spending requirements are not always the same as historical ones

Introduction

“ What is a Highway Asset Management Plan (HAMP)? ”

A Highway Asset Management Plan (HAMP) identifies the current assets and develops a framework for asset management to enhance existing good practices and improve the management of the network. A HAMP is a guidance document used by the service in managing the highway network as an asset and addressing maintenance challenges moving forward. In addition, the HAMP provides information regarding the highway asset base, its implications and identifies the need for funding that could be utilised in addressing maintenance issues. The HAMP also demonstrates to stakeholders how the Council manages highway assets and proposes to face the challenges of managing these assets in the future.

“ Why do we need a Highway Asset Management Plan? ”

The Highway Asset Management Plan (HAMP) supports an evidence based approach to maintaining the highway network and sets out how it can be maintained strategically and efficiently in order to protect the assets and provide the best possible service with the resources available. The purpose of the HAMP is to identify and set out the maintenance requirements for the highway network within Halton in a clear and consistent nationally recognised framework.

The All Party Parliamentary Report into Highways published in October 2013 recommended that it should be mandatory for each Local Highway Authority to produce a Highway Asset Management Plan in order to receive funding from Central Government. The Department for Transport (DfT) subsequently held roadshows in 2014 outlining how Central Government's Highway Maintenance Funding (through the DfT and the DCLG) is likely to be distributed in the future. It has now become clear that unless each LHA is actively committed to Asset Management and other Highways Maintenance Efficiency Programme (HMEP) principles then they could expect a cut in future funding, of up to 15.5% by 2020/21 through what is known as the 'incentive element and funding formula'. This demonstrates more clearly than anything how important it is for the Council to develop and sustain its highway asset management capability.

Introduction

Where we are, and where we want to be.

The Council published its first 'Transport Asset Management Plan' (TAMP) in 2007 at the Central Government's initiative and funding. This TAMP provided an overview of the authority's highway asset inventories, a gap analysis detailing what further data was required and an action plan for moving the authority towards a more asset management based approach to the delivery of highway services. This is now outdated. The decision to review, revise and publish a more up to date HAMP reflects the Council's recognition of the importance of a more robust asset management approach and processes that need to be adopted as well as the need to integrate various significant improvements made over the last eight years.

This revised document has been condensed to include highway assets only (carriageways, footways, structures, street lighting, drainage etc.). The Transportation functions such as bus stop infrastructure, bus stations etc. are excluded at this stage whilst discussions continue as to whether these will be carried out under a joint arrangement within the recently formed Combined Authority (CA) which incorporates all six of the Merseyside Authorities (Liverpool City Region CA). If necessary, the transportation assets can be added to the Plan at a later date. This new HAMP document has been constructed around current "HMEP" guidance on asset management and has evolved from our previous TAMP based on the County Surveyor's Society's (now renamed ADEPT) original framework document for Highway Asset Management on what should be included in a highways asset management plan. It follows recommendations set out in the Audit Commission report (*Going the distance, Achieving better value for money in road maintenance*, May 2011). It also reflects the most current standards set out in the highway codes of practice as well as taking into account local needs.

The Highway Asset Management Framework

The Highway Asset Management Framework is based on BSI PAS 55: 2008 (BSI Publicly Available Specification) and organised in the following way.



Chapter 1 Organisational Strategy

Halton is a place of ambition and enterprise. Together with our partners, we are successfully restructuring the local economy around a diverse range of sectors including science and research, transport and logistics, creative, media and advanced manufacturing. We see our strong economy and economic prosperity as our key focus, with the local population accessing and retaining employment to provide a clear route out of both poverty and poverty related poor health. Economic success gives our local people improved choice and control in the way they live their lives.

“ Halton will be a thriving and vibrant Borough where people can learn and develop their skills; enjoy a good quality of life with good health; a high quality, modern urban environment; the opportunity for all to fulfil their potential; greater wealth and equality, sustained by a thriving business community; and safer, stronger and more attractive neighbourhoods. ”

Our Mission and Our Guiding Principles

Halton Borough Council maintains the present high standards in the way it conducts its business. In implementing actions that flow from this plan, the Council will follow a set of guiding principles.

In all that we do we aim to be:

- Community focused - ensuring that residents' concerns are of prime importance in defining how we deliver effective services. We must maintain our open and democratic processes that encourage local people to become involved in decisions that directly affect them and future generations, working within the emerging policy context such as the localism agenda in developing new models of customer engagement,
- Sustainable - improving the quality of life for today's Halton residents without jeopardising that of future generations whilst also enhancing the biodiversity of the area,

Chapter 1 Organisational Strategy

- Leaders - the Council's role is to give clear strategic leadership to the Borough and to agree roles, responsibilities and relationships that are fit for purpose and enable people to contribute and to make a difference,
- Fair and inclusive - promoting equal access to opportunities and facilities, and helping to ensure that everyone in the community can access the opportunities and progress being made in Halton,
- Good value – enabling and coordinating the delivery of services and ensuring that the community receives value for money services of high quality that are accessible, affordable and focused on local needs. It makes sense to invest in preventative activity that stops problems occurring rather than paying to fix things that go wrong,
- Collaborative - taking full advantage of the benefits for Halton from the community, organisations and groups working constructively in partnership and sharing responsibility whilst also recognising the changing roles of some of our key partners and working with emerging new structures,
- Evidence-based – In making decisions and policy we will ensure that we learn from best practice elsewhere and making good use of research about what works in addressing the Borough's priorities. Halton's Corporate Plan is about focusing on the issues that matter the most and investing in priorities and approaches that are based on evidence.

Our Priorities and Our Goals:

Our Corporate Plan sets out what, within available resources, we plan to achieve over the next five years to improve lives within all the communities of Halton. It will guide the development of more detailed strategy and actions to be undertaken by the Council. Within this plan we explain the steps that need to be taken to deliver on the strategic priorities and key themes that are set out here and within Halton's fifteen year Sustainable Community Strategy 2011 – 2026.

These are:

- A Healthy Halton
- Employment, Learning and Skills in Halton
- A Safer Halton
- Halton's Children and Young People
- Environment and Regeneration in Halton
- Corporate Effectiveness & Business Efficiency ⁽¹⁾

Chapter 2 Highway Asset Management Policy

Halton has a substantial highway and transport network that is constantly undergoing improvement. During the period of LTP1 and 2 (2001/02 to 2010/11) we made substantial progress in delivering integrated and sustainable transport for Halton. This included obtaining legal powers and initial funding for the prestigious Mersey Gateway Project that gained Ministerial approval in December 2010 following the public inquiry in 2009. There was also an announcement in June 2010 that the Government would provide £18.6 million of funding for the Silver Jubilee Bridge Major Maintenance Scheme. This has enabled much needed major maintenance work on the bridge and its complex of structures to be undertaken.

A large measure of our success was due to the support of our many stakeholders and partners. Our collective ability to deliver improvements was acknowledged by the Government through the Department for Transport (DfT), which recognised Halton as 'excellent' in the quality of delivery of transport as well as in our forward planning. We are now seeking to deliver LTP3 to the same high standard. ⁽²⁾

Halton Borough Council has joined with neighbouring Merseyside authorities including Merseytravel, to form a Combined Authority (CA). In doing so, Halton transferred all its local transport authority powers to the CA. This merger of ideas and values was brought about on 1 April 2014. From now on this combine of Transport Functions shall be carried out under the name of the new authority; named in the Order presented to Parliament as the "Halton, Knowsley, Liverpool, St Helens, Sefton and Wirral Combined Authority". Earlier on 21 February 2014, it was decided that the authority will use the public name of Liverpool City Region Combined Authority.



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The six authorities have combined to deal with strategic policy areas such as economic growth, transport, tourism, culture, housing, and physical infrastructure. The authority creates a legal entity officially taking over the role of Merseytravel and expanding its area of formal jurisdiction, as well as formalizing the existing informal arrangements between the city region's constituent councils. The region's economic development is supported by the Liverpool City Region Local Enterprise Partnership (LEP), established in 2010 as the private sector led board comprising political and business leaders from around the city region. ⁽³⁾

Chapter 2 Highway Asset Management Policy

The remit of the CA does not, at this stage, include responsibility for the highway network or highway maintenance, although consideration is being given to the adoption of a Strategic Highway Network and the carrying out of certain functions on that network. The CA's Transport Protocol also requires that a review of the way both Integrated Transport and Highway Maintenance Block allocations should be distributed in future years, the main emphasis being on deciding whether money should continue to be allocated according to the current formulae basis or whether it should be on prioritised need as determined by the CA. As of June 2015, these reviews are ongoing.

The Liverpool City Region currently has two Local Transport Plans for its area. The 'Merseyside Local Transport Plan 3' and its associated documents came into force on 1 April 2011 and form the transport policy framework for Merseyside. 'Halton' has its own Local Transport Plan 3 which is closely aligned to that of Merseyside.

Halton's LTP3, which runs from 2011, presents itself in two parts. The first sets out a strategy for Halton until 2026. The second part lies beneath the long term strategy and it is an Implementation Plan, which set out in detail how the strategy was to be delivered in the first four years (2011-2015).

Both LTPs came to the end of these implementation plans in March 2015. However, on 1st April 2015, the Transport Plan for Growth (TPfG) was produced. This sets out a Joint Strategic Transport Framework for the LCR CA, together with a 6 year Investment Plan. This doesn't replace the existing LTPs, which will continue through to 2024 (Merseyside) and 2026 (Halton), but it updates what has happened since the LTPs original preparation in 2010. The TPfG emphasises how important transport is as an enabler of growth and the role it can play in achieving economic growth across the LCR. ⁽⁴⁾

Transport planning cannot be considered in isolation as its purpose is to serve society. LTP3 and the TPfG therefore, have been built upon wider policy documents such as the Sustainable Community Strategy.

We know, despite our extensive successes, there is much more to be done. The circumstances in which we find ourselves are very different to those of even a relatively short while ago. There will be much less public finance available, but we must ensure that Halton and the Liverpool City Region's aspirations for regeneration and growth continue to be supported by a high quality, low carbon and efficient transport network.



Chapter 2 Highway Asset Management Policy



In January 2011, the Government's Transport White Paper 'Creating Growth, Cutting Carbon – Making Sustainable Local Transport Happen' was published. The White Paper States:

'The Government will be targeting investment in new projects that can help build the dynamic low carbon economy that is essential for our economic prosperity. The White Paper is about providing the early reduction in carbon emissions that local action is best placed to deliver, whilst facilitating the access to local jobs that will boost economic growth.'

Halton recognises the Government's main transport objectives of creating economic growth and reducing carbon emissions. In addition to these, Halton set out its own transport goals in LTP3.

These were:

- Ensure transport network resilience with particular regard to enhancing cross Mersey linkages, by the implementation of the Mersey Gateway project and the Mersey Gateway Sustainable Transport Strategy
- Ensure the transport system supports the priorities of the Halton's Local Strategic Partnership (LSP), the Local Enterprise Partnership (LEP) and Liverpool City Region (LCR)
- Provide and promote a clean and low carbon transport system
- Ensure the transport system promotes and enables improved health and wellbeing

Chapter 2 Highway Asset Management Policy

- Ensure the transport system allows people to connect easily with employment, services and social activities
- Ensure the transport network supports the economic success of Halton and the LCR by the efficient movement of people and goods
- Maintain our transport and highway assets to a high standard. ⁽²⁾

Chapter 2 Highway Asset Management Policy

“Why do we have a Highways Asset Management Policy?”

A highway asset management policy guides how the Council:

- Develops and maintains its highway infrastructure
- Determines maintenance options to achieve the most efficient and cost effective treatments in relation to whole life costing
- Uses existing available resources in an efficient, cost effective way
- Selects partnering options to support the delivery of the maintenance service
- Seeks to minimise the impact on the environment of maintenance activities

In managing our assets well, we provide accountability to the Elected Members for the use of both departmental capital and revenue funding.

Scope

This policy applies to all highway inventory assets purchased, constructed, installed and maintained on the adopted highway network within the authority's boundaries.

(As at June 2015)

Carriageways	593 Km
Footways, Footpaths, Cycleways and Rear Alleys	784 Km
Structures	339
Street Lighting	20,060
Illuminated Road Signs and Lit Bollards	1,850
Traffic Signals	
➤ 59 Traffic signal controlled junctions	
➤ 20 Puffin pedestrian crossings	
➤ 5 Toucan (Pedestrian and Cycle) crossings	
➤ 18 Zebra crossings	
Variable Message Signs	12
Automatic Number Plate Recognition	6
CCTV	9
Speed Activated Signs	47

Chapter 2 Highway Asset Management Policy

Our Commitment

Halton Borough Council considers effective asset management to be one of the key factors to enable the delivery of the corporate priorities namely:

- A Healthy Halton
- Employment, Learning and Skills in Halton
- A Safer Halton
- Halton's Children and Young People
- Environment and Regeneration in Halton
- Corporate Effectiveness & Business Efficiency

It is recognised that a good transport network is essential for a successful economy and for the efficient and effective movement of people and goods in and through Halton. Our roads provide safe and reliable access to jobs, services, schools, get goods to the shops and allow us to make the most of our free time. The highway network is the Council's biggest single asset by far and is used by or on behalf of every single member of the community, often many times a day.

Provision of safe, reliable and accessible routes to all destinations by walking, cycling, road vehicles and public transport is vital to the future of Halton's economy and the quality of its environment. Highway asset management will help meet the Council's aims and objectives for shaping Halton's future.

Our aim is to retain and develop a safe, reliable, attractive, well-managed and maintained transportation network that is easy to use by all users and which:

- Is maintained in the most efficient and effective manner
- Reaches a steady state of maintenance in terms of overall condition that meets the expectations and aspirations of the users
- Has residents and users satisfied
- Is achievable with available resources

Our Priorities

Provide a safe, well managed, maintained and more resilient highway network for all that use it. We will make every effort to understand current and future requirements for the highway infrastructure. In order to deliver this we will continue to understand our stakeholders' needs, promote their desirable levels of service that can be expected and the maintenance priorities for our highways.

Fully recognise the vital role that transport has to play in Halton's economic vitality and we will endeavour to maintain access to education, employment and services, as well as widen travel choice through public and community transport, supported by reliable and safe journeys on our highway network.

Chapter 2 Highway Asset Management Policy

“How do we aim to achieve this?”

Our adoption of an asset management strategy will take a long term view in making informed maintenance and investment decisions.

Halton Borough Council will manage Halton’s highway network stock in accordance with the ‘Highway Asset Management Framework’ set out in the Introduction, which includes a ‘Highway Asset Management Plan’. This strategic plan has been developed to provide the framework to ensure that Council’s Highway assets are operated, maintained, renewed, upgraded, acquired and disposed of to ensure that the Levels of Service are achieved in the most cost effective and sustainable way.

The Highway Asset Management Plan details some specific corporate objectives relating to the highway, a number of the key objectives are listed below:

- Demonstrate responsible and sustainable stewardship of the Council’s Highway assets
- Define how the Council’s Highways assets are and will be managed to achieve the defined Levels of Service
- Assist the management of the environmental, financial and public risks related to the highway assets.
- Provide the basis for forward works programmes.
- Produce the basis for optimising whole-of-life costs
- Support long term financial planning based on whole life costing
- Ensure that all highway management practices comply with current applicable legislation

Halton Borough Council is committed to the responsible management of its highway network asset and to being accountable for:

- The standards of maintenance of that asset.
- The way that maintenance works are identified and prioritised.
 - Using an asset management/ whole life costing approach to all highway maintenance activities
- The commissioning of maintenance works by internal or external agencies.
- Identifying and using sustainable solutions to minimise waste and landfill wherever possible, for highway maintenance works.
- Maintaining the highway network to standards which will significantly reduce the number and costs of third party accident claims.
 - Implementing highway inspection regimes to support the Council’s position

Chapter 2 Highway Asset Management Policy

Procedures

This policy will be reviewed in conjunction with the review of the Highway Asset Management Strategy and Highway Asset Management Plan.

- Highway Asset Register: Halton Borough Council will know the asset it owns or that it has legal responsibility for and will maintain an accurate computerised register developed around an asset hierarchy that supports advanced asset management functions
- Condition Assessment: Halton Borough Council will gather, record, store and analyse condition data using user friendly computerised systems, and design these systems to support high confidence level asset related decision making and to create a comprehensive condition index
- Highway Maintenance: Halton Borough Council will retain a detailed highway maintenance strategy, and operate a user friendly, accurate and comprehensive enterprise asset management system (that includes a Computerised Maintenance Management System) to ensure that the assets, facilities, and systems perform to their design criteria and meet their design lives
- Information Technologies and Analysis and Evaluation: Halton Borough Council will store and analyse its data and knowledge in integrated or interconnected, user friendly, efficient, and effective computerised business information systems that support total organization and asset management responsibilities, vision, and goals
- Levels of Service (LoS): Halton Borough Council will thoroughly understand and record its current levels of service, including customer service demands and will report its performance in meeting these in its asset management plans. These plans will include service level options and costs and likely future LoS requirements necessary for sustained performance
- Highway Asset Risk Management: Halton Borough Council will monitor, understand and manage the risks involved in its business activities and ensure that its policies, processes and practices reflect these commitments
- Financial Planning: Halton Borough Council will understand the value and costs of its highway assets and the financial resources required to appropriately sustain these (short and long term). It will seek to make its decisions based on Total Whole Life Cycle costs and appropriate funding strategies that match its business needs and targeted levels of service. Halton Borough Council will link the condition index to customers' expectations, its financial capacity and its levels of service goals; (for example service levels for the high footfall pedestrianized town centres will have a higher rating than little used rural footpaths)
 - Preparation of budget estimates
- Highway Asset details will be used to prepare budget estimates for cyclic maintenance activities (gully cleaning, grass cutting, watercourse maintenance etc.)

Chapter 2 Highway Asset Management Policy

- Condition data will be used to prepare priority lists and budget estimates in terms of:-
 - Carriageway/footway patching
 - Kerb repairs
 - Scheme works
 - Structural Maintenance
 - Street Lighting, Traffic Management and other Highway Electrical Assets
- Capital Improvement Plan and Budget Funding Processes and Procedures: Halton Borough Council will have uniform processes for the evaluation of investments in highway capital projects, maintenance and operations. These processes will include all costs and benefits, impacts on levels of service, and asset management decision making quality confidence levels. Halton Borough Council will make its decisions about individual projects when the impact of all proposed capital projects on levels of service, assets and service sustainability are known. Halton Borough Council will link its organisational goals to its investments and ultimate action plans;
- Capital Improvement Planning: Halton Borough Council Highways will approve capital investment for new assets or services with an understanding and commitment to the recurrent Operations and Maintenance funding necessary to sustain those. Halton Borough Council will plan its infrastructure and investments to meet current and forecast demands within the expected life of the assets subject to funding availability;
- Highway Asset Management Reporting: Halton Borough Council Highways will report its overall performance in financial, social, environmental and technical terms in reports to relevant Government bodies (DEFRA, DfT, EA) and via internal asset management reports;
- Highway Asset Management Programme Management: Halton Borough Council agrees that to undertake life cycle asset management efficiently and effectively, it needs to apply Best Appropriate Life Cycle Processes and Practices to its valuable community assets, acquire and maintain the necessary data and knowledge needed for these processes, store this data and knowledge in the most appropriate Highway Asset Management Information System and prepare Highway Asset Management Plans that are consistent with asset management strategies that meet stakeholders requirements;
- Highway Asset Management Appropriate Practices and continual improvement: Halton Borough Council believe that only when it can confidently claim that all the above facets of asset management are in use, will Best Appropriate Practices in asset management have been achieved for the benefit of its customers and stakeholders,
- Communication of the Highway Asset Management Policy: The Policy is part of the Highway Asset Management Framework which is embedded within the Council's practices. The Highways Asset Management Plan is a key corporate strategy and will be regularly reviewed and reported to the Council's Executive. ⁽⁵⁾

Chapter 3 Highway Asset Management Strategy

Strategy

A plan of action designed to achieve a particular long term aim

In terms of highways, the highway asset management plan provides detailed strategies to be used to achieve our aims outlined in the Policy, set out in Chapter 2 i.e. *to retain and develop our safe, reliable, attractive, well-managed and maintained transportation network that is safe and easy to use by all.*

To achieve this, the highway network must be maintained and managed through a 'whole life cost' approach in terms of condition rating, treatment options (to address condition rating), treatment selection and timing of the works involved. This in turn supports the corporate aims and objectives outlined in Chapter 1.

When considering Highway Asset Management; the maintenance strategies detailed in the highway asset management plan use the pyramid shown below as the basic platform to achieve well managed overall lifecycle costs for the Council's highway assets.

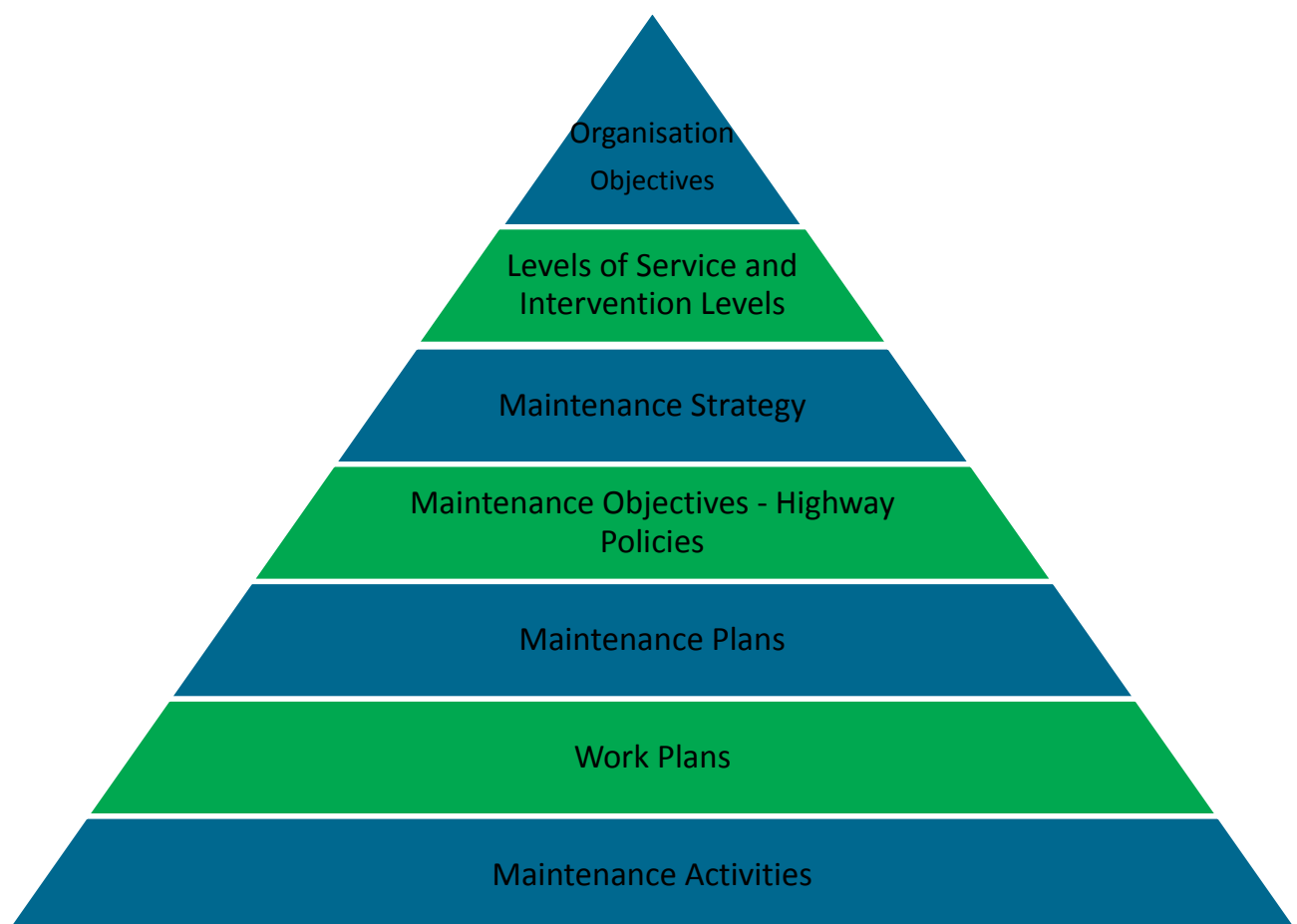


Fig 3.1. Maintenance pyramid (*)

Chapter 3 Highway Asset Management Strategy

Outline of Strategies Contained Within the Highway Asset Management Plan

➤ Highway Condition

To plan and undertake regular highway inspections and condition surveys and upload the data

➤ Treatment Options

These are assessed through linking known existing construction data to condition assessment/rating, traffic loading and age of asset

➤ Treatment Selection

This is assessed through condition rating, age of asset, traffic loading, type and age of last treatment to achieve the asset lifecycle

➤ Treatment Timing

Looked at to achieve the overall benefit to the asset lifecycle approach to minimise long term costs

➤ Highway Construction

Gather, record and update existing construction data along with traffic loading/count data. This information is required for designing and selecting treatment options, which are in turn linked to deterioration modelling

➤ Highway Maintenance

Establish links between types of maintenance i.e. reactive, routine (including cyclic activities e.g. gully cleaning) and programmed

All highway assets when constructed/installed have a design life. To achieve this design life and the level of service allowed for at the time of construction, various maintenance activities will need to be undertaken during the design life.

Maintenance is defined as: *‘all actions necessary for retaining an asset as near as practicable to its original condition, but excluding renewal.’*

The right maintenance options carried out at the right time in the asset’s lifecycle will slow down the deterioration and delays when renewal becomes necessary, thus achieving optimum whole lifecycle costs. The above strategies contained in the highway asset management plan support this.

There are a number of strategies contained within the highway asset management plan. To enable these strategies to be implemented, managed and linked it is essential to have in place a software programme which would enable various data streams to be obtained, held, updated and linked. This data is then processed in differing formats to enable condition ratings, treatment options, treatment estimates, timing of treatments, budget forecasts etc. to be obtained and used.

This approach will enable the highway network to be managed and maintained with an asset lifecycle approach, which has the objective of achieving the lowest long-term cost (as opposed to short term saving) when making treatment choices and timings. The same system will be used to generate all the regulatory standard reports required by government bodies including the whole of government account. ⁽⁵⁾

Chapter 4 Highway Asset Management Objectives

In terms of highway asset management, the objective is to achieve a highway network that is fit for purpose, safe for all users and maintained using an asset management whole life cost approach.

To achieve this, there are number of functions that must be carried out. An example would be to undertake highway safety inspections, which has the aim of maintaining the highway network in a safe condition for users and to reduce the risk of accidents occurring.

The full range of functions is as follows:

- Gather, record and update all highway inventories – objective - to know and be able to value the Council's highway asset. This objective is the essential foundation element i.e. you need to know what you have. This objective is also fundamental in the preparation of budget estimates for a number of routine (cyclic) maintenance activities e.g. gully cleaning, verge grass cutting etc.
- Gather, record and update existing carriageway construction information – objective - to enable maintenance options to be analysed/designed, considered and selected
- Gather, record and update traffic count data – objective – to support the design of treatment options for programmed maintenance schemes
- Inspect the highway – objective - to identify defects that need to be repaired within defined timescales to keep the network safe for users and give outline support for 'condition surveys'
- Undertake separate condition surveys of identified network lengths – objective – to identify road lengths that are requiring some form of maintenance treatment, enabling the type and timing of treatment options to be identified, designed, selected and programmed to support the whole life costing approach to highway maintenance

The 5 functions or objectives listed above contribute and support the preparation of cost estimates for reactive, routine and programmed maintenance, for all highway assets. This is essential when preparing annual budget estimate requirements.

It should be noted that the budget costs are the minimum funding required for statutory provision of these activities. ⁽⁵⁾

Chapter 5 Inventory and Condition

Operational Plan and Procedures

This chapter looks at what highway assets the council is responsible for and what condition they are in. It describes the processes, by which they are categorised into hierarchies of use and how their condition is attained from survey processes.

Inventory and Data

The highway inventory is the register of the assets that form the whole highway. These assets form the starting point from which the asset management process is derived; only with this information can a consistent management approach be achieved.

Data management is fundamental to the overall asset management process. In order to apply an asset management approach, there are mainly three types of data that are required:

➤ **Inventory**

Details of the number, location, size and age for each asset.

➤ **Condition**

What state the asset is presently in.

➤ **Use**

What state the asset is presently in.

These records will enable Halton to:

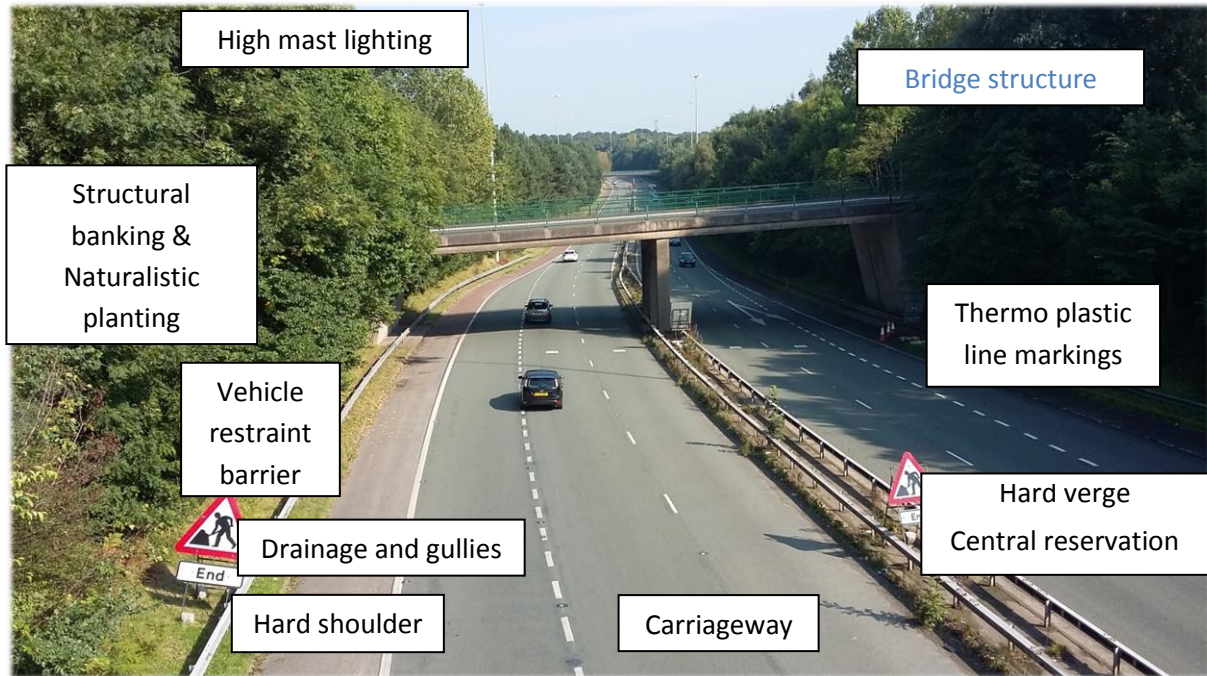
- Monitor and report on the condition of the highway network
- Assess the expected life of assets or their components
- Assess current levels of service and develop future levels of service
- Assess current and future performance indicators
- Model future maintenance options and identify future investment strategies
- Develop long-term forward work programmes and associated budget requirements
- Carry out valuation assessments of each of the assets and calculate depreciation

Effective asset management is not just about the assets to be managed, it is about the systems and business processes used to manage those assets. As such, there is a need to regularly review processes, storage and usage of the data.

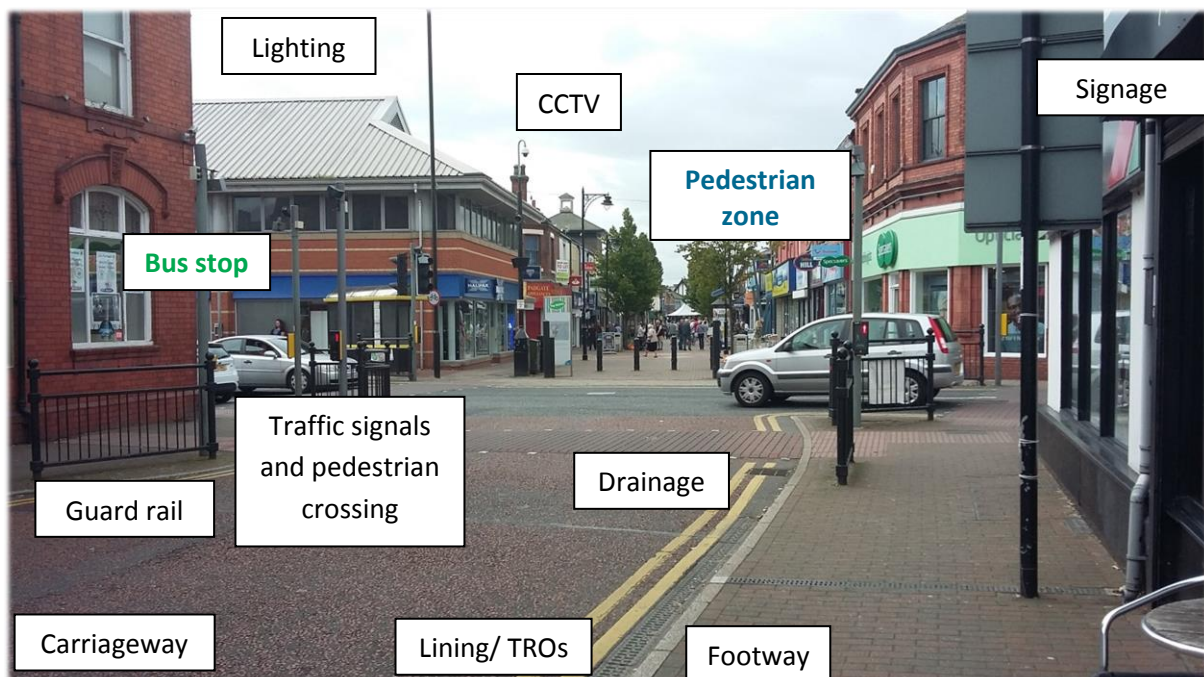
Table 2, in Chapter 2 page 9, shows Halton Borough Council's highway authority's assets. These are grouped into general categories. The photographs overleaf show how a typical stretch of highway is made up of many different assets, these may be grouped to form the categories reported on.

Chapter 5 Inventory and Condition

Typical Highway Asset Diagrams-Showing the Many Different Asset Groups Required to Form a Stretch Of Highway



Typically a **Bridge Structure** –includes, waterproofing, deck, retaining wall, bearings, expansion joints, parapets,



In the **Pedestrian zone** there is a range of street furniture to be maintained including map boards, litter bins, cycle parking, bollards and street trees.

A typical **Bus stop** consists of raised kerbing, a shelter, real time information, timetable and a flag.

Chapter 5 Inventory and Condition

Network Hierarchy

The concept of a road maintenance hierarchy is the foundation of a coherent, consistent and auditable maintenance strategy. This hierarchy should reflect the needs, priorities and actual use of each road in the network and will be used as the main tool in determining policy priorities. Maintenance standards, targets and performance objectives will link to the hierarchy. It is also crucial to asset management in establishing levels of service and to the new statutory network management role for developing coordination and regulating occupation.

The Council has developed a process for defining the hierarchy for Carriageways, Footways and Cycleways in accordance with the Code of Practice in “Well-managed Highway Infrastructure” produced by the UK Roads Liaison Group. This has initially been based upon traffic flows for roads and defined priorities for footways and cycleways. In addition, a further assessment has been undertaken to consider the type of road, the role of the route in a local context, and a consideration of functional factors that may influence how the road is maintained.

Carriageway Hierarchy

Category	Hierarchy	Type of Road	Description	Example
1	Motorway	Limited access, motorway regulations apply	Routes for fast moving long distance traffic. Fully grade separated and restrictions on use. Managed by Highways England	M56 M62
2	Primary Route	Principal 'A' roads between Primary Destinations	Routes for fast moving long distance traffic with little frontage access or pedestrian traffic. Speed limits are usually in excess of 40 mph and there are few junctions. Pedestrian crossings are either segregated or controlled and parked vehicles are generally prohibited.	Runcorn Expressways Watkinson Way
3a	Main Distributor,	Major Urban Network and Inter-Primary Route, Links. Short - medium distance traffic	Routes between Primary Routes and linking urban centres to the strategic network with limited frontage access. In urban areas, speed limits are usually 40 mph or less, parking is restricted at peak times and there are positive measures for pedestrian safety.	Kingsway
3b	Secondary Distributor	B and C class roads and some unclassified urban routes carrying bus, HGV and local traffic with frontage access and frequent junctions	In residential and other built up areas these roads have 20 or 30 mph speed limits and very high levels of pedestrian activity with some crossing facilities including zebra crossings. On-street parking is generally unrestricted except for safety reasons. In rural areas these roads link the larger villages, bus routes and HGV generators to the Strategic and Main Distributor Network	Liverpool Road Runcorn Road

Chapter 5 Inventory and Condition

4a	Link Road	Roads linking the Main and Secondary Distributor Networks and which have frontage access and frequent junctions	In urban areas, they are residential or industrial interconnecting roads with 20 or 30 mph speed limits, random pedestrian movements and uncontrolled parking. In rural areas, these roads link the smaller villages to the distributor roads. They are of varying width and not always capable of carrying two way traffic.	Lowerhouse Lane Halton Road
4b	Local Access Road	Roads serving limited numbers of properties carrying only access traffic	In rural areas, these roads serve small settlements and provide access to individual properties and land. They are often only single lane width and unsuitable for HGVs. In urban areas, they are often residential loop roads or cul-de-sacs.	Terrace Road Lindfield Close

Table 5.1 – Highway Hierarchy

The Plan below shows, in a more simplified form, the more major roads in the Borough.



Figure 5.3 – Simple Map showing Major Roads in Halton

Chapter 5 Inventory and Condition

Carriageway Inventory

The carriageway asset makes up the largest proportion of the highway asset overall. It comprises all the elements that make up the “fabric” of the road from the foundation to the surface construction. The table below summarises the length of carriageways in Halton. The construction of carriageways varies considerably and relatively little is known about the original construction of many parts of the older network.

ASSET TYPE: CARRIAGEWAY (KM)			
ASSET GROUP	Surface length	Kerb length	Road Marking
Principal Urban	33	1128	<i>To be estimated</i>
Principal Rural	79		
Classified Urban	65		<i>To be estimated</i>
Classified Rural	15		
Unclassified Urban	379		<i>To be estimated</i>
Unclassified Rural	22		
Total	593		

Table 5.2 – Carriageway Inventory table

Condition

Maintaining the condition of the carriageway network is a continuous activity – the asset does not remain “new” for long once the road becomes subject to traffic, weather and other factors. A clear understanding of the condition of the carriageway network (and the amount of residual life it has) can help to direct maintenance programmes so as to ensure that best use is made of resources.

The condition of the principal and non-principal classified network is assessed through annual SCANNER (Surface Condition Assessment of the National Network of Roads) surveys, which are mandatory for all Highway Authorities in England. These surveys are carried out using independently accredited/calibrated vehicles; that measure a range of road condition parameters. These measurements are then processed in the Pavement Management System (PMS) which is a computer software programme that creates a Road Condition Indicator (RCI) score for every 10 metre sub-section of this network. These are displayed on a base map as Red, Amber or Green, these signify as:

➤ **Red**

The worst condition. Failure of the asset in part or full, with little or no residual life. Major maintenance works are required of a high cost.

➤ **Amber**

Average condition. The asset is in a transitional state, possibly showing signs of distress and degradation. Some form of maintenance works required to avoid continuing detrition ultimately to a Red state.

➤ **Green**

Near new status. The asset has a good residual life and is structurally sound.

Chapter 5 Inventory and Condition

This allows for comparisons to be carried out between all highway Authorities in England. The whole of Halton's classified network is surveyed through a 2 year alternating direction cycle; with 100% coverage in one direction each year.

The condition of the unclassified network is assessed through annual CVI (Coarse Visual Inspections) surveys. These visual surveys are carried out in accordance with the current UKPMS visual inspection survey manual. Data is collected from a slow moving vehicle and the identified carriageway defects are manually recorded onto a Data Collection Device (DCD). The data is exported from the DCD into the PMS for processing. The entire unclassified network is covered through a 3 year rolling programme with approximately a 1/3rd of the network being surveyed each year.

Data Systems /Use

To assist with the planning of future maintenance, it is essential to be able to use historical maintenance data in conjunction with the condition data from surveys. HBC records the majority of its maintenance work within:

- "Mayrise Highway Management Module"
- "Horizons GIS Platform & MARCHpms System"
- Computer drawings
- Geographic information system
- Mapping drawings

It also has historical records held over a number of systems and formats These can be interrogated to find dates of past maintenance interventions, including treatments, dates and costs (this data is limited to approximately the last 10 years).

Data Gaps

There is a significant amount of work to be done to improve the information held about the type of construction of the network. In addition, the condition surveys carried out annually only provide information about the surface condition of the network and little about the structural condition of the network. Furthermore, it is also equally important to bring all of this information centrally and in consistent, future-proof formats.

Footway, Footpath, Cycleway, Alleyways and Public Rights of Way Inventory

The term 'footway' is used in this document as a generic term and to cover the following:

- Footways, are paths adjacent to the carriageway.
- Footpaths are the paths which are located away from the carriageway and are separated from it by way of a verge or are completely independent of a carriageway.
- Cycleways in most cases are wide shared footways or footpaths that have been designated to allow for use by cyclists
- Alleyways are usually adjacent to terrace properties around the town centres
- Public Rights of Way covers a number of different types of paths and for the purpose of the HAMP are not considered separately, as many, especially in the urban areas, have metalled surfaces and are included in the above categories. A separate document 'Halton's Public Rights of Way improvement Plan' is currently being re-written in combination with the Liverpool City Region Authorities.

Footway Hierarchy

Footways are considered separately from carriageways and a programme of reconstruction and resurfacing has been implemented to improve the overall condition of footways. There is a need for continued improvement and our footway hierarchy, as locally modified from the Code of Practice for "Well-managed Highway Infrastructure" in order add additional categories is as follows.

Category	Category Name	Description
1(a)	Prestige Walking Areas	Very busy areas of town centres with high levels of public space and streetscene contribution
1	Primary Walking Routes	Busy urban shopping and business areas and main pedestrian routes
2	Secondary Walking Routes	Medium usage routes through local areas feeding into primary routes, local shopping centres etc
3	Link Footways	Linking local access footways through urban areas and busy rural footways
4	Local Access Footways	Footways associated with low usage, short estate roads to the main routes and cul-de-sacs.
	Cycleways	Cycleways are usually either provided as part of a shared footway or provided as a cycle lane within the carriageway
	Alleys	These are usually between terrace houses, many of which are now gated
	Public Rights of Way	There are many types and classifications of these. See Appendix 2 (glossary of terms) for more detail

Table 5.3 – Footway hierarchy

Chapter 5 Inventory and Condition

Footway Inventory

The footway, footpath, cycleway and rear alley assets are categorised in line with “Well Maintained Highways” and HBC holds detailed and accurate information about footways, footpaths and cycleways. However, data for alleys are limited to location and length only at present.

The table below summarises the length of these assets in Halton. The construction and surface type of footways and footpaths vary considerably. However, accurate details of the surface types are record, which in turn leads to reasonably accurate estimates of the likely type of construction. This asset group is estimated to be on average 1.8 m wide based on Footway Network Surveys and measurements from Ordnance Survey Master Maps, with cycleways being a minimum of 3m and Prestige areas in the Town Centres being up to 12m.

ASSET TYPE: FOOTWAY, FOOTPATH, CYCLEWAY & REAR ALLEY (KM)	
ASSET GROUP (URBAN + RURAL)	KM
1a – Prestige Walking Areas	3
1 – Primary Walking Routes	33
2 – Secondary Walking Routes	50
3 – Link Footway and Footpath	223
4 – Local Access Footway & Footpath	440
Segregated Cycleway	16
Alleys	19
PRoW	74
Total	784

Table 5.4 – Footway inventory table

*This the figure reported in the Halton Public Rights of Way improvement Plan, and includes some PRoWs which are double counted as they appear in urban areas and are included in other categories.

In the network outlined above, there are also footways & footpaths which were owned by the former Council Housing department. These paths where thought to form part of its asset portfolio, and transferred to the new Housing Association. However, as these paths were constructed by the highway authority and perform a highway function of linking paths and fronts of properties, they are now deemed to be adopted highway and maintainable at public expense, under the case law of Gulliksen. These paths have been comprehensively surveyed and similar accurate data is held for this sub-group.

Condition

Maintaining the condition of the footway, footpath, cycleway and rear alley network is a continuous activity although their life generally tends to be longer than that of carriageways because these are not subject to the same traffic loading. Nevertheless, a clear understanding of the condition of the network (and the amount of residual life it has) can

Chapter 5 Inventory and Condition

help to direct maintenance programmes so as to ensure that best use is made of limited resources.

The condition of these asset items is assessed through the nationally accredited/promoted FNS (Footway Network Survey). These surveys are carried out in accordance with UKPMS guidelines. These are walked inspections by independent accredited surveyors who record, as a minimum, defect types and their extent, and accurately record them against the network. HBC has as part of the initially FNS carried out a more detailed level of this survey; this has also captured length, width and surface types. This data is loaded into the PMS for processing, allowing for network comparisons and maintenance strategies to be formulated.

A single cycle of the detailed FNS has been conducted along approximately 95% of this asset group during the last 5 years and HBC holds an accurate record of the condition of this asset. However, there is no FNS recorded and verified condition data available for the remaining 5% in this category at present. This small section of paths, is covered using data from routine safety inspections. The FNS also confirms and validates actual lengths & widths of these asset items. It is further intended to continue the basic Footway Network Survey on the whole of the network on a 5 year rolling cycle depending upon available funding.

The details from the detailed surveys are not expected to change except by authorised highway works, such as improvements, resurfacing or new developments.

The condition of the network is assessed by trained Council highway inspectors through the Highway Section 58 inspections which are carried out on an annual, quarterly or monthly basis depending on the position of the route in the hierarchy. The main purpose is to identify safety defects on the network. They also provide a useful informed view about the general condition of the network which. This extra information can also be used as to feed into life cycle planning for future schemes and maintenance process.

New Highway sections

The network continues to expand as new developments and links are built. There is a formal process by which these new sections of highway are adopted. This involves a development entering into an agreement with the Council to build the carriageways and footways to the agreed standard. During this time, the Council will inspect the construction and materials being used as well as a subsequent maintenance period, before taking responsibility to maintain at public expense.

Chapter 6 Valuation and Whole of Government Accounts

The highway network managed by Halton Borough Council is the single largest monetary and physical asset in the Council's ownership. It is also the most visible and used asset relied upon by all of the community.

As with any asset, it is necessary to understand its value. In order to derive a valuation for the highway network a monetary value needs to be placed upon it, this is done by using a process of Whole of Government Accountancy (WGA). Adopting a valuation regime for highway assets is also another tool to maximise the positive effects of forward maintenance and planning and funding applications.

Whole of Government Accounts (WGA) Financial Report

The Government's Whole of Government Accounts (WGA) initiative was introduced to align UK Government funding with International Financial Reporting Standards (IFRS). This required all Local Authorities in the United Kingdom to include the adopted highway in the Council's Financial Statements as a fixed asset on the balance sheet.

The objectives of the WGA are to promote greater accountability, transparency and improved stewardship of public finances. WGA objectives and procedures align closely with those of asset management.

The condition of assets with a finite economic life will reduce year on year due to the ageing and use of the asset. The deterioration of assets such as carriageways and footways may be accelerated where episodes of severe weather are greater than average, whether that is hot, cold or wet weather, where there is prolonged use of traffic routing on roads for which they are not designed and constructed to take and which may be as a result of problems or roadworks on the network.

The asset is included within the financial statement as Depreciated Replacement Cost (DRC). DRC is a method of valuation that provides the current cost of replacing an asset with its modern equivalent asset (Gross Replacement Cost GRC), less deductions for all physical deterioration and impairment (Accumulated Depreciation).

The Gross Replacement Cost (GRC) also forms part of this statement. This is the total amount it would cost to build the asset from new. This places a valuation on each of the assets. As most assets do not have specific market value, through from acquisition to disposal, a unit figure is provided by central government, in the form of Highways Asset Management Finance Information Group (HAMFIG), for the various asset groups.

The difference between the GRC and DRC is the cost of restoring the asset from its present condition to 'as new'.

Chapter 6 Valuation and Whole of Government Accounts

Annual depreciation is calculated by identifying all the capital treatments needed to maintain assets or key components over their life cycles and then spreading the total cost evenly over the number of years in the life cycle. Calculated in this way, annual depreciation not only represents the annual consumption of economic benefits embodied in the asset but also provides a measure of what, on average, needs to be spent year-on-year on programmed maintenance to maintain the assets in a steady state.

The following data is taken from the Halton 2015-16 year return and is based on surveys carried out in Halton during 2014-15 and works carried out during that year. The report uses the only full year's data available which is from the previous year's surveys and spends.

2015/16

	Carriageway £,000s	Footways + Cycleways £,000s	Structures £,000s	Street Lighting £,000s	Traffic Management £,000s	Street furniture £,000s	Total £Billion
GRC	702816	110220	580900	26636	9326	8023	1.44

Table 6.1 – Table showing Gross replacement Cost of Highway Assets

The following graphs demonstrate the proportions of the assets reported in the WGA for 2015-16, a regional factor is also applied automatically as part of the submission. The value of land has been excluded as the rates have varied over the years.

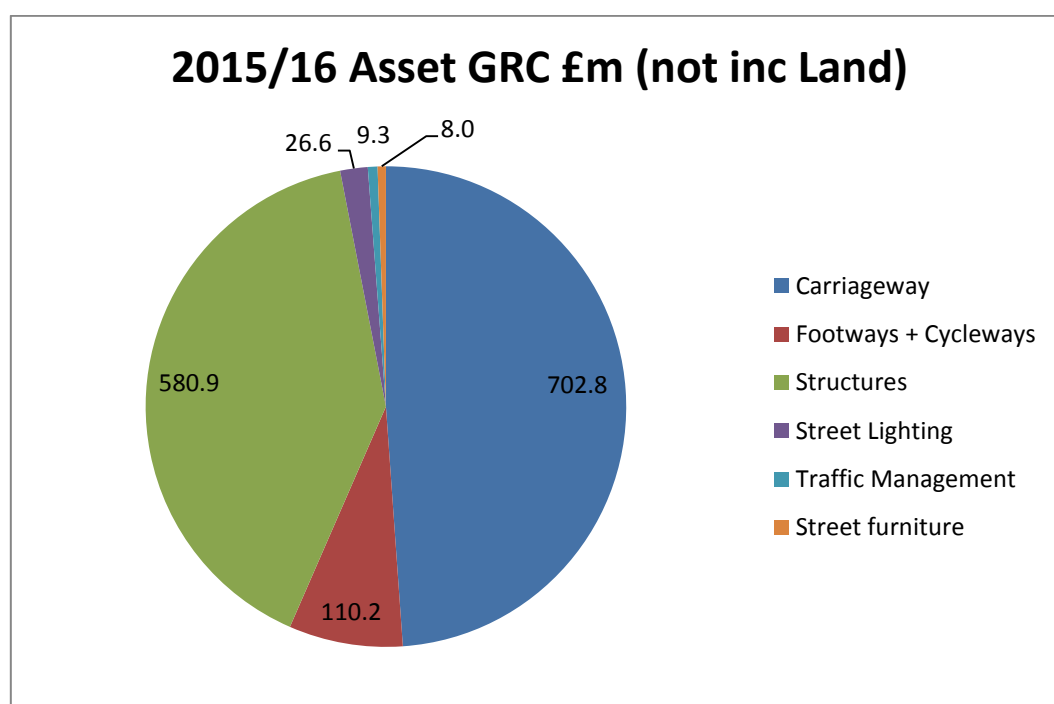


Figure 6.1 – Pie chart showing Gross replacement Cost of Highway Assets 2015/16

Chapter 6 Valuation and Whole of Government Accounts

Asset	GRC in £,000s
Carriageway	702816
Footways + Cycleways	110220
Structures	580900
Street Lighting	26636
Traffic Management	9326
Street furniture	8023
Total	1.44 billion

Table 6.2 – Table showing Gross replacement Cost of Highway Assets
for the year 2015/16

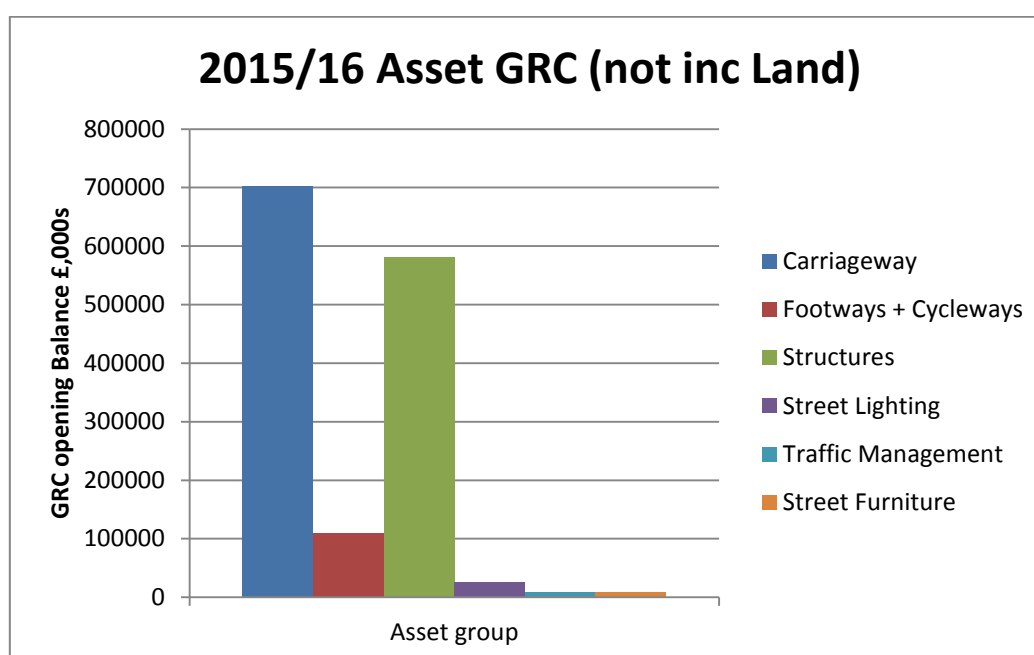


Figure 6.2 –Pie chart showing Gross replacement Cost of Highway Assets 2015/16

Chapter 7 Levels of Service

In terms of highway asset management, the objective is to achieve a highway network that is **fit for purpose**, **safe for all users** and **maintained** using an asset management whole life cost approach (Chapter 4 page 16).

To do this, the Council will look to the following areas:

➤ **Customer Research/Expectations**

What customers want, this being anybody who uses or relies on others who use the network.

➤ **Desired Level of Service**

What our customers would like.

➤ **Legislative Requirements**

What we have to do.

➤ **Current Levels of Service**

What we provide currently.

Public Satisfaction National Highways & Transport Survey (NHT) Halton Borough Council is one of 106 Local Authorities to take part in a standardised survey that asks members of the public exactly the same questions, whether they live in Halton, Hull or Hampshire.

The NHT Public Satisfaction Survey is managed by performance management specialists, measure2improve, the NHT Network administrators. The survey is carried out on behalf of the participating Local Authorities by market research specialist, Ipsos MORI.

Residents are asked for their views on Halton's highways and transport services in the following themes:

- Accessibility
- Public Transport
- Walking & Cycling
- Tackling congestion
- Road Safety
- Highway Maintenance

The questionnaire is sent to a random sample of 3300 of Halton's residents. Their answers are then compared with the views of other members of the public across England and Scotland. It offers Local Authorities the opportunity to compare results, share in best practice and identify further opportunities to work together in the future.

The 2016 survey demonstrated that the public perception of the Council's highway services was favourable with no major deficiencies. Halton ranked first in the Northwest for Highway maintenance (top 25% nationally) and walking & Cycling, and was average with all others with the exception of Tackling congestion which given the ongoing Mersey Gateway crossing works was not unexpected.

These results enable the Council to use the residents' perception of these important services and provide one of several ways in which it can assess its performance and

Chapter 7 Levels of Service

benchmark itself against both national and local authorities. One of the questions in the self-assessment questionnaire requires the Council to confirm that it undertakes benchmarking. The responses to this questionnaire determine to some extent the level of funding the Council receives and is detailed in Chapter 12. It also provides the public with an opportunity to say which services they think the Council should prioritise and improve.

Legislation

There are a number of specific pieces of legislation that provide the basis for powers and duties of a Highway Authority with the main duties and responsibilities being set out in The Highways Act 1980, particularly Section 41. This imposes a mandatory duty to maintain all the highways classified as maintainable at public expense on the highway authorities in England and Wales.

The following is a list of legislation, though not exhaustive, that also places a duty on the Highway Authority:

➤ **The Highways Act 1980 – Section 58**

This section states that a statutory defence against claims is provided where the Highway Authority can establish that reasonable care has been taken to secure that part of the highway to which the action relates to a level commensurate with the volume of ordinary traffic such that it “was not dangerous to traffic”

➤ **The Environment Protection Act 1990**

Need to be compliant with the management of highway waste

➤ **Disability Discrimination Act 1995**

Consideration be given to the movement of people who have mobility problems

➤ **The Transport Act 2000**

Creation of quiet lanes or home zones and therefore the requirement to maintain

➤ **The Traffic Management Act 2004**

The programming and co-ordination of all works affecting the highway which could affect the movement of traffic (both vehicular and pedestrian)

➤ **The Noxious Weeds Act 1959**

Imposes a duty on the highway authority to disrupt the growth and spread of noxious weeds within the highway

➤ **The Wildlife and Countryside Act 1981**

Compliance placed upon highway maintenance operations

➤ **The Traffic Signs Regulations and General Directions 2002**

And subsequent amendments

➤ **The Countryside and Rights of Way Act 2000**

Places a duty on the authority to prepare Rights of Way Improvement Plans

➤ **Road Traffic Regulation Act 1984**

➤ **Electricity at Work Regulations 1989**

➤ **The Highways (Road Humps) Regulations 1999**

➤ **The Zebra, Pelican and Puffin Pedestrian Crossings Regulations and General Directions 1997**

Chapter 7 Levels of Service

Other feedback

When setting levels of service, consideration must be given to available funding as well as customer desires. If expectations are set at a higher level than delivery permits, this will result in poor customer satisfaction.

In addition, when setting and determining service levels, the local authority must also consider its statutory obligations as the Highway Authority in measuring risk and liability as well as the application of national standards at a local level should be taken into consideration when determining a set of baseline standards.

The following set of fundamental Service Standards summarises the Council's aims to deliver a road network which is as safe, reliable and as fit for purpose as possible within current funding and resource constraints. These service standards represent a baseline. Where possible and when funds allow, the Council will always attempt to strive to achieve a higher level of service.

Service Standards

For roads and footways we will:

- Routinely inspect highways at set frequencies
- Respond to any reported highway defects in line with the Highway Safety Inspection Policy
- Continue to review our maintenance hierarchy to ensure that the standards of maintenance are fit for purpose with the usage and type of road
- Use preventative maintenance techniques, as part of life cycle planning techniques where possible. These have lower costs and therefore make the best use of funding by intervening early to avoid costly deterioration of the network and further build-up of backlogs
- Where cost effective, adopt practices that minimise the disposal of waste materials to landfill

To contribute to network safety and co-ordination of works on the highway, we will:

- Respond within 2 hours to any occurrence or incident so serious as to render the highway unusable or pose an immediate risk
- Plan street works to minimise disruption where possible, this is included within the permit scheme
- Manage streetworks and abnormal loads across our network

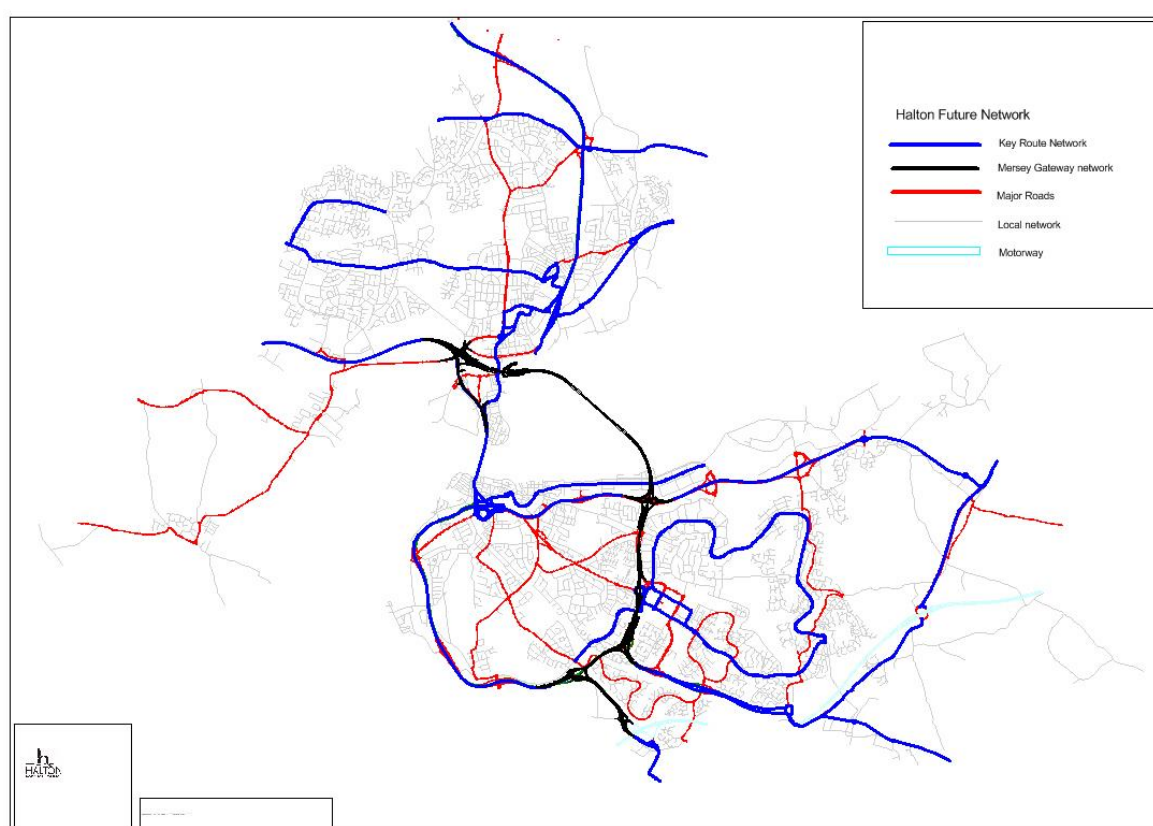
For winter maintenance we will:

- Maintain salt stock levels in line with our Winter maintenance plan
- Adopt salt spreading rates in accordance with national guidance and recommendations
- Operate a winter service of precautionary salting and snow clearance on strategic roads and, when possible, on secondary routes as laid out in our Winter plan

Chapter 7 Levels of Service

The highway network discussed in the previous chapters is the current position. However, it likely there will be changes in responsibility for the management and maintenance of certain parts of this network. These will result from the construction of the Mersey Gateway and its approaches and from the devolution of highway, traffic and street authority powers to the Mayoral Combined Authority (MCA) and the associated designation of a Key Route Network (KRN). The responsibility for asset management and Whole of Government Accounts (WGA) for these changes are still in the process of being finalised and will be reported on when completed. The plan below illustrates these changes.

Figure 8.1 – Map showing KRN, MG network and how they fit in to Halton's Network



Chapter 8 Future Network Changes

Key Route Network (KRN) for the Liverpool City Region Combined Authority

The creation of the Combined Authority in April 2014 brought strategic transport powers within the remit of a single body. This was intended to better co-ordinate transport across the city region, by bringing together the separate transport planning regimes covering Merseyside and Halton.

The KRN is a network of strategically important highway routes within the City Region, for which the Combined Authority would have a range of defined highway and traffic powers and responsibilities as Highway Authority.

These powers are to be devolved back to the respective Councils in the immediate term whilst the CA evolves and develops. The KRN is based on the Primary Route Network (PRN) and defined freight, public transport and key distributor networks in the statutory Merseyside and Halton Local Transport Plans from 2011.

The KRN does not include the Mersey Gateway, and its approach roads, (however these are shown on the above plan to show the completeness of the network) which are excluded from the CA's remit under the provisions of the establishing Order.

Mersey Gateway



Figure 8.2 – Photograph showing Mersey Gateway construction

The second road crossing over the Mersey has been a long held aspiration of Halton Borough Council and its neighbouring local authorities. In 2006, the Mersey Gateway Project, a major scheme to build a new toll bridge over the River Mersey between the towns

Chapter 8 Future Network Changes

of Runcorn and Widnes, was agreed. The new bridge will relieve the congested and ageing Silver Jubilee Bridge.

Wider Mersey Gateway project benefits include:

- Plans to develop and integrate public transport, cycle and pedestrian links across Halton
- Plans to kick start a major 20-year regeneration programme for Halton
- Improving regional transport links to encourage new and inward investment

Merseylink, the consortium constructing the new crossing, has the formal responsibility for the design, build, finance, operation and maintenance of the new bridge and associated road infrastructure over a thirty year period from 2014-2044.

Merseylink is contractually obliged to provide asset management strategies, asset records, annual reviews, forward maintenance plans and plans for dealing with routine, cyclic, ad hoc and winter maintenance.

Merseylink's performance, as regards satisfying these contractual obligations and maintaining the condition of the project infrastructure above prescribed limits, will be monitored, audited and assessed (by the Mersey Gateway Crossings Board on behalf of the Council) continually over the course of the concession. Should Merseylink's performance in this respect fail to meet required standards, it will be subject to a range of contractual remedies. In the first instance, this would be viewed as a Service Failure leading to financial deductions from Contract payments to Merseylink.



Chapter 9 Maintenance Processes

The Highway Asset Maintenance Processes set out in this chapter, document in summary form, Halton Borough Council's method of dealing with the Highways Asset Management Objectives set out in Chapter 4 (a Highway network that is fit for purpose, safe for all users and maintained using an asset management whole life cost approach).

These processes are formulated around the recommendations and guidance contained in the following national codes of practice:

➤ **Well-maintained Highways**

Code of Practice for Highway Maintenance (Management: July 2005 (updated September 2013) 16, (*Superseded*).

➤ **Management of Highway Structures**

A Code of Practice: September 2005 (updated August 2013), (*Superseded*).

➤ **Well-lit Highways**

Code of Practice for Highway Lighting Management: November 2004 (updated August 2013), (*Superseded*).

➤ **Installation of Traffic Signals and Associated Equipment**

(LTN 1/98)

➤ **Code of Practice for Traffic Control and Information Systems for all purpose roads**

(TA 84/06)

➤ **Well-Managed Highway Infrastructure – UK Roads Liaison Group October 2016**

Well-Managed Highway Infrastructure brings together the guidance from the above superseded codes into a single document. The principles have been maintained with new emphasis placed on a risk based approach to maintenance across all asset groups.

Section 7.5 of Well-maintained Highways identifies the various elements of legislation, “which provide the basis for powers and duties relating to highway maintenance”, placed upon a highway authority. The core element of legislation is the Highways Act 1980, Section 41, which imposes on a highway authority a duty to maintain highways maintainable at public expense.

Chapter 9 Maintenance Processes

The maintenance of all assets can be categorised as follows:

➤ **Structural Maintenance**

Structural Maintenance is the work required to reconstruct an asset back to an 'as new' state.

➤ **Programmed Maintenance**

Programmed Maintenance is repair work, identified through a maintenance management system, undertaken to rectify defects identified during visual condition assessments and is primarily resurfacing and reconditioning,

➤ **Reactive Maintenance**

Reactive Maintenance is unplanned repair work carried out in response to service requests, inspections and management/supervisory directions.

➤ **Routine Maintenance**

Routine Maintenance is work undertaken to a regular consistent schedule, for example patching.

➤ **Cyclic Maintenance**

Cyclic Maintenance is the replacement and maintenance of components/sub-components of assets that is undertaken on a regular cycle e.g. gully cleansing.

➤ **Resilience Planning**

In cases of severe weather, a detailed resilience plan is in operation. This includes emergency maintenance strategies, for flooding and cold/severe weather.

The Council will be working towards the guidelines set out in Well-Managed Highway Infrastructure.

In order to explain the maintenance processes, it is necessary to group the highway assets that have similar properties. The following groups are those that are common in their properties and maintenance processes.

The groups are a concentration of those assets in Chapter 4 and reported in the WGA Chapter 6:

- Carriageways, Footways, Footpaths, Cycleways and Public Rights of Way (PRoW)
- Structures
- Electrical Equipment
- Street Furniture
- Horticultural Assets

Chapter 9 Maintenance Processes

Structural Maintenance – Carriageways, Footways, Footpaths, Cycleways and Public Rights of Way (PRoW)

General

Carriageways form the main part of the highway network within Halton. They have been surfaced over the years using macadam, asphalt or concrete materials to provide an even, paved finished surface for vehicular traffic to use. The majority of roads within Halton have a footway on one or both sides of the carriageway. In addition to these footways, Halton has a substantial network of ‘independent footpaths’ and cycleways. These footways, footpaths and cycleways have been surfaced using a variety of modular, asphalt and concrete type materials, to provide a paved finished surface for pedestrians and cyclists to use. Halton also has a network of Public Rights of Way (PRoW), which can be constructed using a variety of materials or they may simply be rights of way paths across fields etc.

Reactive Maintenance

Carriageway defects identified through inspection or reports on all roads are treated as requiring “reactive maintenance”, with works being carried out to rectify the defect. The works will be carried out based on the category/priority given and linked with available resources and budget.

Reactive maintenance activities include:

- Patching (permanent fix or making safe) isolated carriageway areas which meet or exceed defined intervention levels
- Making safe (though fixing or isolating from the public using Traffic Management) carriageway areas, which meet or exceed defined intervention levels
- Patching isolated footway and footpath areas which meet or exceed intervention levels
- Making safe footway and footpath areas, which meet or exceed intervention levels
- Street Furniture repairs

*All reactive maintenance works are carried out in accordance with
‘Highway Maintenance – A Strategy for Halton’*

Programmed/Planned Major Maintenance

Programmed/Planned maintenance schemes are work schemes identified through reports of a number of significant defects, the nature or number of which cannot be rectified by routine or reactive maintenance works. This “needs led” approach is based on engineering judgement and is a fundamental step towards complete asset management and ensures that limited resources are targeted towards restoring the life of the sections of the network with the greatest requirement.

In general, every major maintenance scheme will aim to provide:

- A residual life of at least 15 years
- A surface free from visible defects
- A skidding resistance appropriate to the road and traffic at the site in question
- An appropriate transverse and longitudinal profile
- A surface free of standing water
- Appropriate lining and signing

Chapter 9 Maintenance Processes

Carriageways

Annual programmes of surfacing schemes for structural maintenance and patching of carriageways will be prepared.

The list of schemes for any one year will be based on the following:

- The results of various highway condition surveys carried out on the network
- Feedback from safety inspections, especially in relation to programmed patching works
- The priority given to each scheme based on factors such as economic value, future housing and business developments
- The Council's focus on minimising the whole life costs for each individual scheme in accordance with its Highway Asset Management Plan
- Identified traffic safety improvement works or other highway schemes to be undertaken in the same area. This could affect the priority rating given to a scheme, improve efficiency of the construction works and deliver cost savings in terms of construction

Footways

Annual programmes of resurfacing / reconstruction schemes for structural maintenance of all footways and footpaths will be prepared.

The list of schemes for will be based on the following:

- The latest results of Footway Network Survey (FNS) carried out on the network
- Visual condition established through "Safety Inspections"
- Treatment surveys updated by the in-house highways inspection team
- The Council's focus on minimising the whole life costs for each individual scheme in accordance with its Highway Asset Management Plan
- Accident claim data
- Classification hierarchy of the footway and footpath

Structural footway maintenance is generally comprised of more extensive and, therefore, expensive treatments to restore the condition and value of the asset. As such, they are planned and programmed separately and individually.



Chapter 9 Maintenance Processes

Routine/Cyclical

Routine/Cyclical maintenance relates to activities undertaken to ensure the serviceability and efficient operation of the highway. Activities such as gully emptying, street cleaning, weed spraying and grass cutting have a preventative effect on the carriageways and footways. Even though these activities are not designed to directly improve the condition of the asset, they ensure that damage to the asset via vegetation and water is prevented, thus protecting the lifespan of the asset. These activities also have a significant effect on stakeholder opinion in regards to the level of service Halton Borough Council provides.

Winter Maintenance

Winter maintenance operations are undertaken on a 'Planned Reactive' basis. Halton Borough Council is committed to providing a winter and emergency service that plans for precautionary salting, snow clearance and reasonable response times for other emergencies. Halton Borough Council keeps an updated and extensive "Winter Services Operational Plan" (WSOP). This plan explains fully the Winter Service delivery including salting routes, decision making charts, snow clearance policy, maintenance of salt bins and response times. The WSOP will be looked at and updated on a regular basis. There is also a footway winter maintenance programme that targets key areas such as the town centres.



Chapter 9 Maintenance Processes

Highway - Structures

General

The maintenance process for highway structures is identified under the three maintenance headings of Routine, Programmed and Reactive in line with Section 5.5 of the 'Management of Highway Structures – A Code of Practice: September 2005 (updated August 2013)'.

Apart from the statutory obligations, the Code of Practice for the 'Management of Highway Structures' (published by the UK Roads Board) provides guidance for councils setting out their responsibilities for managing the bridges and structures assets.

The above code was published in 2005 as part of a suite of documents on the management of highway assets. This initiative was led by the UK Roads Liaison Group with its Bridges Board being responsible for the Highway Structures Code of Practice.



The Structures Code sets out three implementation milestones that can be summarised as follows:

- That structures should be safe to use, inspected and maintained
- That structures should be fit for purpose
- That structures should be managed against specific service levels and whole life costing principles

Reactive Maintenance

The following are regarded as Reactive maintenance activities:

- Emergency works which seek to reduce a high risk situation such as maybe caused by accidental bridge strikes
- Structural repair works which have to be carried because a structure is considered to be or about to be structurally inadequate or unsafe

Structures and Bridge defects that are identified through safety inspections or reports/complaints are treated as “reactive maintenance”, with works being carried out to rectify the defect that has been identified. The works will be carried out based on the category/priority given to the defect identified in accordance with 'Management of Highway Structures', and linked with available resources and budget.

Chapter 9 Maintenance Processes

Routine/Cyclical Maintenance

The following are regarded as Routine maintenance activities:

- Removal of vegetation, cleaning of expansion joints, cleaning of structural drainage systems etc.
- Structural review, assessment and inspection programme which will be used to inform the Programmed maintenance scheme list

Common Structures and Bridge defects that are likely to require treatment annually are treated as “routine maintenance”. The works will be carried out based on the category/priority given to the defect identified in accordance with ‘Management of Highway Structures’ and linked with available resources and budget.

Programmed Major Maintenance

This is the annual programme of bridge and structural schemes for structural maintenance to either repair or arrest deterioration. It may also include upgrading or improvement works of bridges and structures.

The list of schemes for any one year will be based on the following:

- The results of various structural surveys carried out i.e. General, Principal and Special. General surveys are carried out every 2 years at road level by eye, without the need for intrusion on to the structure. Principal surveys are carried out every 8 years; these are more involved and require the inspector to be within touching distance of all parts sometimes requiring specialist equipment. Special surveys are carried out where issues are raised by the other surveys as and when required
- National Deterioration models
- The priority given to each scheme based on engineering judgement and expertise
- The Council’s focus on minimising the whole life costs for each individual structure by adopting a whole life cycle approach to structural maintenance

Structures and Bridge defects that are identified through General, Principal or Special inspection or reports are treated as “programmed maintenance”, with works being carried out to rectify the defect that has been identified. The works will be carried out based on the category/priority given to the defect identified in accordance with ‘Management of Highway Structures’ and linked with available resources and budget. Wherever possible, all materials to be removed / excavated will be sent for re-cycling and re-used, wherever possible, within Halton.



Chapter 9 Maintenance Processes

Highway – Electrical Equipment

General

Highway electrical equipment is to be managed in such a way that it does not pose an unacceptable risk to public safety and that it remains available for use. Halton Borough Council will maintain electrical equipment in accordance with the HBC Street Lighting – Strategy and Policy.

Reactive Maintenance

The following are regarded as Reactive maintenance activities:

- Replacement of lamps that have prematurely failed
- Repair/replacement of lanterns that have failed
- Replacement of photo-electric cells that have failed
- Replacement of damaged/faulty supply cables
- Replacement of damaged/worn out signs
- Traffic Signal Controller/detector faults
- Repairs to damaged equipment (cables, poles, signal heads, etc.)
- Re-cutting loop detectors
- Faults on street equipment (e.g. loss of communications, loss of display, etc.)
- Damage to equipment
- Repairs to damaged equipment
- Repairs to communications systems

Street lighting faults and traffic signal faults identified through night time inspections, the Traffic Signal Remote Monitoring System (RMS) or reports from the public, etc., are treated as 'reactive maintenance' with works being carried out to rectify the fault identified. The works will be carried out based on the category/priority given to the type of defect. When all signal lights are out, for example they have a higher priority than signals with a single lamp out. Replacing loop detectors will be dependent upon the likely impact and availability of traffic management, and available time periods at certain junctions.

Routine/Cyclical Maintenance

The following are regarded as Routine maintenance activities:

- Replace street lamps (on a cyclical basis)
- Inspection and testing of electrical safety (on a cyclical basis)
- Structural testing of columns and signposts at a frequency as determined by the last test
- Replacement of Traffic Signal lamps (red & green lamps every 6 months; amber lamps every 12 months) for sites with tungsten halogen lamps
- Cleaning signal head aspects
- For sites with LED aspects, an annual clean is required and replacement when necessary
- An annual inspection will be carried out on all Intelligent Transport System (ITS) related equipment and any works identified from the inspection, will form part of the programmed maintenance work for inclusion in future upgrades unless it is deemed as safety critical

Chapter 9 Maintenance Processes

- Equipment checked and cleaned twice a year
- Inspection and testing of electrical safety on a cyclic basis (max 6 years)

Any works identified from the inspections, will form part of the future programmed maintenance work unless it is identified as urgent.

Any works identified from the annual inspection (sites not on remote monitoring) will have an additional interim inspection covering specific safety related items, such as lamps out, detection issues and visibility of signal heads.

Programmed Maintenance

The following items are regarded as Programmed maintenance work:

- Replacement of lamps and replacement with LEDs
- Replacement of life expired columns, signposts and lanterns
- Upgrade equipment to Extra Low Voltage (ELV)
- Replacement of life expired equipment (including cameras and communications equipment)

Work will be funded through the combined capital/revenue budget for the year in question and if there is insufficient funding, they will be prioritised on the basis of safety implications.

Major Maintenance

The following items are regarded as Major maintenance work:

- Replacement of life expired columns, signposts and lanterns
- Conversion of traffic signal heads (tungsten halogen to LED)
- Replacement of controllers
- Upgrade equipment to Extra Low Voltage (ELV)
- Upgrade to include Microprocessor Optimised Vehicle Activation (MOVA) control at junctions to maximise capacity at junctions
- Replacement of life expired equipment (including cameras and communications equipment)

Work will be funded through the capital programme, when available, to improve highway electrical assets in order to reduce further maintenance costs in the long term. For example, capital was allocated to replace a large selection of traditional street lighting with more cost effective and energy efficient LED systems.



Chapter 9 Maintenance Processes

Highway - Street Furniture

General

The maintenance process for street furniture is identified under the maintenance heading of 'Reactive' in line with Section 8.12 of the 'Well-maintained Highways – Code of Practice for Highway Maintenance Management: July 2005 (updated September 2013)'.

Reactive Maintenance

The following are regarded as Reactive maintenance activities:

- Repairs and replacement of damaged bollards
- Repairs and replacement of damaged sign plates
- Cleaning of street name plates
- Repairs to posts and lengths of barrier following accidents/damage
- Re-tensioning of lengths of tensioned guard rail following damage repairs

Non-illuminated traffic sign problems that are identified through inspection or reports are treated as 'reactive maintenance' with works being carried out to rectify the defect. The works will be carried out based on the category/priority given to the defect identified in accordance with 'Highway Maintenance – A Strategy for Halton' and linked with available resources and budget. Both sides of traffic signs are to be power washed as and when required to maintain legibility and to reduce corrosion, thus supporting the achievement of design life and whole life costs.

Routine/Cyclical Maintenance

The following are regarded as Routine maintenance activities:

- Tensioned bolts of tensioned safety fences will be checked and reset to the correct torque on a routine basis.
- Inspection and testing of safety barriers with regard to mounting height and integrity/condition every 5 years.
- Litter Bins and benches that are on highway will be replaced as and when they need to be, such as when they are no longer able to function as required or they are hit during a road traffic collision

Programmed / Major Maintenance

When, through safety inspections and / or condition surveys, a "significant problem" has been identified, which will require works to be undertaken, then this work will be included within the listings of programmed maintenance requirements put forward for consideration unless it is to be rectified at an earlier due to a safety issue. The inclusion of the work for the agreed programme will be based on the priority given linked to the likelihood and consequences of asset failure or danger to the public. Any works identified from the 5 yearly routine inspections above, will form part of the programmed maintenance work for that year.

Chapter 9 Maintenance Processes

Highway - Road Markings Maintenance

General

The maintenance process for road markings is identified under the maintenance heading of 'Reactive' in line with Section 8.12 of the 'Well-maintained Highways – Code of Practice for Highway Maintenance Management: July 2005 (updated September 2013)'.

Reactive Maintenance

The following are regarded as Reactive maintenance activities:

- Renewing existing white thermoplastic road markings
- Renewing existing yellow thermoplastic road markings
- Renewing paint applied existing road markings on the face of kerbs

Halton Borough Council will consider for renewal, road markings when large sections of them become ineffective, as a consequence of them being worn away, where loss of reflectivity at night-time or during adverse weather conditions is evident. The locations to be treated will be identified through inspection and reports on the categories below.

- Strategic Routes Category 2
- Main Distributor Category 3a
- Secondary Distributor Category 3b
- Link Road Category 4a
- Local Access Road Category 4b
- Unclassified Roads
- Known collision hotspot areas

(The above route categories are as defined in Section 8.8 of the 'Well-maintained Highways – Code of Practice for Highway Maintenance Management: July 2005 and 'Highway Maintenance – A Strategy for Halton') descriptions of the categories mentioned above are given in Chapter 5 of this document.

Chapter 9 Maintenance Processes

Highway – Horticultural Maintenance

General

The 'soft' landscaping of the Highway provides a habitat for flora and fauna, as well as providing a visual attraction and creates areas for drainage. These areas are managed by the Council's Open Space Services Division.

Reactive Maintenance

The following are regarded as Reactive maintenance activities:

- Reinstatement of damaged/sunken verge areas to maintain the verge profile for grass cutting
- Additional cutting of hedges where these are overhanging footways, carriageways and bridleways with potential to cause an obstruction
- Pruning or removal of damaged, diseased, dead or fallen highway trees

Matters relating to the above activities that are identified through inspection or reports/complaints are treated as "reactive maintenance" with works being carried out to rectify the defect/problem that has been identified. The works will be carried out based on the category/priority given to the defect/problem by the Open Space Services Division in consultation with Highways officers, and linked with available resources and budget.

Routine/Cyclical Maintenance

The following are regarded as Routine maintenance activities:

➤ Grass cutting in urban (residential) areas

Highway grass verges in urban (residential) areas shall be cut on a routine, cyclical basis between March and October (including areas under planted with a range of naturalised flowering bulbs). The grass will be cut as per HBC grass cutting specification based on optimised efficiency.

➤ Grass cutting in rural areas

Grass in these areas will be cut to maintain visibility sight-lines. A variety of cutting regimes will be applied dependent upon the area. As a minimum, grass will be cut once per year by side arm flail but in other areas cutting will match that of the urban areas. On the major roads/expressways, grass will be cut on a cyclical basis between March and October based on optimised efficiency.

➤ Maintenance of hedges and planted areas

Pruning of hedges, shrub beds and planted areas form part of a continual maintenance cycle, based on the application of a range of coppice and renewal techniques, appropriate to species and environment. From time to time, issues occur that require urgent attention and will be remedied as Reactive Maintenance.

➤ Street cleansing

Litter picking and street sweeping are undertaken on a routine cyclical basis, according to the road hierarchy and in compliance with the Environmental Protection Act 1990. Litter or other detritus that may be a danger to highway users, clog drainage or be unsightly will be removed.

Chapter 9 Maintenance Processes

Programmed Maintenance

Halton Borough Council undertakes management of trees and shrubs within the highway boundary on a programmed basis. In addition to this, there are other activities associated with landscaping and open spaces that are required to maintain the highway.

➤ **Tree and Woodland Strategy**

A Tree and Woodland Policy underpins the inspection and works required to provide a healthy and aesthetical mix of trees and woodlands.

➤ **Specialist Hedge Maintenance**

Works to long term maintenance of hedging will be carried out on a planned basis as opportunities and resources facilitate.

➤ **Landscaping and planting of Roundabouts and Highway Verges**

Works to enhance roundabouts and verges are carried out on a planned basis as required where opportunities arise and resources facilitate.

➤ **Weed Control**

Control of vegetation within non landscaped areas will be undertaken on a programmed basis at the optimised time.

Chapter 10 Risk Management

“Authorities should adopt a risk-based approach and a risk management regime for all aspects of highway maintenance policy. This will include investment, setting levels of service, operations, including safety and condition inspections, and determining repair priorities and replacement programmes. It should be undertaken against a clear and comprehensive understanding and assessment of the likelihood of asset failure and the consequences involved.”

- *Well-maintained Highway Infrastructure: A Code of Practice* (UK Roads Liaison Group, 2016)

The Management of risk is an integral part of managing the highway assets. All activities, from the management, identification and prioritization of works to the establishment of budgets, have risks associated with them. The purpose of this section is to emphasize the need for processes to manage these risks in a holistic manner.

Ideally, risks should be identified at each level of the management hierarchy (strategic, tactical and operational) then, using appropriate tools and procedures; they should then be managed effectively with:

- Strategic risks being managed at a corporate senior manager level
- Tactical risks being managed at an asset management/ network management level
- Operational risks being managed at a service delivery/ operations level

Risk Management Processes

Risk management should be used for the delivery of all services and applied at the strategic, tactical and operational levels in an organisation. It may also be applied to specific projects to assist in decision making or to manage specific risk areas. People will view (evaluate) the same risk differently; there are four main steps of a risk management process:

- **Risk Identification** - To identify key risk exposure
- **Risk Profile** - Probability and severity level (assessment/evaluation)
- **Risk Control and Management** - Manage and control risk exposure
- **Risk Reporting and Review** - Monitor, review and report on progress

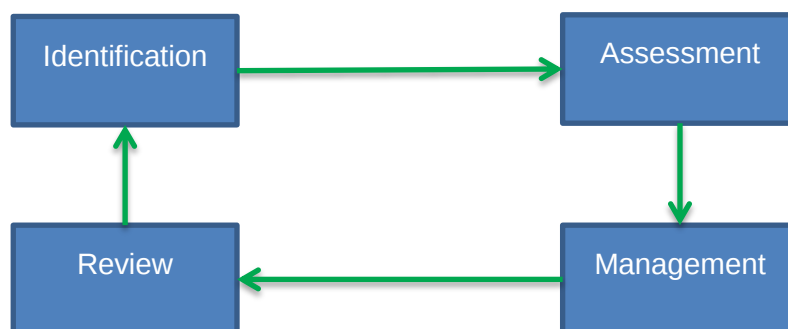


Figure 10.1 – Risk management process flowchart

It will never be possible to remove all risks; some may be reduced and/or mitigated but there will be a cost aspect that must be considered as part of the decision making process.

Chapter 10 Risk Management

The Application of Risk Management

The assessment of comparative risk is a key asset management tool. It can be used for option appraisal and selection by assisting with the assessment of:

- The comparative risks of providing differing levels of service, e.g. is it acceptable to fund only a minimum level of service for certain asset groups i.e. a 'repair if broken' approach.
- The comparative risk of funding works on different assets, e.g. is it better to fund works on streetlights as opposed to footways?
- The comparative risk of funding improvements to the network as opposed to maintenance works, e.g. is it better to provide additional speed control facilities or to increase response time to certain defects?

Risk management is an integral part of good management practice; benefits that include:

- Fewer surprises, a reduction, control or transfer of risk;
- Provision of a better quality of services;
- Improved planning, performance and effectiveness
- Increased ability to manage change;
- Contingency planning;
- Exploitation of opportunities and innovation
- Delivery of best value;
- Improved information for decision making;
- Improved accountability, assurance and governance;
- Improved economy and efficiency;
- Awareness of limitations;
- Improved stakeholder relationships, Enhanced reputation;
- Personal wellbeing;
- The Opportunity to design out risks.

Key Risk: Future Demand

The future demands on the network by all users, is one of the main risk management areas for a highway network. The carriageway and other network assets should enable the "free passage of vehicles". With any network this is not always satisfied; this could be due to accidents or other incidents and necessary maintenance. In addition, network failures may also be responsible for impairing traffic. The network could also have insufficient capacity.

There is a need to plan and develop the network for future growth, needs and demands; this will necessitate consideration of a number of factors including the following:

- The network having sufficient capacity to minimize delay and congestion ;
- Providing a network that is safe and reliable for all vehicles, including public transport and goods vehicles;
- Providing access to all users, including people with disabilities;
- Providing a network that will support urban renewal and provide benefits to the community by attracting new business;

Chapter 10 Risk Management

- Providing a network that will enhance the community by providing routes for employment, education, shopping, leisure, recreation and emergency access requirements;
- Provide a network with low environmental impact;
- Ensuring that network design and performance is suitable for usage and designed to provide an effective whole life cost; and
- Provision of both on and off-street parking suitable for user needs.

Key Risk: Climate Change

Climate change is likely to figure on the highway maintenance agenda for the foreseeable future. Its impact is uncertain but it is a key risk management area which needs to be considered. Climate change impacts show that the UK can expect warmer, wetter winters and hotter, drier summers with more extreme rainfall events, accelerating increased sea level rise, possible stronger wind speeds.

Possible impacts include:

- Hot weather can cause melting of roads, embankment subsidence, deterioration of concrete, problems with expansion joints, increase in dust levels and a reduction in skid resistance.
- Flooding can occur from the overwhelming of impervious pavements such as roads, due to drainage capacity constraints, and from ingress by rivers and the sea. At particular risk are routes located adjacent to rivers and floodplains, although flash flooding can affect most places.
- Cold weather and snow are expected to decline in the future with the consequential reduction in the salting of roads, the occasional cold-snap could causing problems if systems are unavailable or vehicle drivers become unfamiliar with such conditions.

The long lifespan of transport assets means that adaptation measures require implementation sooner rather than later. Many adaptation measures require the co-operation of third parties and it is important for local authorities, government bodies and transport providers to work together with the Environment Agency, water companies and other planning authorities to identify critical impacts and solutions and incorporate climate change into routine risk management procedures to help prepare for future adverse events.

The costs of adapting to climate change can be minimised if adaptation is built in:

- At the planning stage for new developments;
- When infrastructure is upgraded;
- When plans come up naturally for review;
- Before organisations are forced to act by a sudden extreme climatic event(s) or mounting maintenance costs.

Decision-makers should ensure climate risk management measures are sufficiently flexible and schemes can be adapted (if necessary) to manage uncertainty in future impacts. Where possible, decision-makers should avoid actions that will make it more difficult and costly to cope with future climate impacts, e.g. new infrastructure projects (such as storm drainage) should include a reasonable allowance for climate change risks where the costs of subsequent upgrading would be prohibitive or very difficult to engineer.

Chapter 10 Risk Management

Key Risk: Network Resilience

Halton guidance is working towards producing a network resilience plan, which will identify areas susceptible to adverse climatic conditions, civil emergencies, structural or utilities failure or road traffic incidents. This network plan will identify key receptors that will be vulnerable. This will involve stakeholder engagement.

Our asset management principles encourage risk management to take into account risk from condition of assets and increase the potential for investment based on business risk. A better understanding of asset deterioration and failure rates provides an evidence base to support risk-based decision making. For example, where a footway or carriageway has the potential for high costs resulting from liability claims, investment to reduce the risk of these claims may be a cost effective option. Conversely, SCANNER condition surveys may indicate where a carriageway has failed but no liability claims may have ensued. This may indicate that resources could be better focused on other roads at a particular time.

Categorisation of Risks

Some general risks are shown in the following table:

Risk Group	Risk	Summary Description
Political / Governance	Political / Governance	➤ Changes in political power and policies, legal changes and unsupportive policies
	Governance	➤ Decisions that do not define expectations, grant power, or verify performance
Financial / Economic	Economic	➤ Changes in budget provision
	Financial	➤ Availability of financing
	Competitive	➤ Delays due to competition, tendering from multiple companies
	Partnership / Contractual / Supplier	➤ Inappropriate operation, higher operation and maintenance costs; faulty construction, cost escalation and delays
	Budgets	➤ Financial forecasts exceed budgeted provision
Reputational Risk	Social	➤ Major disruption
	Customer / Citizen	➤ No customer gain, expectations not being met
	Environmental	➤ Adverse environmental impacts and hazards
	Reputational	➤ Expectations not met or accepted leading to loss of image
	Physical	➤ Unforeseen difficulties
Legal / Legislation	Legislative & Regulatory	➤ Changes in legislation
	Managerial & Professional	➤ Policy decisions inappropriate; inability to appoint staff due to no appropriate skills in the workplace
	Legal	➤ Delays associated with the procuring and award of Contracts
	Legal / Liability	➤ Not meeting our duty of care under various legislations.
Technology / Information	Information / Knowledge	➤ Information needed to develop decisions not available/incorrect
	Technological	➤ Due to engineering or design failure
Safety	Safety	➤ Poor maintenance decisions

Table 10.1 – Risk categorisation and description in table format

Chapter 11 Life Cycle Planning

“For every £1 spent on preventative maintenance, up to £4 could be saved on future re-surfacing works.”

~

‘Going the distance achieving better value for money in Road Maintenance’, Audit Commission 2011

Lifecycle Planning

Lifecycle plans are a core component of the Asset Management process. A lifecycle plan is a long-term Strategy for managing an asset or a group of similar assets, with the aim of minimising the whole life costs and providing the required Level of Service.

The ‘Going the Distance’ report published by the Audit Commission in May 2011 advocates a whole life cost option over ‘worst first’ prioritisation. It says that by considering an asset over a whole lifecycle it is possible to select the best time to intervene, which is before the asset deteriorates to a very poor condition. Halton Borough Council has adopted this philosophy over a number of years and it is paying dividends, as reflected in its performance indicators for the quality of its carriageways and footways.

The diagram below shows how, with the correctly timed interventions, the whole life of the asset can be prolonged and done in the most cost effective financial manner. This modelling can be applied to any asset, from structures to carriageways. An easy example would be to consider the maintenance of a wooden fence. This would require regular painting to waterproof, minor repairs of slats, or concrete posts. Eventually all panels and or posts are replaced.

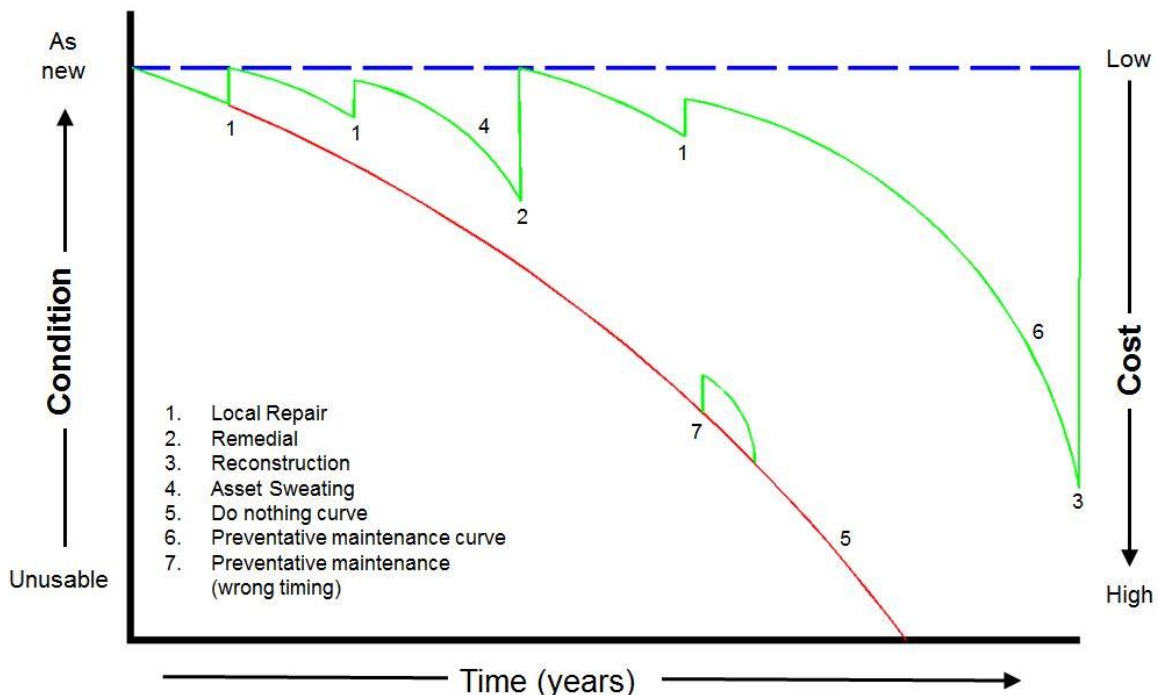


Figure 11.1 - Graph showing intervention timing, type and how they affect costs (lifecycle planning)

Chapter 11 Life Cycle Planning

A lifecycle plan starts to optimise the cycles of activities that the assets will experience throughout their life including (where necessary):

- Planning, design, creation/ acquisition, construction;
- Operation, maintenance, rehabilitation/reconstruction; and
- Disposal and decommissioning.

Lifecycle plans for each asset group or sub-group need to take into account the expected deterioration mechanisms and rates of deterioration for the material types concerned, component service lives, the required levels of service, maintenance techniques, influence of maintenance on future deterioration rates, maintenance unit costs and risks to safety and service loss. This requires a sound understanding of asset behaviour.

The future usage and demands that could become influential include:

- Traffic growth
- Climate change
- Population growth in the area
- Legislation
- Road Traffic Reduction Act
- Changes in technology

A number of alternative maintenance strategies should be developed for each asset group or sub-group and compared in terms of whole life costs to identify the optimal Strategy.

The following are the core principles of lifecycle plan development:

➤ **Audit Trail**

Document all assumptions, data sources, analytical techniques and engineering judgements in order to provide a clear audit trail

➤ **Knowledge Transfer**

The Council's engineers have a wealth of history, expert and practitioner knowledge of the highway network that needs to be retained and passed on to other and future staff

Carriageway and Footway Network Level Lifecycle Analysis

A significant prioritisation factor for the highway network is carriageway condition. However, the treatment that would be required for sections and when these are undertaken can also play a significant part in the management of the network. For prioritisation based on highest proportion of those identified by surveys as being red condition, (worst case) most schemes chosen are likely to require full depth reconstruction. However, this type of treatment is not the best value for money when considering the network over lifecycle periods. As full depth reconstruction is expensive, only relatively short lengths of the network can be treated. In the mean-time, the rest of the network is deteriorating and each year a proportion of amber sections will deteriorate to red.

Chapter 11 Life Cycle Planning

The alternative method is for sections that require resurfacing to be treated before they deteriorate to the point where they would require full reconstruction. This method would allow much longer lengths to be treated with more cost effective resurfacing treatment and enable further deterioration of the network to be contained by treating amber lengths with less expensive treatments before they deteriorate to red condition, where structural maintenance would be required. The red sections that already require reconstruction will remain red and the treatment requirements would remain the same. Where possible, roads with a high proportion of red condition should be held in a safe condition with reactive maintenance budgets whilst a long term appropriate scheme is devised.

The following tables give a hypothetical, illustrative example of how the use of correctly timed interventions can reduce the whole life costs for carriageways. This does not include for footways, structures and all the other highway elements, which will have their own lifecycle costs and plans. It also does not take into account inflation or increases in material and labour costs. The tables show that, with optimally timed interventions and treatments, £520,000 per km of carriageway would be required over a 100 year period to maintain the carriageway in a 'steady state' condition. This compares with a cost of £1,000,000 per km if interventions are carried out on a worst case based approach of only carrying out reconstructions when required. The use of a partial asset management approach gives a £800,000 cost per km over 100 years. For Halton's network of 600km, for a full optimum asset management approach, this would mean that £312m/100yr period or £3.12m per year for carriageway surfacing would be required, as opposed to £600m/100yrs or £6m per year if only reconstructions were carried out when required.



Figure 11.2 – Hypothetical, illustrative example of correctly timed interventions reducing whole life

Chapter 11 Life Cycle Planning

It can be seen that the use of optimum asset management can demonstrate nearly a halving in the costs of that compared to worst case interventions (i.e where little preventative maintenance is carried out and the road is left to deteriorate to a point where full reconstruction is necessary). It is unlikely that this is fully achievable given previous history and interventions. It is worth noting this is an ideal scenario with commencement of strategies at the beginning of an asset's life. The reality is that assets have had various interventions at differing times within their life cycle, including reactive treatments and damage through excavations from utilities (statutory undertakers plant).

It is known that a large percentage of highway network was constructed at the same time as part of the New Town programme of the 1960/70s and will, therefore, potentially start to show signs of deterioration and failure at the same time. It has, therefore, been necessary to carry out a preventative works programme of surface dressings over a number of years, with sites being prioritised based on engineering judgements of wear and traffic volumes. This has been done to avoid the need for a large scale expensive intervention programme of Reconstruction being delivered over a short period of time in confined geographical areas.

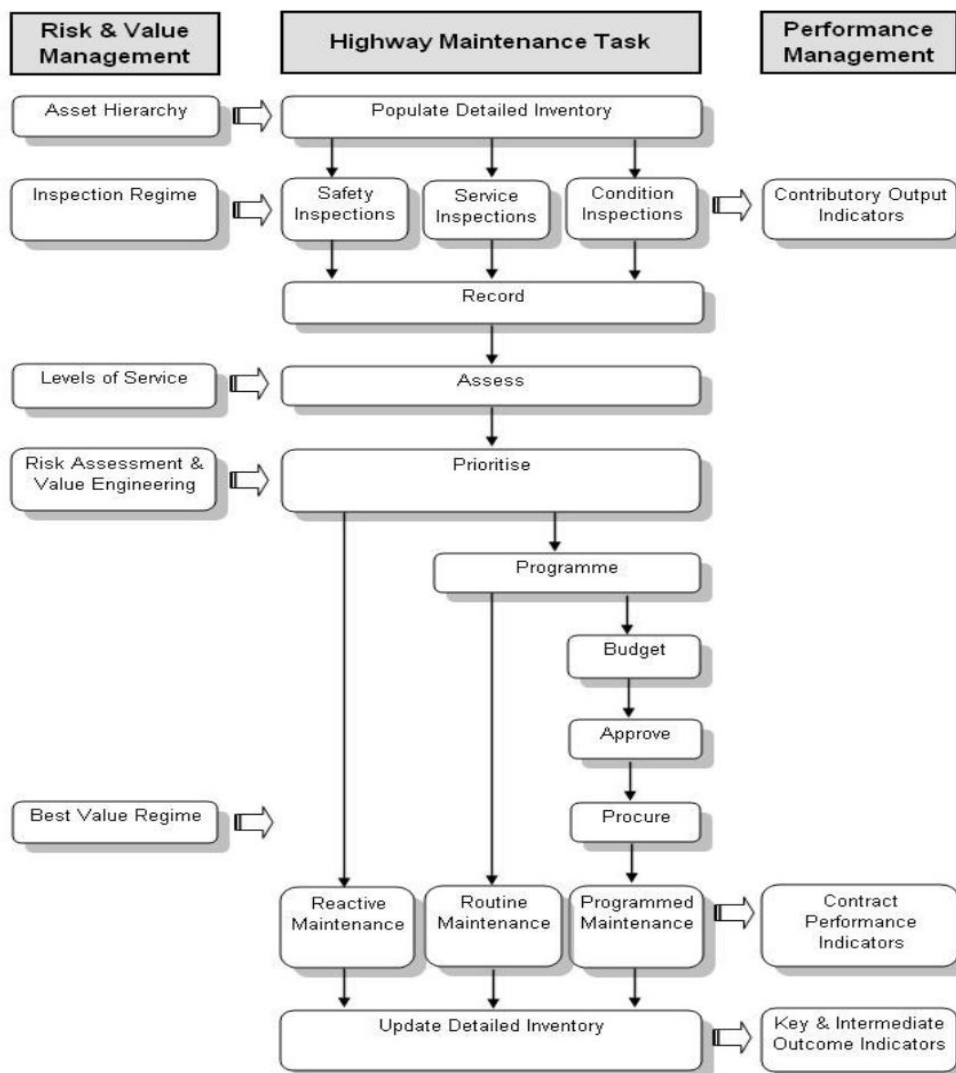


Figure 11.3 – Life Cycle Flow Chart

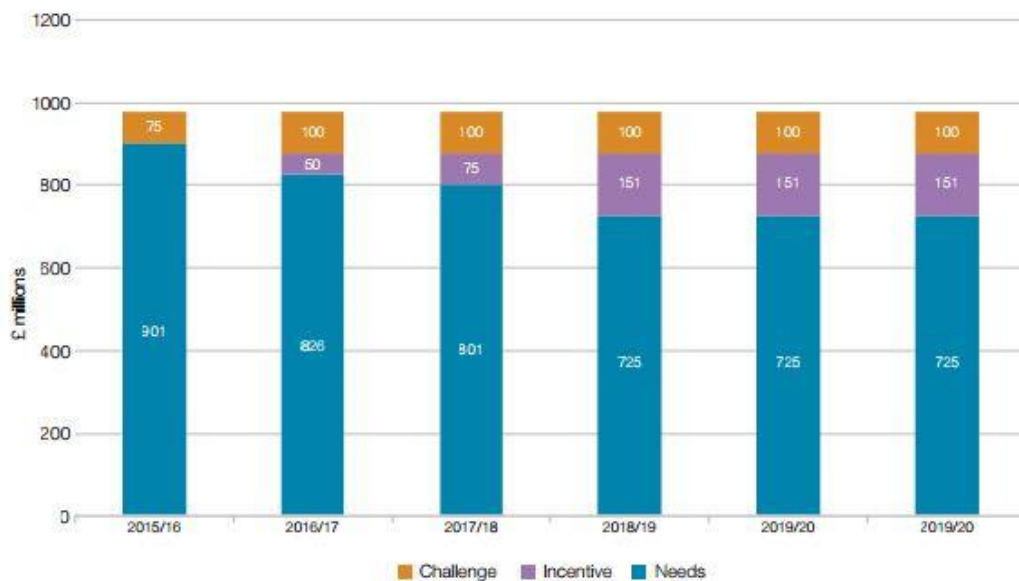
Chapter 12 Funding

The highway funding environment for all councils has changed in recent years. From an allocation directly from central government in the form of single a block allocations for Highway maintenance and an Integrated transport block, to that of a combination of needs formula based on WGA and other survey returns, challenge fund based on specific bidding criteria and an Incentive fund based on Council performance, this is detailed further in this chapter. The table and graphs below taken from DfT documents.

Table 2.1: Funding model summary

Year	Needs formula	Incentive formula	Challenge Fund	Total
2015/16	£901m	£0m	£75m	£976m
%	92.3%	0.0%	7.7%	100.0%
2016/17	£776m	£50m	£150m	£976m
%	79.5%	5.1%	15.4%	100.0%
2017/18	£751m	£75m	£150m	£976m
%	76.9%	7.7%	15.4%	100.0%
2018/19	£725m	£176m	£75m	£976m
%	74.3%	18.0%	7.7%	100.0%
2019/20	£725m	£176m	£75m	£976m
%	74.3%	18.0%	7.7%	100.0%
2020/21	£725m	£176m	£75m	£976m
%	74.3%	18.0%	7.7%	100.0%

Figure 4.2: English Local Highways Maintenance Block Grant 2015/16-2020/21



Chapter 12 Funding

This has further changed for Halton Borough Council on becoming a constituent member of the Liverpool City Region Combined Authority (LCRCA) where all Capital funding is now sent and aggregated into the Single Capital Pot. Due to the infancy of the LCRCA, funding is currently being devolved back to the respective Highway Authorities as per the DfT allocations but this can and will change in the future as the CA matures

Halton Borough Council will use the NHT survey (Chapter 7 level of service) and other customers' feedback and expectations, and its financial capacity to set levels of service goals; (for example, service levels for the high footfall pedestrianized town centres will have a higher rating than little used rural footpaths).

Incentive Funding

New Minister, Andrew Jones MP, Parliamentary Under Secretary of State for Transport has shown a strong interest in better local roads. This was reflected in his 'Better local roads' speech given 11 June 2015. The funding environment for councils will be changing and the use of a self-assessment toolkit will become part of ongoing Capital funding.

Incentive Funding is based around a self-assessment analysis (22 questions signed off by the Section 151 Officer) which categorises each Authority into 1 of 3 Bands. The table below shows how the Incentive element of the total funding available nationally for Highway Maintenance will increase from £0m in 2015 to £151m by 2018/19, where it is then projected to remain at the same level. If Halton were in Band 1*, over that 5 year period it would stand to lose £1.058m that it could have acquired if it had attained Band 3. It could lose up to £0.579m if it only achieves Band 2.

Halton Borough Council as a constituent member of the Liverpool City Combined Authority, has been awarded Band 3, as part of the devolution agreement with Government. However, it has been made clear by the DfT that it is dependent on all 6 authorities that comprise the CA continuing to work towards Band 3 and that, if any Authority does not progress then DfT reserves the right to downgrade all districts within the CA.

	2015/16		2016/17		2017/18		2018/19		2019/20		2020/21		Totals
Needs Based formula	£901M	£2.228M	£826M	£2.043M	£801M	£1.981M	£725M	£1.793M	£725M	£1.793M	£725M	£1.793M	£11.631M
Incentive Formula	£0M	£0.000M	£50M	£0.124M	£75M	£0.185M	£151M	£0.373M	£151M	£0.373M	£151M	£0.373M	£1.429M
Band 1	100%	£0.000M	90%	£0.111M	60%	£0.111M	30%	£0.112M	10%	£0.037M	0%	£0.000M	£1.058M
Band 2	100%	£0.000M	100%	£0.124M	90%	£0.167M	70%	£0.261M	50%	£0.187M	30%	£0.112M	£0.579M
Band 3	100%	£0.000M	100%	£0.124M	100%	£0.185M	100%	£0.373M	100%	£0.373M	100%	£0.373M	£0.000M

DfT states that this self-assessment questionnaire should be shared with the Executive of the Council and made public. If the questionnaire is not completed, then DfT will not release any Capital Funds. Of the 22 questions asked, there are three Key questions that need to be answered positively without which no progression can be made even if all other questions are answered.

Chapter 12 Funding

These are the following questions, a full list of questions is attached in Appendix 3:

Q1. Does (Halton) have an Asset Management Policy and Strategy?

Q2. Has (Halton) communicated its approach to Highway Infrastructure Asset Management (HIAM)?

Q5. Is (Halton) undertaking lifecycle planning as part of its HIAM?

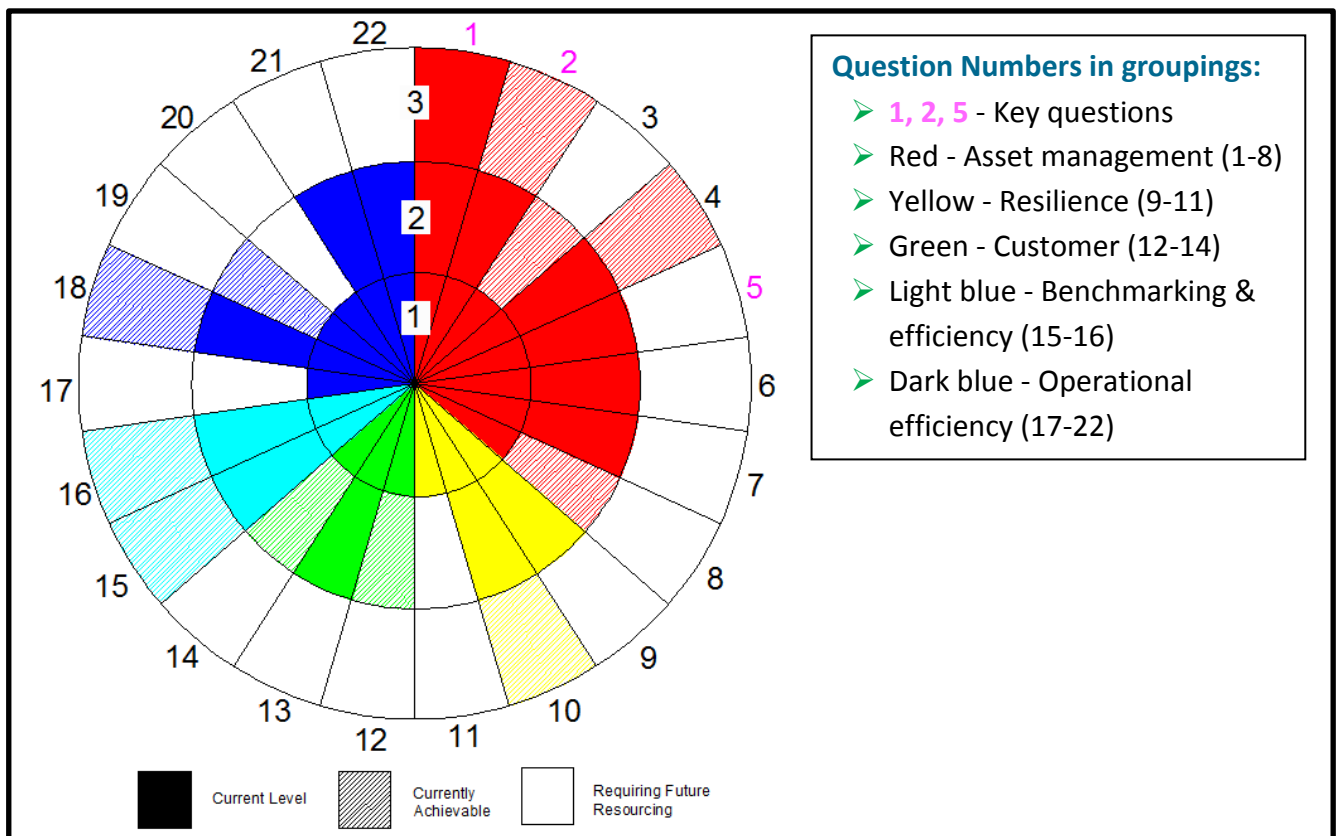
Question 6 is a very critical component on which the self-assessment is judged and seen to be a strong indicator of an Authority's commitment to the asset management process:

Q6. Is (Halton) able to demonstrate leadership and commitment from senior decision makers in taking forward its HIAM approach?

Halton's scores to the 22 questions (as of January 2017) are shown below and show the banding achieved, with the solid colours being the presently achieved band and the hatched areas are seen to be the band achievable within current resources and timescales. In order to be classified as a Band 2 authority, Halton had to achieve level 2 for questions 1,2,5, and in at least 12 of the other questions. Band 3 would require it to first of all achieve level 2 and then to achieve level 3 in questions 1, 2, 5, and at least 15 of the other questions.

The incremental step from band 2 to band 3 will require significant investment in time and resources. The Council will need to adopt new policies and strategies and ways of working. These will need to be in line with external accreditations such as PAS55/ISO 5500 (competency framework). These will in turn demonstrate lessons learnt and improvements over a period of time and will need to be successfully communicated to stakeholders and these various elements will enable the achievement of band 3.

Self-Assessment Questionnaire 2017



Chapter 13 Performance Monitoring

Performance management is a fundamental component of the best value regime in that there is a requirement for authorities to secure continuous improvement in the way they exercise their functions having regard for economy, efficiency and effectiveness. Halton uses both nationally defined indicators as well as locally set indicators. These are reported internally to the Councils' Environment and Urban Renewal Policy and Performance Board on a quarterly basis using the following indicators with those indicated as being annual reported once.

Former National Indicators:

PPT LI 16	% of network where structural maintenance should be considered:
	130-01 principal roads (Previously BVPI 223).
	130-01non-principal roads (Previously BVPI 224a)
	130-02 unclassified roads (Previously BVPI 224b).

Local Indicators:

PPT LI 01	Percentage of third party compensation claims due to alleged highway / footway defects successfully defended. Annual Calculation.
PPT LI 13	Damage to roads and pavements (% above intervention levels) repaired within 24 hours.
PPT LI 14	Average number of days taken to repair street lighting fault: non-DNO (Street lights controlled by the authority). (Previously BVPI 215a).
PPT LI 15	Average number of days taken to repair street lighting fault: DNO (Street lights controlled by the energy provider). (Previously BVPI 215b).
PPT LI 18	% of footpaths and Public Rights of Way (PROW) which are easy to use.

The results of both the national and local indicators are reported in a number of other survey responses that the highway authority is expected to reply to, these include:

- WGA
- DfT questionnaires
- Industry questionnaires including the asphalt industry alliance Alarm survey

These reports, surveys and questionnaires contribute towards the Council benchmarking itself against previous years and against other authorities. This is part of the continual improvement process referred to in the incentive funding questions of 15 & 16 as outlined in the previous chapter.

Chapter 14 Current situation

Current Situation

This describes Halton's position and the challenges that it faces. Halton Borough Council, like most other highway authorities, is experiencing major changes and challenges across all aspects of its highway services. With the formation of the Combined Authority, there is likely to be changes in how capital funding will be allocated and prioritised. Whilst the Council, as part of Devolution Agreement for the Liverpool City Region, is currently receiving Band 3 funding from the Incentive fund, it is necessary to obtain this banding on its own merits. Failure of any of the Authorities within the LCR to not be striving to achieve Band 3 could result in all partners losing funding.

Other changes include the construction of the Mersey Gateway and the formation of a Key Route Network which may have their own asset management requirements and resource demands going forward. Whilst this will reduce the lengths of Council maintained highways, it could potentially leave the more local network with significantly reduced funding, but still with very significant use. Control over the Key Route Network can be exercised by both the Council and the Mayoral Combined Authority concurrently, although it is anticipated that the Council will be responsible for its maintenance for the immediately foreseeable future.

The use of highway condition modelling software is being refined to provide confidence in the levels of investment required to maintain a quality highway network that is fit for purpose over its lifetime. Halton has an asset value of nearly £1.5 billion but has a current total annual spend on highway maintenance of less than 0.1% (0.075%) of that. Whilst the Highways Neighbour survey for 2016 did not show any significant dissatisfaction with the current highway services, there was an understanding of the pressures and tolerance by the public of the works being carried out as part of the Mersey Gateway project. Under investment in our highways will result in deterioration of the network which will be reflected in a poorer quality network requiring significantly greater future expenditure to reduce the backlog of works.

New guidance documents and Codes of Practice are resulting in a change of emphasis and priorities. Risk based approaches and resilient networks, based on user hierarchies and survey data information, are to be formulated. The Council will need to respond to these from early 2017 onwards and potentially up to mid – 2018.

As the various changes to the network and assessment approaches are taken into account in the software models, the Council will be able to give more accurate estimates of the long term investments required to adequately maintain its networks.

Appendices

Appendix 1

Abbreviations

The following abbreviations are used in this report:

AM	➤	Asset Management
AMP	➤	Asset Management Plan
BVPI	➤	Best Value Performance Indicators
CA	➤	Combined Authority
CSS	➤	The County Surveyors' Society
CVI	➤	Coarse Visual Inspection
DfT	➤	The Department for Transport
GIS	➤	Geographical Information System
HAMP	➤	Highway Asset Management Plan
ITS	➤	Intelligent Transport System
KPI	➤	Key Performance Indicator
KSI	➤	Killed and Seriously Injured
LCR	➤	Liverpool City Region
LoS	➤	Level of Service
LTP	➤	Local Transport Plan
TfL	➤	Transport for London
UKPMS	➤	United Kingdom Pavement Management System
WGA	➤	Whole of Government Accounts

Appendices

Appendix 2 Glossary Acronym / Term Explanations

Annualised Depreciation ➤ This is a measure of in-year change in value due to deterioration of the infrastructure. This is taken as the average annual spend required to maintain the asset in a serviceable condition. At its most basic level this is calculated by taking the According to Section 7.4 of the Code of Practice on Transport Infrastructure Assets where it is possible to quantify risks due to extreme events (such as prolonged snow cover). These costs need also to be incorporated in the depreciation cost, although the repairs must be permanent and restore the service potential of the asset. In basic terms, it is calculated as the total cost interventions in the lifecycle plan divided by the number of years in the lifecycle.

Backlog ➤ A maintenance backlog is defined here as the total value of accumulated remedial works to assets that are determined to be in an unacceptable condition and beyond the tolerance levels identified in individual asset lifecycle models.

Depreciated Replacement Cost (DRC) ➤ The depreciated replacement cost is simply taken as difference between the Gross Replacement Cost and total value of works that would be required to bring the infrastructure in its current state back to 'as new' condition. The DRC method is accepted internationally as the most appropriate for the purposes of valuation of public infrastructure assets that have no equivalent or comparable market value.

Gross Replacement Cost (GRC) ➤ The Gross Replacement Cost represents a total value of the asset in a theoretical 'as new' condition. As most transport assets do not have specific market value through acquisition and disposal, it is assumed that their value is embodied in the cost of replacing the full asset (such as reconstruction of a stretch of road), hence the term 'Replacement Cost' is used.

Lifecycle plan ➤ A forecast of the maintenance requirements of an asset throughout its entire lifecycle. For some assets the total period of the lifecycle may be the time that elapses before an asset is to be replaced. For many assets such as road pavements this is defined as the time that elapses between major maintenance interventions (such as resurfacing or reconstruction). The lifecycle plan then details the maintenance requirements including the nature, timing and cost of interventions within that time period. These interventions must not include temporary emergency repairs, but must maintain the service potential or extend the life of the asset (such as through preventative maintenance).

Whole Life Cost ➤ This is the total cost associated with an asset over the entire period of the lifecycle plan including quantifiable risks associated with the asset and subsequent reactive and emergency maintenance requirements. The average annual spend requirements derived from this total cost is used as a proxy measure of annual depreciation (reduction in asset value).

ALARM Survey Annual Local Authority Road Maintenance Survey ➤ This is carried out by the Asphalt Industry Alliance. The survey can be found at this link:
<http://www.asphaltuk.org/alarm-survey-page/>

Appendices

CVI Coarse Visual Inspection ➤ This is a road condition survey undertaken from a moving vehicle. This was previously required for the production of national road condition indicators for local unclassified roads.

DMRB Design Manual for Roads and Bridges ➤ This suite of documents contains EU and UK standards for design, construction, assessment and maintenance of trunk roads. Many of the standards are equally applicable to local highway authority infrastructure.

Footway This is the formal term to describe pedestrian routes at the side of roads. In this document we use the familiar term 'pavement' although this is used in engineering terminology to describe the physical structure of the road or footway (including lower layers).

NHT National Highways and Transport Public Satisfaction Survey ➤ A survey of public satisfaction within individual participating authorities to assist in measuring performance and prioritisation of highways and transportation services and enable benchmarking across highway authorities. In 2016, a total of 106 authorities took part. The TAMS draws evidence from this survey in relation to highway infrastructure management aspects.

Preventative maintenance ➤ Maintenance operations undertaken before the onset of significant deterioration in the condition of an asset to extend the useful life before more expensive structural maintenance is required. As such, it is a critical part of a sustainable investment strategy for highways in particular.

SCANNER Surface Condition Assessment for the National Network of Roads ➤ SCANNER surveys use automated road condition measurements machines to measure a range of road condition parameters including ride quality, rut depth, intensity of cracking, texture depth and edge condition. These were previously required for use in the production of the National Indicators for road condition.

Structural Maintenance ➤ This refers to major maintenance of a road or footway involving renewal of one or more layers of the road pavement structure.

UKPMS UK Pavement Management System ➤ This is an accreditation system for road and footway condition surveys including SCANNER machine surveys and Course and Detailed Visual Inspections and associated software to process the data. A key function previously was to produce national road and footway condition indicators although it is no longer a requirement to use UKPMS for this purpose.

Public Rights of Way ➤ The main PRoW infrastructure (footpaths, bridleways and restricted byways) presents a problem for valuation purposes. In most cases PRoWS have not been constructed or maintained to any defined standard although Halton as the Highway Authority has a legal duty to maintain them to a standard appropriate for their use. The majority of footpaths are 'naturally' surfaced; grass or earth but some are 'metalled' in urban areas. Bridleways and byways exist mainly on metalled / unmetalled farm tracks or green lanes with a variety of surfacing materials. Collectively as there is no accurate information in respect of the various surfacing types and condition of the asset to make a realistic valuation on maintenance or replacement costs.

Appendices

Appendix 3 Questions in the Self-Assessment

Q1. Does your local authority have an asset management policy and strategy for its highway infrastructure?

Q2. Has your local authority communicated its approach to highway infrastructure asset management?

Q3. Does your local authority have a performance management framework and maintenance regime that supports its highway infrastructure asset management strategy and continuous improvement?

Q4. Does your local authority have an effective regime to manage its highway infrastructure asset data?

Q5. Is your local authority undertaking lifecycle planning as part of its highway infrastructure asset management?

Q6. Is your authority able to demonstrate leadership and commitment from senior decision makers in taking forward its highway infrastructure asset management approach?

Q7. Has your local authority identified the appropriate competencies required for highway infrastructure asset management and what training may be required?

Q8. Does your local authority have a comprehensive approach to managing current and future risks associated with the highway infrastructure assets?

Q9. Has your local authority established a resilient network as recommended by the 2014 Transport Resilience Review?

Q10. Has your local authority implemented the relevant recommendations of the 2012 HMEP Potholes Review - Prevention and a Better Cure?

Q11. Has your local authority implemented the relevant recommendations of the 2012 HMEP Guidance on the Management of Highway Drainage Assets?

Q12. Does your local authority undertake customer satisfaction surveys into the condition of its highway network and if so how does it use this information to help drive service improvement?

Q13. Does your local authority have a mechanism in place to gather customer feedback on its highway maintenance service and if so how does it use this information?

Q14. How does your local authority ensure that customers are kept informed about their highway maintenance service?

Q15. Does your local authority undertake benchmarking to drive improvement in its highway maintenance service?

Q16. Does your local authority have a process in place to measure the ongoing cashable and non-cashable efficiencies that are being delivered in the highway maintenance service?

Q17. Does your local authority have a mechanism in place to undertake a periodic review of its operational service delivery arrangements for the highway maintenance service?

Appendices

Q18. Is your authority working in collaboration with your operational service provider and their supply chain in delivering the highway maintenance service or any component of it?

Q19. Has your local authority undertaken a Lean or equivalent transformational change management review of its highway maintenance service or any aspect of it?

Q20. Has your local authority produced a long term forward programme of capital maintenance works for all its highway infrastructure assets?

Q21. Is your local authority or your operational service provider working in collaboration in delivering the highway maintenance service or any component of it?

Q22. Is your local authority adopting a good practice approach in the way it procures external highway maintenance services?