Cabinet – 20 March 2019

Highway Infrastructure Asset Management

Portfolio: Councillor Andrew – Regeneration

Related portfolios: Councillor Harrison – Clean and Green

Service: Planning, Engineering and Transportation

Wards: All

Key decision: Yes

Forward plan: Yes

1. Summary

1.1. As Highway Authority the Council has a statutory duty to maintain the highway in a reasonable condition. The 2005 'Well Maintained Highways, Code of Practice for Highway Maintenance Management' set out a framework of guidance and standards intended to encourage co-ordination and consistency in the delivery of local highway maintenance services while facilitating sharing and developing best Practice.

1.2. 'Well-managed Highway Infrastructure' was published by The UK Roads Liaison Group in October 2016 and replaced the 2005 document. This new document moves away from a reliance on specific guidance and recommendations (as in the previous Codes) to a risk-based approach that is to be determined by each Highway Authority through appropriate analysis and development. The Well-managed Highway Infrastructure document gave Highway Authorities two years by which to develop a risk-based approach to highway asset management activities and adopt the principles of the new Code.

1.3. Well-managed Highway Infrastructure ('the new Code') was commissioned by the Department for Transport (DfT) and overseen by the UK Roads Liaison Group (UKRLG) including their Roads, Bridges and Lighting Boards. It is designed to promote the adoption of an integrated asset management approach to highway infrastructure management based on the establishment of local levels of service through risk-based assessment.

1.4. Delivery of a safe and well-maintained highway network relies on good evidence and sound engineering judgement. The intention of this new Code is that Highway Authorities will develop their own levels of service while providing guidance for authorities to consider when developing its approach in accordance with local needs, priorities and affordability.

1.5. In October 2018 the Portfolio Holder for Regeneration endorsed the Highway Infrastructure Asset Management Policy which has underpinned the drafting of the new Highway Asset Management Strategy and Highway Maintenance Management Plan. It is intended that both of these documents will replace the Highway Asset Management Plan 2015 – 2021 and the Highway Maintenance Strategy 2015 – 2018.

1.6. This report seeks approval to consult on the Council's new Highway Asset Management Strategy and Highway Maintenance Management Plan. This report also seeks delegated authority to the Head of Planning, Engineering and Transportation to make minor amendments and editorial changes to the Highway Policy, Strategy and Plan; which may be necessary in light of consultation feedback, case law, legal advice and developments, which arise prior to adoption and which might assist in managing the risk of litigation in relation to the statutory duty to maintain the highway.

1.7. This report also seeks approval to introduce revisions to the approach to highway tree management through the use of a new assessment methodology (Appendix D).

2. Recommendations

1.1 That Cabinet, in noting the content of this report and the Highway Asset Management Policy (appendix A), approve the release of the draft Highway Asset Management Strategy (appendix B) and draft Highway Maintenance Management Plan (appendix C) for a four week consultation period.

1.2 That Cabinet delegate authority to the Head of Planning, Engineering and Transportation, in consultation with the Portfolio Holder for Regeneration and Executive Director of Economy and Environment, to make minor amendments and editorial changes to the Policy, Strategy and Plan as may be necessary and that may assist in managing highway assets.

1.3 That Cabinet approve the approach to highway tree management as assets in the highway and use of the new highway tree assessment (appendix D) to document the decision making process for highway trees across the borough. This process would determine maintenance works to be undertaken or felling in some circumstances and would be alongside tree inspection/assessment programmes, whilst having due consideration for Conservation Area status and Tree Preservation Orders.

3. Report detail

<u>Introduction</u>

3.1 The Council holds responsibility for the maintenance of approximately 856Km (532 miles) of road network in the borough excluding special roads and trunk roads such as the M6 and A5 trunk road. Walsall's highway infrastructure and associated assets have a gross replacement value of over £1.4billion.

3.2 Maintaining a healthy and efficient highway network and improving transport links supports the Council's vision as outlined in the Corporate Plan 2018 – 2021.

3.3 Asset management is widely acknowledged to deliver a more efficient and effective approach to management of highway infrastructure assets through longer term planning. Longer term planning contributes to ensuring that levels of service are defined and achievable for available budgets. It facilitates a greater understanding of the contribution highway infrastructure assets make to economic growth and social well-being of local communities

3.4 The now superseded 'Well Maintained Highway's, Code of Practice for Highway Maintenance Management' was published in July 2005 to provide local highway authorities with guidance on how to develop a highway maintenance policy based on best practice. This former Code prescribed standards, suggested service levels and complemented the structures and street lighting codes 'Management of Highway Structures' and 'Well Lit Highways' respectively. The 2005 Code of Practice underpinned the Council's approach to highway asset management which lead to the preparation, approval and publication of the Highway Asset Management Plan 2015 – 2021 and associated documents.

3.5 'Well Maintained Highways, Management of Highway Structures' and 'Well Lit Highways' were superseded in October 2016 by 'Well Managed Highway Infrastructure – A Code of Practice'.

3.6 The new Code of Practice adopts an entirely risk-based approach to highway asset management. The new Code moves away from a prescriptive document to a system of guidance that encourages highway authorities to develop their own standards and levels of service based on evidence based risk assessment.

<u>Well Managed Highway Infrastructure – A Code of Practice</u>

3.7 The new Code advises that authorities should adopt this approach by October 2018. This Code of Practice is not statutory but provides highway authorities with guidance on highway management; adoption of the recommendations within the new Code is a matter for each highway authority, based on their own legal interpretation, risks, needs and priorities.

3.8 The Council, as highway authority, has a well-developed approach to highway asset management and good understanding of operational risks that require managing – such as risk of trips on rocking paving or damage from potholes. This is managed through the Council's robust approach to highway safety inspections and reactive maintenance.

3.9 The new Code takes risk much further than the operational risks provided above and requires the Council, from Senior Management to Highway Safety Inspectors, to have a good understanding of how risk applies to all highway asset management activities.

3.10 The new Code comprises 36 recommendations that are primarily centred around:

- Development, endorsement and publication of asset management frameworks, strategy and policy
- Stakeholder engagement
- Consistency with other authorities (including integrated networks)

- Risk based approach that is transparent, managed, and aligned to inspections
- Network inventory and data management
- Whole life costs, designing for maintenance in new infrastructure and lifecycle planning
- Risk based defect repair regime
- Climate change adaptation and resilient network
- Civil emergencies and severe weather emergency plans
- Performance framework and monitoring

3.11 The majority of the 36 recommendations have clear links to risk with non-compliance potentially exposing the authority to litigation. The Highway Maintenance team have been working closely with external specialist advisors in developing the October 2018 Highway Infrastructure Asset Management Policy (appendix A) and the new Highway Asset Management Strategy (appendix B) and Highway Maintenance Management Plan (appendix C).

What highway assets does the new Code of Practice cover?

3.12 The highway contains many assets that are designed, installed and maintained by various departments within the Council. In developing the new approach to align asset management practices to the 2016 Code of Practice, officers have sought input from departments across the Council to ensure the approach to highway infrastructure maintenance considers the highway network as an integrated set of assets. Such highway assets broadly comprise:

- Paved surfaces including kerbs, block paving and bituminous material
- Unpaved surfaces such as public rights of way and grass verges
- Structures including retaining walls, culverts and street lighting
- Drainage including gullies and associated infrastructure
- Road signs (illuminated and non-illuminated), road markings
- Street furniture including pedestrian guard-railing, bollards barriers and bins
- Trees

3.13 The Highway Maintenance team has a well-developed approach to highway asset management and good understanding of highway assets. This has required the use of technology to develop a detailed inventory of highway assets which includes

- Web based drainage management system and database
- Geo-spatial mapping of road signs and bespoke surfacing treatments
- Mapping of street lighting through the Street Lighting PFI
- Highway tree management systems and database
- UKPMS Pavement management system (Including condition surveys).

3.14 Preparing the new Highway Asset Management Strategy and Highway Maintenance Management Plan, has required a review of current practice and approach to highway asset management infrastructure. One such area included a review of the management of highway trees.

3.15 Officers from Planning, Engineering & Transportation and Clean & Green have reviewed the approach to highway tree management and developed a new assessment methodology (appendix D). This assessment, to be undertaken by

both tree officers and highway safety inspectors, is intended to be used where queries and complaints are received from residents and businesses concerning maintenance/removal of highway trees. In developing this approach, officers have undertaken trial assessments to refine the process and prepare the document contained in appendix D. Once complete, it is intended that the assessment be uploaded to the tree asset management database as a reference for future use.

3.16 It should be noted that this process, if approved, would operate in parallel to the regular tree inspection/assessment programme already in use rather than replace it.

3.17 It is recommended that Cabinet approve the use of the new highway tree assessment (appendix D) to document the decision making process for highway trees across the borough.

What has the Highway Authority done in implementing the new Code of Practice?

3.18 In developing its approach to implementing the new Code the Council has undertaken the following:

- Working with its highway delivery partner, Tarmac, it has appointed external specialist consultants to assist in the preparation of the Highways Asset Management Strategy (to incorporate life cycle planning) and the Highway Maintenance Management Plan
- Re-written and published the Highway Safety Inspection Manual to incorporate risk based approach to highway defects
- The British Standards Institute (BSI) LANTRA qualification training obtained for Highway Safety Inspectors
- Continued to collate, store and manage an asset inventory
- Performance monitoring and benchmarking (National Highways & Transportation survey, Association for Public Sector Excellence, Whole of Government Accounts Valuation)
- Worked with neighbouring authorities to ensure consistency in its approach

What does this mean for highway condition and maintenance?

3.19 In 2018 the Council was shortlisted by the Association for Public Service Excellence (APSE) for the 'most improved performer in roads, highways and winter maintenance' based on its submission of August 2018. This placed the Council within the top 5% of improved authorities and demonstrates the benefits achieved from the £6m of extra Challenge Fund investment in the highway network.

3.20 As the new Code adopts a risk based approach to highway infrastructure asset management this has facilitated a shift from the previous use of 'intervention levels' to 'investigatory levels'. As outlined in the updated Highway Safety Inspection Manual, the investigatory levels are 50mm for carriageway and 25mm in footway and paved areas. It should be noted that the investigatory levels do not necessarily mean immediate action (repair) will be undertaken but that the defect will be risk assessed to inform the course of action and associated timescales. Where investigatory levels do not meet the aforementioned thresholds routine safety inspections will be used to monitor risk levels.

3.21 In adopting this approach, it will allow the Council to prioritise and direct limited resources to areas while utilising highway asset condition data to inform future investment decisions.

3.22 Adoption of the new Code of Practice and effective highway infrastructure asset management is likely to be linked to the annual allocation of Department for Transport (DfT) Incentive Funding. This fund is 'banded' depending on performance with the highest 'band 3' securing the maximum level of funding; for the Council this equates to approximately £400,000 a year with Band 1 currently equating to £40,000.

What level of service can we expect from this new approach?

3.23 As Highway Authority, the Council has a statutory duty to maintain the highway in a reasonable condition and it has to do this against competing budgetary pressures. The Council typically spends around £8m a year (depending on grant funding allocation) on highway maintenance through various funding sources; of this £8m the Council allocates £5m for carriageway resurfacing. To maintain a steady state of carriageway condition, lifecycle planning requires this level of investment to be maintained for the foreseeable future.

3.24 Evidence demonstrates that any sustained reduction in budget has the potential to see a decline in carriageway condition in which case the Council would need to manage a declining condition and adjust its asset management approach for approval accordingly.

3.25 Lifecycle analysis predicts that if carriageway resurfacing budgets were to increase by around £1.5m per annum (giving a total carriageway resurfacing budget of £6.5m) over a 10 year investment period, the overall condition of the carriageway's would consistently improve by around 2% per annum. Lifecycle Planning will therefore support service level decision making over the longer term.

What happens next?

3.26 If Cabinet is minded to approve the recommendations contained in this report, the draft Highways Asset Management Strategy and Highway Maintenance Management Plan will be published for consultation on the Councils highway maintenance website. Comments received will be reviewed and the documents amended where appropriate in accordance with the delegated authority to the Head of Planning, Engineering & Transportation should Cabinet grant it.

3.27 Following consultation on the draft Highways Asset Management Strategy and Highway Maintenance Management Plan and when the documents are finalised, the Council may be required to make minor amendments and editorial changes to assist in effective management of highway assets. Therefore it is recommended that Cabinet delegate authority to the Head of Planning, Engineering and Transportation, in consultation with the Portfolio Holder for Regeneration and Executive Director of Economy and Environment, to make minor amendments and editorial changes to the Policy, Strategy and Plan as may be necessary and that may assist in managing highway assets.

4. Council Corporate Plan priorities

Sound transportation infrastructure clearly assists existing businesses and will attract investment nurturing economic growth and the creation and retention of employment. This has been specifically recognised by government in recent maintenance grant awards.

The condition of the highway also has a major impact on people's health and wellbeing. Safe carriageways and footways reduce the potential for accidents and associated injuries. In addition, independence for older people, the infirm and disabled is enhanced.

5. Risk management

The condition of the highway and the inspection and maintenance regimes in place affect the potential exposure of the Council to insurance and compensation claims. If the Council does not undertake its statutory maintenance functions in a reasonable manner then it may be held responsible for loss or damage as a result.

6. Financial implications

The costs of developing the draft Highways Asset Management Strategy and Highway Maintenance Management Plan (and work associated with the consultation) has been met through the use of existing Highways Maintenance budgets. Robust asset management planning is a requirement for receiving the highest levels of grant funding available to local authorities through the DfT's Highways Maintenance Incentive Fund Self-Assessment process.

The costs of developing and implementing the new assessment methodology for highway trees has been met through the use of existing highway maintenance budgets.

7. Legal implications

The Council, in its capacity as Local Highway Authority, has a statutory duty under Section 41 of the Highways Act 1980 to maintain highways for which it has responsibility and to keep them available and safe for the passage of the travelling public. Failure to maintain may be grounds for civil action for damages, or, in extreme cases, prosecution of the Local Highway Authority or of individual officers of the Council. Having a Highway Asset Management Policy, Highway Asset Management Strategy and Highway Maintenance Management Plan in place is not in itself a defence in any such action, but their subsequent implementation would assist the Council in demonstrating its actions and the basis upon which any steps are taken in relation to highway maintenance in any civil or criminal proceedings.

The new code, the 'Well-managed Highway Infrastructure: A Code of Practice', recommends that strategy documents and asset management plans are prepared in a way that demonstrates a systematic and logical approach to the delivery of highway maintenance services.

8. Property implications

The Highways Asset Management Strategy and Highway Maintenance Management Plan, once finalised, document the Council's approach to highway asset management.

There are no direct implications on any property of the Council relating to the recommendations contained in this report. However, the Highways Asset Management Strategy and Highway Maintenance Management Plan, once finalised, will continue to deliver improvements in highway condition which minimises the risk of exposure to claims.

9. Health and wellbeing implications

As indicated in section 7 the responsibility for maintaining the highway is a statutory duty of the Council. The ability to do this impacts on health and wellbeing in two ways.

The condition of the highway directly contributes to the potential risk of accidents and injury. In addition the economic wellbeing of an area and its relative employment rates have clear health impacts. A smooth and efficient highway network is a recognised essential contributor to a region's economy.

10. Staffing implications

None identified as a result of the recommendations contained in this report.

11. Reducing inequalities

No protected characteristic or groups have been identified as a result of the recommendations contained in this report.

The Highways Asset Management Strategy and Highway Maintenance Management Plan, once finalised will support the Council's equal opportunities policies by providing a well-managed transportation network that benefits all members of the community and improves accessibility, including for those with disabilities. The way the highway network is managed and maintained can have a significant bearing on improving social inclusion and this has been recognised in the draft documents.

The documents, and consultation, will be provided (upon request) in different languages, large print, braille and audio tape.

Continued implementation of highway asset management principles will bring improvements to the way in which the Council manages the highway network. Improvements to the condition and management of our roads, footways, cycle ways, public rights of way and lighting can have a positive impact on crime prevention. By maintaining a pleasant, clean and well-maintained appearance, highway users will generally feel more safe and secure and be encouraged to make better use of the network facilities available to them.

12. Consultation

In relation to the preparation of this report consultation has taken place with communications, legal, finance, Clean & Green, risk and insurance teams.

In relation to the draft Highway Asset Management Strategy (appendix B) and draft Highway Maintenance Management Plan (appendix C), consultation has taken place with legal, Metis Asset Management Consultants and the Councils communications team.

Further consultation on the draft Highway Asset Management Strategy (appendix B) and draft Highway Maintenance Management Plan (appendix C) will be undertaken with external stakeholders as outlined within this report.

Background papers

1. Well Managed Highway Infrastructure: A Code of Practice – October 2016
2. Highway Safety Inspection Manual – January 2018
3. Highway Asset Management Plan 2015 – 2021
4. Highway Maintenance Strategy 2015 – 2018
5. Urban Forestry Strategy for Walsall Council 2016 – 2026

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Simon Neilson
Executive Director

12 March 2019

Councillor Adrian Andrew
Portfolio Holder

12 March 2019

Walsall Council

Highway Infrastructure Asset Management Policy

Walsall Council has a clearly defined vision within its Corporate Plan that is *'Inequalities are reduced and all potential is maximised'*; the Councils purpose is *'to create an environment that provides opportunities for all individuals and communities to fulfil their potential'*. A well-managed safe and efficient highway network underpins the vision and purpose while directly promoting the following Council priorities:

- Economic growth for all people, communities and businesses
- People have increased independence, improved health and can positively contribute to their communities
- Communities are prospering and resilient with all housing needs met in safe and healthy places that build a strong sense of belonging and cohesion

The Council is committed to making best use of its resources and part of this requires the implementation of an asset management approach with regard to highway maintenance activities. Adopting an asset management approach for the maintenance of its highway infrastructure is critical for our long-term asset infrastructure planning objectives and corporate priorities.

The highway infrastructure is the most valuable asset owned and maintained by the Council, a fundamental pre-requisite for Asset Management Policy will be to ensure that the asset base is preserved or improved without imposing any undue financial legacy for future generations.

The highway infrastructure is a vital component for providing an integrated transport system that helps to promote equality and opportunity for all our residents by maintaining and improving the connectivity and accessibility of our transport systems. The Council will encourage and assist local communities and interest parties to participate in looking after local assets to improve local amenity. The Council will work as 'one team' with its service delivery partner to fully explore available expertise and improve the service delivered.

As highway authority with over 840km of carriageway to maintain the Council has to manage its highway network under increasing pressures from growing traffic volumes, particularly heavy goods vehicles, increasing network demands along with environmental and climate change.

This Policy aligns our asset management practices with our corporate vision, values and priorities; we recognise the specific and vital role played by the highway infrastructure in supporting the Council's strategic transport goals.

Walsall Council

The Council will develop, review and update an Asset Management Plan that will be used to inform and develop an Asset Management Strategy; both documents will clearly demonstrate decisions that are being made in response to pressures placed on highway assets and provide an integrated approach to highway infrastructure. This will be achieved by the establishment of local service levels through risk-based assessment in accordance with 'Well-Managed Highway Infrastructure: A Code of Practice'.

Signed: .....

Councillor Adrian Andrew
Deputy Leader & Portfolio Holder, Regeneration.

Signed: .....

Simon Neilson
Executive Director, Economy and Environment.

Signed: .....

James Walsh
Executive Director, Resources and Transformation
(S151 Officer/Chief Finance Officer)

Signed: 29/10/18

Steve Pretty
Head of Service, Planning, Engineering and Transportation

Walsall Council

HIGHWAY ASSET MANAGEMENT STRATEGY

WALSALL COUNCIL

APRIL 2019
VERSION 1.2

HAMS MODULE 1 – FOREWORD

Councillor Adrian Andrew

Portfolio Holder, Regeneration.

Walsall's Highway Asset Management Strategy is a key driver for the delivery of efficient and sustainable highway services, it supports a smarter and more flexible working approach that acknowledges the increasing austerity measures imposed on local government resources. It is a long-term plan that optimises Council resources for the management of Walsall's highway network.

As Portfolio Holder for Regeneration, I give my full support to the Highway Asset Management Plan, which will facilitate Highways and other supporting services to be sufficiently informed when making complicated decisions, which are required to constantly maintain fundamental and highest valued council assets of the highway infrastructure.

We all use the highway network in our daily lives, whether it is for travelling to work, school or for leisure, by means of bus, car, cycling or walking.

The purpose of this Highway Asset Management Strategy (HAMS) is to have a live document that will have detailed information about the Walsall's highway assets.

A copy of this HAMS can be found on the Council's website.

Portfolio Holder, Regeneration

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Councillor Adrian Andrew

Head of Planning, Engineering & Transportation

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Steve Pretty

HAMS MODULE 1 – EXECUTIVE SUMMARY

Overview... Walsall manages and maintains the highway assets falling within its 842 km of highway network. With responsibility to ensure the highway assets are fit for purpose and able to fulfil their functions in an efficient and sustainable manner.

Walsall aims to pursue an inclusive economy; make a positive difference to the lives of the people of Walsall; provide children the best start in life and make Walsall a clean, safe and healthy place to live in.

The contribution of highway assets to this overarching strategy for Walsall is managed through a policy supported by specific objectives to ensure focus is kept on what matters most to Walsall in managing the highway asset and the community's needs.

Walsall has adopted asset management practices to ensure the biggest benefit for the whole community is achieved. Asset management best practices require a look into long-term investments to make best use of resources and ensure right interventions are implemented at the most effective time to ensure a safe highway, a statutory requirement.

Overall performance... Walsall manages its network performance through performance indicators, which are aligned to and contribute towards achieving the Council's corporate vision and objectives laid out in the transport strategy, Transport in Walsall 2017-2022. Moreover, performance management demonstrates the effective use of the Council's budgets.

Investment... In 2017/18 Walsall invested a total of £10.9m in maintaining its highway infrastructure assets, from which £6m was spent on resurfacing roads and footways and £1.5m was spent on reactive highway repairs. (Note that this included £2m of Challenge Fund investment)

Through investment strategies, Walsall has determined that the current condition of the carriageway and footway assets create a backlog of around £41 million[2]. Walsall aims to manage the highway network in a steady state by continuing to invest in the right treatments at the right time for the right cost. An investment of £6.7 million[2] per annum has been identified as allowing for achieving this strategy. If the level of investment is not sustained the asset will decline increasing the amount of backlog. In turn more investment will be required in the future to maintain the asset.

Walsall's asset valuation figures for 2017/18 show that the total value or Gross Replacement Cost (GRC) of Walsall's highway asset is £1.527 billion[3], and the Depreciated Replacement Cost (DRC) or the value of the highway assets in their current state is £1.321 billion[3], resulting in 13.5%[3] depreciation of £205,860 million[3].

Engagement... Walsall engages with a number of key stakeholders to inform its decision processes. This ensures the social and economic benefit of the use of the road network is recognised. Such consultations help establish and prioritise an annual works programme based on the community's needs taking into account the stakeholder's most important considerations as well as engineering parameters of condition and serviceability.

Progress... Walsall is committed to continuous improvement in its practices and has developed a programme to enhance its asset management processes, systems and data, and support effective delivery of its desired asset management outcomes.

[1]: figures provided by Walsall.
[2]: figures obtained from investment modelling.
[3]: figures obtained from WGA.

HAMS MODULE 2 - CONTENTS & REFERENCES

Abbreviations... A list of abbreviations used in the Highway Asset Management Plan.

IAM	Institute of Asset Management
CIPFA	Chartered Institute of Public Finance and Accountancy
DCLG	Department of Communities and Local Government
DfT	Department for Transport
DRC	Depreciated Replacement Cost
GRC	Gross Replacement Cost
HAMS	Highway Asset Management Plan
HIAMG	UKRLG Highway Infrastructure Asset Management Guidance
HMEP	Highway Maintenance Efficiency Programme
IFRS	International Financial Reporting Standards
NHT	National Highway and Transport Survey
Section 106	Section 106 of Town and Country Planning Act (1990)
Section 278	Section 278 of Highways Act (1980)
UKPMS	United Kingdom Pavement Management System
UKRLG	United Kingdom Roads Liaison Group
Walsall	Walsall Council
WMHIMG	West Midlands Highways Infrastructure Management Group
WGA	Whole of Government Accounts

Reference Documents... A list of key reference documents and information used in the Highway Asset Management Plan. These are cited in the 'Further Information' section of each module, with web links where available.

Walsall Corporate Plan – 2018-2021	2018	Walsall Council
Transport in Walsall, Walsall's Transport Strategy 2017-2022	2017	Walsall Council
HMEP/UKRLG – Maintaining a Vital Asset	N/A	HMEP
ISO55000 – Asset Management	2014	ISO
UKRLG – Highways Infrastructure Asset Management Guidance Document	2013	UKRLG
UK Pavement Management System (UKPMS)	2018	UKRLG
UK Roads Liaison Group - Codes of Practice	2016	UKRLG
The Community Infrastructure Levy	2011	DCLG
Business Rates	2012	DCLG
Walsall's Asset Investment Models & Maintenance Strategies	2018	Walsall Council
National Highways and Transportation website: www.nhtsurvey.org	2018	NHT
Equalities Act 2010, Public-Sector Equality Duty	2010	Legislation
National Performance Indicators, Single List	2018	DCLG
Code of Practice on Highways Network Assets	2016	CIPFA
Whole of Government Accounts Guidance, HM Treasury	2018	HM Treasury
Well-Managed Highway Infrastructure: A Code of Practice	2016	ADEPT

Acknowledgements...

HAMS MODULE A – POLICY & OBJECTIVES

What... Walsall Council is committed to manage and maintain its highway assets to ensure they are fit for purpose and able to fulfil their functions efficiently and sustainably.

Walsall reviews these policies regularly to ensure they are appropriate and reflect its statutory duties, best practice and stakeholder requirements.

Why... Walsall's vision; as stated in Walsall's Corporate Plan; aims to pursue an inclusive economy; make a positive difference to the lives of the people of Walsall; provide children the best start in life and make Walsall a clean, safe and healthy place to live in.

The corporate aims relevant to highways management are:

- *A Resilient Network* - Ensuring Walsall's highway is fit for purpose for today and for the future.
- *A Vibrant and Healthy Place* – Enable walking and cycling and provide an enhanced green estate and sustainable highway
- *A Safe Highway* – Ensuring that the public highway is safe for use.
- *An Accessible Network* – Make the public highway inclusive to all users
- *Engaged with the Community* – Create a culture of open and engaged communication with our customers.

Walsall sets objectives and performance measures to ensure highways contribute to these corporate aims whilst maintaining a prudent long-term management plan.

Who... The responsibilities for the 'Policy & Objectives' module lie with:

Sign off policy	**Portfolio Holder Economy, Infrastructure & development**
Establish objectives	**Highways Asset Manager**
Updating & reporting module	**Senior Engineer**

How... Walsall aims to:

- Maintain its assets in a state of good repair.
- Ensure its green estate is looked after.
- Ensure the assets are safe for the public.
- Maintain an inclusive road network.
- Engage with the public and respond effectively to their needs.

In managing its assets, Walsall aims to:

- Utilise the asset management principles of life cycle planning and whole life costing to minimise the cost of asset ownership.
- Take a proactive approach to maintenance, favouring effective preventative treatments.
- Utilise quality and up-to-date asset inventory and condition data to inform decisions.
- Seek access to external funding sources to contribute to asset investment.
- Support its statutory duties as a highway authority under the Highways Act 1980, the New Roads and Street Works Act 1991, and the Flood and Water Management Act 2010 with sound asset management practices.

Reporting... Reporting of the delivery of the Policy and Objectives is done through performance reports and updates to the HAMS.

Success Measures... The recognition and adoption of the stated aims, and objectives through Council buy-in in other local documents will define success. Moreover, improvement in performance outcomes shall also demonstrate success.

Further Information:
Walsall Corporate Plan – 2018-2021
Transport in Walsall, Walsall's Transport Strategy 2017-2022
HAMS – Cabinet Report April 2019

HAMS MODULE B - CONTEXT

What... Asset management is a best practice approach endorsed by the Government. Maintaining valuable assets essential for the economic and social health of Walsall Council requires pragmatic and focused investment to ensure the biggest benefit for the whole community is achieved.

Long-term investment is required to make best use of resources and ensure the right interventions are implemented at the most effective time, whether capital investment or reactive maintenance to ensure a safe highway, a statutory requirement.

Why... Spending public money must demonstrate value and be aligned to the needs of the businesses and the residential community. Ensuring the right facilities have the right level of accessibility and are maintained to safe standards to meet the duties of the Highways Act (1980), will serve to make Walsall a safe and accessible place open for business and a great place to live.

With a long-term investment programme, Walsall can plan maintenance works better and seek economies of scale, as well as, maximising the life of treatment through reducing the whole life cost.

Carriageways: A typical 1m^2 pothole costs around £70 to repair, while it costs around £20 - £50/m^2 to resurface a road for up to 10 to 25 years.

Footways: A typical 1m^2 footway defect costs around £50 - £100/m^2 to repair, while it costs around £15 - £30/m^2 to resurface a footway for up to 80 years.

In addition, drainage, street lighting, UTC and structures are also essential assets within the highway and are maintained according to need.

Therefore, the move to capital investment is essential to reduce risk, reduce the cost of reactive maintenance, and minimise disruption to the road users.

Who... The responsibilities for the 'Context' module lie with:

Statutory duty	**Head of Planning, Transport and Engineering**
Overall reporting	**Highways Asset Manager**
Updating & reporting module	**Senior Engineer**

How... Walsall works with other local authorities through the West Midlands Highways Infrastructure Management Group (WMHIMG). Through this Group Walsall works to develop a common understanding and approach to asset management, which can be made bespoke to meet the particular needs of Walsall.

The Group reviews guidance and tools developed by the Department for Transport's HMEP, UKRLG, IAM, as well as, the evolution of ISO55000, a global standard for asset management.

From the guidance and tools available, the group assesses how best to implement asset management, and then, Walsall decides how it will develop and implement the best aspects of asset management to meet its needs.

Reporting... To ensure investment and outcomes remain effective, the modular HAMS provides a suite of measures to explore and demonstrate success or otherwise. From this, improvement actions can be developed, and discussed with peers at the WMHIMG.

An annual performance report is produced to draw together progress, performance and investment impact. The report is produced in each year to reflect the latest asset value and asset performance as per module D – Performance Management and module K - Valuation.

Table B1 shows the ownership and reporting across the HAMS modules to support long-term implementation, improvement and realisation of the benefits asset management brings.

Success Measures... An evolving asset management approach to managing the highway assets of Walsall will show an improvement, and hence, success in maintaining the Councils highway network efficiently. This approach will be aligned with prudent investment strategies delivering demonstrable benefits to the community, through achieving performance improvement targets and maximising the benefit of capital investment and revenue expenditure.

To deliver success, the following activities will be essential for the efficacy and demonstrable benefit of asset management:

- An Annual Asset Management Maturity Assessment and the associated reporting to ensure progress towards the stated objectives.
- Asset Valuation for WGA to ensure the asset retains the desired value.
- Updating expenditure figures to assess the expenditure against investment strategies.
- Updating the performance measures and assessing progress against targets.

This review process needs to ensure the stated aims remain current and in-line with corporate aims. Should the aims change, this HAMS must be revised to reflect the new aims/targets for performance and outcomes.

Further Information:
HMEP/UKRLG – Maintaining a Vital Asset
ISO55000 – Asset Management
UKRLG – Highways Infrastructure Asset Management Guidance Document

Table B1: Ownership and reporting of modules.

Module		Responsible	Version	Next Review	Reporting	
					How	When
A	Policy & Objectives	Highways Asset Manager	1.2	April 2020	HAMS modules updates	April
B	Context	Highways Asset Manager	1.2	April 2020	Module D – Performance Management Module K – Valuation	April August
C	Asset Knowledge	Highways Asset Manager	1.2	April 2020	Module D – Performance Management Module I – Stakeholder Engagement Module K – Valuation	April April August
D	Performance Management	Highways Asset Manager	1.2	April 2020	Performance dashboard	April
E	Funding & Expenditure	Highways Asset Manager	1.2	April 2020	Historical Expenditure per asset	April
F	Investment Strategies	Highways Asset Manager	1.2	April 2020	Investment Strategies report	June
G	Maintenance Strategies	Highways Asset Manager	1.2	April 2020	Investment Strategies & Maintenance Strategies assessed	June
H	Works Programme	Highways Asset Manager	1.2	April 2020	Forward works' programme	February
I	Communication & Engagement	Highways Asset Manager	1.2	April 2020	NHT survey results Module D – Performance Management	June April
J	Benchmarking	Highways Asset Manager	1.2	April 2020	HAMS modules updates Module D – Performance Management	April April
K	Valuation	Highways Asset Manager	1.2	April 2020	WGA valuation report	August
L	Improvement Action Plan	Highways Asset Manager	1.2	April 2020	Improvement action plan	April

HAMS MODULE C – ASSET KNOWLEDGE

What... Asset knowledge comprises inventory, safety and serviceable data for the highway assets Walsall is responsible for.

Collection and maintenance of asset data is required to assist managers in assessment, analysis and reporting of performance, progress and future need.

Why... Asset data is required to enable Walsall to undertake the following processes:

- Monitor and report on the condition of the highway network.
- Assess the expected lives of individual assets or asset components.
- Evaluate performance indicators.
- Model future maintenance options.
- Identify future investment strategies.
- Investigate and manage risk.
- Develop short- and long-term forward works programmes.
- Analyse and report financial values for WGA.

These processes enable Walsall to make informed and cost-effective decisions.

Who... The responsibilities for the 'Asset Knowledge' module lie with:

Data collection	**Highways Asset Manager**
Data management	**Highways Asset Manager**
Updating & reporting module	**Senior Highways Engineer**

How... Data is an expensive commodity to collect, store and keep up to date. It is essential to ensure data collected and held can be trusted and remains current to support performance reporting and decision-making.

Walsall adopts a pragmatic approach to the collection of data to ensure the same data can be used for multiple tasks and that the level of sophistication meets the needs of the authority. Table C1 and Table C2 provide an overview of the data collected and the resources used.

Reporting... Walsall uses the asset inventory shown in Table C2 to quantify the extent of its highway assets. This data is then used to feed into other HAMS Modules to report on asset performance, including:

Module D – Performance Management.

Module I – Stakeholder Engagement.

Module K – Valuation.

Success Measures... Apart from feeding in to other HAMS modules, asset knowledge will help Walsall to support statutory requirements. Moreover, this will greatly help in making effective and informed decisions.

Further Information:
Highway Infrastructure Asset Management Guidance document, HMEP – UKRLG, 2013
UK Pavement Management System (UKPMS)
UK Roads Liaison Group - Codes of Practice

Table C1: Walsall's asset inventory.

Asset Group	Asset Type	Quantity		Asset Group	Asset Type	Quantity
Carriageways	Principal Classified Roads (A roads)	98 km	1,027,000 sq.m	**Street Lighting**	Columns	25,835
	Non-Principal Classified Roads B roads)	41 km	335,000 sq.m		High Mast Columns	4
	Non-Principal Classified Roads (C roads)	11 km	101,000 sq.m		Wall Mounted Units	126
	Unclassified roads (U roads)	691 km	4,351,000 sq.m		Feeder Pillars	192
	TOTAL	**841 km**	**5,814,000 sq.m**		Illuminated Bollards	938
Footways	Prestige Walking Zones (Category 1A) & Primary Walking Routes (Category 1)	40 km	116,840 sq.m		Externally Illuminated Signs	2597
	Secondary Walking Routes (Category 2)	434 km	1,083,000 sq.m		Central Refuge Beacons	158
	Link Footways (Category 3) & Local Access Footways (Category 4)	1,240 km	2,522,000 sq.m		Other	222
	TOTAL	**1,714 km**	**3,721,840 sq.m**		***TOTAL***	**30,071**
Highway Structures	Concrete Bridges – Single span	*27*	3564 sq.m	**Urban Traffic Controls**	Puffin Crossing	93
	Brick Arch Bridge – Single span	8	1092 sq.m		Pelican Crossing	28
	Steel Deck Bridges – Single span	25	3750 sq.m		Toucan Crossing	17
	Pedestrian / Cycle Bridge – Single span	36	1440 sq.m		Wig Wags	3
	Culvert – Single cell	58	464 sq.m		VMS	6
	Concrete Bridges Medium	16	4896 sq.m		CCTV	42
	Concrete Bridges Large	3			Traffic Signals with Pedestrian facilities	248
	Concrete Bridges Extra Large	2	1920 sq.m		Traffic Signals without Pedestrian facilities	120
	TOTAL	**175**	**17126 sq.m**		***TOTAL***	**557**

RAG	Description
	High Confidence in Data
	Medium Confidence in Data
	Low Confidence in Data

Table C2: Walsall's Safety and Serviceability data.

Asset Group	Asset Type	Type of Survey	Network coverage	Frequency	Service Provider	Storage System
Carriageways	Principal Classified Roads (A roads)	SCANNER condition surveys	50%	Annually	Yotta	UKPMS
		Grip Tester	100%	Annually	TBC/Awaiting tender	UKPMS
	Non-Principal Classified Roads (B roads)	SCANNER condition surveys	50%	Annually	Yotta	UKPMS
	Non-Principal Classified Roads (C roads)	SCANNER condition surveys	100%	Annually	Yotta	UKPMS
	Unclassified roads (U roads)	Coarse Visual Inspection (CVI) surveys	25%	Annually	Aecom	UKPMS
Footways	Prestige Walking Zones (Category 1A) & Primary Walking Routes (Category 1)	DVI surveys	50%	Annually	Aecom	UKPMS
	Secondary Walking Routes (Category 2)	DVI surveys	50%	Annually	Aecom	UKPMS
	Link Footways (Category 3) & Local Access Footways (Category 4)	FNS surveys	25%	Annually	Aecom	UKPMS
Highway Structures	All Structures	Principal Inspections	100%	3 Yearly	Jacobs	Bridge Management eXpert
	All Structures	General Inspection	100%	6-Yearly	Jacobs	Bridge Management eXpert
	All Structures	Special Inspections	-	Ad-hoc	To be arranged	Bridge Management eXpert
	Principal Road Network	Load Assessments	-	Ad-hoc	To be arranged	Bridge Management eXpert
Drainage	Gullies	Cyclical gully cleansing	100%	Annually	Tarmac Ltd	Kaarbontech
Street Lighting	Lighting columns	Structural Inspections	PFI	PFI	Amey Lighting	Mayrise
		Electrical Inspections	PFI	PFI	Amey Lighting	Mayrise
Street Furniture	All street furniture	Routine safety inspections	100%	Annually (as part of safety inspections)	Walsall	Mayrise
Urban Traffic Controls	All Urban Traffic Control Systems	Electrical Inspections	16.67%	Annually	W'ton CC	Database

HAMS MODULE D - PERFORMANCE MANAGEMENT

What... Performance management is the process by which Walsall communicates its objectives for the highway assets and monitors performance.

Why... Walsall has adopted this approach to ensure highway asset maintenance functions on the ground are aligned to and contribute to achieving the Council's corporate vision.

Who... The responsibilities for the 'Performance Management' module lie with:

Approving targets	**Highway Asset Manager**
Monitoring performance	**Highway Asset Manager**
Updating & reporting module	**Senior Engineer**

How... Walsall has adopted performance management according to ISO 55000 and as outlined in the HMEP – UKRLG Highway Infrastructure Asset Management Guidance document (2013).

Relevant high-level drivers were identified from Walsall's Corporate Plan. These have been translated into four highways performance target statements, which drive all of Walsall's highway maintenance activities, Figure D1.

Asset specific performance target statements have also been developed to identify the key objectives for each of the main highway asset groups.

The performance target statements are supported by a suite of performance indicators, which have been selected to enable performance monitoring and target setting against the objectives, Table D2.

In addition, these performance indicators were further evaluated through NHT Surveys and assessed against service levels criteria evaluated against industry practice and performance in order to group performance into three clear service levels, Good, Fair and Poor. This enables target setting and prioritisation based on sound analysis, Table D2.

Reporting... Walsall uses the following performance dashboards to illustrate the performance management system adopted, Table D2. They consider all significant assets under the Council's remit, outlining for each, multiple performance indicators, their current condition, and their short- and long-term targets mapped to levels of service categories.

This process ensures Walsall focuses its effort and investment into the areas that positively impact the high-level drivers and represent the highest level of risk to the Council. The cost of attaining target Performance Indicators is discussed in HAMS module F – Investment Strategies.

Success Measures... Apart from providing a direct link to the Council's corporate vision, performance management will help Walsall demonstrate the effective use of its budgets. This will also demonstrate any shortfalls in funding and where this needs to be targeted to ensure the transport network is fit for purpose and with an acceptable level of risk.

Further Information:
Highway Infrastructure Asset Management Guidance document, HMEP – UKRLG, 2013
ISO 55000 – Asset Management

Figure D1: Asset performance indicators setting.

Table D2: Walsall's performance dashboard - Technical

Service Level	Ref	Description	Levels of Risk			Performance		
			Low	Medium	High	Trend	Current	Target
1. Ensure Resilience on the Network	1.1	% of A Roads carriageway not in poor condition (RCI 130-01)	>95%	≥80%	<80%	↑	97%	95%
	1.2	% of B & C Roads carriageways not in poor condition (RCI 130-02)	>95%	≥80%	<80%	↑	98%	95%
	1.3	% of U Roads carriageways not in poor condition (BVPI 224b)	>95%	≥80%	<80%	↑	80%	95%
	1.4	% of Hierarchy 1A, 1 & 2 footway network not in poor condition (BVPI 187)	>95%	≥80%	<80%	↓	64%	95%
	1.5	% of Hierarchy 3 & 4 footway network not in poor condition (FNS HI)	>95%	≥80%	<80%	↓	83%	95%
	1.6	% of gullies cleansed annually	>85%	≥78%	<78%	→	94%	90%
	1.7	% of structures in good condition	>70%	≥60%	<60%	TBC	TBC	TBC
	1.8	% of UTC which have not reached their estimated lifespan	>95%	≥80%	<80%		86%	100%
2.Vibrant & Healthy Public Realm	2.1	% energy efficient lighting (LED)	>70%	≥50%	<50%	PFI	PFI	PFI
	2.2	% completion of decluttering	100%	≥50%	<50%	↑	86%	100%

Service Level	Ref	Description	Levels of Risk			Performance		
			Low	Medium	High	Trend	Current	Target
3. Sustain a Safe & Serviceable Network	3.1	% of insurance claims repudiation	>95%	≥90%	<90%	↑	57%	95%
	3.2a	% of carriageway Cat 1 defects completed within the response time	100%	≥98%	<98%	↑	98%	95%
	3.2b	% of footway Cat 1 defects completed within the response time	100%	≥98%	<98%	↑	98%	95%
	3.2c	% of carriageway Cat 2 defects completed within the response time	>99%	≥97%	<97%	↑	97%	95%
	3.2d	% of footway Cat 2 defects completed within the response time	>99%	≥97%	<97%	↑	97%	95%
	3.3	% of safety inspection completed on time	>95%	≥90%	<90%	↓	84%	95%
	3.4	% of carriageway condition inspections completed on time	>95%	≥90%	<90%	↑	98%	95%
	3.5	% of structures inspected on time	>90%	≥85%	<85%	TBC	TBC	90%
4. Provide an Accessible Network	4.1	% of street works completed on time	>95%	≥90%	<90%	TBC	TBC	90%
	4.2	% of highway structures without formal restrictions	>95%	≥90%	<90%	TBC	TBC	TBC

Service Level	Ref	Description	Levels of Risk			Performance		
			Low	Medium	High	Trend	Current	Target
	4.3	% street lighting operating effectively	>98%	≥90%	<90%	PFI	PFI	PFI
5. Open Engagement & Communication Channels	5.1	% of completed letter drops ahead of work on time	>95%	≥90%	<90%	TBC	TBC	90%
	5.2	Level of customer satisfaction with condition of highways (NHT KBI 23)	>70%	≥50%	<50%	🡻	29%	50%
	5.3	Level of customer satisfaction with highway maintenance service (NHT KBI 24)	>70%	≥50%	<50%	🡻	49%	50%
	5.4	Level of customer satisfaction with street lighting (NHT KBI 25)	>70%	≥50%	<50%	🡻	67%	70%

HAMS MODULE E – FUNDING & EXPENDITURE

What... Funding is the financial support Walsall uses to maintain its highway assets. This module looks at historical expenditure and forecasts long-term financial requirements. Walsall's policy is to ensure that the asset base is preserved or improved without imposing any undue financial legacy for future generations.

Why... Walsall needs to stay abreast of developments in funding and revenue opportunities and, with changes in government funding, to be able to raise revenue locally.

The highways team needs to, therefore, ensure the best case is put forward for funding from funds available through Community Infrastructure Levy, Section 278, Section 106 and business rates as these provide income to the authority.

Who... The responsibilities for the 'Funding & Expenditure' module lie with:

Defining budget need	**Highways Group Manager**
Developing income opportunity	**Highways Group Manager**
Monitoring expenditure	**Highways Asset Manager**
Updating & reporting module	**Senior Engineer**

How... The following funding streams are available to Walsall:

- Capital allocations from the West Midlands Local Transport Plan
- Revenue allocations from local council tax, business rates, central government revenue support, community infrastructure levy and other grants
- Department for Transport Winter Damage Fund and Pothole Fund
- Local Highways Maintenance Challenge Fund.
- Local Sustainable Transport Fund
- Walsall is partnered with Amey through a Private Finance Initiative to upgrade and maintain street lighting assets (over a 26 year period, which started in 2002)
- Funding from Prudential borrowing

Lifecycle planning is used as a key tool to determine funding needs and to anticipate the impact of funding levels on asset condition and service level provision.

Reporting... Expenditure is monitored on an annual basis. Historical expenditure figures can be seen in Figure E1. This provides an overview of total budget available to Walsall in the past, along with how the budget is allocated between asset groups.

Table E2 sets out estimates of Walsall's current funding requirements. These estimates have been calculated using whole life costing methods, to estimate the average funding required annually to maintain the asset in a steady state.

Success Measures... Maximising income from third parties will be essential for the long-term improvement and steady-state maintenance of the highway assets.

Hence, Walsall's aim is to maximise external funding to complement its capital works by continuously increasing the income from third parties to fund its investments.

The lifecycle planning methods, outlined in HAMS module G – Investment Strategies, are imperative to building a good business case for ascertaining additional funding.

Further Information:
The Community Infrastructure Levy
Business Rates

[1]: information provided by Walsall.
[2]: figures obtained from investment modelling.

Figure E1: Historical Budget Allocations Across Asset Groups [1]

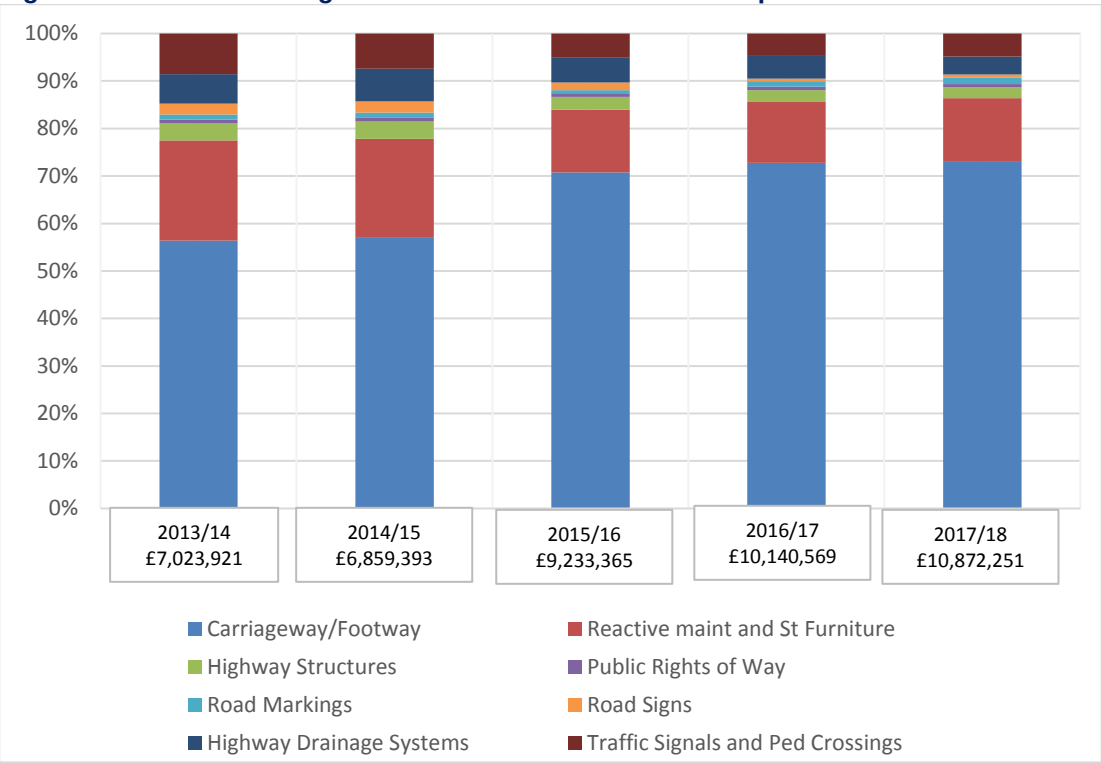


Figure E2: Estimated Funding Requirements [2]

Estimated steady state capital funding requirements	£/year
Carriageways	£4,500,000
Footways	£1,200,000
UTC with Civils	£325,000
Structures	TBC
Drainage	TBC
Total Capital Funding Requirement	£6,025,000

[1]: information provided by Walsall.
[2]: figures obtained from investment modelling.

HAMS MODULE F – INVESTMENT STRATEGIES

What... Investment in the highway assets is essential to improve the condition, maintain steady-state or even just to control the rate of deterioration.

To determine the best level of investment to drive long-term capital savings and meet the desired outcomes, a series of strategies can be explored to understand the impact of different budget scenarios, including the impact of investing in different parts of the network.

Lifecycle planning is the process used to determine backlog and steady-state funding requirements. It provides analysis of differing possible budget scenarios to suggest what the short- and long-term impacts may be. Figure F1 presents an overview of the lifecycle planning method used by Walsall.

Why... Understanding how the asset condition will be affected by differing budget scenarios helps determine the level of investment required to meet desired levels of performance. Robust understanding of the impact of different levels of investment supports decision making and can help set appropriate budget levels.

Who... The responsibilities for the 'Investment Strategies' module lie with:

Determining strategies	**Group Managers**
Evaluating strategies	**Highways Asset Manager**
Updating & reporting module	**Senior Engineer**

How... Walsall continuously reviews the investment needs of assets using condition data and performance measures (Module D – Performance Management).

This information, then, feeds into the lifecycle planning model to determine the current backlog and the impact of the determined investment scenarios, ensuring the investment is driving capital savings, striving towards the stated performance outcomes and is providing a network fit for purpose.

Reporting... Lifecycle planning reporting is done through update reports as and when investment scenarios are undertaken.

For the purposes of the HAMS the investment strategy will be updated in line with the determined budgets and amended accordingly with budget alterations.

Success Measures... To deliver the performance targets as stated in Module D-Performance Management.

Summary Information – estimated through lifecycle planning work.

Backlog (£ millions)[1]	
Carriageways	£19.1m
Footways	£21.8m
Structures	£TBC
Street Lighting	PFI
UTC	£5.4m
Drainage	£TBC
Total	**£ 46.6m**

Steady-State Funding Need (£ millions)[1]	
Carriageways	£4.5
Footways	£1.2
Structures	£TBC
Street Lighting	PFI
UTC	£1.0
Drainage	£TBC
Total	**£ 6.7m**

A more detailed breakdown for carriageway, footway and structures assets is provided below.

Further Information:
Walsall's Asset Investment Models & Maintenance Strategies

[1, 2, 3, and 4]: figures obtained from investment modelling.

Figure F1: Lifecycle Planning Method – Modelling Asset Deterioration and Maintenance

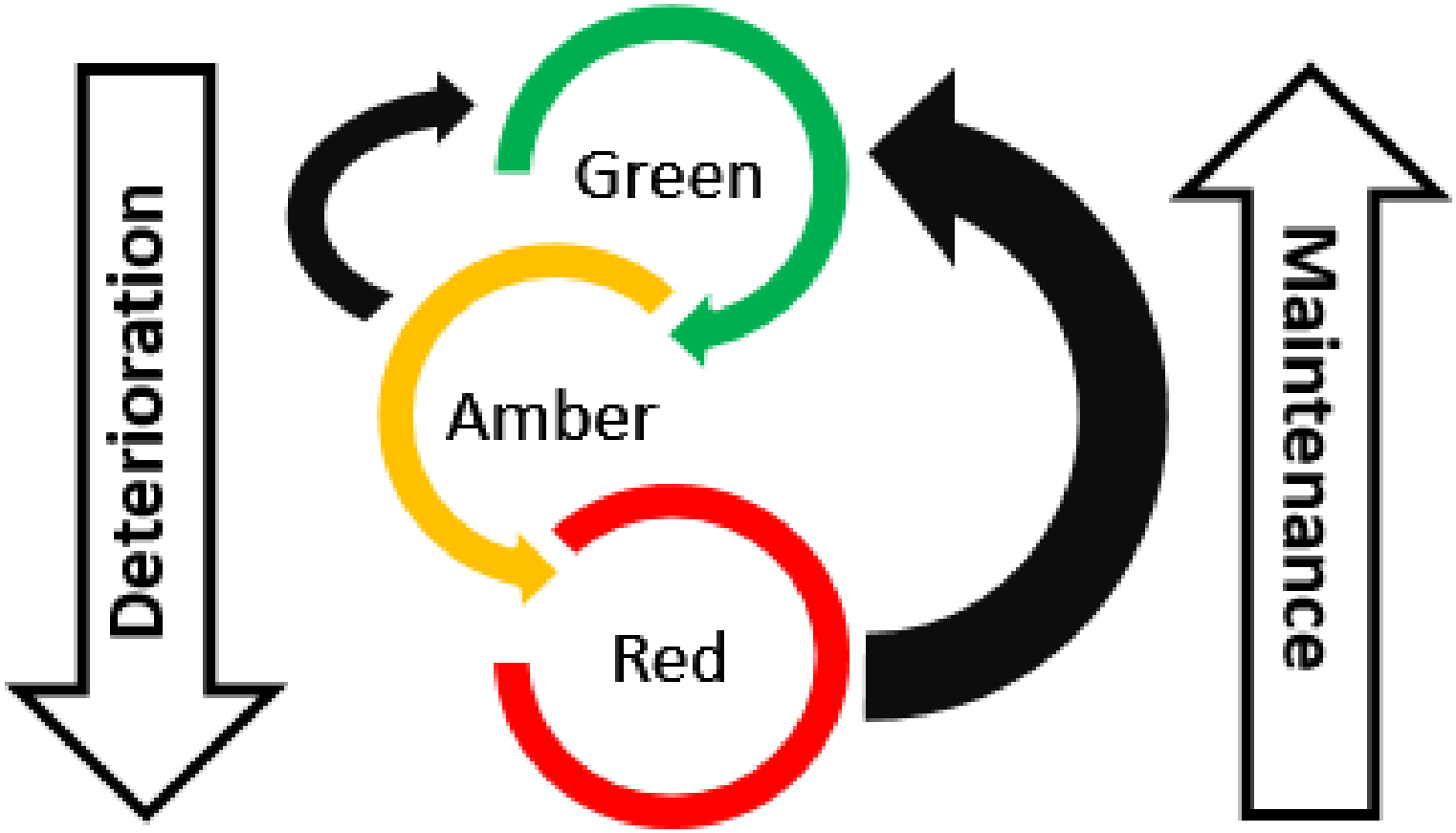


Figure F1 provides an overview of the principles upon which the lifecycle planning model is based. Each unit of the asset is classified using a traffic light system, according to its condition. How it is classified is dependent upon the particular asset in question. For carriageways, for example, the asset is classified according to the results of road condition surveys, which are regularly conducted.

An asset will deteriorate from green → amber → red over time, whilst maintenance works will improve the condition of a road from either red → green, or amber → green, depending on the treatment undertaken.

[1, 2, 3, and 4]: figures obtained from investment modelling.

Carriageways Information[1] – calculated through lifecycle planning work.

Backlog (£ millions)		
A Roads	B&C Roads	U Roads
£ 0	£ 0	£ 19.1[1]
Total - £ 19.4million		
Backlog (km)		
0 km	0 km	103.7 km
Total – 103.7km		

Steady-State Funding Need (£ millions/year)		
A Roads	B&C Roads	U Roads
1	0.5	3
Total	£ 4.5m	

Optimum Budget Allocation under Investment Scenarios (£ millions)			
Options	A	B&C	U
Expected (£3m annually)	0.37	0.14	2.49
Budget cut (£2.25m annually)	0.37	0.14	1.74
Budget increase (£4.5m annually)	0.37	0.14	3.99

Note – Red cells indicate not meeting steady state, green cells indicate meeting steady state

Note that under the budget increase scenario, the budget is adequate to achieve steady-state but the optimum budget allocation is to invest more heavily in U roads in the medium term to clear the existing backlog, while A and B/C roads are exceeding performance targets.

[1] The current percentage of U roads in red condition is 20%, it would cost £19.4m to reduce this to 5%

Footways Information[1] – calculated through lifecycle planning work.

Backlog (£ millions)	
1A, 1 & 2	3 & 4
£ 8.81[2]	£ 13.0[3]
Total - £ 21.8million	
Backlog (km)	
71 km	128km
Total –km	

Steady-State Funding Need (£ millions/year)	
1A, 1 & 2	3 & 4
0.25	0.95
Total	£ 1.2m

Optimum Budget Allocation under Investment Scenarios (£ millions)		
Options	1A, 1 & 2	3 & 4
Expected capital budget (£0.47m annually)	0.09	0.38
Supplemented budget[4] (£0.7m annually)	0.14	0.56
Enhanced budget (£1.2m annually)	0.25	0.95

Note – Red cells indicate not meeting steady state, green cells indicate meeting steady state

[2] The current percentage of hierarchy 1, 1A and 2 footways in red condition is 36%, it would cost £8.81m to reduce this to 5%

[3] The current percentage of hierarchy 3 and 4 footways in red condition is 17%, it would cost £13.0m to reduce this to 5%

[4] In this budget scenario, the secured capital budget is supplemented with revenue income.

[1, 2, 3, and 4]: figures obtained from investment modelling.

HAMS MODULE G – MAINTENANCE STRATEGIES

What... Walsall must decide how funds available for highway asset maintenance are best spent. This involves allocating budget across many different asset types and selecting the most appropriate maintenance activities and treatments for those asset types. These vary depending upon the type of asset in question, the materials it is made of, its current condition and many other factors.

A maintenance strategy is an approach to managing homogenous asset groups with consistent treatments. The treatments are decided upon by identifying the most efficient means of meeting the required performance targets, based on whole life cost analysis and lifecycle planning.

Why... To create a suite of treatment options to facilitate decision making for efficient use of available funds. Benefits include:

- Time saved in going through the treatment selection process for individual assets.
- A consistent aesthetic and performance across the Borough.
- Ease of comparing new treatment options on the market.
- A better understanding of how treatments behave over time.

Who... The responsibilities for the 'Maintenance Strategies' module lie with:

Defining strategies	**Group Managers**
Whole life costing	**Highways Asset Manager**
Updating & reporting	**Senior Engineer**

How... Walsall uses lifecycle planning methods to inform maintenance strategy. A range of maintenance strategy options are modelled and the impact on asset condition is assessed. Following this, maintenance strategies are developed that aim to make the best use of available funds and optimise asset condition over the medium and long term.

This approach lends itself to ensuring different strategies for different asset types provide a 'right for asset' approach to long-term maintenance.

As an example, Walsall use an array of treatments on carriageways to deliver best whole life cost including but not limited to micro-asphalt, surface dressing and a variety of bituminous inlays. On the other hand, it is not viable for Walsall to use cheaper strengthening methods like bituminous overlays due to the urban nature of the highway network.

For its footway assets Walsall has introduced the use of slurry seals to lengthen the serviceable life of the asset and UTC assets are being future-proofed by introducing ducting.

Figure G1 provides illustrative examples of outputs from a lifecycle planning exercise, comparing the difference in carriageway condition over the next ten years under two alternative maintenance strategies.

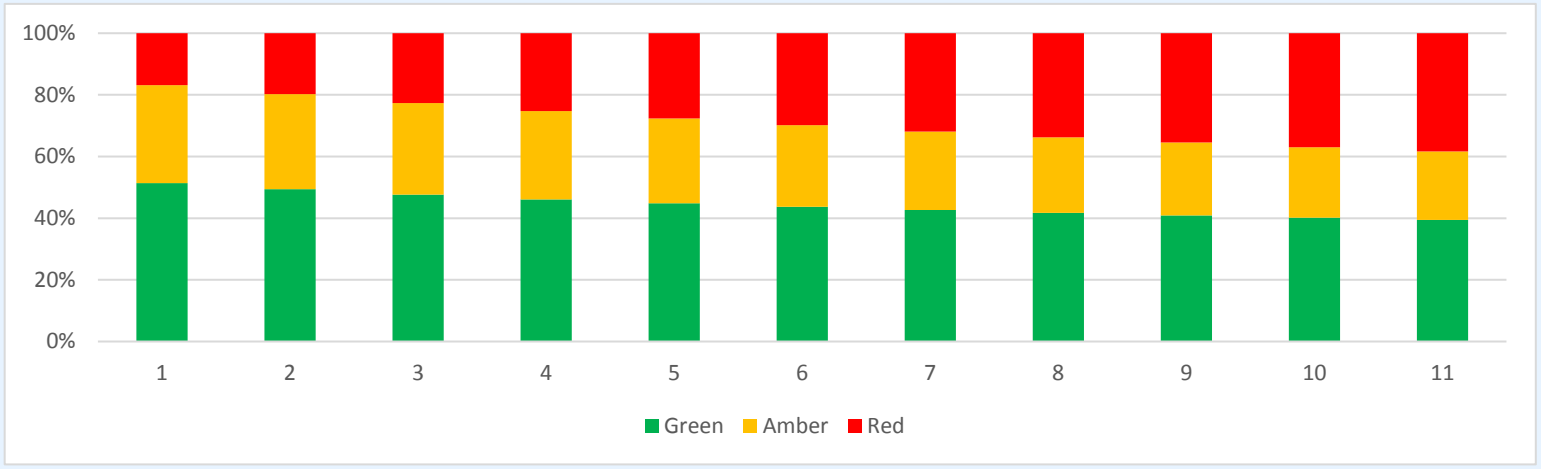
Reporting... Maintenance strategies are reviewed periodically, or when new treatment options come on the market. They are reported through lifecycle planning reports and business cases as an integral element of module G - Investment Strategies.

Success Measures... To be able to demonstrate an on-going reduction in the whole life cost of asset maintenance, through the use of the most efficient maintenance strategy for the particular asset group.

Further Information:
Walsall's Asset Investment Models & Maintenance Strategies

Figure G1: Illustrative example of maintenance strategy testing during lifecycle planning

Carriageways Condition over 10 Years: Maintenance Scenario 1

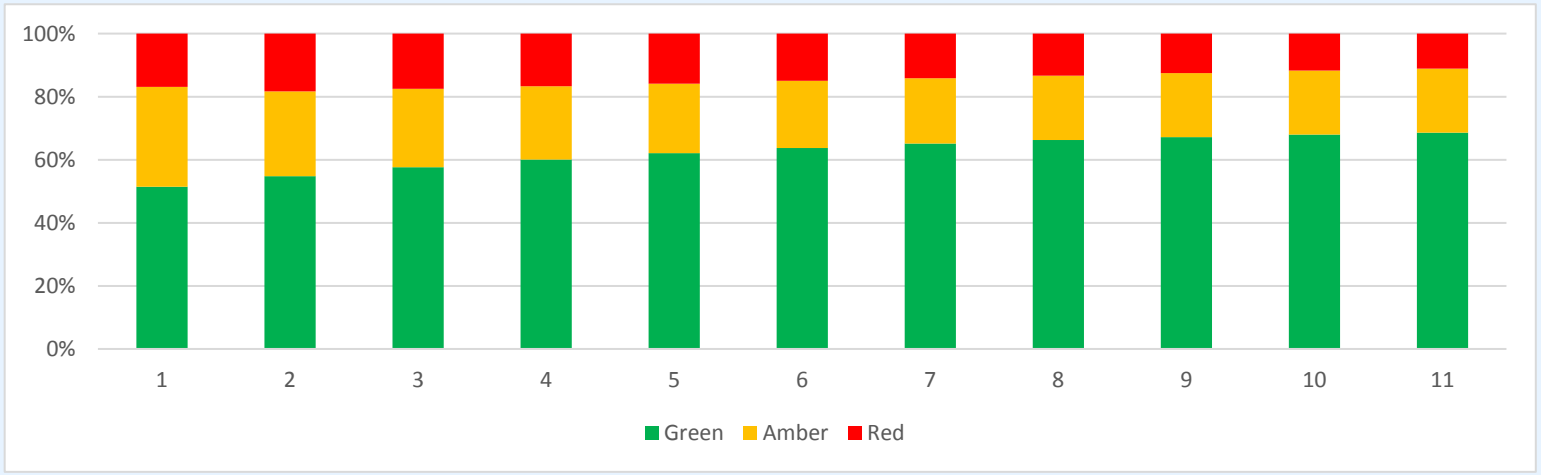


Total budget of £3m annually allocated as follows:

A Roads: £1.44m on 150mm deep resurfacing
B/C Roads: £0.36m on 150mm deep resurfacing
U Roads: £1.2m on 100mm deep resurfacing

*See note[1] for explanation of green, amber and red condition roads

Carriageways Condition over 10 Years: Maintenance Scenario 2



Total budget of £3m annually allocated as follows:

A Roads: £0.37m on micro asphalt or similar shallow treatment
B/C Roads: £0.14m on micro asphalt or similar shallow treatment
U Roads: £1.31m on 100mm deep resurfacing and £1.18m on micro asphalt or similar shallow treatment

[1] Note on Green / Amber / Red condition classification: Green roads are defined as those that currently require no treatment, amber roads are those that would benefit from thin (preventative) treatments, and red roads are those that would benefit from deep (structural treatment).

HAMS MODULE H – FORWARD WORKS PROGRAMME

What... The works programme is one of the key outputs of asset management. It sets out the plan for future maintenance activities, after prioritisation of all candidate schemes and optimisation to maximise outcomes. The works programme should reflect Walsall's asset management strategy and be designed to ensure performance targets are met.

Why... Developing a programme of works gives greater transparency of the work to be delivered. For the residents and businesses, there is an understanding of the volume and location of work that will be delivered, and when their street will be invested in. For works delivery teams, it provides greater certainty of future orders to better resource and deliver work efficiently.

Furthermore, looking at a longer-term investment in highway assets ensures the focus is kept on long-term benefits derived from the investment, and facilitates understanding what can be done with the investment provided.

Who... The responsibilities for the 'Works Programme' module lie with:

Preparing works programmes	**Highways Asset Manager**
Updating & reporting module	**Senior Engineer**

How... Walsall continually reviews, and updates investment priorities based on engineering need, condition and social benefit. To achieve this, asset condition data is collected and analysed to provide a prioritised list of work required within an asset group.

Individual asset managers determine the forward works programme for their asset group based on lifecycle planning principles. Managers select schemes according to the strategy that was found to give the best economic return on investment and then develop a bid for funding according to short-term needs.

Cross-asset prioritisation currently occurs informally. Senior decision makers allocate funding across asset groups according to the strength of the funding bids they have received. Walsall is in the process of changing their forward works programming, with the goal of employing more rigorous cross-asset optimisation processes.

For further information of Walsall's investment and maintenance strategy see module F - Investment Strategies and module G - Maintenance Strategies. The processes for developing the programmes for the above-mentioned highway assets are shown in Figure H1 and H2.

Reporting... Walsall produces a prioritised schedule of works through condition related service measures. Carriageways and footways needing maintenance are assigned a score which determines their priority ranking. This ranking underlies the schedule of works up to the available budget. The draft forward works programme is then, presented to the council for their final approval and endorsement.

Success Measures... The delivery of Walsall's works programme is the tangible outcome of the entire asset management planning process. The programming and delivery of works align with the asset management objectives discussed in HAMS module A – Policy & Objectives and deliver the performance targets set in module D – Performance Management.

Further Information:
Highway Infrastructure Asset Management Guidance document, HMEP – UK RLG, 2013
ISO 55000 – Asset Management
UK Pavement Management System (UKPMS)

Figure H1: The works programme development process for carriageways.

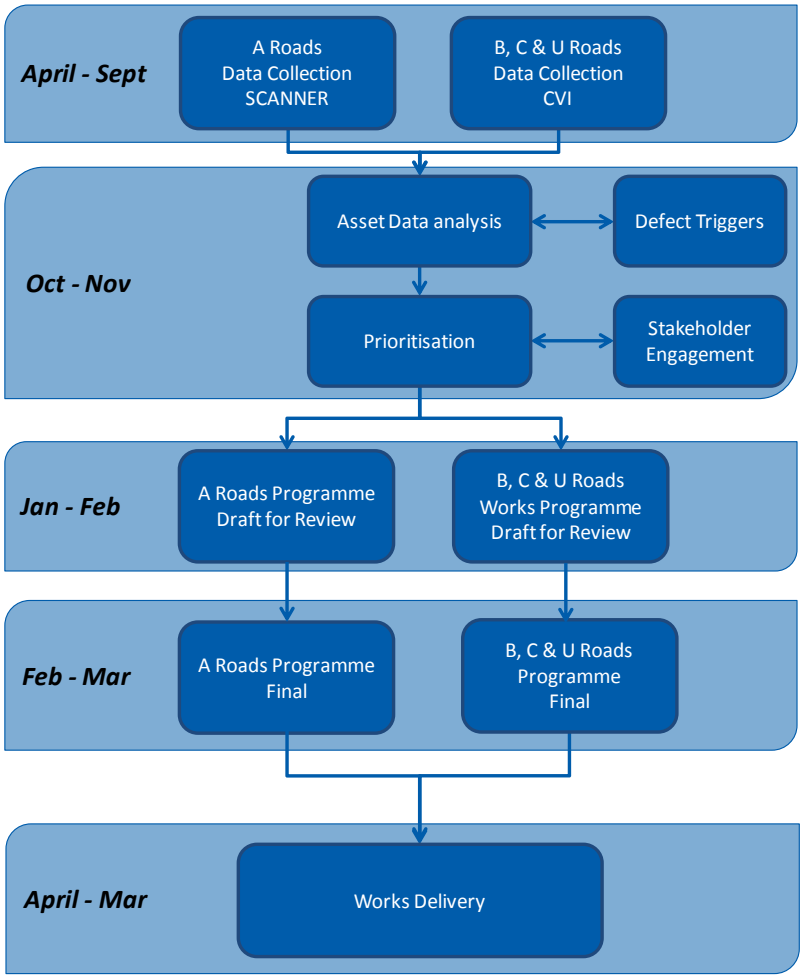
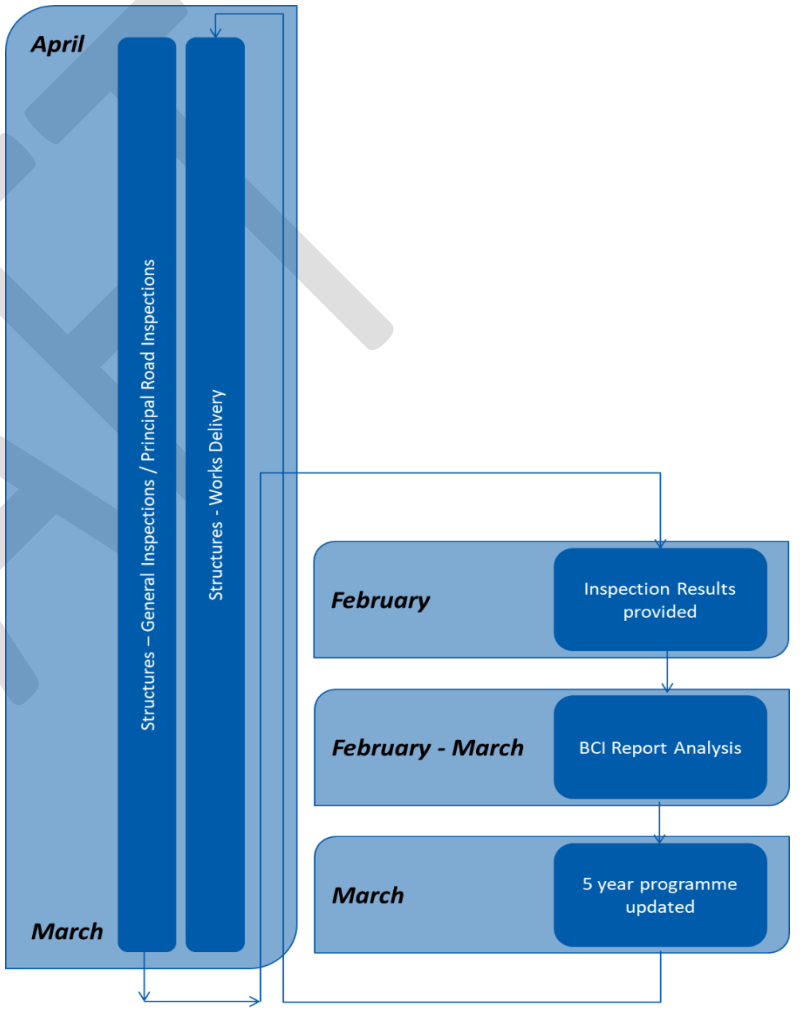


Figure H2: The works programme development process for highway structures.



HAMS MODULE I – COMMUNICATION & ENGAGEMENT

What... Stakeholder engagement is the process of involving those with an interest in how highway assets are maintained in management decision-making processes.

Stakeholders include both those who have an ability to influence management decisions and those who are affected by the decisions taken. Walsall's stakeholders include highway users (pedestrians, cyclists and drivers) and those dependent upon highway users (for example local businesses, who may be reliant upon the highways to receive deliveries or to ensure staff and customers can reach their premises, and vulnerable groups, who may be reliant on support services reaching them via the highway).

While stakeholders can and should influence asset management decision-making process, safety concerns remain Walsall's number one priority. It is vital that the asset is maintained in a manner which provides a safe network, to fulfil the authority's statutory duty.

Why... Engaging with stakeholders is essential to ensure that end-user needs are well understood, and a wide range of stakeholders have the opportunity to inform asset management decision-making processes. It is necessary to ensure the costs and benefits of highway asset management are shared equitably and investment activity can be focused where it is needed most.

Local community empowerment through choice in service delivery is not easily achieved, but in accordance with the spirit expressed within the local government white paper, 'Strong and Prosperous Communities', increased emphasis on local decision-making has become more important. This is particularly true in the light of funding cuts implemented in recent years.

Who... The responsibilities for the 'Stakeholder Engagement' module lie with:

Leading Stakeholder Engagement	**Head of Planning, Transport and Engineering**
Updating & reporting module	**Highways Asset Manager**

The community groups engaged are:

- Mobility Forum
- Disability Forum
- Business communities
- Resident groups
- Cycle groups
- Others as required

How... Walsall has embraced a citizen-centric approach to service delivery through its, 'Putting the Citizen First' project. The project has adopted both Call Centre Association and Community Portal Principles. The Council's, 'Tell Us' system provides an online interface for customer and stakeholder enquiries and offers a direct forum through which complaints can be made regarding staff or performance in the delivery and management of services.

Information is provided to stakeholders through a variety of channels including the internet, press releases and media articles, a range of leaflets and strategy and policy documents. These are made available online and in print at public buildings, by letter, and are delivered in person to households or business affected by various programmes of works. Walsall's annual works programmes and key policy documents are published online each year, and stakeholders are given the opportunity to make comments on draft versions.

Communities are engaged through a neighbourhood management approach, which aims to improve communication mechanisms throughout the Borough. Six area partnerships, each with a dedicated neighbourhood manager, implement the new neighbourhood model at the local level.

In addition, Walsall participates in the National Highways and Transport (NHT) public satisfaction survey. The survey examines a

range of issues that cover different aspects of road and transport services across the Borough. The results of the NHT survey are available online, see the link provided in further information.

Reporting... The results published on the NHT survey website is the tool by which Walsall reports changes to its public satisfaction and investment needs.

Success Measures... Three of Walsall's performance measures assess success in achieving Walsall's objective of, 'Open engagement and communication channels'. These are:

- % of customer queries responded to on time
- % of letter drops completed ahead of work on time
- Level of customer satisfaction with condition of roads.

See also Module D, 'Performance Management'.

Further Information:
National Highways and Transportation website: www.nhtsurvey.org
Equalities Act 2010, Public-Sector Equality Duty

Case Study 1: Slaney Road

Back in 2011 in the case of public realm improvement works at Slaney Road, residents were extensively consulted with regard to retention of existing highway trees and provision of on street parking. In this case study example, advice was sought by the scheme designers on how the choice of materials met with the council's highway maintainability guidelines. This scheme demonstrated how designers and planners can take on board the views of local residents and how the choices for construction materials can be guided through the councils Highway Maintainability Audit.

Case Study 2: Town Centre Transport Package

Large capital projects such as the Town Centre Transport Package involve a highly coordinated approach to customer engagement at key stages during the delivery of the project. Prior to work starting on site there are public meetings backed up with advertising campaigns that include local newspapers, information boards and the internet. During the construction phase there are several stakeholder forums and focus groups that are used to disseminate information to both the public and commercial concerns; this is supported with letter drops, leaflets and advertising campaigns, with important traffic management bulletins being aired on local radio.

HAMS MODULE J – BENCHMARKING

What... Benchmarking is the process of systematically assessing how Walsall is performing in comparison to other similar authorities. It aims to identify best practice in asset management, so that Walsall can improve their own performance.

For the purposes of this HAMS, Walsall determines its own performance targets, and establishes strategies and investment needs to achieve the appropriate asset performance. Walsall's approach ensures it delivers what is best for its community.

Why... Benchmarking identifies good practice and enables Walsall to challenge the way it operates and delivers services. Walsall uses benchmarking to test its approach to managing highway assets. It looks at high performing authorities and routinely engages with neighbouring authorities to see how they operate differently. Where other authorities are outperforming Walsall, it is possible to analyse why other authorities are doing better and to use this understanding to improve Walsall's own processes. Benchmarking provides checks and balances to judge whether levels of investment are delivering the desired and expected outcomes.

Who... The responsibilities for the 'Benchmarking' module lie with:

Updating & reporting module	**Senior Engineer**

How... Walsall uses a variety of benchmarking documents and forums as follows:

- UKRLG Codes of Practice.
- National Performance Indicators.
- NHT Public Satisfaction Survey.

Reporting... The delivery of the various elements of benchmarking are ongoing throughout the year. As such it is not intended to provide detailed reporting, other than to ensure better ways of working are reflected in HAMS module updates.

To this end, such observations or major changes in performance compared to others will be noted in Walsall's Performance Management Framework in module D.

Success Measures... Success will be measured by ensuring Walsall remains at the forefront of delivering highway assets that meet the needs of the community in the most cost-effective and efficient manner.

Further Information:
National Performance Indicators, Single Data List
UKRLG Codes of Practice
NHT Public Satisfaction Survey

HAMS MODULE K – FINANCIAL MANAGEMENT & VALUATION

What... Asset valuation quantifies the financial value of all the highway assets that Walsall owns. The value of Walsall highway assets in 2017/18 was at £ 2,766.44 million including £1,239.2 million land value, making this the most valuable asset in the Council's portfolio.

Why... Walsall calculates asset valuation primarily for Whole of Government Accounts (WGA) annual reporting purposes. As the information used for financial reporting is compiled according to robust accounting principles and rigorous controls, it is a reliable source of high quality data that is also useful for asset management. The valuation process is also used internally for the following purposes:

- To provide an indication of the annual change in condition of the assets in monetary terms.
- To calculate the annual depreciation of the assets, which represents the annual consumption of service benefits and provides a measure of what on average needs to be spent year-on-year to maintain the assets in a steady-state.
- To produce transparent information for stakeholders, on the authority's management of its highway assets.

Who... The responsibilities for the 'Asset Valuation' module lie with:

Statutory Duty	**Head of Planning, Transport and Engineering**
Overall reporting	**Highways Asset Manager**
Updating & reporting module	**Senior Engineer**

How... Walsall has adopted asset valuation methods in line with the Chartered Institute of Public Finance and Accountancy's, 'Code of Practice on Highways Network Assets' (the Code, 2016) and associated guidance notes. The method used follows established accounting principles of reliability, comparability and reflects good engineering practice to support the best investment choices for maintenance and renewal.

The value of Walsall's highways assets is calculated on a depreciated replacement cost (DRC) basis in line with the Code. This is the current cost of replacing an asset with its modern equivalent, the gross replacement cost (GRC), less deductions for all physical deterioration and impairment. The difference between the GRC and DRC represents the cost of restoring the asset from its present condition to 'as new'.

It should be noted that the availability and reliability of data for each asset category determines the accuracy of the valuation process. See Module C, 'Asset Knowledge' for further information on data management.

Reporting... Walsall presents the valuation process, the calculations, and assumptions annually in an audited valuation report. Table K1 shows Walsall's highway asset valuation figures for 2017/18

Success Measures... Beyond the WGA requirements, Walsall utilise valuation to track the condition of highway assets. Knowing the change in value year-on-year helps Walsall better understand how effective the planned maintenance regimes are. With this knowledge, Walsall are better placed to present cost estimates for different levels of service, and to better understand the impact of those service levels on the end user. This, in turn, helps build a robust business case to access funding to ensure the highway network is fit for purpose and maintained as efficiently as possible.

Further Information:
Code of Practice on Highways Network Assets (2016)
Whole of Government Accounts Guidance, HM Treasury

Table K1: Walsall's asset valuation report figures for 2017/18.

Asset Group	GRC (£'000)	DRC (£'000)	Depreciation (£'000)	Depreciation %
Carriageways	£1,002,510	£906,083	£96,426	10%
Footways	£278,113	£251,056	£27,056	10%
Highway Structures	£149,588	£115,748	£33,840	23%
Street Lighting	£50,183	£21,632	£28,551	57%
Traffic Management	£22,787	£10,253	£12,534	55%
Street Furniture	£24,073	£16,622	£7,451	31%
Gross Replacement Cost (GRC)			£1,527,254	
Depreciated Replacement Cost (DRC)			£1,321,394	
Depreciation	13%		£205,858	

HAMS Module L – Improvement Action Plan

What... Walsall's improvement plan formally documents any significant gaps identified between current and desired asset management processes. It sets out an action plan to fill those significant gaps along with resources required, the anticipated outcome and benefits to be realised. The improvement plan is a central element of Walsall's continuous improvement programme. It seeks to enhance performance in pursuit of the Borough's desired asset management outcomes.

Why... Improvement leads to the provision of a better service, reduction of risk exposure and/or increased efficiency and financial savings. The need to implement improvements is particularly great in the current context of austerity measures and budget cuts.

Who... The responsibilities for the 'Implementation & Improvement Plan' module lie with:

Implement Asset Management	**Group Manager**
Maturity Assessment	**Highways Asset Manager**
Identify & deliver improvement actions	**Highways Asset Manager**
Updating & reporting module	**Senior Engineer**

How... Walsall undertakes continuous improvement according to ISO 55000 and as outlined in the HMEP – UKRLG Highway Infrastructure Asset Management Guidance (HIAMG) document (2013).

Gap analyses are carried out periodically, through Asset Management Maturity Assessments. These analyses identify strengths and areas where the Council needs to execute improvement actions in both the short- and long-term.

All staff are encouraged to identify potential process improvements on a continuous basis and through efficiency monitoring workshops. All ideas are logged and prioritised according to their potential impact on risk, cost and quality of service provision.

Reporting... Walsall will utilise the guidance published by the Institute of Asset Management in July 2015; "The self-assessment methodology" and will set up improvement measures against sections of this HAMS and will populate Table L1 with specific improvement actions.

Success Measures... At the time an innovation is proposed, a metric to measure its success following implementation is identified along with a timeline for realisation. A follow up review is conduced to assess the effectiveness and impact of the innovation.

Further Information:
Highway Infrastructure Asset Management Guidance document, HMEP – UKRLG, 2013
ISO 55000 – Asset Management

Table L1: Improvement Action Plan.

Module	Improvement Issue	Improvement Action	Responsibility	Time		
				2018/19	2019/20	Onward
Module D	Some gaps exist in bridge inspection and bridge management data, due to the retirement of Walsall's bridge engineer.	Secure consultancy input to update a structured programme of bridge inspections and data held in the BMX bridge management software.	Group Manager		✓	
Module C	Grip Tester data contract procurement mechanisms require updating. The West Midlands Skid Priority System (SPS) needs to migrate to a hosted operating environment with capability for bureau arrangements to secure the skills needed for setting/reviewing IL's and defining schemes. The West Midlands Skidding Resistance Strategy requires updating.	Coventry City Council are taking the lead on contract procurement arrangements for the West Midlands and shall be reviewing the Skid Prioritisation Software and Strategy documents as an integral part of this process	Highway Asset Manager		✓	
Module D	Staff resource levels for delivering highway safety inspections for the future should be reviewed to ensure that any additional demands resulting from the implementation of the revised Code can be met.	Engage with the Risk and Insurance team to make the case for additional investment in staffing to carry out routine highway safety inspections. Reduce the physical burden on safety inspectors to manageable levels in terms of km output's	Group Manager		✓	
Modules A to L	Asset management planning is an overseeing process that requires a broad range of skill-sets. The DfT's Self-Assessment funding mechanism recognises the investment required in the form of skills, expertise and leadership frameworks in order to merit the highest levels of grant allocation.	Walsall has a relatively small asset management team, it's therefore desirable that it collaborates with consultants into the future to ensure that improvements for asset management planning continues.	Group Manager		✓	
Module G	Potential exposure to risk concerning highway trees, inappropriately sized/located, causing trip hazards for pedestrians, or damage to drainage systems and adjacent properties.	A coherent strategy for removing inappropriate trees should be developed with Clean & Green.	Group Manager		✓	

Walsall Council

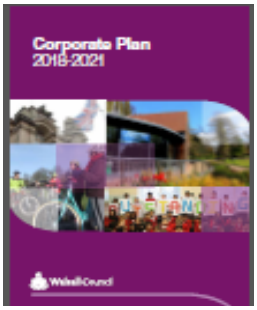
HIGHWAY MAINTENANCE MANAGEMENT PLAN

Contents:

1 – Introduction.

The highway and associated infrastructure is by far the most valuable asset managed and maintained by the Council and has an estimated 'As New' replacement value of approximately £1.35 Billion. The Council manages a highway network of 841km and adoption of asset management principles is widely recognised as an effective way to manage highway assets, it is promoted by the Department for Transport (DfT) and encouraged through the UK Roads Liaison Group 'Well-Managed Highway Infrastructure: A Code of Practice' (The Code). This Code sets out 36 Recommendations as key drivers for effective Highway Maintenance Management Planning.

This Highway Maintenance Management Plan is one of three core documents that form an integrated approach for delivering planned, routine and reactive maintenance services across Walsall's highway infrastructure assets. It aligns with the Council's Highway Asset Management Policy, sets out the Council's objectives for infrastructure management while describing how these compliment the Corporate Plan, visions, objectives and priorities. It is to be read in conjunction with the Council's Highways Asset Management Strategy which details the approach taken by the Council for developing and delivering asset and highway maintenance management planning practices:



Highway Asset Management Policy

⇩

Highway Asset Management Strategy

⇩

Highway Maintenance Management Plan

Together, this suite of documents outline how the Council will fulfil its statutory and regulatory duties as Highway Authority by developing management practices that aim to maximise Network Safety, Serviceability and Sustainability, within a customer services framework. It provides a framework for the Council's Financial Management processes for delivering highway infrastructure maintenance activities. In developing this approach the Council has captured long standing institutional knowledge and combined this with guidance and support from leading private sector asset management planning consultancies and good practice from neighbouring authorities.

"This Highway Maintenance Management Plan provides a reference point for those seeking information on aspects of maintenance policies and procedures, as well as being a resource for officers involved in procurement, provision or administration of the highway maintenance service. It highlights the areas where new initiatives have been introduced; revisions to policy or service provision within a risk based environment."

'Councillor Adrian Andrew – Deputy Leader & Portfolio Holder, Regeneration'.

Walsall's most significant Highway Infrastructure Assets include:

Carriageways	841km
Footways	1,301km
Public Rights of Way	98km
Street Lights	25,786
Road Gulley's	36,813
Traffic Signal Junctions	368
Bridges	117

Key Legislative and Good Practice drivers include:

- Highways Act 1980
- Railways and Transport Safety Act 2003
- Traffic Management Act 2004
- New Roads and Street Works Act 1991
- Countryside and Rights of Way Act 2000
- Transport Act 2000
- Road Traffic Regulations Act 1988
- Road Traffic Reduction Act 1997
- Flood and Water Management Act 2012
- Traffic Signs Regulations and General Directions 2016
- Railways and Transport Safety Act 2003
- Countryside and Rights of Way Act 2000
- Environmental Protection Act 1990
- Clean Neighbourhoods Act 2005
- Wildlife and Countryside Act 1981
- Health and Safety at Work Act 1974
- Management of Health and Safety at Work Regulations 1999
- Construction Design and Management Regulations (CDM) 2015
- Local Government Act 2003
- Disability Discriminations Act 2005
- Equalities Act 2010
- Criminal Justice and Public Order Act 1994
- Human Rights Act 1998
- Civil Contingencies Act 2004
- Well-Managed Highway Infrastructure: A Code of Practice 2016
- CIPFA Code of Practice on Transport Infrastructure Assets 2013
- HMEP Infrastructure Asset Management Guidance

Walsall's Key Documents that Support Highway Maintenance Management Planning Include:

Walsall Council Corporate Plan

[Insert Link] Highway Asset Management Policy

[Insert Link] Highway Asset Management Strategy

The document suite developed for delivering Highway Infrastructure Asset and Maintenance Management Practices are designed to meet the Code of Practice in the following ways:

Recommendation 1	**Use Of The Code**
The Code, in conjunction with the UKRLG Highway Infrastructure Asset Management Guidance, should be used as the starting point against which to develop, review and formally approve highway infrastructure maintenance policy and to identify and formally approve the nature and any extent of any variations.	

Recommendation 2	**Asset Management Framework**
An Asset Management Framework should be developed and endorsed by senior decision makers. All activities outlined in the Framework should be documented.	

Recommendation 3	**Asset Management Policy And Strategy**
An Asset Management Policy and Strategy should be developed and published. These should align with the Corporate Vision and demonstrate the contribution Asset Management makes towards achieving this vision.	

2. Asset Inventory and Network Hierarchies.

Working within our Information Governance Policy the core objectives of highway infrastructure maintenance management revolve around Network Safety, Network Serviceability and Customer Service. To serve these objectives the effective compilation of asset knowledge comprising mainly of inventory, safety and serviceability data is essential.

Highway Authorities have a legal duty to keep a register of streets that are maintainable at public expense and a requirement to maintain information for the purposes of:

- Identifying streets described as traffic sensitive, where work should be avoided at certain times of the day.
- Identifying structures and other features described as special engineering difficulty, requiring consideration when work is planned.
- Identifying reinstatement categories used by statutory undertakers in the reinstatement of their street works.

To support effective asset management planning the Council supplements its register of highways assets with more detailed inventory data defining the scale, nature and use of its assets, this data helps the Council to:

- Monitor and report condition
- Assess the expected lives of individual asset groups
- Produce performance data
- Model future maintenance options
- Identify future funding needs and establish works programmes
- Investigate and manage risk
- Report asset valuation
- Optimise cross boundary service provision
- Support industry research and innovation
- Respond to customer queries/complaints

Data can be an expensive commodity to collate, maintain and update such that it can be relied upon to support performance reporting and decision making. The Council adopts a pragmatic approach to data management to ensure where practical it can be used for multiple tasks and that its level of sophistication meets needs.

Hierarchy is a significant attribute for most network data, it is defined by function and it forms the foundation of risk based strategies, it is crucial for establishing levels of service for the council's statutory network management role and for managing its co-ordination and regulatory duties.

There is a firm need to define hierarchies for resilience planning and winter service operations, hierarchy provides a starting point that can be modified to accommodate local operational factors, including across our boundaries with neighbouring authorities, so that reasonable continuity of levels of service can be expected.

Across all asset groups, many hierarchies descend from historically-established or nationally derived forms of classification. Wherever practical the network hierarchies are dynamic and regularly reviewed to cater for changes in network characteristics and functionality. This is to ensure maintenance strategies reflect current situations rather than when hierarchies were originally developed and defined.

Table 1 of the Code of Practice identifies a reference point from which to develop local carriageway hierarchies:

Cat	Category	Type/General Description
2	Strategic Route	Trunk & some Principal 'A' class road between primary destinations
3a	Main Distributor	Major Urban Network & Inter Primary Links. Short – medium distance traffic
3b	Secondary Distributor	B & C class roads and some unclassified urban routes carrying bus, HGV & local traffic with frontage access & frequent junctions
4a	Link Road	Roads linking between the Main & Secondary Distributor Network with frontage access & frequent junctions
4b	Local Access	Roads serving very limited number of properties

Table 2 of the Code of Practice identifies a reference point from which to develop local footway hierarchies:

Cat	Category	Type/General Description
1a	Prestige Walking Zones	Very busy areas of towns and cities with high public space and street scene contribution
1	Primary Walking Routes	Busy urban shopping 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
*	Minor Footways	Little used rural footways serving very limited numbers of properties

The Council's carriageway and footway hierarchies align with the Code reference points, but make no distinction between Local Access Footways and Minor Footways. In addition during all carriageway and footway safety inspections an 'on-site' reality check is carried out by Highway Safety Inspectors to confirm that classification reflects current usage:- variations are applied where risk based judgements confirm their need.

The Council annually invests in data collection for many of its key systems/processes:

System	Inventories/Asset Coverage
NSG	Register of highways assets
GIS Spatial Mapping	Highway extents; road classification; works history; road signs; high friction surfaces; structures; flood risk zones; PRoW's; cycleways
UKPMS	Carriageway & footway: SCANNER; CVI; DVI; FNS; Griptester surveys
Mayrise	Highway safety inspections; works orders; CRM customer contacts; street works co-ordination
Bridge Management eXpert	Highway structures and bridge inspections
Kaarbontech	Road gully inventory and maintenance
GIS Spatial Mapping	Street lighting/illuminated signs inventory; Highway extents.
Ezytreev	Trees inventory

The Councils accompanying Highways Asset Management Strategy outlines the inventory held by the Council for its significant infrastructure assets along with their associated confidence levels. The Council collects asset inventory to quantify the extent, scope, scale, and nature of highway assets and uses this data to supplement other Highway Asset Management Strategy modules to share data both internally and externally. This includes hierarchy consistency, reporting asset performance and informing risk investment models.

All highway inventory data held by the council is managed in accordance with appropriate data protection protocols, licensing and data sharing/processing agreements, and a corporate data management competency training package is also set in place.

Typical highways Inventory data includes:

Asset Group	Asset Type	Length	Area
Carriageways	A Roads	98km	1,027,000 m^2
	B Roads	41km	335,000m^2
	C Roads	11 km	101,000m^2
	U Roads	691km	4,351,000m^2

Asset Group	Asset Type	Length	Area
Footways	Prestige Zones	40km	116,840m^2
	Secondary Zones	434km	1,083,000m^2
	Link/Access Zones	1,240km	2,522,000m^2

Asset Group	Asset Type	Number	Area
Bridges	Concrete, Single Span	27	3,564m^2
	Brick Arch, Single Span	8	1,092m^2
	Steel Deck, Single Span	25	3,750m^2
	Concrete, Medium Span	16	4,896m^2
	Concrete, Large/Extra Large Span	5	1,920m^2
	Pedestrian/Cycle, Single Span	36	1,440m^2

Asset Group	Asset Type	Number
Street Lighting	Columns	25,835
	High Mast Columns	4
	Wall Mounted Units	126
	Feeder Pillars	192
	Illuminated Bollards	938
	Externally Illuminated Signs	2,597
	Central Refuge Beacons	158
	Other	222

Asset Group	Asset Type	Number
Urban Traffic Control	Puffin Crossing	93
	Pelican Crossing	28
	Toucan Crossing	17
	Wig Wags	3
	VMS	6
	CCTV	42
	Traffic Signals with Pedestrian Facilities	248
	Traffic Signals without Pedestrian Facilities	120

The approach developed for the collection and management of 'Highway Asset Inventory and Network Hierarchies' is designed to meet the Code in the following ways:

Recommendation 5	Consistency With Other Authorities
To ensure that users' reasonable expectations for consistency are taken into account, the approach of other local and strategic highway and transport authorities, especially those with integrated or adjoining networks, should be considered when developing highway infrastructure maintenance policies.	

Recommendation 9	Network Inventory
A detailed inventory or register of highways assets, together with information on their scale, nature and use, should be maintained. The nature and extent of inventory collected should be fit for purpose and meet business needs. Where data or information held is considered sensitive, this should be managed in a security-minded way.	

Recommendation 10	Asset Data Management
The quality, currency, appropriateness and completeness of all data supporting asset management should be regularly reviewed. An asset register should be maintained that stores, manages and reports all relevant asset data.	

Recommendation 11	Asset Management Systems
Asset management systems should be sustainable and able to support the information required to enable asset management. Systems should be accessible to relevant staff and, where appropriate, support the provision of information for stakeholders.	

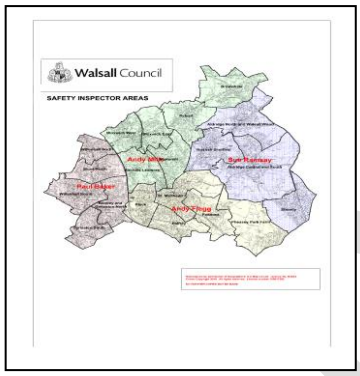
Recommendation 12	Network Hierarchy
A network hierarchy, or a series of related hierarchies, should be defined which include all elements of the highway network, including carriageways, footways, cycle routes, structures, lighting and rights of way. The hierarchy should take into account current and expected use, resilience, and local economic and social factors such as industry, schools, hospitals and similar, as well as the desirability of continuity and of a consistent approach for walking and cycling.	

3. Asset Inspections/Condition Standards.

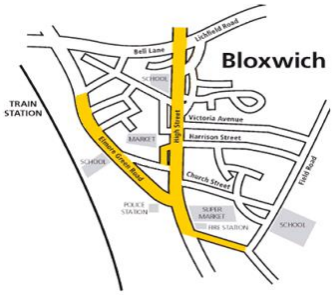
The Council as highway authority has a duty under the Highways Act 1980 to maintain public highways to an adequate level of repair. So it is important that inspection and assessment regimes are aligned to the authorities risk management policies to maximise safety for road users and strengthen our ability to repudiate claims and fulfil our requirements with regard to Network Safety, Serviceability and Sustainability.

The following inspections are undertaken to meet the Authority's statutory obligations and mitigate risk:

Highway Safety Inspections.
Highway Safety Inspections are carried out by a team of Highway Safety Inspectors employed by the Council. Their purpose is to identify defects that are likely to create danger or serious inconvenience to users of the network. Inspections include: carriageways and footways running/walking/cycling surfaces; kerbs; verges; street furniture; signs and road markings; drainage, gullies/ironwork; bollards, guard rails and safety fencing.



Borough & District Centre Inspection Zones



Highway safety inspections are programmed across four geographical zones, these are supplemented with additional inspections for District Centres: Aldridge; Bloxwich; Brownhills; Darlaston; Walsall and Willenhall. Inspections are normally walked but driven inspections may also be carried out by two persons where network conditions dictate.

Frequencies for inspections are derived from hierarchy established from a network classification review undertaken in 2015, flexibility to raise/lower frequencies in response to risk based need assessments is built in as required. Where practical carriageways and footways are inspected at the same time. When hierarchies for carriageways and footways conflict, the frequency of inspection is set in accordance with the highest frequency required. Hierarchies are subject to an 'on-site' reality check during the course of inspections being undertaken with any necessary amendments/variations applied.

The Highway Safety Inspection manual, is available on line, and describes in detail the approach to dealing with highway defects and the timescales for response.

[Insert Link] Safety Inspection Manual

Walsall's regime for Carriageway Safety Inspection is:

Feature	Category	Frequency
Roads	Strategic Route	1 Month
	Main Distributor	1 Month
	Secondary Distributor	1 Month
	Link Road	3 Months
	Local Access	1 Year

Walsall's regime for Footway Safety Inspection is:

Feature	Category	Frequency
Footways	Prestige Area	1 Month
	Primary Walking Route	1 Month
	Secondary Walking Route	3 Months
	Link Footway	6 Months
	Local Access Footway	1 Year

Defects meeting investigatory levels are risk assessed by inspectors using a risk matrix approach:

Probability ⇩ Impact ⇨	Very Low (1)	Low (2)	Medium (3)	High (4)
Negligible (1)	1	2	3	4
Low (2)	2	4	6	8
Medium (3)	3	6	9	12
High (4)	4	8	12	16

Cat 2 Low Risk Response	Cat 2 Medium Risk Response	Cat 1 (24 hr) Response	Cat 1 (1hr) Response
1-3 Within 6 Months	4-6 Within 5 Working Days	8-12 Within 24 Hours	16 Within 1 Hour

When applying this approach highway safety inspectors shall exercise their judgement, discretion and training in deciding whether to record individual defects and in which category to place them. This process adopted triggers the following defect response times:

Defect Risk Category	Description	Response Time
Cat 1 (1 hr)	Where urgent repair is required	1 hour
Cat 1 (24 hrs)	Where temporary repair within traffic sensitive areas is required	24 hours
Cat 2 (Medium Risk)	Where the defect criteria meets with the safety inspection manual investigatory levels	5 working days
Cat 2 (Low Risk)	Where programmed reactive solution is required	6 months

All highway safety inspections and any associated defect repairs are routinely recorded and fully documented within the Councils MAYRISE system. The data is updated using mobile technology employing real-time logging of defects.

Highway Condition Inspections.

The primary purpose of these inspections is to collect data so that the Council can effectively monitor highway condition at a strategic network level, measure performance and report asset value. The data collected is used in asset lifecycle planning and supports the compilation of future maintenance programmes.

The specialised nature of highway condition surveys requires Walsall Council to procure the service through the private sector, using consultancies employing competent accredited: survey personnel; survey vehicles; survey collection devices/software; data processing platforms.

The Council undertakes highway condition surveys in accordance with the following frequencies:

Carriageways				
Annual Coverage ⇨ Survey Type ⇩	Principal A Roads	Non Principal B Roads	Non Principal C Roads	Unclassified Roads
SCANNER	50%	50%	100%	N/A
CVI	N/A	N/A	N/A	25%
Griptester	100%	Site Specific	Site Specific	Site Specific

Footways		
Annual Coverage ⇨ Survey Type ⇩	High Amenity Footways	Low Amenity Footways
DVI	50%	N/A
FNS	N/A	25%

The data collected is processed and analysed using the Councils UKPMS pavement management software, it informs the Council regarding current condition for its long term and short term decision making, while enabling trend analysis and informing lifecycle expectations.

Structural condition surveys undertaken include:

- **SCANNER**
  Machine based traffic speed surveys that collect data on transverse and longitudinal profiles, texture, rutting and cracking of carriageways. They are undertaken using specialist survey vehicles using real time processing for site condition readings.

- **CVI**
  Visual surveys carried out from a slow moving vehicle designed to cover large parts of the network on a regular basis by categorising lengths of features having generally consistent defectiveness.

- **DVI**
  Visual surveys carried out on streets that incorporate high amenity footways where more detailed routine inspection is considered to be required.

- **FNS**
  Visual surveys carried out on streets that incorporate low amenity footways where less detailed routine inspection is considered to be required.

These inspections don't identify individual defects and their risk, instead they gather overall condition data to support informed decision making around investment need.

- **Grip Tester**
  Machine based traffic speed survey used to collect skidding resistance data especially for higher risk event situations due to speed, geometry, bends, steep gradients, major junctions and pedestrian crossing locations mainly on Classified Principal A Roads. The Council analyses this data in line with the West Midlands Skidding Resistance Strategy to associate on-site grip values with accident records. Specialist consultants are engaged for setting and reviewing Investigatory Levels to secure the professional competency standards required.

Service Inspections

This inspection category focuses on whether the network meets the needs of users. It includes inspections for regulatory purposes intended to maintain network availability, reliability and integrity, including:

- **NRSWA**
  Utility companies operate under statutory powers, the New Roads and Street Works Act 1991 (NRSWA) co-ordinates and controls the works carried out by utility companies. Under section 72 of NRSWA Highway Authorities are empowered to carry out investigation to check whether or not an undertaker has complied with the duties placed upon it with respect to reinstatement of the street. Two inspection procedures are specifically provided for within the Act:

Sample Inspections: This involves inspections of a structured random sample of various stages of excavation and reinstatement, and completion.

Defect Inspections: A procedure for dealing with individual reinstatements which do not comply with reinstatement specification, including joint inspections between the council and the utilities undertaker to determine the remedial action required.

- **Bridge Inspections**
  General bridge inspections are carried out on an approximate two year cycle, although some structures may be subject to more frequent inspections depending on risk, condition, construction or accessibility.

  Principal Bridge Inspections are also carried out as appropriate following occurrences of crash damage and flooding, or on all major structures at six-year intervals. Bridge inspections may be undertaken using external consultants via a framework contract where essential competency requirements need to be met.

- **Street Lighting, Illuminated Signs and Bollards**
  As part of Walsall's Public Lighting PFI contract, maintenance of electrical components is carried out by Amey LG Ltd, who undertake: optical inspections; electrical testing; lamp changing at scheduled intervals to coincide with internal inspections and cleaning.

- **Fences and Barriers**
  Inspecting and testing of safety barriers with respect to mounting height, surface protection and structural condition are carried out where road traffic accident damage is suspected or where tensioning of pre-tensioned units is needed.

The approach developed for 'Asset Inspections and Condition Standards' is designed to meet the Code in the following ways:

Recommendation 16	**Inspections**
A risk-based inspection regime, including regular safety inspections, should be developed and implemented for all highway assets.	

Recommendation 17	**Condition Surveys**
An asset condition survey regime, based on asset management needs and any statutory reporting requirements, should be developed and implemented.	

Recommendation 18	**Management Systems and Claims**
Records should be kept of all activities, particularly safety inspections, including the time and nature of any response, and procedures established to ensure efficient management of claims whilst protecting the authority from unjustified or fraudulent claims.	

Recommendation 19	**Defect Repair**
A risk-based defect repair regime should be developed and implemented for all highways assets.	

4. Asset Performance.

The Council has an established Corporate Performance Management Framework, which recognises that we are here to support the people of Walsall and all other stakeholders. It's activities are undertaken through the use of limited public so investment decisions need to be made from an informed position to generate opportunities for maximising efficiency wherever possible. The performance management framework aims to provide clarity, consistency and intelligence led decision making helping the Council to identify and manage risks and meet corporate visions and objectives. Embedding effective performance management provides:

- Defined and prioritised goals with resources targeted and allocated effectively.
- Outcomes are more clearly identified for local people.
- Ensures the council and its partners achieve what they set out to do.
- Establish an evidence base against which to benchmark improved decision making and resource allocation.

For tracking and measuring the delivery of outcomes, we must ensure that the service data compiled is sufficiently robust to connect the frontline services with the strategic objectives of the Council, so that priorities are delivered by taking the actions required to meet the needs of customers. Where data or the review of data relates to 'network safety' specialist consultants shall be engaged whenever competency requirements dictate a need.

The quality and accuracy of data is paramount, especially where it highlights customer needs and shapes the priorities of the Council, data which is of poor quality could lead to the council targeting the wrong priorities, skew performance measures and mislead decision making.

Through highways asset management planning processes the Council aims to identify:

- Where do we want to be?
- How will we do it?
- How are we doing?
- How do we need to act differently?

Module D of the Council's Highway Asset Management Strategy – Performance Management, outlines 'targets and measures' for our most significant asset groups, and defines Red, Amber and Green levels of associated risk. This performance dashboard is used to ensure that the Council focuses its strategy and investment into areas that most positively impact upon the highest level drivers, where the greatest risk lies.

The Council uses nationally acknowledged, industry recognised, and accredited forms of data collection and performance monitoring measures to establish the condition of infrastructure assets, this includes outputs from the National Highway & Transportation Survey (NHT) and Customer Quality Care analysis (CQC).

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These Performance monitoring mechanisms help the council to monitor levels of:

- Resilience on the network
- Vibrant and healthy public realm
- Safe, Serviceable and Sustainable network
- Network Accessibility
- Open Engagement and Communication

The performance data compiled and managed by the council is periodically reviewed to ensure it achieves the desired robustness and reliability on a number of levels, including:

- Survey instructions to consultants and contractors
- Selection/appointment of inspectors, consultants and contractors
- Training/accreditation for inspectors, consultants, contractors and systems
- Specification of procurement and surveys
- Survey procedures and auditing processes
- Data collection devices and software
- Data processing software
- Maintenance and calibration of survey equipment

Current Asset Performance Monitoring undertaken in support of highway infrastructure management activities by the Council includes:

RCI 130-01	Condition of Classified Principal A Roads
RCI 130-02	Condition of Classified Non Principal B & C Roads
BVPI 224b	Condition of Unclassified Roads
BVPI 187	Condition of High Amenity Footways
FNS HI	Condition of Low Amenity Footways
DfT	Skidding Resistance Survey
DfT	Carriageway Work Done Survey
NHT	Network Public Satisfaction Survey
NHT	Customer Quality Cost Survey
APSE	Performance Networks Road Asset Management Data Survey
HISC	Contract Key Performance Indicators (KPI's)
Contact Centre	Complaints Monitoring
Risk & Insurance	Third Party Claims Monitoring
Contractor	Scheme Satisfaction Monitoring
HAMFIG	West Midlands Regional Benchmarking
Kaarbontech	Gully Cleansing Performance Dashboard
GIS	Work History, Engineering Programme Inspections, Complaints, Public Rights oy Way, Cycle Tracks

The Council's Highway and Infrastructure Services Contract (HISC) employs a robust set of contract Key Performance Indicators (KPI'S) and Operational Performance indicators (OPI's) to measure, monitor and manage service delivery, including:

- People, staff and social values
- Planned maintenance scheme satisfaction surveys
- Financial performance
- Health & safety, environment & recycling
- Structural, preventative, emergency, reactive and cyclic maintenance
- Winter maintenance
- Bridge maintenance
- Major and minor improvements scheme monitoring

The data feeds into the performance management framework and informs highways asset management decisions within a systematic and transparent framework to support our key financial planning decisions using lifecycle modelling predictions wherever practical. It also supports the development of the Council's Highway Asset Management Strategy and associated Maintenance Management Improvement Planning processes.

The approach adopted to measure, monitor and review 'Asset Performance' is designed to meet the Code in the following ways:

Recommendation 26	**Performance Management Framework**
A performance management framework should be developed that is clear and accessible to stakeholders as appropriate and supports the asset management strategy.	

Recommendation 27	**Performance Monitoring**
The performance of the Asset Management Framework should be monitored and reported. It should be reviewed regularly by senior decision makers and when appropriate, improvement actions should be taken.	

Recommendation 28	**Financial Plans**
Financial plans should be prepared for all highway maintenance activities covering short, medium and long term horizons.	

Recommendation 29	**Lifecycle Plans**
Lifecycle planning principles should be used to review the level of funding, support investment decisions and substantiate the need for appropriate and long term investment.	

5. Maintenance Strategies, Programmes and Priorities.

The Council's highway infrastructure management obligations span across a diverse range of asset groups, including: carriageways; footways; street lighting and illuminated bollards; bridges and structures; drainage; street signs; urban traffic control; high friction surfaces; street furniture; barriers and guardrails.

The priorities for respective asset types are most often determined by the outcome of safety inspections, service inspections or condition surveys assessed using appropriate risk factors, any maintenance responses required will normally fall into one of the following categories:

- **Programmed Maintenance**
  Providing forward works programmes using lifecycles and condition data as part of a prioritisation matrix where practical, such as structural or preventative maintenance schemes.
- **Planned Maintenance**
  Attending to defects and other less urgent matters that may benefit from further planning leading to permanent repair, such as localised patching repairs.
- **Emergency/Reactive Maintenance**
  Attending to defects and other safety matters that require urgent action, such as a missing road gully cover. The response provided shall depend upon operational practicalities which may include fencing off and guarding, or repairs of a temporary nature where required.
- **Routine/Cyclical Maintenance**
  Providing locally defined levels of service, such as gully cleansing.
- **Regulatory Functions**
  Relating to occupation, interference or obstruction of the network, such as statutory undertakers street works co-ordination.
- **Winter Services**
  Providing locally defined levels of service, such as precautionary salting runs or the filling of grit bins.

The Council's Corporate Budget Plan, and Treasury Management & Investment Strategy identify high level budget proposals. The Council then determines how the funds available to it for highway asset maintenance should be allocated across many different asset types and then select the most appropriate and beneficial maintenance activities for those asset types. The treatments and timing of intervention are determined by identifying the most efficient means of meeting the required performance targets.

Modules G and H of the Highway Asset Management Strategy outline the approach for the development of maintenance strategies. Compilation of Forward Works Programmes are based primarily around an understanding of current asset condition, associated risks, lifecycle needs, and the likely social/commercial impact of our works.

Developed strategies are reviewed to accommodate, where possible, new treatment options, materials or technological developments that come onto the market. When financial resources are limited, potential maintenance schemes may need to compete for places within Forward Works Programmes.

Programmed Maintenance.
The Council's largest maintenance funding commitment is directed to its carriageway and footway structural resurfacing programmes, which are compiled using a Targeted Assessment and Ranking (TAR) prioritisation tool. This considers a range of risk related factors, including:

- Local Priority
- Commercial Impact
- Social Impact
- Safety Inspector Priority
- Partnership Management Priority
- DfT Road Classification
- DfT Road Hierarchy
- Traffic Sensitivity
- UKPMS Ranking
- Engineering Programme Inspection (EPI) Ranking
- No. of Pothole Repairs
- No. of Risk & Insurance Claims
- No. of Public Complaints
- Delayed/Deferred Scheme
- Co-ordinated Schemes – Including Cross Asset Requirements
- Estates Management Schemes
- Recommended Treatment Year

The TAR is reviewed annually to provide a costed long term programme by scoring each individual scheme which can then be used to rank the highest priorities of required maintenance locations, so that sites posing the greatest risk are treated. From this, the annual carriageway and footway maintenance programmes are derived and published on the Council's website.

To facilitate consideration of both the current and future maintenance costs associated with the delivery of planned maintenance schemes, the Council has developed and embedded a robust Highway Maintainability Audit procedure.

Preventative Maintenance.
Lifecycle planning modelling and industry best practice guidance such as the 'HMEP Potholes Review - Prevention and a Better Cure', confirm that intervening at the right time will significantly reduce the amount of potholes forming and will help to prevent bigger and more costly problems occurring later.

Prudent management of carriageway and footway assets requires the use of cost effective preventative maintenance treatments such as micro surfacing and surface dressing. Although not always popular with local residents or highway users, preventative treatments combined with targeted planned patching works form an essential maintenance strategy for prolonging the life of carriageway and footway surfaces across our highway network.

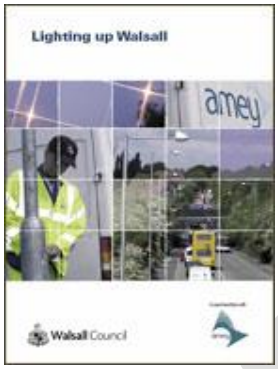
The Council develops flexible and responsive preventative maintenance programmes annually, using processed condition data and Engineering Programme Inspections (EPI), which are then fully integrated within an Estates Management based planning approach.

Emergency/Reactive Maintenance.

Emergency and Reactive Maintenance mainly involves rectifying Category 1 and Category 2 defects and other matters requiring attention, usually arising from inspections or public complaints. Such defects often involve a degree of urgency, with some having the potential for serious consequences for which priorities will almost exclusively be determined on the basis of risk, to determine the operational practicalities for:

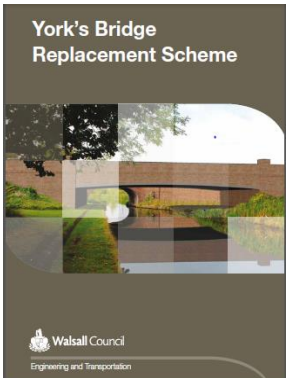
- Sign, guard or protect to make safe
- Provide an initial temporary repair
- Provide a permanent repair

For some other key asset groups such as street lighting and illuminated signs/bollards, the Council has secured the services of Amey LG Ltd through a Private Finance Initiative (PFI), which started in April 2002 and will operate for a 26 year period. The main aim of the PFI is to replace the ageing lighting stock, improve road safety, and reduce the fear of crime.



Walsall Council Street Lighting Strategy

All major structures, bridges and culverts are managed in accordance with the recommendations set out in the Design Manual for Roads and Bridges. The Council undertakes principal bridge inspections every six years and general inspections every two years. The current forward works programme is based largely upon the findings of structural inspections, and is also influenced by the national transportation emphasis for the primary route network and is limited by the historical reduction of capital funding, which has resulted in the need to impose weight restrictions and other interim measures at some locations.



'Information regarding scheme specific Bridge Replacement works are published on the councils Transportation & Streets website'.

The approach adopted for the development of 'Maintenance Strategies, Programmes and Priorities' is designed to meet the Code in the following areas:

Recommendation 6	**An Integrated Framework**
The highway network should be considered as an integrated set of assets when developing highway infrastructure maintenance policies.	

Recommendation 13	**Whole Life / Designing For Maintenance**
Authorities should take whole life costs into consideration when assessing options for maintenance, new and improved highway schemes. The future maintenance costs of such new infrastructure are therefore a prime consideration.	

Recommendation 30	**Cross Asset Priorities**
In developing priorities and programmes, consideration should be given to prioritising across asset groups as well as within them.	

Recommendation 31	**Works Programming**
A prioritised forward works programme for a rolling period of three to five years should be developed and updated regularly.	

6. Risk Based Practices.

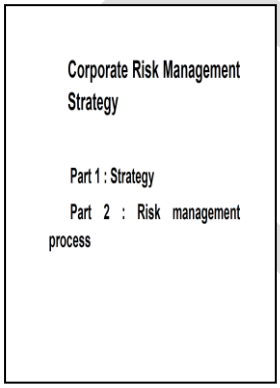
The Code encourages Council's to account for the management of current and future risk associated with highway assets and embed this within its approach to asset management. This ensures strategic, tactical and operational risks are considered and appropriate mitigation measures implemented.

The Council adopts risk management regimes for the 'significant' aspects of its highway maintenance management planning, including: procuring services; investment modelling; operations; information management; setting levels of service; resilience; safety and condition inspections; and for determining localised defect repair priorities and establishing forward programmes of work.

The Risk Based Approach is founded on:

- Aligning the Council's legislative requirements and corporate objectives against the management of risk.
- Recognising risk for the highway service and the likely significance for users.
- Managing inventory to support effective service delivery.
- Establishing flexible hierarchies, levels of service and making cases for funding.
- Investing in staff or consultancy services to secure competency, and monitoring performance to make informed procurement decisions for delivering our service.

Organisationally the Council operates a Corporate Risk Management Strategy which has been developed over a number of years. It outlines the governance arrangements set in place for risk management strategies and processes embedded throughout the Council. All managers within the Council have a role to play in the identification of risks within their own areas of activity and expertise, including: service delivery, project risks, strategy, and the effective management of those risks as part of the Annual Governance Statement process.



Independent assurance and scrutiny of the adequacy of the risk management strategy and processes rests with the Audit Committee. It is the role of the Audit Committee to seek assurance that action is being taken to identify and manage risks effectively and that the strategy and processes that underpin this are appropriate and fit for purpose.

Risk management Policy Statement
"It is the policy of the Council to identify, analyse and economically control the risks that threaten the objectives (both strategic and operational) or assets of the Council".

The aims in achieving this are to:-

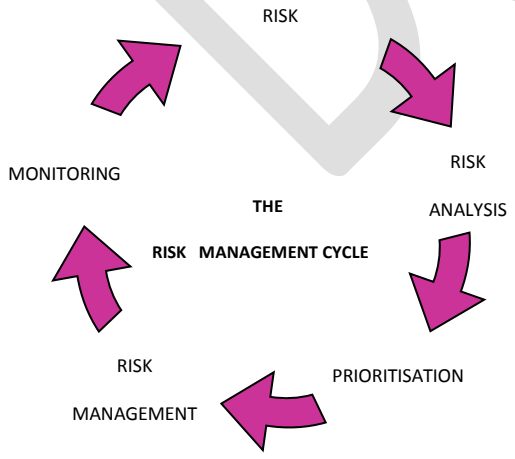
- Ensure that service delivery is not disrupted
- Provided a safe environment for those who come into contact with the Council
- Take all reasonable steps in the management of risk
- Protect the assets of the Council

When implementing this, the policy requires the Council to:-

- Identify significant risks that threaten the objectives or assets of the Council
- Evaluate the consequences of the identified risks on the council in terms of their likelihood and impact
- Take reasonable steps to reduce the likelihood and/or impact of the identified risks. Where it is not economically prudent to control identified risks further we will: Retain the risk where it is economically advantageous to do so or transfer the risk to a third party via contract or an insurance arrangement
- Establish a corporate risk management strategy and process
- Provide training, guidance and support to Officers and Members to help them understand and implement the policy in a consistent manner

A key goal for risk management is to allow business risks to be taken within a structured and transparent framework that encourages the taking of 'appropriate risks. The risk management process is the tool that is used to demonstrate that risks have been considered in an appropriate, structured and consistent way. The council recognises that there are risks associated with a large number of activities and that it has a duty to manage these risks in a balanced, structured and cost effective way.

The Council's highway Asset Management Strategy identifies more clearly the key components of risk processes relating to the highway infrastructure by identifying the framework that engineers have developed for: communication, consultation, and monitoring mechanisms following the principles outlined within the Corporate Risk Management Cycle.



Walsall Council Risk Management Cycle.

During the development of its Asset Management Strategy the Council has worked jointly with 'one of the country's leading experts of asset management planning - Metis. As part of this collaboration Metis were commissioned to conduct a maturity assessment of the Council's compliance with the new Code of Practice via a series of workshop to identify any significant gaps in existing practices.

The maturity assessment and its associated Action Plan was then used to direct the highways asset management strategy toward the adoption of risk based planning methodologies. The strategy employs a modular approach that seeks to apply risk focus to the core issues of highway asset management planning, including: highway infrastructure Performance Management and Benchmarking Framework's; Asset Information and Competencies Strategies; Lifecycle Planning alongside Investment Modelling and Maintenance Strategies.

This strategic overview is intended to provide the Council's asset managers and custodians of resources with the data required to make informed decisions about the needs of highway assets over the long term, so that the potential impact of any significant decisions can be predicted, understood and reviewed.

Risk based decision making supports our approach to highway infrastructure management from the highest strategic and tactical levels through to the individual defects on the ground. It is not practical to eliminate all risk, instead the Council aims to reduce it to acceptable levels and set in place any mitigating actions that may be required to manage it.
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The approach adopted for managing 'Risk Based Practices' is designed to meet the Code in the following areas:

Recommendation 7	**Risk Based Approach**
A risk based approach should be adopted for all aspects of highway infrastructure management, including setting levels of service, inspections, responses, resilience, priorities and programmes.	

Recommendation 8	**Information Management**
Information to support a risk based approach to highway management should be collected, managed and made available in ways that are sustainable, secure, meet any statutory obligations, and, where appropriate, facilitate transparency for network users.	

Recommendation 14	**Risk Management**
The management of current and future risk associated with assets should be embedded within the approach to asset management. Strategic, tactical and operational risks should be included as should appropriate mitigation measures.	

7. Competency.

Highway infrastructure management requires appropriate levels of competency for all activities involved. The Council's approach to staff performance is detailed within its 'Corporate Workforce Strategy 2018-2021 Proud in Growing Together', it acknowledges that Walsall's residents deserve the very best from their Council, ensuring that the workforce is able to respond to changing local needs, operate with reduced budgets and keep up with changes both nationally and globally.

Competency is a measure of our ability to undertake work effectively, professionally and safely, whilst meeting: legislative; environmental; industrial; technical; procedural and associated good practice guidance. The council needs to ensure that it is able to attract and retain the best talent in which to deliver its services and undertake its duties.

Walsall Council Corporate Workforce Strategy

Highways Asset Infrastructure Management covers a diverse range of asset groups, including:

- Carriageways and footways
- Drainage and floodwater management
- Street lighting, road signs and road markings
- Bridges and structures
- Urban Traffic Control (UTC), including CCTV
- Arboriculture maintenance, verges and trees
- Road safety, traffic regulatory functions and street works co-ordination
- Car parks
- Resilience planning and winter maintenance
- Public Rights of Way (PRoW) and cycleways management

For all staff, competency is a critical factor considered from the initial recruitment stage onwards, employee specifications and job descriptions are carefully focussed to meet the precise roles, responsibilities and duties required.

Organisationally, the Council provides a web based e-learning and development framework for all staff, offering a suite of training packages designed to ensure that core corporate training competencies are fully met, including:

- Equality, safety and wellbeing
- Directorate specific training
- Personal development
- ICT skills including GDPR
- Financial systems
- Workplace skills

Engineers possess appropriate levels of formal qualification in line with competence and ethics guidance outlined by The Engineering Council as the UK's regulatory body for the engineering profession, including industry knowledge and practical experience required to enable them to undertake their work professionally, effectively and safely. Depending upon service areas this may include:

- BTEC: Level 3 diploma (Built Environment–Civil Engineering); ONC/HNC certificate/diploma in civils related fields
- Certificate/Diploma in Road Safety Engineering
- Bachelor's degree in: Civil, Construction, Structural or Electrical Engineering
- Post graduate degree in engineering related fields, BSc, MSc, PhD
- Membership of Professional Bodies or Institutes, including: ICE; IHT; IHE; IStrucE; ILP.

The Council appraises its employee on a routine basis through 'Annual Performance Conversations' (APC). These involve an annual review of performance, discussing barriers or inhibitors to maximising performance, setting individual performance objectives for the year and agreeing personal learning and development plans to support achievement. Budgets are made available to fund training initiatives where needs assessment confirms their requirement.

Beyond these Council wide initiatives, a competencies framework exists to give elevated significance to key activities supporting our maintenance management functions to provide adequate levels of Proficiency, Experience, Knowledge and Awareness (PEKA):

- Where specialist systems, equipment, technology, skill sets and knowledge are required to deliver certain highway infrastructure management services, private sector consultancy may also be procured to gain access to specialists or competencies that are be needed. In such cases the Council will make appropriate checks to ensure that the required competency from consultants is assured through evidence of qualifications, training, accreditations or experience. The Council currently engages consultancy support for work-streams such as Highways Asset Management Planning and skidding resistance data collection and accident association.

- For highway safety inspections, the Council ensures that its Highway Safety Inspectors are trained to LANTRA certification standards and are NRSWA accredited, they are also conversant with risk based decision making methodologies and industry good practice guidance and innovations.

- For network level highway condition surveys the council requires surveyors to hold valid UKPMS survey accreditation certificates for CVI, DVI and FNS, whilst machine surveys including the setting of Investigatory Levels (I.L's) shall be subject to valid TRL, Griptester/SCANNER professional certification.

- Network level carriageway and footway highway condition survey data is collected on site, stored and processed using compliant data collection and data processing software subjected to and passing UKPMS annual health check certification.

- Network classification and hierarchies have been identified through a systematic review process undertaken by experienced specialist pavement management consultants. The Council provided all necessary GIS mapping data appropriate to support classification judgements. Individual street classifications are subject to routine on-site reality checks from highway inspectors as an integral part of the Council's highway safety inspection regime.

- Engineers, transport planners and highway safety inspectors have received Construction Design & Management Regulations 2015 (CDM 2015) training, ranging from general awareness sessions through to Client and Principal Designer as appropriate. This is supplemented with IOSH Working Safely training to consolidate health and safety awareness for staff delivering highway infrastructure maintenance management activities.

- Relevant politicians, senior managers, asset managers, safety inspectors and general practitioners who are directly involved with delivering highway maintenance management activities undertake focused training to ensure that they are competent to implement risk based decision making processes. This ranges from generic awareness sessions through to individually tailored sessions to meet the needs of specific groups.

- As practical and where the case for funding can be established, the Council shall seek to appoint trainee engineers under the appropriate apprenticeship framework, providing funded training opportunities through to graduate engineer and professional institute membership levels. This is a tangible measure of the Council's commitment to corporate social responsibility and the support it provides for the youth of our local community and the civil engineering community in general.

The approach adopted to ensure workplace 'Competency' is designed to meet the Code in the following areas:

Recommendation 15	**Competencies and Training**
The appropriate competency required for asset management should be identified, and training should be provided where necessary.	

8 - Resilience, Extreme Weather and Emergencies.

Resilience as defined by the Cabinet Office is the “ability of a community, services, area or infrastructure to detect, prevent, and if necessary to withstand, handle and recover from disruptive challenges”.

The Council’s highway infrastructure network is vital to enable the successful operation of the boroughs social and economic activities, so the continued availability and operation of its key routes is essential to keep the borough moving at an acceptable level.

The Transport Resilience Review acknowledges that an economically rational approach should be taken to spending on resilience, ensuring that enough is invested, with the right prioritisation, and avoiding wasteful and economically unjustified expenditure. For this reason there is a need to focus resilience risk assessments on a sub-set of the network which constitutes the resilient network to ensure it provides:

- Connectivity between major communities
- Links to the strategic highway network
- Connectivity across authority boundaries
- Access to emergency facilities including: Fire; Police; Ambulance and Hospitals
- Links to transport interchanges or critical infrastructure
- Principal public transport routes
- Local community facilities

The risk of specific asset failure leading to closure or restriction of the Resilient Network also needs to be considered along with the socio-economic consequences of failure and potential for community severance.

Network Resilience is particularly significant for winter maintenance as highlighted in the Climate Change Risk Assessment (CCRA) and the Governments National Adaption Programme (NAP), which calls for Highway Authorities to consider how climate change variables including intense/prolonged rainfall, hotter temperatures and higher wind speeds will impact on highway assets, and the risks associated with these events occurring.

Meteorological forecasts and weather information are critical for the Council’s risk based operational planning responses, these are normally based on colour coded descriptions:

- Yellow – Be aware, there is a small chance of…
- Amber – Be prepared, there is likely to be…
- Red – Take action, there will be…

The Environment Agency has also developed a similar system for flood warnings:

- Flood Alert – Flooding is possible, be prepared…
- Flood Warning – Flooding is expected, immediate action required…
- Severe Flood Warning – Severe flooding, danger to life…

The key information needed to enable people to make informed decisions about how they should travel is made publically available through the council’s communications team whenever and wherever it is required.

Precautionary measures taken in areas known to be at high risk of flooding may include:

- Place Fast Response Crew(s) on stand-by, equipped with road closure signs
- Check watercourse trash grids are clear of debris
- Clear any affected watercourses
- Clean any affected road gullies

The Council reviews its responses to severe weather events to identify potential improvements to any of our severe weather and operational plans and procedures using lessons learned and adopting risk based principles.

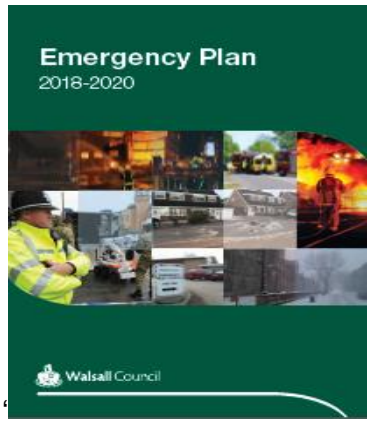
The Resilient Highway Network is contained within the Council's Winter Service Operational Plan.

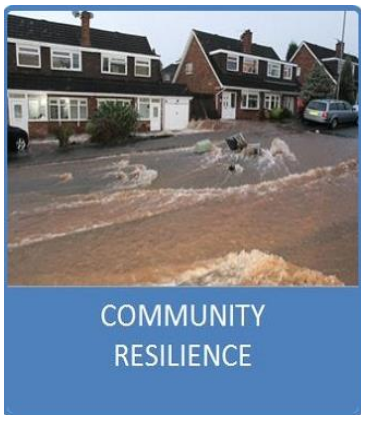
Walsall Council Winter Service Plan

'The Plan sets out the approach to: winter policy; resilience standards; meteorological forecasts; precautionary salting runs and decision making'.

Emergency Planning procedures are published in the Council's website:

Walsall Council Emergency Plan





The Emergency Planning webpage provides detailed information and advice around a range of risk events, including: hot/cold weather, flooding, and communications, it defines Walsall's role as a Category 1 Responder under the Civil Contingencies Act 2004.

The approach adopted for 'Resilience, Extreme Weather and Emergencies' is designed to meet the Code in the following areas:

Recommendation 20	**Resilient Network**
Within the highway network hierarchy a 'Resilient Network' should be identified to which priority is given through maintenance and other measures to maintain economic activity and access to key services during extreme weather.	

Recommendation 21	**Climate Change Adaption**
The effects of extreme weather events on highway infrastructure assets should be risk assessed and ways to mitigate the impacts of the highest risks identified.	

Recommendation 22	**Drainage Maintenance**
Drainage assets should be maintained in good working order to reduce the threat and scale of flooding. Particular attention should be paid to locations known to be prone to problems, so that drainage systems operate close to their designed efficiency.	

Recommendation 23	**Civil Emergencies And Severe Weather Emergencies Plans**
The role and responsibilities of the Highway Authority in responding to civil emergencies should be defined by the authority's Civil Emergency Plan. A Severe Weather Emergencies Plan should be established in consultation with others, including emergency services, relevant authorities and agencies. It should include operational resource and contingency plans and procedures to enable timely and effective action by the Highway Authority to mitigate the effects of severe weather on the network and provide the best practicable service in the circumstances.	

Recommendation 24	**Communications**
Severe Weather and Civil Emergencies Plans should incorporate a communications plan to ensure that information including weather and flood forecasts are received through agreed channels and that information is disseminated to highway users through a range of media.	

Recommendation 25	**Learning From Events**
Severe Weather and Civil Emergencies Plans should be regularly rehearsed and refined as necessary. The effectiveness of the Plans should be reviewed after actual events and the learning used to develop them as necessary.	

9 – Sustainability & Environment.

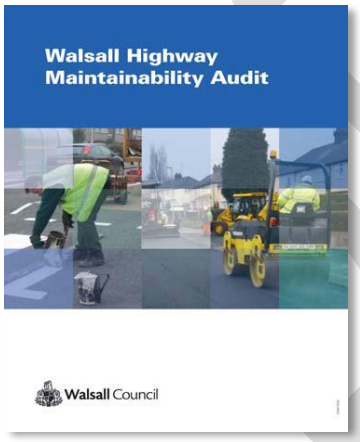
Highway infrastructure maintenance has a significant role to play in achieving a sustainable economy, as reflected in the Governments sustainability agenda. Sustainable construction is about designing and delivering works that meet the needs of the present, without compromising the ability of future generations to meet their own needs.

The DfT publication 'Sustainable Highways: A Short Guide' identifies that for highway maintenance to be delivered sustainably there must be a focus on maximising the use of recycled arising's from existing roads wherever possible. Furthermore, materials, products and treatments for highway infrastructure maintenance should be appraised for environmental impact and for the wider issues of sustainability.

Environmental management strategies need to encourage the consideration of:

- Carbon costs and energy reduction
- Noise reduction
- Material choices
- Waste management and recycling options
- Air quality and pollution control mechanisms
- Nature conservation, biodiversity and environmental intrusion

To co-ordinate and influence the design of maintenance and improvement schemes in the Borough, engineers have developed and embedded 'Walsall's Highway Maintainability Audit (WMHA)'. Its objective is to ensure that all materials and treatments selected or specified conform to the Design Manual for Roads and Bridges, HAPAS, and other relevant British or European Standards.



'The purpose of the WHMA is to give clear guidance to ensure that as far as reasonably practicable that future maintenance implications are considered at the earliest possible stage during any highways project'.

Walsall Council Highway Maintainability Audit

The WHMA provides a framework so that whole-life maintenance implications of highways projects are systematically considered, including:

- Selecting materials that will be durable and functional
- Selecting materials from sustainable/ethical sources, that can be matched and replaced easily
- Reduce street furniture and unnecessary clutter
- Recycle to reduce the need for virgin aggregates

The maintainability audit draws attention to lifecycle considerations, including:

- Scheme design life and compatibility with the surrounding highway
- Suitability of the design and materials for predicted traffic use
- Are the materials likely to be readily available across the life-cycle
- Are the materials likely to fade or discolour, will they be resilient to contamination
- Can surfaces be cleaned easily
- Have recycled materials been considered
- Are there any special engineering difficulties
- Have co-ordinated works opportunities been explored

The key deliverables arising from the WHMA include:

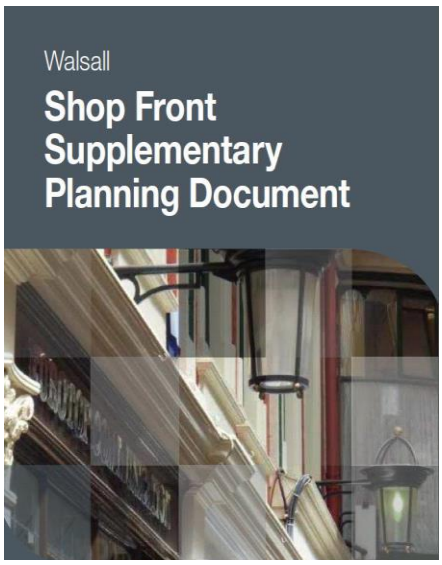
- Reduced remedial works and associated congestion
- Reduced routine maintenance requirements
- Better knowledge for future planned maintenance operations
- Better surfaces to walk, cycle and drive on
- Lower waiting times for repairs using materials from regular suppliers and reduced needs to carry varieties of stock items as alternative products

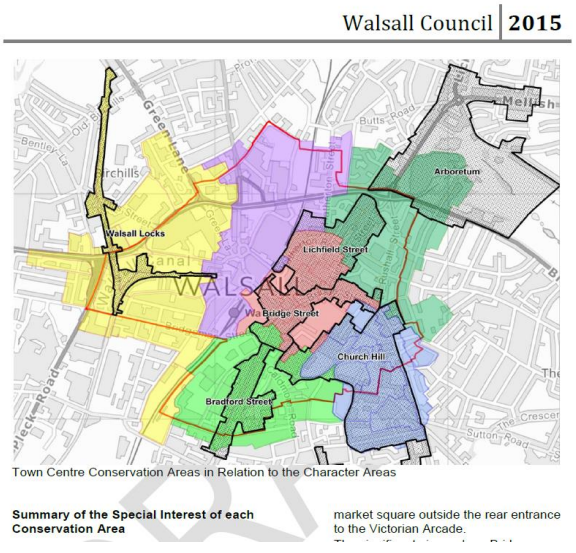
The Council routinely recycles machine planed arising's for use as sub base material when delivering planned maintenance schemes throughout the borough, and where durability requirements can be satisfied consideration is given to the use of Low Energy Asphalts (LEA's) for resurfacing works.

Heritage Assets.

The Council has developed a comprehensive log of Designated Heritage Assets across the borough, which includes: scheduled monuments, listed buildings and conservation areas.

A range of Supplementary Planning Documents are also published to link legislation and policy frameworks to both design processes and environmental considerations, including our key district centre locations.





Minimising Clutter

The council has published online 'Walsall's Way Ahead – Wayfinding Strategy Document' which sets out the strategy adopted to aid mobility across the borough, including the key district centres. The strategy embraces and encourages a Declutter approach, our maintenance and sign replacement programmes endorse the strategy wherever practical, with around 700 items of obsolete street furniture being removed over the past two years.

Walsall Council Wayfinding Strategy

The approach adopted for 'Sustainability and Environment' is designed to meet the Code in the following areas:

Recommendation 32	**Carbon**
The impact of highway infrastructure maintenance activities in terms of whole life carbon costs should be taken into account when determining appropriate interventions, materials and treatments.	

Recommendation 33	**Consistency with Character**
Determination of materials, products and treatments for the highway network should take into account the character of the area as well as factoring in whole life costing and sustainability. The materials, products and treatments used for highway maintenance should be met for effectiveness and durability.	

Recommendation 34	**Heritage Assets**
Authorities should identify a schedule of listed structures, ancient monuments and other relevant assets and work with relevant organisations to ensure that maintenance reflects planning requirements.	

Recommendation 35	**Environmental Impact, Nature Conservation And Biodiversity**
Materials, products and treatments for highway infrastructure maintenance should be appraised for environmental impact and for wider issues of sustainability. Highway verges, trees and landscaped areas should be managed with regard to their nature conservation value and biodiversity principles as well as whole-life costing, highway safety and serviceability.	

Recommendation 36	**Minimising Clutter**
Opportunities to simplify signs and other street furniture and to remove other redundant items should be taken into account when planning highway infrastructure maintenance activities.	

10 – Engaging and Communicating with Stakeholders.

Highways network stakeholders consist of our residents, visitors or anyone using our highway network whether for business or pleasure, including:

- Pedestrians, motorists, motor cyclists and cyclists
- Bus/taxi operators and their passengers
- Freight vehicle drivers and haulage operators
- People with disabilities
- Equestrians
- Residents and landowners adjoining the highway
- Emergency services

How the Council engages, communicates, and informs customers is through a variety of ways including:

- Consultation
- Participation and empowerment
- Service pledges
- Service standards

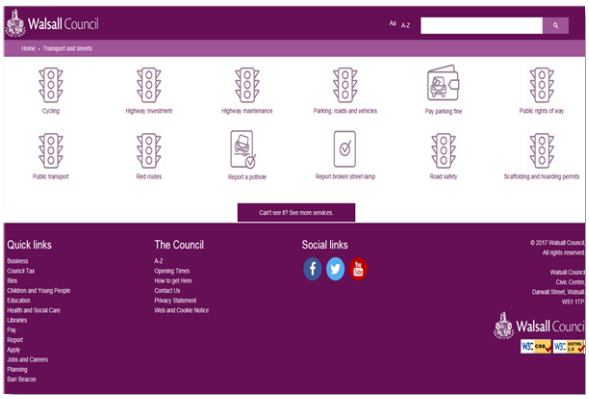
The Council has a robust consultation protocol: Our Approach to Preparing for Consultation (Sep 17), this affirms the Councils commitment to listening and responding to the residents and businesses of Walsall to inform the decision making process, providing vital service information, and collecting feedback.

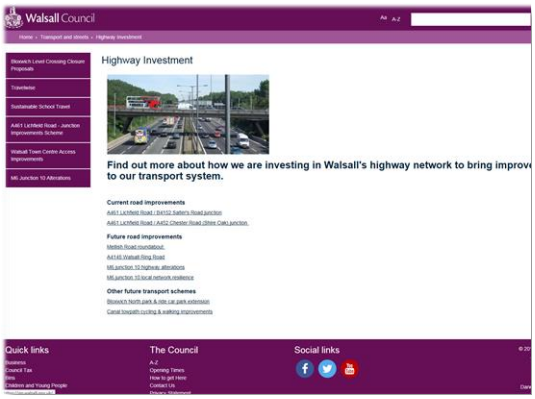
The Council's Transportation and Streets website is the primary interface for stakeholders to find out about and contribute to Council services. It provides multiple links to top level folders including:

- Cycling
- Highway investment, highway maintenance and pothole reporting
- Parking
- Public Rights of Way
- Public transport and red routes
- Road safety

Top level data is supplemented by a wealth of supporting information available through sub-links to more detailed information about:

- Council services/provision
- Policies, strategies and improvement initiatives
- Service standards
- Funding streams
- Major schemes
- Defect reporting





[Walsall Council's Transport & Streets Website]

To monitor highway infrastructure service delivery the council participates in the National Highways and Transportation (NHT) survey conducted by IPSOS Mori, supplemented by the Customer Quality Costs (CQC) survey which measure: customer satisfaction levels; work quality issues; value for money and stakeholder perception. This information is considered alongside APSE benchmarking to help us target those areas where improvements may be required and better understand how we are performing and what our stakeholders expect from us.

Feedback for all of our services is also available through Walsall's complaints/compliments (Tell Us) system,

[Walsall Council Tell Us System]

Customers can also contact the Council:

In Person through the First Stop Shop, Civic Centre, Darwall Street, Walsall, WS1 1DG.

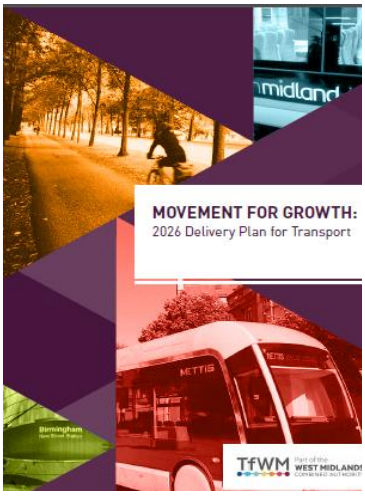
First Stop Shop Opening Hours:

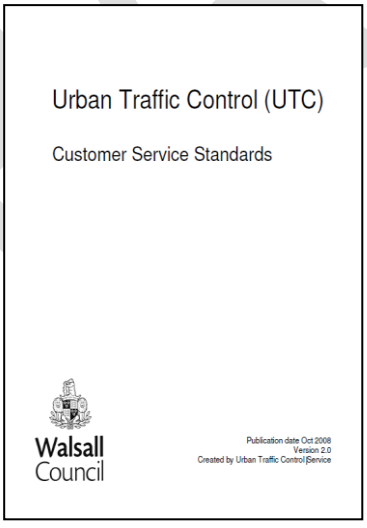
Day	Opening hours
Monday	8.45am – 5.15pm
Tuesday	8.45am – 5.15pm
Wednesday	8.45am – 5.15pm
Thursday	8.45am – 5.15pm
Friday	8.45am – 4.45pm
Saturday	Closed
Sunday	Closed

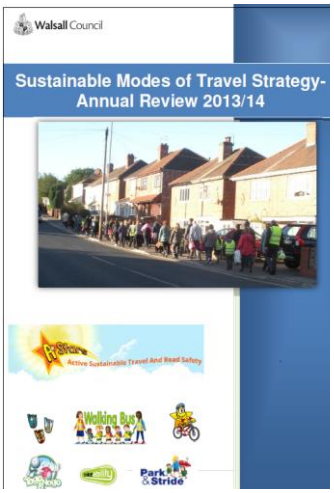
By phone 01922 650000 including out of office hours.

Or online using the 'Apply or Report' link.

Service Standards are published on the councils Transportation and Streets website and on other suitable outlets in the form of: Policy; strategy documents; route maps; service leaflets; project leaflets, providing the information required to enable the public to understand in qualitative terms the levels of service they can reasonably expect from the highways maintenance service.







The approach adopted for 'Engaging and Communicating with Stakeholders' is designed to meet the Code in the following area:

Recommendation 4	**Engaging And Communicating With Stakeholders**
Relevant information should be actively communicated through engagement with relevant stakeholders in setting requirements, making decisions and reporting performance.	

Walsall Council

Highway Tree Management -Tree Removal Assessment

Street Name:	**Tree Location/address:**
Date:	**Assessment Officer(s):**

Location e.g. School, surgery, other facility		
Surface Integrity	**Minimum Footway Width** 1.0m in accordance with DfT guidance 'Inclusive Mobility' Section 3.1	
	Maximum Footway Gradient 1:10 in accordance DfT guidance 'Inclusive Mobility' Section 3.2 Review footway crossfall for wheelchairs and mobility scooters.	
Tree Roots	**Exposed Tree Roots** assess for trip hazards and structural damage to adjacent property	
	Tree Root Heave Lifting carriageway surface and creating standing water with increased risk of sheet ice during winter periods.	
	Kerbs Displaced into Carriageway by Tree Roots. Assess risk to motor vehicles and potential to cause road traffic accidents.	
Clearance	**Overhanging Highway** Creating a danger to high sided vehicles. Recommend that trees do not overhang the highway kerb line for a height of 2.5m, increasing to 4.5m on bus routes. (Highways Act S154)	
Potential Risk and Insurance Claims Risk level, previous claims		

On-going Maintenance Costs e.g. Highway Repair		
Species and Value High, Medium, Low		
Condition & Health of Tree Safe Useful Life Expectancy (SULE)		
Community/ Consultation e.g. complaints, queries (continue on separate sheet if necessary)		
	Recommended Action Retain tree ☐ Remedial work ☐ Remove tree ☐	**Comments / Justification**
Signature (Tree Inspector)		**Date:**
Signature (Highway Inspector)		**Date:**

Appendices attached:

Item	Details
1	Photos attached ☐ ___ of ___
2	
3	
4	
5	
6	
7	

RISK RATING

IMPACT						
	5 Catastrophic					
	4 Severe					
	3 Material					
	2 Minor					
	1 Negligible					
		1 Rare	2 Unlikely	3 Possible	4 Probable	5 Almost Certain

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