



Worcestershire County Council

Highways Asset Management Plan

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Team: Highways, Economy and Infrastructure Directorate

Executive Overview

The Highways Infrastructure Asset Management Plan reflects the approach outlined in the Code of Practice "Well-Managed Highway Infrastructure". The Code of Practice serves as a guidance document to Local Authorities, encouraging them to implement a Risk-Based Approach within their service. This document demonstrates our continued commitment to a Risk-Based Approach, whilst considering the specific local factors that define Worcestershire as a county.

Our highway network is managed in line with the four priorities of our **Corporate Plan**:

1. Championing Open for Business
2. Supporting Children and Families
3. Protecting The Environment
4. Promoting Health and Well-Being

This plan is based on the following principles that the Authority:

- Identifies outcomes from investment in the highway network to develop the level of service required.
- Measures and understands the performance of its major assets and uses lifecycle optimisation planning principles to model management and funding options to provide value for money.
- Collects information to value each highway asset and determine the risks associated with the assets to support investment decisions and manage risk.
- Implements an asset management and risk approach in service delivery and continuous improvement.
- Uses a complete performance management framework in place which links performance targets to investment levels and are aligned with financial requirements and funding arrangements over a three-year period in a forward programme.
- Involves its senior decision-makers in providing direction to asset management.
- Informs staff and stakeholders through the Performance Management Framework including regular asset management briefings.
- Implements and monitors communications with lessons learnt, including stakeholder consultation information to help develop levels of service.

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1. Introduction

The highway network in Worcestershire is the largest and most visible community asset for which the County Council is responsible. The way it is managed and maintained has a direct impact on the Council's ability to deliver on its corporate priorities and other outcomes. Residents, businesses and visitors all depend upon safe and reliable journeys using our highway network to sustain our economic growth and transportation needs.

Therefore, Worcestershire County Council (hereinafter referred to as the Council), recognises the importance of its highway infrastructure and how an effectively maintained and managed network contributes to the achievement of its corporate goals and delivers the required outcomes for Worcestershire residents and businesses.

As the Highway Authority for Worcestershire, we have a duty under the Highways Act 1980 to maintain the Public Highway Infrastructure within Worcestershire. This means we have a legal obligation to maintain and ensure the safety of public roads and highways within our jurisdiction. This duty extends to ensuring the highway is in a reasonably safe condition for public use, including safe passage during winter weather.

Worcestershire County Council maintains 4,101 km (2,548 miles) of highway network and associated assets. National Highways is responsible for the management of the motorways (M5, M50, M42) and A46 in Worcestershire. To ensure the highway network is well managed and maintained, it is essential that the management of the highway network is carried out in a systematic way, which takes a long-term view of the performance and condition of our highway assets, our corporate objectives, maintenance requirements, customer expectations, service risks and funding availability.

The highway network in Worcestershire is managed with a careful balance between carrying out long-term preventative maintenance repairs and reactive repairs. Reactive repairs are often necessary for safety and other reasons, but like many other authorities, we carry out a risk and databased asset management approach to reduce the need for short-term reactive work as set out in the Government's Code of Practice: Well Managed Highway Infrastructure. We utilise many forms of data when deciding whether to carry out structural, preventative or reactive maintenance. These include condition survey results (both past and present), safety inspection data, enquiries received from the public and other sources.

We monitor the condition of A, B and C classified roads using Scanner Surveys on an annual basis and for U roads, we use a CVI survey on an annual basis. We also take into consideration other key factors such as number of reported defects, complaints, third-party claims, public satisfaction and road traffic accident data. We have also developed a Financial Impact Modelling Tool (FIMT) that allows us to model the future condition of any class of road in the county using different funding levels that are required. This helps us to understand and manage the risk in terms of asset deterioration in relation to the funding that we need to maintain the road condition and to use the most appropriate cost-effective

methods of repair. Across all major asset groups, we use software systems to evaluate historical schemes and condition data. Using this approach alongside DfT funding and the ongoing investments made by the County Council, we have not only maintained a steady state in highway condition but have generally improved its condition over the last ten years.

1.2 What is Asset Management?

Asset Management is a strategic approach that seeks to optimise the allocation of resources for the management, operation, preservation and enhancement of the highway infrastructure to meet the needs of current and future users of the transport network.

Worcestershire County Council recognises the importance of applying the principles of asset management through the process of long-term planning and whole life costing, to ensure best value and optimal future funding and programming decisions are taken where appropriate in line with available funds. Key elements of infrastructure asset management include adopting a life cycle approach, developing and deploying cost effective maintenance strategies for the medium and long term, identifying and providing affordable levels of service, and adopting a sustainable approach to the use of resources and continuous improvement in the highway services practices and processes.

Key highway assets include roads, footways, streetlights, street furniture, traffic signals, gullies and drains, trees, grass verges, signs, road markings, bridges and other structures that form the overall highway network infrastructure.

1.3 Purpose

The purpose of this plan sets out the County Council's commitment to highway asset management and demonstrates how the asset management approach aligns with the County Council's Core Purpose and vision. It also ensures that the highway maintenance service supports the County Council's wider transport objectives as outlined in the **Local Transport Plan** (LTP) from 2018 to 2030 and the Transport Asset Management Plan (TAMP).

1.4 How the HAMP supports the Corporate Plan Priorities

Worcestershire County Council is committed to an asset management approach encompassing the outcome-based benefits of a whole cost lifecycle approach, ensuring the most efficient and effective use of the available highway budget and demonstrating the case for additional funding where this is appropriate. The continued use of innovative treatments alongside tried and tested maintenance materials will ensure the appropriate treatment is utilised at the right time to maintain highways assets in Worcestershire.

The Transport Asset Management Plan (TAMP) is a key document that sets out the primary asset types of Worcestershire County Council's road network, including the primary asset types of carriageway, footway, streetlights, bridges and traffic signals, and also the secondary asset types such as signs and drainage which support the road network functions.

The TAMP has the following objectives to:

- Achieve corporate objectives.
- Continue to identify improvements in the information and systems necessary to refine this process.
- Include all highway and transportation assets.
- Monitor the condition and performance of assets.
- Use optimisation tools to develop options for current and future service delivery, forward financial planning and investment and asset renewal programmes.
- Provide value for money by optimising the long-term life cycle costs of assets and through improved system and practices.
- Enable Worcestershire County Council to meet the Government's future requirements for financial planning for transport.
- Demonstrate effective management of assets on behalf of customers and stakeholders.
- Planning for future asset requirements based on projected demand and service levels.
- Seek the views of asset group users on appropriate service levels.
- Increase the horizon and confidence in future planning and programmes.
- Adopt best practice.

1.5 Benefits

The highway network is maintained using the principle of "prevention is better than cure". Proactive preventative measures are more cost-effective and less disruptive to highway users than reactive repairs. Road surfaces and structures are maintained routinely in good condition to prevent major deterioration and the formation of potholes, which are costly and disruptive to fix. The benefits of the plan are to:

- Provide a clear and transparent document stating the strategic, tactical and operational priorities and objectives of the County Council in relation to managing the highways asset.
- Work with key stakeholders to achieve defined outcomes and take on board their views.
- Provide for the effective use of tried and tested methodologies and the adoption of innovative techniques in the maintenance and operation of the highway asset in line with asset management principles and lifecycle costs.
- Enable us to review priorities effective in line with, and taking account of, the political cycle, resilience, economic shifts, severe weather and other emergencies.
- Assist us in working with other public and private asset owners in the county, the Midlands region and nationally where appropriate to work effectively together.
- Ensure all of our Senior Asset Managers are appropriately trained to be stewards of the highway asset in line with current asset management principles.

2. The Highway Asset

2.1 Asset Inventory

Asset inventory information is the foundation on which asset management processes are built. Accuracy and completeness of the inventory and condition data, and the management of associated systems is essential. The County has an Infrastructure Asset Management Team that is responsible for maintaining an inventory and assessing asset condition. The Infrastructure Asset Manager is responsible for this team.

Worcestershire County Council is responsible for a wide variety of highway assets; Tables 1 and 2 provide details of this infrastructure.

Table 1 : Worcestershire's Highway Infrastructure Key Assets

Highway Assets	Asset Group Elements
<i>Carriageway</i>	Carriageway - including lay-bys, bus lanes etc
<i>Footway, Footpaths, Public Rights of Way (PROW) & Cycleways</i>	Footways - adjacent to the carriageway Footways – divorced and remote from the carriageway PROW Cycleways - constructed off-carriageway cycleways, shared cycle/footways and cycle/carriageways
<i>Structures</i>	Bridges, sign gantries, culverts, embankments, retaining walls and subways
<i>Lighting (including illuminated signs and bollards)</i>	lighting columns, lamps, cabling, ducts feeder pillars, subway lighting. Illuminated signs & posts, information boards
<i>Integrated Transport Systems</i>	Signalised junctions, signalised pedestrian crossings, detection equipment, cabling, ductwork, bollards and variable message signs
<i>Safety Fences</i>	Vehicle safety fences
<i>Non-illuminated Signs</i>	Non-illuminated signs, warning, regulatory and local direction/information posts, information boards
<i>Closed Circuit Television</i>	CCTV Installations & Monitoring Equipment
<i>Drainage</i>	Gullies & linear drainage channels, highway drains (including pipework, manholes & outfalls), land drainage ditches and watercourses, roadside ditches, swales etc
<i>Traffic Calming</i>	Traffic Calming Features - including tables, humps chicanes etc
<i>Road Markings</i>	All road markings
<i>Verges and Planted areas</i>	Verges, soft landscaped areas and highway trees
<i>Street Furniture</i>	Cycle stands, bollards etc

The majority of the asset groups shown above are plotted within our Geographic Information System (GIS) as information layers, affording restricted secure access to key stakeholders such as District Councils and the Environment Agency where appropriate.

2.2 Data Capture and Management

The highway asset inventory is held on an Exor database. Whilst it is important to collect inventory and condition data related to existing assets, this needs to be progressed proportionately in accordance with the relevant risk and resources available. In line with new developments, we record all new assets in the asset register, ensuring procedures are in place internally and externally to capture these.

Other assets such as signs are periodically surveyed to account for additions, changes and deletions.

Streetlights are catered for using the Mayrise data base and the County's Structures are logged on an A.M.X. database.

Our Geographic Information System (GIS) is an integral database for our general use and management and communication between officers (both internal and external) in relation to key asset management data. This includes a multi-layer information platform database for tactical and operational use. In addition, we use an emergency GIS system that is shared between ourselves, the emergency services and other key stakeholders.

2.3 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 it. Through detailed knowledge of the size, safety, condition and value of our highways asset, the information gathered enables us to take into 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 risk and where a strong element of timely 'preventative' treatment can achieve the most beneficial whole of life cost. This approach was 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 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 to those areas which will contribute most to the overall objectives and priorities of the County Council and allow an assessment to be made of the residual risk.

In terms of determining the best method of management and repair for carriageways, the County Council has a comprehensive database of historical schemes and performance data for the carriageway asset and this assists in the planning of maintenance works. On an evolved network, the precise age of an asset is difficult to determine. Therefore, previous scheme performance data, collected over many years, is used when assessing the anticipated performance of different treatments and materials alongside quality engineering assessments and sound methodologies and innovations in consideration of asset management criteria and community need.

Using many years of previously gathered data on treatment strategies and longevity and condition data from the WCC network, the Asset Management team use a lifecycle methodology to calculate the average cost per linear kilometre to maintain each class of road. Scenarios of expenditure and funding requirements are then considered to offer the optimal approach for maintaining the highway. The risks involved around funding levels and methods of management and repair from an asset management perspective discussed and clarified as part of the Corporate Strategy Planning process.

The collaborative partnership with our Highways Maintenance Service Contractor Ringway, enables us to identify whole lifecycle costed programmes of work, prioritised using our locally developed asset value management prioritisation criteria that considers not only the condition of each length of highway but also managed risk and the benefit to stakeholders using the highway. We can also predict the effect of funding and budget decisions on key sections of the highway rather than just at a whole network level. This allows us to calculate the cost of those decisions in an efficient asset-based manner.

2.4 Condition Surveys

Asset condition information is collected at regular scheduled intervals to ensure the information held in the asset systems is up to date and supports the performance management framework. It also ensures the risk and value of premature failure associated with each asset is monitored and corrective actions at both a strategic and practical level can be instigated to prevent or minimise those risks in good time. By having foresight of potential risks at an early stage, investment decisions can be altered to ensure the efficiency and effectiveness of the overall management of the asset. New or accelerated risks are identified before they compromise delivery of the required outcomes.

To apportion a level of condition to the network, the County completes a number of surveys each year. These include:

- SCANNER
- Course Visual Inspection (CVI) – The County still retains a full-time CVI team)

- SCRIM
- Structures G.I.s and P.I.s
- Diving surveys of bridge piers, quaysides and abutments

All the above have dedicated WCC revenue budget allocations and are clearly demonstrable by way of transactions and entries in WCC financial systems. In addition, relevant elements of information gathered from Highways Safety Inspections are considered as a part of the asset management analysis.

2.5 Integrated Highway Asset Management Systems

The collection and analysis of inventory and condition data enables us to make the right investment and priority decisions for each key asset group. The storage, sharing and use of that data is, therefore, paramount to the continued strategic planning and implementation of asset management works. Across all major asset groups integrated highway management software systems are in place, furthering our use of quality data in decision making. An example of this, is the utilisation of asset management planning software, supplemented by our asset value management prioritisation toolkits to inform asset management in relation to planned programmes of work on footways and carriageways.

2.6 Asset Groups

Different types of asset have maintenance 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. For example, street lighting is managed under a contract with Prysmian, structures are managed by Jacobs, traffic signals and intelligent transport systems are managed in-house by the County Council, and all other highway maintenance is managed in partnership with Ringway Infrastructure Services via the Highway Maintenance Service Contract.

A major part of budget strategy is assessing the effect of budget decisions for an asset group on the delivery of corporate priority outcomes. WCC, therefore, ensures that 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 asset.

The plans for each asset group allow the effects of different budget strategies to be considered appropriately, in terms of providing for effective management and delivery.

2.7 Contract Management

The asset groups are managed and delivered through several different contract 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 Highways Maintenance Service Contract (HMSC) with Ringway. The current HMSC was an evolution of the County's previous Term Highways 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.
- **Structures Management** is delivered through a Term Service Contract (TSC) with Jacobs.
- **Street lighting** is delivered through a Term Service Contract (TSC) with Prysmian.
- **Other services** are delivered internally.

2.8 Risk Management

The identification of risk and its management is an important consideration of highway asset management. It is, therefore, essential to understand assets that are critical to the functioning of the network. Our asset management principles encourage risk management to consider risk from condition of assets and increase the potential for 'spend to save' investment based on business risk. A better understanding of asset deterioration and failure rates, provide an evidence base to support risk-based decision making.

Worcestershire County Council maintains a Corporate Risk Register which is reviewed annually by senior managers and links into the Economy and Infrastructure Directorate Risk Register. Several key elements of the Directorate Risk Register relate to Highways Assets and associated matters. All Worcestershire County Council Contracts have associated Contract Risk Registers that are reviewed regularly. These Risk Registers and reviews include our asset inventory.

3. Procurement process

All WCC Highways related Contracts are NEC based, either Engineering and Construction Contract (ECC) or Term Service Contract (TSC), including the Professional Services Provision Contract although this will change to NEC4 PSC for the new term about to be procured. The County has a very strong commissioning process which ensures value for money. Our Maintenance Contracts have Contractors' Share clauses and the Highway Maintenance Service Contract includes an efficiency factor that enables "in Contract" Price reductions.

The Highways Maintenance Service Contract with Ringway is a twelve- and half-year contract that was specifically tendered through a rigorous procurement process to achieve:

- Specification of outcomes
- Clarity of costs and risks
- Clarity of planning the Service
- Opportunities to remove cost / drive efficiency
- Flexibility
- Target Pricing involving both parties

- The Contractor's Plan that provides a strong management and planning tool for the Service
- Incentives and Efficiencies

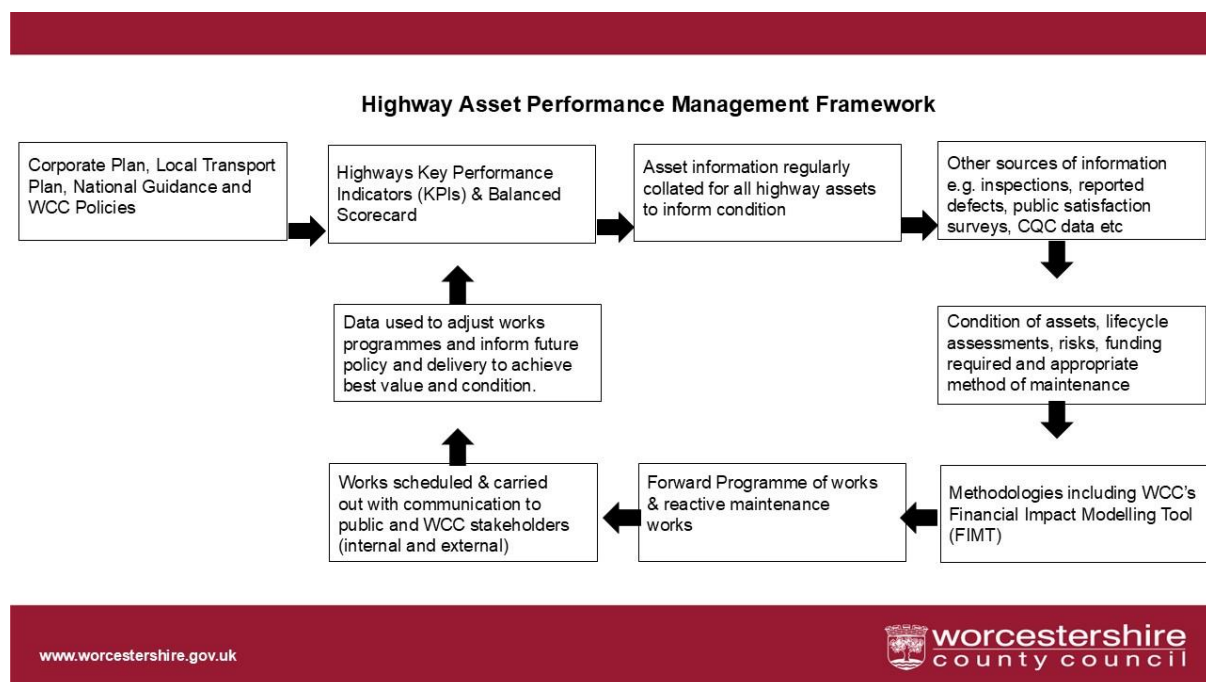
Extensions to the Contracts are earned by meeting Contract Key Performance Targets which are reviewed regularly as part of the Performance Management Framework with senior level officers from both Worcestershire County Council and contractors.

3.1 Performance Management Framework

Worcestershire County Council operates a Performance Management Framework that supports the Highways Asset Management Plan and is used to measure its performance and continuous improvement in general. 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, and any shortfalls.
- Effective communications with key stakeholders by demonstrating performance against their requirements.
- Aids decision making to deliver value for money.

A diagram showing the Performance Management Framework is shown below.



3.2 Condition of the highway network

Using our asset management framework, with DfT funding and the ongoing investments made by the County Council, we have not only maintained a steady state in highway condition but have generally improved its condition over the last ten years.

The ongoing financial challenges mean we are moving into a period of greater prioritisation of overall funding across the authority. However, our strategy of preventative maintenance and whole lifecycle cost asset management will ensure the impact on the asset is proactively managed and we remain in a strong position to provide for effective highways asset management over the next three years.

3.3 Targets and Outcomes

The highway maintenance service is committed and responsive to improving our roads and footways, recognising that they are a high priority for the residents and businesses in Worcestershire.

Service performance monitoring is an important aspect of our Highway Maintenance Service Contract with Ringway with whom we operate weekly contract review meetings with senior officers to review targets and performance of service delivery. This data feeds into our Performance Management Framework which leads to the regular reporting of Key Performance Indicators (KPIs) and reports with the Senior Management Team within the Directorate. There are 12 KPI's aligned to the HMSC contract with Ringway which are outcome based. These include and relate to defect repairs, effective cost management, key people and positive local impact. We focus on the effective delivery of our design and build of highways works using a target price system, and Contractors' Plan approach for efficient coordination and delivery of value for money.

4. Scheme of Delegation

Worcestershire County Council, as part of its governance arrangements, operates a Scheme of Delegation (Register of Executive Decision) that provides managers with a clear statement outlining who has the authority and responsibility to take officer decisions within the Economy and Infrastructure Directorate. This is an important legal document delegating executive powers given to the Director, and where appropriate, key managers and officers. The principle is that delegation will be to the lowest level possible, consistent with safe management of the Directorate's services, the protection of staff and the effective management of resources.

The Scheme of Delegation delegates the following responsibilities from the Chief Executive to the Director of the Economy and Infrastructure Directorate:

- To carry out the functions of the Council as Highway Authority (including footpaths, bridleways and cycleways) and to be Proper Officer under the Highways Act 1980.

- To carry of the functions of the Council as Traffic Authority and functions relating to road safety and on and off-street parking.
- To carry of the functions of the Council as a street or Streetworks authority.
- To carry of the Council's network management functions under the Traffic Management Act 2004.
- To oversee and coordinate public/integrated transport issues as they affect the county and carry out the County Council's functions in respect of public passenger transport services.

The day-to-day implementation and monitoring of asset management through its supply chain is undertaken by the Asset Management Team operating under the County Council's Scheme of Delegation.

5. Industry Good Practice

Effective collaboration is at the heart of the Highways Maintenance Service Contract between Worcestershire County Council and Ringway to ensure the specified outcomes are achieved. In terms of industry good practice, the partnership has secured the European Foundation for Quality Management (EFQM) award. The partnership between Worcestershire County Council and Ringway has also successfully achieved formal recognition of ISO 44000 (equivalent to BS11000) for collaborative working in successive years since 2017.

Worcestershire County Council is a member of the CQC (Customers, Quality and Cost) Efficiency Network that provides members with an annual assessment of their efficiency, using CQC methodology, focusing on key areas of highway maintenance expenditure identified by the CQC Steering Group.

The authority also participates in the annual National Highways and Transport (NHT) survey that collects public perspectives on, and satisfaction with, Highway and Transport Services in Local Authority areas. It is a unique, standardised, collaboration between Highway Authorities across the UK enabling comparison, knowledge sharing, and the potential to improve efficiencies by the sharing of good practice.

Worcestershire County Council has and continues to be a leading highway authority both regionally and nationally, sharing good practice and continual improvement through the Midlands Highway Alliance Plus. The membership the Alliance helps to deliver best value by working together with other local authorities to share information and industry best practice to further improve efficiencies, reduce costs and improve public satisfaction.

6. Public Satisfaction

By participating in the annual NHT survey and collecting public satisfaction data from the annual Worcestershire County Council Viewpoint survey and data drawn from roadshows around the county and other sources, the authority analyses trends and uses this

information to measure, benchmark and diagnose performance and identify potential for improvement.

7. Tackling Congestion

To also help combat congestion and disruption to the highway network, Worcestershire County Council operates a 'West and Shires Permit' (WaSP) scheme that allows participating authorities to better manage activities on the highway and minimise disruption and inconvenience. The WaSP scheme requires an activity promoter to apply for a permit to 'book' time on the highway, this applies to work by developers, utility companies and works carried out by the County Council. The Permit Authority issues permits with conditions attached to better focus the activity in terms of reducing the impact on road users and other stakeholders; this might be in relation to the timing of the works, the traffic management and methodology that is deemed important.

Equally, the Permit Authority can refuse to issue a permit if it feels the planning or the detail of the application is insufficient.

To help road users stay informed about potential delays and diversions, WCC publish its roadworks information on [One.Network](#). This is a UK platform for publishing and managing roadworks information, combining data from various sources, including local authorities, utility companies, and National Highways, to create a comprehensive map of current and planned roadworks in any given area.