



Worcestershire County Council Highway Maintenance Policy

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1. Introduction

The adopted highway is Worcestershire County Council's most valuable asset. As the Local Highway Authority, the Council is responsible for ensuring the Highway Network is managed and maintained for the safe and convenient movement of people and goods.

The Highways Act 1980 sets out the duties of the Local Highway Authority in respect of highway maintenance. In particular, Section 41 imposes a duty to maintain the adopted highway at public expense. Whilst the Highways Act does not specify the level of maintenance required, this document sets out Worcestershire County Council's policy to maintain the highway network and to deliver the highway maintenance service in accordance with the 'Well Managed Highway Infrastructure' (WMHI) Code of Practice published in October 2016. This Code of Practice replaces the following:

- Well Maintained Highways - Code of Practice for Highway Maintenance Management;
- Well-lit Highways - Code of Practice for Highway Lighting Management; and
- Management of Highway Structures - A Code of Practice.

The WMHI Code of Practice encourages Highway Authorities to develop a locally determined risk-based approach to highway maintenance that fits with the asset management approach recommended by central government.

2. Background

The WMHI Code of Practice advocates an asset management approach to highway maintenance. It provides Highway Authorities with guidance on highway management for good practice and has 36 key recommendations with the emphasis on inspections, recording defects, repairs and training of competent staff linked to risk assessment with the view that "*practical and reasonable approach to the risks and potential consequences identified*" is adopted. Worcestershire County Council has reviewed each of the 36 recommendations and has documented its approach and compliance to each recommendation in a separate document called "A Review and Response to the Code of Practice: Well Managed Highway Infrastructure".

Worcestershire's Highway Maintenance Policy demonstrates how the highway maintenance service of the County Council supports the County Council's vision and key priorities over the medium to long term and how it links to the Corporate Plan called [Shaping Worcestershire's Future 2017 – 2022](#).

3. Risk Based Approach

Worcestershire County Council manages risk carefully. At a strategic level there is the Corporate Risk Register, which details a broad range of high level risks for which the Council has oversight and how these risks are managed and mitigated. This mechanism feeds into the Economy and Infrastructure Directorate, where risk management and mitigation is addressed in more detail and links to key areas including highway maintenance.

Historically, the County Council has already adopted a risk based approach to highway maintenance and defect management which is in line with the current WMHI Code of Practice. This approach has been reviewed to ensure it fully meets the guidance and recommendations detailed in the WMHI Code of Practice.

This systematic risk based approach to highway safety inspections, determines whether identified defects should be defined as either a Category 1 response (within 24 hours) or a Category 2 (planned response), as per the response times detailed below:

- R.1 Make safe or repair within 1 hour (emergency situations);
- R.2 Make safe or repair within 24 hours;
- R.3 Repair within 7 working days;
- R.4 Repair within 4 weeks. (28 working days)

This approach is detailed further in this document.

4. Core objective of Highway Maintenance and Highway Asset Management Framework

The core objective of highway maintenance is to deliver, as much as is reasonably practicable, a safe, serviceable and sustainable network. This objective takes into account the need to contribute to the wider objectives of asset management, integrated transport and corporate policy. The foundation for highway maintenance and asset management is based on the following key elements:

- Asset Inventory;
- Network hierarchy;
- Inspections;
- Reports from the public;
- Condition surveys;
- Reactive maintenance;
- Routine and Cyclic maintenance; and
- Programmed maintenance.

In context, the Highway Maintenance Policy and the Highway Maintenance Plan form part of the highway asset management framework and other key plans that Highway Authorities are required to develop. The principle documents are shown in the Asset Management Framework diagram below:

Figure 1: Highway Asset Management Framework



4.1 Network Safety, Serviceability and Sustainability

The Highway Maintenance Plan is the operational delivery mechanism to set standards for undertaking inspections and maintenance, as far as is reasonably practicable, in accordance with a risk based approach in order to achieve:

- Network safety; complying with statutory obligations and maintaining a safe network.
- Network Sustainability; minimising cost over time, maintaining value to the community and maintaining appropriate environmental standards.
- Network Serviceability; maintaining condition, ensuring availability, maintaining reliability and achieving integrity.

4.2 Operational Objectives

The Highway Maintenance Plan provides the detail of key operational objectives covering a range of asset groups across highway maintenance activities, including:

- Carriageways, footways and cycleways
- Drainage
- Bridges and structures
- Lighting and signals
- Road signs and markings
- Weed control
- Safety barriers and fencing
- Unauthorised signs
- Hedges and Trees
- Verges
- Traffic signs and bollards

The Highway Maintenance Plan also details the scope and frequency of safety and service inspections for the above asset groups in conjunction with the Highway Inspection Manual that provides guidance for routine carriageway, footway and cycleway safety and service inspections.

4.3 Highway Maintenance management and delivery arrangements & effective work activity prioritisation

Different types of asset have their own asset management plans that reflect national codes of practice and the individual needs of each asset. Each group of assets have their own asset manager and are managed in different ways to reflect their need.

The highway asset groups are managed and delivered through a number of different contractual models depending upon the asset group, with WCC Client teams in place in relation to each key contract delivery area:

- **Highway maintenance, design and construction services** are delivered through our Highway Maintenance Service Contractor (HMSC) with Ringway. The current HMSC was an evolution of the County's previous Term Highway Maintenance Contract and was procured using an NEC Term Service Contract after a thorough commissioning process. This is a strategic partnership to achieve measurable outcomes and is monitored and reviewed through 12 Key Performance Indicators as part of a Performance Management Framework.
- **Bridges and Highway Structures** are delivered through a Term Professional Services Contract by Jacobs who in turn, is managed by the County's Infrastructure Asset Manager.
- **Street lighting** is delivered through a Term Service Contract (TSC) with Prysmian Group.

The principle role of the County Council and the contractors are as follows:

Worcestershire County Council:

- Lifecycle planning of the assets
- Identify/design works and set high level prioritisation of works
- Long term programming of work
- Manage funding and budgetary issues
- Manage public enquiries and act as a customer interface
- Monitor and manage the performance of the service
- Appoint and manage consultants and contractors
- Audit
- Review performance

Contractors:

- Develop an efficient integrated programme of works
- Complete programmes of highway and associated works
- Ensure work quality and meet requirements as detailed in the Term Service Contract for highways
- Compliance with legislation and response timeframes in accordance with the Term Service Contract arrangements

Budget strategy process

Part of the budget strategy process is to assess the effect of budget decisions for an asset group and across asset groups on the delivery of corporate priority outcomes.

Worcestershire County Council, therefore, ensures the effects of all strategic funding decisions are considered at an early stage to achieve the most efficient and effective outcome for the authority and our customers within the finance available for the service in relation to the County's Highway Network.

By the use of robust evidence based decision making processes, Worcestershire County Council is able to optimise assets by the appropriate prioritisation of work within the available funding. One element of the decision making prioritisation process is the potential for schemes to be clustered and coordinated across asset groups, for example; resurfacing a road in conjunction with a road safety scheme. Such alignment of schemes within the Works Programmes is fundamental to optimising available funding across our service delivery. These form part of the Annual Contractor's Plan (a key component of the Term Service Contract) for highway maintenance.

With all key works, quality management systems are in place to ensure the durability and quality of products and works completed.

5. Network Hierarchy

The network hierarchy is the foundation of a coherent, consistent and auditable maintenance strategy. It is also crucial to asset management in establishing levels of service and to the statutory network management role to co-ordinate and regulate the occupation of road space for roadworks. The latter operates under the West and Shires Permit (WaSP) scheme that Worcestershire County Council has been operating since April 2016.

It is important that the hierarchy adopted reflects the needs, priorities and actual use of each road in the network. These may be determined by importance e.g. a strategic route or main distributor, or a route leading to a major hospital. They may be determined by environment, for example, a rural, urban, busy shopping street or a busy residential street etc. They may be determined by non-vehicular traffic factors such as pedestrian usage. Footway priorities may differ from carriageway priorities, and hence it is necessary to define separate footway and cycle route hierarchies. Collectively, these issues may be referred to as the 'functionality' of the section of the highway in question.

The hierarchy definitions for carriageways, footways and cycleways are defined in the Highway Maintenance Plan.

6. Network Inventory

Worcestershire County Council maintains a Network Inventory (or asset register) of highway asset items that includes data relating to their quantity, nature and locations to be maintained, such as the length, width and surfacing materials used for both carriageways and footways. The network inventory and how it is maintained, is detailed in the Highway Asset Management Strategy.

7. Inspection and Assessment

The Highways Act 1980 sets out the duties of the Local Highway Authority in respect of highway maintenance. In particular, Section 41 imposes a duty to maintain the adopted highway at public expense. The Highways Act does not specify the level of maintenance although the Code of Practice: Well Managed Highway Infrastructure offers guidance and recommendations in line with national best practice.

WCC's safety inspections are designed to identify all defects likely to potentially create danger or serious risk to users of the network or the wider community. Associated processes and procedures for condition inspection, assessment and recording for major assets are described in the Highway Asset Management Strategy.

WCC's safety inspection regime forms a key part of the Council's strategy for managing liabilities and risk. It comprises the following elements:

- frequency (and mode) of inspections
- items for inspection

- degree of deficiency
- nature of response

Worcestershire County Council's highway maintenance inspections are categorised into:

- Safety Inspections - leading to reactive maintenance and including maintenance in response to severe weather and other emergencies.
- Service Inspections - leading to routine and cyclical maintenance of carriageways, footways and cycle routes, drainage system, fences and lighting.
- Bridge and Structure Inspections.
- Street Lighting Inspections.
- Winter Service Inspection and Assessment.
- Development and Regulatory Inspections.
- Condition surveys - leading to programmed maintenance to resurface or reconstruct carriageways, footways and cycle routes.

All inspections are carried out by appropriate competent professionals (such as Highway Safety Inspectors and qualified bridge engineers), in their relevant fields in accordance with Government guidance.

8. A risk based approach to highway inspections

WCC's risk based approach to highway inspections means that the prioritisation of the defect will depend on the level of risk that it poses for the highway user.

The approach to selecting the appropriate action for a reported defect is the risk assessment process. All reported or identified issues should be evaluated for their significance and the likelihood of injury or damage to a highway user.

Response times for remedial action on reported defects will depend on the severity of the defect and where it is located on the Highway Network. The Highway Infrastructure Asset Management Guidance Document produced by HMEP and the UK Roads Liaison Group provides a guide and methodology to assess risk;

'Risk assessment involves determination of the likelihood and consequence of an event. Risk assessment allows the identified risks to be analysed in a systematic manner to highlight which risks are the most severe and which are unacceptably high. An authority can then determine its level of exposure to the risk and the actions necessary to minimise that risk. Overall risk is normally described as:

Risk = Likelihood x Severity

8.1 Risk Identification

Safety inspections are carried out to regular specified intervals (detailed in the Highway Inspection Manual). In general, this is monthly for A and B roads, quarterly for most C roads and annually for Unclassified roads (quiet rural roads and urban streets/roads in general).

These inspections are holistic and cover a range of issues to be considered and the risks therein in relation to them, for example: carriageways surface condition, potholes, tree issues, faded road markings and damaged signs. A clear methodology for the identification of defects and risks therein, is provided in detail in the Highway Inspection Manual. This includes the suggested inventory to be observed and examples of investigatory levels.

8.2 Risk Evaluation

All risks identified through this process have to be evaluated in terms of their significance, which means assessing the likely impact should the risk occur and the probability of it actually happening. A defect Risk Register will considerably assist the risk evaluation process. Although it may not be possible to include every conceivable risk, the register identifies a wide range of risks likely to be encountered. This enables the vast majority of all risks actually encountered through comparison, interpolation or extrapolation, to be assessed with the identified risks. The risks contained in the Register are based upon the highest assumed risk attributable to the type of defect, position and assessed type of usage. Local knowledge could assess the risk differently.

8.3 Risk Impact or Consequence of Event occurring

The impact of a risk occurring should be quantified on a scale of 1 to 5 assessed using the following table as guidance:

Impact High (score 5); The hazard presented by the defect or due to the short term structural deterioration in the defect, could result in serious injury or fatality.

- Impact will result in serious damage to persons or property.
- Highway users will instinctively react to avoid the defect and this will place them in peril.
- The defect could destabilise a vehicle and will place the highway user in peril.

Impact Medium (score 4); The hazard presented by the defect, or due to the short term structural deterioration in the defect, could result in injury or serious claim against the authority.

- Impact will result in damage to persons or property, from which they are likely to recover.
- Highway users will instinctively react to avoid the defect.

Impact Low (score 3); The hazard presented by the defect, or due to the short term structural deterioration in the defect, could result in a minor injury or claim against the Authority. If untreated the defect will contribute to the deterioration in the overall condition of the highway asset. The defect is likely to deteriorate further before the next safety inspection.

- Most impacts will not result in any injury.
- Highway users are unlikely to react to avoid the defect and the impact will not interrupt their passage.

- The defect will be felt and recognised as a defect by most highway users, and its presence will be a negative on their perception of the highway asset.

Impact Very Low (score 2); The hazard presented by the defect, or due to the short term structural deterioration in the defect, is unlikely to result in injury or claim, but the defect will contribute to the deterioration of the overall condition of the highway asset. The defect is unlikely to deteriorate further before the next safety inspection.

- The defect will be recognised by highway inspectors as requiring consideration, but is unlikely to be felt or recognised as a defect by most highway users.
- The defect is unlikely to cause injury or damage.

Impact Negligible (score 1); The hazard presented by the defect, or due to the short term structural deterioration in the defect, is unlikely to result in injury or claim, but the defect will contribute to the overall condition of the highway asset. The defect is unlikely to deteriorate further before the next safety inspection.

- The defect will be recognised as requiring consideration, but is unlikely to be felt or recognised as a defect by highway users. The defect is very unlikely to cause injury or damage.

8.4 Risk Probability or Likelihood of Event Occurring

The probability of the risk occurring should also be quantified on a scale of 1 to 5 assessed using the following table overleaf as guidance.

Probability Ratings	Score	Description	Possible Indicators
Severe	5	More than a 75% chance of occurrence.	<p>Vehicle, cycle and/or pedestrian flows are high.</p> <p>A high % of vulnerable users may pass.</p> <p>The location of the defect and the topography will mean that it is difficult for a highway user to recognise and avoid. Forward visibility may be compromised.</p>
High	4	60% to 75% chance of occurrence.	<p>Vehicle, cycle or pedestrian flows may be high, but differing modes are less likely to share the highway at this location.</p> <p>Some highway users would recognise and take action to mitigate the impact of the defect.</p> <p>Forward visibility is good.</p>
Medium	3	40% to 60% chance of occurrence.	<p>Vehicle, cycle or pedestrian flows may be moderate, but differing modes are less likely to share the highway at this location.</p> <p>The majority of highway users will be able to recognise and take action to mitigate the impact of the defect.</p> <p>Forward visibility is good.</p>
Low	2	10% to 40% chance of occurrence.	<p>Vehicle, cycle or pedestrian flows are moderate or low.</p> <p>Different modes are unlikely to share the highway at this location.</p> <p>The majority of highway users will be able to recognise and take action to mitigate the impact of the defect.</p>
Negligible	1	Less than 10% chance of	<p>Vehicle, cycle or pedestrian flows are very low.</p> <p>The speed differential between users is very likely to be low.</p>

8.5 Risk Factor

The risk factor for a particular risk is the product of the risk impact and risk probability and is therefore, in the range of 1 to 25. It is this factor that identifies the overall seriousness of the risk and consequently the appropriateness of the speed of response to remedy the defect. Accordingly, the priority response time for dealing with a defect can be determined by correlation with the risk factor, as shown in the Risk Matrix below.

LIKELIHOOD OF EVENT OCCURRING	CONSEQUENCE OF EVENT OCCURRING				
	NEGLIGIBLE 1	LOW 2	MEDIUM 3	HIGH 4	SEVERE 5
NEGLIGIBLE 1	1	2	3	4	5
VERY LOW 2	2	4	6	8	10
LOW 3	3	6	9	12	15
MEDIUM 4	4	8	12	16	20
HIGH 5	5	10	15	20	25
KEY TO RISKS					
RESPONSE TIMES	CONTINUE TO MONITOR	28 DAYS R4	7 DAYS R3	24 HOURS R2	1 HOUR R1

The response time categories for actionable defects are:-

R.1 Make safe or repair within 1 hour (emergency);

R.2 Make safe or repair within 24 hours;

R.3 Repair within 7 working days;

R.4 Repair within 4 weeks. (28 working days)

The timescales are designed to enable highway defects to be, wherever practicable, actioned in a programme of permanent repairs. This balances the immediate risk posed to the highway user with the ongoing risk that will be posed as a consequence of a failed temporary repair. In some situations, it may be necessary to respond to certain defects as an emergency and that only a temporary repair can be achieved in the short term. However, it will be necessary to programme for the permanent repair to follow.

Where defects with potentially serious consequences for network safety are made safe by means of temporary signing or repair, arrangements should be made for a special inspection regime to ensure the continued integrity of the signing or repair is maintained, until a permanent repair can be made.

8.6 Risk management

Having identified a particular risk, assessed its likely impact and probability and calculated the risk factor, the category and the timescale to rectify actionable defects should be defined and prioritised as either a Category 1 response (within 24 hours) or a Category 2 (planned response), as detailed further below.

The timescales for response commence at the point in time that the authority has knowledge of the reported defect, has undertaken the risk assessment and as a consequence has categorised and prioritised the reported defect.

It should be appreciated that the Authority and its contractors will make every effort to complete the defects within the target response times, however, in times of extreme weather conditions (during and immediately following severe snow, storm or flood events), it may not always be possible to achieve 100% compliance with target response times.

Identified defects are treated as Category 1 or 2 dependent on the particular circumstances and severity of the defect. Therefore the nature and speed of response will depend upon, amongst other things, the assessed risk posed by:-

- The depth, surface area or other degree of deficiency of the defect or obstruction;
- The volume, characteristics and speed of traffic;
- The location of the defect relative to highway features such as junctions and bends;
- The location of the defect relative to the positioning of users, such as in traffic lanes or wheel tracks;
- The nature of interaction with other defects;
- Forecast weather conditions.

Category 1 and Category 2 defects are defined and prioritised as follows:

Category 1 – Defects that require prompt attention because they represent an immediate or imminent hazard or there is a risk of short-term structural damage. If it is not possible to correct or make safe the defect at the time of inspection, which will generally be the case, repairs of a permanent or temporary nature should be carried out as soon as possible and in any case within a period of 24 hours. Permanent repairs should be completed as soon as reasonably practicable, where appropriate.

Category 2 – Defects which following a risk assessment are deemed not to represent an immediate or imminent hazard to users or risk of short term structural deterioration. Such defects may have lesser safety implications, although of a far lesser significance than Category 1 defects, but are more likely to have serviceability or sustainability implications. These defects are not required to be urgently rectified, and those for which repairs are required shall be undertaken within a planned programme of works, with the priority as determined by risk assessment. These priorities together with access requirements, other works on the road network, traffic levels, and the need to minimise traffic management, should be considered as part of the overall asset management programme.

9. Routine and Cyclic Maintenance

Routine and cyclic maintenance is concerned with providing works to a regular and consistent schedule such as grass cutting and gully cleansing and emptying operations. This type of maintenance is primarily carried out for the purpose of providing defined standards of network serviceability, availability, reliability and integrity.

Priorities and programmes are determined for the key areas of routine maintenance and consideration is given to combining a number of operations into a co-ordinated programme, for routine and cyclical operations, where practicable.

10. Reactive Maintenance

Reactive maintenance refers to works that are a response to an issue that has been raised, which may not be viable to include via normal cyclical programmed works activity. This may be in relation to a safety issue (eg; a pothole), or where another issue has been raised for example a complaint, that needs to be reacted to. The priority of response is determined on the basis of a risk assessment and a decision is made to complete works based around this assessment.

11. Programmed Maintenance for carriageways and footways

Programmed maintenance for carriageways and footways (via the Design and Build function), is completed based around sound Asset Management principles. Condition surveys of carriageways and footways are completed regularly. This information is combined with other key data from other inspections and data sets. From this, a

programme of highway maintenance is defined and implemented. More detailed information on this issue is provided in the Highway Asset Management Strategy.

12. Skid Resistance Management Policy

As part of the Transport Asset Management Plan (TAMP), Worcestershire County Council has a Highway Skid Resistance Management Policy in support of the Local Transport Plan. The policy and methodology for its implementation is detailed in the Highway Asset Management Strategy.

13. Programming and priorities of work types

WCC's approach to considering the Highway Network as an integrated set of assets is detailed in the Highway Asset Management Strategy and Policy.

The Forward Highway Works Programme and series of rolling Annual Plans in the form of the Contractor's Plan, detail the specific activities for different types of works on the highway. In addition, for carriageways there is a 3 year rolling list of roads which require consideration for treatment (potential repair). This is reviewed and updated each year.

Reactive, routine and programmed maintenance follows a structured approach to programming and prioritisation. The cycle and review of highway works takes account of the relative priorities of these types of work, having regard to historical conditions, and seeks to increase the proportion of programmed to reactive maintenance, where possible, which leads to a corresponding decrease in reactive maintenance in the longer term (subject to available funding).

Safety of the network relating to fulfilling relevant statutory duties and requirements is clearly a key priority for the maintenance of the Highway Network in the County. In light of this, programming of works on the network, take account of a number of issues, including;

- Safety matters;
- Asset condition data.
- Other survey and relevant information (eg; Public Enquiries).
- Service inspection information.
- Potential impacts of works on the network.
- Road category and surrounding issues.
- Impacts on businesses and communities.

To ensure effective network management and co-ordination, our Forward Works Programme for carriageways is identified and planned 1 year in advance (with a broad high level 3 years' rolling plan). This is refined and agreed in an annual programme of works that is managed and implemented via the Highway Maintenance Service Contract delivered by Ringway in the form of the Contractor's Plan, covering all key areas of work on the Highway Network for WCC. The Contractor's Plan provides for an integrated approach, bringing

together all areas of work and delivery. This ensures that works programming, co-ordination and management is more effective and joined-up to increase efficient use of resources across the board.

The above works are coordinated in conjunction the County Council Streetworks function, which is responsible for ensuring that all works on the Highway Network in the County (including Utility and other works), are coordinated as effectively as is reasonably practicable.

14. Lifecycle Planning

Lifecycle planning is a technique which enables Worcestershire County Council to monitor and anticipate the future condition of assets and to know when we need to maintain or replace them. Through detailed knowledge of the size, safety, condition and value of our highway's asset, the information gathered enables us to take in to consideration whole life costs when maintaining our assets.

Lifecycle planning tools have been developed which enable the development of work programmes which make best use of the available funding and resources in meeting long-term objectives, mitigating risks by allocating funds to where they will be most beneficial. It must be noted that this type of allocation moves away from a more traditional "worst first" approach and targets work programmes at those parts of the infrastructure which present the greatest 'asset' risk and where a strong element of timely 'preventative' treatment can achieve the most beneficial 'whole of life' cost. This approach is advocated in the 'Going the Distance Report' by the Audit Commission in 2011.

Worcestershire County Council uses lifecycle planning to develop investment strategies to deliver an agreed level of performance or, where funding becomes constrained, a prediction of the effect of particular funding scenarios on the levels of service that can be delivered. This approach enables service delivery to be as effective as possible, allowing a cogent allocation of resources providing a balance between focussed asset management and contributing to the objectives and priorities of the Council and allow an assessment to be made of any residual risk.

This lifecycle approach allows Worcestershire County Council to demonstrate what level of investment is required to achieve identified outcomes and where this investment is not available, the likely shortfall, to aid effective decision-making. As part of its Lifecycle planning approach and methodologies, the Asset Management team have developed a Financial Impact Modelling Tool (FIMT) for carriageways which is used in conjunction with the HMEP Lifecycle Planning Toolkit. The FIMT enables the future condition of any class of road to be predicted given a particular level of funding and helps the council to understand and manage risk in terms of asset deterioration in relation to available funding.

This is a fundamental approach that is used for decision-making in relation to the budget setting cycle, identifying performance targets and monitoring achievement of targets as part of the Performance Management Framework.

The lifecycle planning approach also allows tracking of performance against investment for each asset group and, thereby, informs future strategies to ensure the investment achieves the outcomes planned.

For the major asset groups, the Council utilises the asset management approach, as detailed in the asset management framework, in conjunction with the risk-based approach, outlined above, to target its maintenance resources effectively.

15. Performance Management Framework

Worcestershire County Council operates a Performance Management Framework (PMF) that supports the Highway Asset Management Strategy and is used to measure its performance and continuous improvement in general. Shown in Fig 2 overleaf, the framework provides:

The link between the corporate vision, asset management strategy, levels of service and maintenance operations.

- A systematic approach to measure progress in the implementation of asset management.
- Set levels of service and performance targets to enable auditing and monitoring of the delivery of the asset management strategy.
- The mechanism for demonstrating how funding is being used effectively to meet the levels of service and performance targets.
- Effective communications with key stakeholders by demonstrating performance against requirements.
- Aids decision making to deliver value for money.

[The NHT Network](#) is a service improvement organisation providing a range of benchmarking services for the Highways & Transport sector. The NHT Network has developed a generic Performance Management Framework for Highway Authorities to adopt in full or in partial support of their own PMF. The WCC Performance Framework for Highways (outlined overleaf), links in with this.

Figure 2: Performance Management Framework

Highways Performance Management Framework

Worcestershire Corporate Plan: key themes:

- Championing 'Open For Business'
- Supporting Children and Families
- Protecting The Environment
- Promoting Health and Well-Being

Local Transport Plan v4 (LTP4)

E&I Directorate Business Plan Transport Asset Management Plan (TAMP) Highways Asset Management Policy & Strategy

66085 lighting assets
4093 km of road
3307 km of footways
3,000 miles of Public Rights of Way
140 miles of waymarked trails and circular walks
99,193 drainage gullies
1339 bridges/structures

HPROW Business Unit Plan:

Example HPROW Performance Targets

Safe, reliable & efficient transport network with Balanced Score Card KPIs

Highways Maintenance Service Contract Key Performance Indicators (KPIs) x 12

Footways requiring treatment Reduced to 25% by 2020

By 2020 strive to be in the upper Quartile of condition of A, B, C & U Roads.

Public Realm schemes and D & B schemes delivered on time and in budget

PROW: % of high priority defects & mapping orders resolved within target time

Highways Maintenance Service Contract

Weekly Contract Management Team review meetings
Weekly Area Response Team (ART) defect meetings

Sharing Best Practice and Collaboration

Members of WMHA, HMEP and MSIG to share best practice and collaborate with external parties such as Highways England, Environment Agency and with District/Borough and Parish/Town Councils for joined up service delivery

Public Satisfaction

Viewpoint and NHT public satisfaction survey results are reviewed and benchmarked nationally and locally with ViewPoint survey and NHT survey Results to measure public satisfaction. Reviewed by Public Perception Working group to identify lessons learned and action planning.

Review Mechanism

LTP is reviewed regularly.
TAMP – regularly reviewed and updated.
Corporate Strategy Planning process
Business Plan - Annual review by Directorate Leadership Team (linking to the Corporate Plan and providing for the broader framework.)
Quarterly Cabinet Member with Responsibility (CMR) and Directorate review meetings
Strategic Quarterly Review (SQR) mechanism in place.
Performance Management Framework Group – quarterly meetings.
Weekly contract management team meetings by senior managers to review Targets & Contractors Plan
Regular Member Led Scrutiny Panels and Process and meetings with Cabinet Member with responsibility for highways

16. The Resilient Network

Worcestershire County Council has a Highway Emergency and Resilient Network Plan that details how the network in Worcestershire is managed, and in response to, severe weather impacts, emergencies and other key resilience issues as identified in the Department for Transport's Policy paper published in 2014 called Transport Resilience Review: Recommendations.

The resilient network in Worcestershire is made up of routes in the County that are considered essential for economic activity and for key services and access in the event of extreme weather events, major incidents and other disruption. The primary gritting routes equate to the large majority of the resilient network and we treat these roads as a priority in the event of any such incidents, and focus our resources on keeping them available for use, where practicable.

WCC treat adopted sections of the highway that relate to major infrastructure assets including, for example, hospitals, emergency services and crematoria.

WCC also has a defined network of category 1 and 1A footways which cover the predominance of town centres. These are treated in advance of severe weather and as an ongoing activity once resources become available. Additional resources via District Council workforces augment our resources and increase our potential coverage. Co-ordination arrangements with all adjacent authorities for Winter Service Networks are confirmed in advance of the season by comparison of each Authority's networks.

WCC focusses a strong element of its associated maintenance and management activity on the resilient network, for example in terms of surfacing and repair, management and resolution of flooding and drainage issues, reaction to major emergency events and co-ordinated management of street works and congestion matters in such events, where practicable.

During very severe weather events, such as extreme levels of snow or flooding, there may be times when it is not possible to ensure that all elements of the resilient network are maintained and available for use. In addition, if such events are very prolonged at a national level, this can lead to other impacts, such as shortages/restrictions in salt supply for winter highways' management. In such circumstances, the County Council has plans in place to address how it reacts to such events and issues.

To ensure that its approach to managing a resilient network is effective and cohesive, WCC have put in place a delivery framework comprising the following partnership groups; the Local Resilience Forum, Worcestershire Emergency Planning Tactical Control group, Worcestershire Severe Weather group and the Highway Flood Adaptation Programme Board. The Emergency and Resilient Network Plan defines Worcestershire County Council's approach to responding to highway emergencies and managing a resilient network.

The resilient network is reviewed every two years.

17. Materials and Treatments

WCC pay careful consideration to the environmental impact of highway maintenance works with the aim to sustain the County's biodiversity, character and heritage by the adoption of good environmental management procedures. WCC maintains an inventory of its 'structures' with particular attention to bridges that are either national monuments or are listed.

In maintaining the Highway Network to meet the challenges of safety, serviceability and sustainability, and in order to provide best value for the Council and local community; materials, products and treatments are considered using an asset management approach and focussed upon cost effective materials (to extend the life of the road in terms of preventative maintenance) and the safety of the highway user.

For Public Realm schemes, the Local Transport Plan v4 includes a Public Realm Policy (14) that prescribes the materials, grades and specification to be used. For sustainability, 10% of additional materials is ordered for contingency/future repairs and Worcestershire County Council have acquired a storage facility of materials for Public Realm schemes. Wherever possible, WCC will endeavour to re-use existing materials from other sites for Public Realm schemes that have been identified.

17.1 Recycling

Worcestershire County Council has a designated recycling unit at Stanford depot with recycling targets in place with Ringway. The Council will also carefully consider, whenever commercially viable, the use of products and services, where appropriate, that are:

- selected from sustainable material sources
- that are recycled, or
- are recyclable.

The Term Maintenance Contract requires its supplier to recycle at least 40% of arisings, generated from highway works back into programmed works.

17.2 Nature Conservation and Biodiversity

Worcestershire County Council has a duty to 'Enhance & Conserve' Biodiversity (under the Biodiversity Duty (Section 40) under the Natural Environment and Rural Communities (NERC) Act 2006) and recognises the importance of nature conservation and biodiversity. By managing our highway works carefully, any adverse effects on biodiversity can be avoided or minimised. WCC have taken positive steps to promote biodiversity through its practices of:

- Creating and maintaining designated Roadside Verge Nature Reserves (RVNRs) around the county.
- Variable grass cutting regimes that take into consideration these RVNRs and other areas for conservation whilst ensuring safety of the Highway Network.
- Establishing partnerships for joint biodiversity projects, for example, with the Malvern Hills Area of Outstanding Natural Beauty (AONB) Partnership
- The careful control of invasive and injurious weeds.
- Mapping conservation areas, principle protected species and Areas of Outstanding Natural Beauty into its Geographic Information System.

As a 'pollinator-friendly' organisation, WCC encourages new developments to incorporate botanically diverse verges containing flowering herbs of value for local pollinators.

Trees are important for amenity and nature conservation reasons and should be preserved but they can present risks to highway users and adjoining land users if they are allowed to become unstable. All trees within falling distance of the highway are collectively termed 'highway trees'. Section 154 of the Highways Act 1980 empowers the authority to deal, by notice, with hedges, trees and shrubs growing on adjacent land which overhang the highway, and to recover costs. Safety inspections and the management of highway trees are outlined in the Tree Risk Management Plan. The plan also outlines ecological measures that should be taken and observed such as the replacement planting of appropriate trees for its location and consideration to roosting bats and the bird nesting season, (subject to issue of significant safety).

17.3 Carbon Reduction

Through its supply chain in highways, the County Council continues to promote the use of recycled materials and materials that consume less energy in their production, where appropriate.

Over recent years, the Street Lighting contract has introduced Light Emitting Diode (LED) technology and variable lighting levels that is lower energy consuming. Over the life of this Strategy, Worcestershire County Council will continue to mitigate energy consumption against the planned growth of the street lighting asset.

18. Reports from the Public

Members of the public are able to use our website to report defects online via our Public Enquiry Management (PEM) system. This has a tracking facility and allows our Highways and Transport Control Centre to review all requests received each day and determine the most appropriate action based on both the details that are provided and the policies and procedures we use. The PEM system allows members of the public to be updated about the progress of their reported issue.

All safety inspections and repairs are recorded using WCC asset management systems. Reports raised by the public, are investigated and where required, action is taken as necessary. The information is retained electronically in the Public Enquiry Management (PEM) system and Customer Relationship Management (CRM) system.