



Worcestershire Local Transport Plan 3

# Transport Asset Management Plan (2016)



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# Terms

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The following terms are used in this Plan:

- **Asset Management** - A strategic approach that identifies the optimal allocation of resources for the management, operation, preservation and enhancement of the highway infrastructure to meet the needs of current and future customers.
- **Asset Valuation** - The calculation of the current monetary value of an authority's assets. It excludes therefore any consideration of the value to the community in terms of the economic and social benefits of providing a means for people to travel in order to work, socialise and live.
- **Levels of Service** - A statement of the performance of the asset in terms that the customer can understand. Levels of service typically cover condition, availability, capacity, amenity, safety, environmental impact and social equity. They cover the condition of the asset and non-condition related demand aspirations, i.e. a representation of how the asset is performing in terms of both delivering a service to customers and maintaining its physical integrity at an appropriate level.
- **Risk Management** - The formal assessment of risks with the potential to affect delivery of the service via a process of identification, assessment, ranking and control planning.
- **Gross Replacement** - A strategic approach that identifies the optimal cost allocation of resources for the management, operation, preservation and enhancement of the highway infrastructure to meet the needs of current and future customers.
- **Deterioration** - The change in physical condition of an asset resulting from use or ageing.
- **Depreciation** - The consumption of economic benefits embodied in an asset over its service life arising from use, ageing, deterioration, damage or obsolescence.
- **Depreciated** - The current value of the asset, normally Replacement Cost calculated as the Gross Replacement Cost minus accumulated depreciation and impairment.
- **Service Options** - Options available for an asset or groups of asset in terms of alternative levels of service.

# Abbreviations

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- **AIS** – *Asset Information Strategy*
- **AV** – *Asset Valuation*
- **BOAT** – *Byway Open to All Traffic*
- **BPM** – *Business Process Maps*
- **BVPI** – *Best Value Performance Indicator*
- **CAMP** – *Corporate Asset Management Plan*
- **CPS** – *Corporate Property Strategy*
- **ADEPT** – *Association of Directors of Environment, Economy, Planning and Transport (Formerly the County Surveyors Society)*
- **CVI** – *Coarse Visual Inspection*
- **DfT** – *Department for Transport*
- **DRC** – *Depreciated Replacement Cost*
- **DVI** – *Detailed Visual Inspection*
- **GAAP** – *Generally Accepted Accounting Principals*
- **GIS** – *Geographic Information Systems*
- **GRC** – *Gross Replacement Cost*
- **KPI** – *Key Performance Indicators*
- **KSI** – *Killed and Seriously Injured*
- **ITS** – *Intelligent Transport Systems*
- **LoS** – *Level of Service*
- **LTP(3)** – *Local Transport Plan (2011-2026)*
- **RAB** – *Resource Accounting and Budgeting*
- **TAG** – *Local Government Technical Advisory Group*
- **TAMP** – *Transport Asset Management Plan*
- **SCANNER** – *Surface Condition Assessment of the National Network of Roads*
- **UKPMS** – *United Kingdom Pavement Management System*
- **WGA** – *Whole of Government Accounts*



# Executive Summary

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This Transportation Asset Management Plan (TAMP) is being developed by Worcestershire County Council in response to several major initiatives that have been introduced in recent years.

These include:

- *The realisation by many local authorities that they must have systematic procedures in place to allow decisions to be made regarding the best way to invest in Council-owned assets over the long term,*
- *The introduction of initiatives by the Department for Transport to make local authorities more accountable for their investment decisions for road assets, such as through Performance Indicators,*
- *The implementation of measures in UK to tie road funding to asset management performance.*
- *New Codes of Practice to guide the development of rational systems to support road asset management.*

The road network is importance to support Worcestershire County Council's mission and objectives and producing desired outcomes across many areas of its community responsibility. In this regard, and under the constraints of finite budgets over the long-term, the asset must be protected, but at optimum cost in relation to the level of service required.

The TAMP covers Worcestershire County Council's entire 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.

Many asset management practices are already undertaken by the various Service Areas within Worcestershire County Council that have responsibility for road assets. This TAMP formally sets out the scope of these practices and the methods used.

Worcestershire County Council's published strategies and objectives indicate public aspirations supported by an effective road network. In particular, the Local Transport Plan (LTP) directs this TAMP to outcomes expected of the network. The ways in which the TAMP will support the LTP in delivering these outcomes are set out within the document.

It is anticipated that the review and updating cycles for each part of the plan will differ as follows:

The **Executive Summary**: is expected to be replaced after the first year by an annual asset management plan performance report. This report will update the key actions from the plan and present these into the relevant Worcestershire County Council's decision making processes to influence budget allocations. This should also include reporting progress with introducing and implementing asset management techniques in relation to the overall programme.

The **Asset Management Plan** will be updated biennially to reflect ongoing improvements in practice and procedure.

The **Appendices**: will be "living" documents. They will be updated as their contents demand them to be changed; this will typically be either annually, quarterly or monthly. Updating will be linked to the management processes introduced to manage the implementation of the plan.



The **Implementation Plan** will have a duration that mirrors the plan i.e. it will contain proposals that will target the embedding of highway asset management practice within Worcestershire County Council.

# 1. Introduction

## Definition of Transport Asset Management

The road network has importance to Worcestershire County Council in supporting its mission and objectives and producing desired outcomes across many areas of its responsibility to the community. In this regard, and under the constraints of finite budgets over the long-term, the asset must be protected but this should be done at optimum cost in relation to the level of service required. The Council has multiple objectives which are either directly aimed at transport and road network performance or are significantly supported by the provision of a road asset in good condition.

Some key aspects of asset management are:

- A Strategic Approach - Taking a longer-term view of how the authority manages its assets. Such a systematic approach will transcend annual budget cycles and are essential if Worcestershire County Council is to maximise the long-term benefits of the resources available.
- Optimal Allocation of Resources - Local authorities have a statutory duty to pursue best value. Expenditure must be prioritised to ensure corporate objectives can be effectively delivered within budgetary constraints. Asset management assists this process by enabling the allocation of resources based upon assessed need.
- The use of lifecycle planning, the minimisation of whole life costs and decision making informed by an appreciation of risk and benefit are key asset management components that will help Worcestershire County Council allocate resources to where they are likely to provide the best long-term benefits.
- The Needs of Customers - The development of levels of service for each of the highway assets means that it is possible to explicitly take account of the needs and aspirations of service users.

## Drivers for Road Asset Management

There are many drivers for the implementation of a TAMP, which include:

- Evidence of strategic thinking and long term planning with regard to maintenance and management of the highway infrastructure
- Satisfactory explanation to stakeholders of a fair and reasonable way of allocating limited operational, maintenance and improvement resources
- The introduction of Whole of Government Accounts (WGA) and Resource Accounting and Budgeting (RAB), whereby local authorities are to be required to provide financial forecasting and valuation information to central government in order to meet both national and local outcomes as specified within the single outcome agreement
- Legislation requires the production of Local Transport Plans (LTP's) which must now incorporate reference to a Transportation Asset Management Plan in each local authority, and the development of an Asset Valuation to properly account for the accumulated depreciation and impairment of the road asset in line with accounting standards used on other assets under local authority control.

## **Worcestershire County Council's Initial Infrastructure Asset Management Plan**

Worcestershire County Council is determined to develop its transport asset management processes in recognition of the importance that optimal investment in the road network will bring to the economy and living standards of the County.

The published strategies and objectives of Worcestershire County Council indicate a desire on behalf of the public for all of the outcomes listed above.

The strategic goals and objectives are broad statements that describe the long term vision and direction of Worcestershire County Council. These statements are provided in a number of plans and strategy documents. The Corporate Plan and the Local Transport Strategy in particular establish the relationship between asset management and the other goals and objectives of Worcestershire County Council and translate the strategic goals and objectives into quantifiable Levels of Service and Performance Targets for asset management purposes.

There are several core issues which must be addressed by the TAMP. These are:

- *The need for evidence-based validation of investment levels to arrest decline in the local road network.*
- *Procedures that focus on core processes for investment decision-making.*
- *Procedures for Inventory and Asset Management of existing assets.*
- *Procedures for Inventory and Asset Management of new construction and improvement schemes that are improving the average condition but are adding to the inventory for maintenance.*

Worcestershire County Council has developed an asset management based approach to deliver Highway Maintenance. Key to this has been data collection to develop and maintain an evidence base. Whilst excellent progress has been made in achieving a complete inventory further work is required on the less critical elements to ensure this evidence base covers all highway and transport assets that are owned and managed by the County Council.

The existence of this evidence base aides decision making, by enabling the County Council to properly understand and manage the relationship between performance and cost. Ultimately, this will deliver a noticeably improved level of service over time, meeting statutory requirements and making efficient use of limited resources.

This Transport Asset Management Plan pulls together the relevant strategies, goals, objectives, plans and methods in use for managing highway and transportation assets across Worcestershire. This plan sets out how the asset management approach in Worcestershire has been structured to be delivered in a 5-year rolling programme; the first three years of which will be in some detail and the later three being more indicative.

A series of steps are necessary to allow an effective decision-making process in managing the road asset. The steps used in this TAMP are generally:

- *Establish the road network*
- *Segment the network into uniform street types*
- *Rank the street types*

- *Collect the asset inventory*
- *Rate the condition of the assets*
- *Set standards and goals*
- *Identify deficiencies from actual to standard*
- *Prioritise works (including valuation and budgeting)*
- *Monitor and review*

The Worcestershire Transport Asset Management Plan will be a 'living document' and therefore will need regular review to ensure that it remains current. Its performance as an asset management tool will be primarily improved through the development of optimisation processes, which will continually seek to embrace best practice; focussing investment where evidence suggests that need is greatest. This will deliver sustained customer satisfaction, surety of funding requirements and improved economic, social and environmental well being for Worcestershire.

As the Transport Asset Management Plan matures, it will bring about the following benefits:

- *Include all highway and transport assets owned and operated by Worcestershire County Council*
- *Enable continuous monitoring of the condition and performance of the asset*
- *The ability to combine maintenance programmes with capital programmes, to achieve greater efficiency, through developing packaged schemes including both revenue and capital funding streams.*
- *Continue to identify improvements in the information and systems necessary to refine this process*
- *Reduced life-cycle costs through increased efficiency, leading to better value for money*
- *Decreased financial, operational and legal risk*
- *Achieve corporate and national objectives*
- *Enable forward planning to take place with confidence, based on projected demand and defined service levels, leading to better management of expectations*

### **Benefits of Transport Asset Management Plans**

Asset management facilitates informed decision-making by supplementing instinctive engineering judgement and supposition with analysis (financial, economic and engineering). It thereby enables an authority to better understand and manage the relationship between cost and performance.

This will assist in delivering the best value and the most cost effective maintenance regimes for the resources available, For example:

- *The same or better level of service at a reduced cost;*
- *A better level of service at the same or marginally increased cost,*
- *Or; where, owing to budgetary constraints, it is not possible to maintain the level of service, the effects of the reduced level of service is mitigated through the efficient use of resources.*

Specific benefits of an assessment management approach are:

- *Reduced life-cycle costs*
- *Defined levels of service*
- *The ability to track performance*
- *Improved transparency in decision making*
- *The ability to predict the consequences of funding decisions*
- *Decreased financial, operational and legal risk*
- *Ability to discharge statutory valuation and financial reporting responsibilities*

These are stepping-stones to the realisation of better value.

### **Scope of the Transport Asset Management Plan**

This document presents the following:

- *an introduction to the principles of Transport Asset Management Plans*
- *a summary of current elements of asset management underway in the County*
- *a way forward*

Worcestershire County Council currently operates a technical based approach to asset management. As the TAMP is further developed over the coming years it will evolve to include the elements of more advanced systems and will include other elements of Integrated Transport asset as even more data is collected and analysed. We are however, always considering ways of using utilising the data we already collect more effectively. We will also assess what additional data is required to improve the methodology for budget allocation, identification and prioritisation of works.

There is an opportunity to realise further benefits from introducing progressively more advanced asset management techniques, building on the current approach by enhancing our predictive modelling, risk management and optimised renewal decision making techniques. These further techniques facilitate long term financial forecasts and programmes that minimise lifecycle costs whilst delivering required levels of service. Accurate and detailed data on assets is essential to gain the benefits of advanced asset management.

### **Aims of Worcestershire's Transport Asset Management Plan**

Worcestershire County Council is constantly seeking to enhance the current approach to transport asset management, thereby becoming more effective and improving our ability to meet national and local objectives and customer needs. It is the intention to develop a rolling 5-year programme, the first three years of which will be in some detail and the latter two being indicative.

As the plan is developed it will:

- *Continue to identify improvements in the information and systems necessary to refine this process.*
- *Include all highway and transportation assets.*
- *Adopt best practice.*

- *Monitor the condition and performance of assets.*
- *Prioritise greatest need.*
- *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.*
- *Achieve corporate objectives.*
- *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.*

The adoption of a formalised asset management approach builds on the foundations of existing practices but also represents a large step improvement in what we do. This plan will set out practices in regard to these elements as far as is possible. Where changes are identified in the information and systems necessary to refine this process they are set out in an improvement plan.

The concept of the TAMP is that it is a 'living document' and therefore must be reviewed, and updated regularly. However, its performance as an asset management tool will be primarily improved through the development of optimisation processes. This must be done through an ongoing process of programmed development that will continually seek best practice.

The TAMP process begins with the identification of the expectations of stakeholders and works through logically to outputs on the road asset which will deliver these expectations.

Improvements to practice occur if the expectations are described qualitatively in Levels of Service (LOS), and quantitatively through Performance Targets, so that the process of decision-making for investment of funds is made in a rational series of steps linking back to the needs of the users and funders of the road network asset.

In addition, there are functions carried out on the road network which do not fit directly into the TAMP, but which support and inform it, and are designed to meet service and performance requirements:

- *Network Management is carried out to co-ordinate the operations of the many different parties which work within the road corridor, in order that optimal traffic flow is maintained on a daily basis. This is managed by Worcestershire County Council through co-ordination of lane closures with utility companies and through the approving of works by private developers within the road. From 1 April 2016 the County will be operating a "Permitting Scheme" to ensure maximum network efficiency.*
- *There is a need to ensure the programmed maintenance included in the TAMP is taken into account by utility companies and developers.*
- *Road Maintenance deals with the operational level of response to defects in the assets, whether emergency or routine, and the resorting of this work.*

Data from these operations can inform the asset management process in regards to locations and individual asset items that have an excessive maintenance history. It is important that emergency and routine maintenance takes account of planned maintenance included in the TAMP. The TAMP itself then sits above these other plans that authorities must develop, as referred to in “Well-Maintained Highways”. The TAMP consists of the decision-making processes that determine the best use of funds to be invested in the longer-term viability of the road network and its component assets.

## 2. Highway Maintenance Powers, Strategy and Service Delivery

### Worcestershire County Council's Legal Network and Asset Responsibilities

Worcestershire County Council has a legal responsibility for the highway network in terms of keeping the routes available and safe for passage for the travelling public. It undertakes this duty in its role as the Highway Authority. Much of the highway network has evolved through being historic routes and networks. Over time the network has been augmented through new routes either via new developments (housing, commercial, industrial) or through changes to the original network to facilitate traffic and economic growth (by-passes etc).

Worcestershire County Council is the Highway Authority for all non-trunk roads which are maintainable at public expense within Worcestershire. As such, Worcestershire County Council has to fulfil a number of statutory duties.

It is the duty of all Highway Authorities to reasonably maintain and repair the highway, and to keep the surface of the road free from that, which might otherwise obstruct it.

### Highway Maintenance Strategy

#### *Principles*

The maintenance strategy is aimed at optimising the maintenance contribution to the service provided by the infrastructure. The principles of the highway maintenance strategy are:

- *to deliver the statutory obligations of the authority;*
- *to be responsive to the needs of users' and the community;*
- *to contribute to effective highway asset management and maintain the asset value;*
- *to support effective delivery of the statutory network management duty;*
- *to support and add value to local transport objectives;*
- *to support and add value to wider corporate policy objectives*

#### *Main Components*

The Highway Maintenance Strategy is built around three main components;

- *A defined hierarchy for all elements of the network*
- *A framework of policies and objectives for the service*
- *An Inventory of all relevant components of the asset.*

To be effective, these key components are supplemented by the following:

- *a comprehensive management system for inspecting, recording, analysing, prioritising and programming maintenance works to optimise their asset management contribution;*
- *arrangements to finance, procure and deliver maintenance works, in accordance with the principles best value and Worcestershire County Council's procurement policies;*



- *a risk management strategy clearly identifying and evaluating the risks and consequences of investment decisions and measures to mitigate them;*
- *arrangements to monitor, review and update as necessary, each component of the strategy and the performance of the strategy*

### **Detailed Strategy for Highway Maintenance**

The overall strategy for highways maintenance is to ensure the protection of the overall capital asset and the provision of specified levels of service, appropriate to the type and functional importance of each individual route. This is taken forward through the development of the TAMP.

Our priority in recent years has been to ensure that funding has been allocated on a "needs" basis and ensuring that the appropriate National Indicators have improved where possible.

The detailed elements of the strategy are to:

- *Utilise asset management practices to ensure protection of the highway infrastructure and improve these through the implementation of the Improvement Plan of the Transport Asset Management Plan.*
- *Identify needs against the National Code's of Practice and survey data.*
- *Allocate resources based upon assessed needs basis, to minimise the risk of assets deteriorating.*
- *Carry out repairs to the most appropriate standards and methods, based on whole-life costing, to ensure value for money.*
- *Continue to identify improvements in the information and systems necessary to refine this process.*
- *Improve the condition of footways to enhance their safety and availability for all users.*
- *Seek the required funding by demonstrating the maintenance needs for maximum Government support, through the Local Transport Plan.*
- *Seek additional funding through Worcestershire County Council's strategic planning and budget cycle.*
- *Seek to optimise the benefits of maintenance works by incorporating any appropriate safety, availability or accessibility improvement works at the same time.*
- *Co-ordinate works to reduce disruption.*
- *Treat as a priority those hazards that could lead to personal injury or damage to vehicles.*

### **Network Hierarchy**

As well as the national classification (A/B/C/U) the highway network in Worcestershire is classified according to a route hierarchy, which distinguishes roads on the basis of their function and level of use.

All trunk roads and Motorways are the responsibility of the Highways England and are not included within the County's network. They are therefore not included in this TAMP.

The hierarchy classifications used by Worcestershire are shown in Appendix A, the County's Highway Maintenance Plan which also states how the day to day, safety aspects of the network are managed.

## **Arrangements for Service Delivery**

Service delivery is procured through a series of Term Contracts specifically aimed at the various specialist sectors. These are:

- ***Highway Maintenance Service Contract*** – (*Winter Maintenance, reactive safety related repairs, gully emptying and drainage system maintenance, Planned strategic Maintenance [carriageways, footways, structures etc]*)
- ***Term Civil Engineering Contract*** – (*Improvements to the Highway*)
- ***Lighting Term Maintenance Contract*** – (*Lighting and Illuminated sign Maintenance*)
- ***Traffic Signals Maintenance and Renewals Contract*** – (*Traffic signal maintenance and installations*)
- ***Term Shared Professional Services Contract*** – (*Provision of engineering consultancy services*)

### 3. Levels of Service

#### Levels of Service Introduction

Levels of service describe both what the customer wants from the asset and what is necessary to ensure that a proper maintenance regime is in place. A clear understanding of customer views is therefore fundamental in defining them, as is a comprehensively planned maintenance regime. Both aspects will be influenced further by legislative requirements, the Council's objectives and policies and best practice from elsewhere. Available funding of course plays a key role in this process.

Four dimensions for levels of service are used:

- *Safety*
- *Availability*
- *Serviceability*
- *Condition*

The first three of these cover customer requirements.

Safety describes the risk to the customer in using the asset and will in all cases be required to meet very high standards. This dimension does not initially cover road safety in the wider sense, which depends substantially on the behaviour of road users. To illustrate the difference, a worn road which has a slippery surface is not meeting the required level of service, but a bend with perfectly good surface which has a record of accidents because drivers drive too fast, is meeting it in terms of asset management. In the longer term, as noted below, the TAMP may be expanded to include the improvements to overcome issues such as this, which are currently considered separately.

Availability is largely self-explanatory and will vary according to the asset and location. A single street light not working is unavailable and may cause minor nuisance to road users and residents, but a bridge on an 'A' road closed because of structural weakness will be a major problem.

The serviceability dimension describes whether the asset actually delivers what service users and the Council require of it. As just one example, a road surface may be perfectly safe, available for use at all times and in good condition, but the fact that it is of concrete construction could be causing noise nuisance to people living nearby.

The serviceability dimension also has the potential to bring into play much wider attributes of the asset, for example is the road congested, is the footway surface appropriate for the local environment, is the street lighting provided to adequate standards for local needs? These and other considerations would link to the Council's proposed improvements programme, detailed in the Local Transport Plan.

The condition dimension is judged relative to minimising the long-term cost of maintaining the asset and not relative to customer requirements. For example, a rusting steel lamp column may be safe, working and acceptable in appearance to customers. The fact that it is in rusty condition is, in these circumstances, only of concern if the optimum maintenance regime to minimise whole-life costs would have had it repainted before rust appeared. Such an optimum maintenance regime will, for many assets, include periodic preventative maintenance before more extensive maintenance, or full replacement, is undertaken. A maintenance regime which involves little investment over many years followed by major renewals may be more expensive overall

than a 'little and often' regime which applies regular preventative maintenance; hence the emphasis given to minimising whole life cost.

Environmental sustainability is growing rapidly in importance and Worcestershire County Council already takes many steps to minimise the environmental damage done by its management of highway assets. It is likely that this will be added as a specific additional dimension of levels of service in future editions of the County's TAMP.

All aspects of level of service include elements of risk. As examples, the collapse of a bridge immediately makes the service unavailable; inadequate monitoring of skid resistance may increase the risk of road accidents. The analysis of levels of service needs to take such risks into consideration.

### **Use of Levels of Service**

Levels of service are a way in which a highway authority can determine whether or not it is meeting customer expectations and its statutory obligations in the delivery of its highway service. They enable the Highway Authority to:

- *Document and measure the service provided*
- *Rationally evaluate service versus cost trade-offs*
- *Determine if adequate consideration is given to what is important to the customer*
- *Establish if operational activities support the achievement of strategic goals*

### **The Condition of the Asset**

The physical condition of the asset has 2 elements:

- *The 'perceived' condition of the asset as "measured" by public and road users perception*
- *The condition of the asset as determined by measurement and analysis of road condition data.*

This is particularly important as whilst this framework promotes a focus on the customer's needs there may be instances (particularly in relation to the structural condition of the asset) when the customer is not in a position to hold an informed opinion.

### **Demand Aspirations**

This is a term used to describe the non-condition related performance requirements of the asset. These can relate to safety, availability, accessibility etc. Such measures recognise that the asset provides a service to customers by enabling them to travel.

The development of measures that reflect performance against these aspects and in particular the development of a relationship between the resources allocated to tasks that support them is critical if the principles of asset management are to be applied fully across all aspects of the highways service.

Once a suite of levels of service and performance measures are put in place to support them, it will then be possible to obtain some understanding of the relationship between the cost and the level of performance

against each level of service. This information can then ultimately be used to inform decisions on the allocation of resources between competing demands.

The ability to rationally assess competing demands is at the core of an asset management approach. The information collected against levels of service is the base data that can be used for optimisation.

## **Requirements**

### ***Legislative Requirements***

There is a statutory duty (The Highways Act 1980) for the Highway Authority to maintain the Public Highways it is responsible for. Common law also imposes a general duty of care on Worcestershire County Council in the way it carries out its statutory functions.

Often when a statutory duty applies it is not an absolute duty, but set against a statutory defence. For example:

- *Highway Inspections – Section 58 Defence*
- *Precautionary Gritting and Snow Clearing - 'Reasonableness'*
- *Snow Clearing - 'Importance of route and Resources'*

### ***Customer Expectations***

A number of surveys of public perception and preference regarding highway maintenance are carried out every year.

The surveys give a broad indication of levels of satisfaction with the service and the relative importance of elements that make up the maintenance function (structural maintenance, bridges etc). The research focuses on expected levels of service and not targets. The research tends not to be focussed on the functional quality of customer service (response to queries, politeness of staff) but rather on broad technical outcomes (how do you rate the quality of the roads in Worcestershire).

We undertake surveys of adjacent householders and businesses when carrying out maintenance schemes, asking about quality of consultation, notice, workforce, inconvenience, benefits and fitness for purpose. Satisfaction with the quality of works (satisfactory, good or very good) has reached 86% overall.



## 4. Asset Valuation

### Background

Valuing roads, bridges and other transport assets must be to some extent a theoretical exercise, given the nature of the assets, but it is an essential part of the asset management process and will be required under 'whole of government accounting' rules. Its particular value in the context of the TAMP is to shed more light on the cost consequences of implementing sub-optimal maintenance regimes, usually because of under-funding. Asset valuation therefore allows decision makers at both national and local levels to make better-informed decisions on funding allocations.

Calculating asset values can be a complex exercise. An initial 'gross replacement cost' approach has been used for the highway assets in work co-ordinated through the Midlands Service Improvement Group, this being what it would cost to provide a modern equivalent of the asset if it did not exist. Future versions of the TAMP will need to develop this analysis.

The amount of service life of an asset that has been consumed is the depreciation and can be evaluated financially. This figure will be the expenditure required to return an asset to "as new" condition, if it can be repaired. Alternatively, it is the sum that should be set aside for the replacement of any asset that cannot be repaired. The current or net value of an asset is its **Gross Replacement Cost** minus the financial depreciation.

### Calculation – Gross Replacement Cost

The following calculations of **Gross Replacement Cost (GRC)** for the Road Asset are derived from unit rates provided by the **Highway Asset Management Financial Information Group (HAMFIG)**. The component parts making up these unit rates incorporates the cost to replace the various items included in the Carriageway and Footway Asset Classes as defined in Section 4.2 of The Transport Infrastructure Assets Code published by CIPFA.

The features included in this valuation are as follows:

- Pavement,
- Attached Footway,
- Central Islands,
- Central Reserves,
- Road Markings,
- Road Studs,
- Kerbs,
- Verges,
- Drainage,
- Safety Fences,
- Boundary Fences.

- Structures
- Lighting and Traffic Signals
- Road signs and other Transportation assets

Based on the WGA methodology the **Gross Replacement Cost** for the County's Infrastructure asset equates to £8.9 billion.

### **Calculation – Depreciated Replacement Cost**

In order to calculate the **Depreciated Replacement Cost (DRC)** it is necessary to deduct from the benchmark valuation the accumulated depreciation for the items included in the road asset group. For example:

- ***Gross Replacement Cost** – Depreciation = **Depreciated Replacement Cost***
- *The **DRC** figure would then need to be factored annually to arrive at the current value of the asset.*



## 5. Life Cycle Planning

### Introduction

Every asset goes through a series of phases during its serviceable life. They are defined as:

- *Creation/Acquisition*
- *Planned Maintenance*
- *Renewal/replacement*
- *Upgrading*
- *Disposal*

The asset stock in Worcestershire can be grouped into the following asset sets:

- *Roads*
- *Footways*
- *Cycleways*
- *Drainage*
- *Signs*
- *Road Markings and Road Studs*
- *Vehicle Restraint Systems*
- *Barriers, Fences and Guardrails*
- *Winter Maintenance*
- *Structures*
- *Street Lighting*
- *Powered / Illuminated signs*
- *Traffic Signals*
- *Cycling and Walking Infrastructure*
- *Public Rights of Way*

Lifecycle plans have been established for some of the asset sets shown above. Plans for the remaining sets are currently under development. Where we have each will detail:

- *The levels of service we wish the asset to meet*
- *Evidence on the extent of the asset and its characteristics*
- *Evidence on its present condition, and how that is measured*
- *The present valuation of the asset*
- *An assessment of future changes in demand for the asset*

- *The options available for treatment of the asset*

This provides the basis for the analysis:

- *Analysis of the best management strategy for minimising the whole-life cost of the asset whilst meeting service level aspirations*
- *Identifying options within this strategy, which deliver different levels of service, with different targets, depending on budget availability*
- *Setting out the action plan necessary to ensure the effective delivery of the lifecycle plan*
- *Identifying the specific risks which may affect the successful implementation of the lifecycle plan*

The lifecycle plans cannot be freestanding because the level of resource provided for one asset will affect the funding available for others.

All of Worcestershire's life cycle plans are constantly reviewed based on the latest data available and to reflect the current methods of collecting the same.

They document the lifecycle planning process that has been undertaken for each asset grouping in order to manage each phase of an asset's life is managed (For example from creation to disposal) and in doing so recognises the interdependency of the phases.

A lifecycle plan starts with the identification of options, clearly documenting them. It only however becomes of significant value if the evaluation of those options is undertaken in a rigorous and repeatable manner; for example if there is a process of optimisation.

## **Lifecycle Cost Analysis**

Lifecycle Cost Analysis is a process of comparing different cost streams over the same extended period of time, to determine the most appropriate strategy. With different strategies for managing (elements of) the asset, will come different levels of service, different cost streams and different residual risk options.

We are seeking to develop this process across a range of assets. Some are more progressed than others.

It is considered that sufficient funds exist to carry out the inspection regimes, any emergency and high priority works identified across our asset types.

Certain types of demand can be weather related. The severity of winter and the extent of rainfall can vary considerably year to year. If necessary additional funding from other routine heads can be drawn upon depending upon need. The Met office provides weather warning related to rainfall, the Environment Agency regarding flood risk and various sources provide winter weather forecasting.

## **Service Levels**

Some formal 'service levels' have been established and incorporated within the HMSC. We have made reference to those recommended standards and performance indicators used to monitor the condition of various assets within the individual lifecycle plans.

## **Other Response Issues**

The following issues are dealt in appendices and describe ordering timescales and responses to situations affecting the asset rather than their condition.

Routine Maintenance – Defect Categories, response and ordering timescales, highway defect risk matrix and register can be seen in Appendix A.

## 6. Asset Inventory and Condition – A Strategy for Enhancement

### Introduction

The asset management strategy draws on the analysis set out in the lifecycle plans to show:

- *The way we will budget expenditure so as to provide the best overall maintenance of all our assets, judged against desirable levels of service, and*
- *The techniques we use to ensure that we manage the different assets in the most cost-effective way, and how we will improve those.*

In this interim TAMP the strategy covers two main areas:

- *The optimum allocation of the capital budgets available between the asset categories. This is intended to provide the background for decisions on future spending which will need to be made once the implications of the government's comprehensive spending review are clear.*
- *The main areas for further investigation and analysis in taking forward our techniques for managing the individual assets.*

### Strategy to Optimise Performance against Levels of Service Aspirations

The analyses in the lifecycle plans show how far we are able at present to meet our aspirations for levels of service. Taking the four dimensions in turn:

- **Safety** – *The County has been shown excellent results in reducing the number of deaths and serious injuries on the County's network in recent years, to considerably below Government targets*
- **Availability** - *with our action plan to meet our responsibilities under the Traffic Management Act 2004 is now in place and we continue to build upon previous good practice. From April 1 2016 the County will operate a full permitting scheme.*
- **Serviceability** – *we believe that we are meeting most customer aspirations for serviceability but the lack of specific customer research data means that we cannot yet be confident of this. Worcestershire County Council's participation in Public Satisfaction Surveys will improve this knowledge.*
- **Condition** – *The Condition Indicator targets for carriageways and Footways have proved difficult to attain but in general this has been achieved. The use of an effective TAMP will help increase performance in this area. The best balance of preventative and structural maintenance is the key to using the available funding to the best effect.*

### Asset Management Approach to Inventory and Condition Data

Following the decision to establish a Transport Asset Management Plan, it was necessary to assess the suitability of the existing information inventory and condition data relating to the network.

The value of the highway asset, which will form the largest part of the authority's total asset portfolio, will change due to growth, as its condition varies, and by unplanned external influences such as extreme storms or flooding. This will be countered by investment into the asset in the form of both maintenance and improvements.

In this section, we identify the information about the asset that is currently available, the management systems used, and the processes used to assess the information and determine how the asset will be managed.

As well as providing a location based listing of the component elements of the network, the highway inventory is needed in order to record the current value for each of its highway assets. Since the valuation requires knowledge of its replacement value, current condition and rate of deterioration, we need to be aware of the state of the inventory and condition data in order to complete the valuation.

Data collection, storage, retrieval, integration and analysis of data are fundamental requirements of asset management.

The highways inventory is a distinct data set and is used to define the asset, For example its location and attributes of each item. The physical state of each element of the asset is assessed through inspections and surveys and held as condition data.

Auxiliary datasets are defined as providing supporting data including accident statistics, traffic flows, Traffic Regulation Orders, route status (such as gritting route, traffic sensitive street etc), which is useful information maintained in an easily accessible form against the general highway referencing system. Data held in this way can provide comprehensive information about all sections of the asset.

Some Auxiliary datasets are already available; others are being developed to enable them to be presented in a consistent form.

## **Asset Data**

### ***Asset Data – Inventory***

The highway inventory has been collected over a number of years, and covers the whole county.

The Inventory is held in asset groupings and is used in different ways by a wide variety of users. These users can be divided into two principal types, whose requirements from the Inventory and the level of detail needed, can be quite different:

- ***Operational Users*** – requiring access to data of varying accuracy, on an almost daily basis and for whom the Inventory is an essential tool. For example, Area staff, Urban Traffic Control, street lighting etc.
- ***Strategic Users*** – needing summary information on a less frequent basis, such as providing answers to technical queries, analysis, or preparing annual budgets and maintenance programmes. This use also includes the preparation of the annual valuation report, and carrying out the necessary annual adjustments relative to the changing condition of the asset.

The level of detail required for different users will dictate the level of detail that an inventory needs to hold, and thus the level of maintenance it will need to sustain its accuracy and quality.

The value of the inventory data is dependent on its quality, in other words, being complete, accurate, up to date and accessible. Whilst the inventory for the "main" assets such as Carriageways, Footways, Structures, VRS, Gullies, Lighting and Signals is fully up-to-date and comprehensive, certain minor assets require update. A programme of works is now in place to address this and the TAMP will evolve further as this data is secured.

There are some sections of the highway asset that are inconsistently recorded, and in some cases missing completely. The current valuation guidelines recognises that there are such gaps and allows assumptions to be made, for example surface water drainage pipelines

It is important to identify the uses to which inventory data will be put. Currently, there is a perception that the available information is not utilised to its fullest capacity. It is also likely that insufficient data is held for some requirements.

The current inventory can be described as fit for current purposes; however it is not as complete as desired. It has limitations and these will increase as the desire for information increases.

The inventory is subject to ongoing review and all the necessary data is being collected and maintained to enable the plan to function efficiently.

Careful consideration will be given to ensure that the collection of any new data is cost effective, i.e. that it is worth collecting. Since the original data attributes were established, demand for different information has brought the need for some additional attributes, whilst some other attributes may now be superfluous.

A system of periodic re-collection of the network or attributes may need to be considered where confidence levels are unacceptably low. A detailed cost/benefit analysis for various options will be necessary before any action taken

There are, however, several opportunities for ad hoc inventory collection or validation to be carried out whilst a site is being visited for other purposes. These opportunities will be developed wherever possible.

### **Asset Data – Condition**

Condition data has been collected through programmed Coarse and Detailed Visual Inspections (CVI's and DVI's) and through machine based surveys:

- *SCRIM survey is undertaken annually on the whole 'A' road network and strategic "B" roads and local distributors in both directions.*
- *SCANNER based inspections are carried as set out in the lifecycle plan for carriageways*
- *CVI surveys remain the prescribed inspection for assessing condition on the 'U' road network.*

### **Asset Data – Principal and General Inspections of Structures**

Condition assessment is covered in more detail in Sections 8.

The frequency of Highway Safety and serviceability Inspection are given in the County's Highway Maintenance Plan

### **Asset Data – Auxiliary Datasets**

Many items are held that provide additional useful information and condition data. These support the basic inventory and condition data, although are primarily used for other purposes. These can also be linked to the

inventory data, and be therefore easily accessible, enabling a comprehensive picture of the asset obtained through one point of access, and direct links to the data.

Items that could be included as Auxiliary Datasets include:

- *Traffic counts and surveys*
- *Manual classified*
- *Pedestrian Counts (O&D)*
- *Pedestrian counts (crossing)*
- *Pedestrian count (school crossing)*
- *Pedestrian count (footway)*
- *Radar Gun speed survey*
- *Laser gun speed survey*
- *Vehicle occupancy*
- *Bus passenger counts*
- *Accident data (in summary form, to indicate need for referral to Casualty Reduction Team)*
- *Images of sign faces, especially ADSs*
- *Traffic Regulation Orders, possibly linked to a future Legal Services database*
- *Network Management*
- *Traffic sensitivity*
- *Engineering difficulty*
- *Permits and Licenses*
- *TMA requirements as they develop*

## **Asset Management Systems**

### ***Highway Management Systems (HMS)***

The key to a successful asset management plan are comprehensive Highway Management Systems (HMS's). The following section sets out the functionality of the systems and issues relating to its management in Worcestershire.

### ***Functions and their supporting systems***

Implementation of an integrated asset management system is an ongoing and developing process. Worcestershire County Council is currently employs EXOR highways management system, which will manage the majority of the County's Asset Inventory and other datasets. There are various other specialised HMS's

relating to Street Lighting and structures for instance. Table 6.1 below shows some of the functions and the systems on which they are held.

**Table 6.1 – Systems, Functions and Types**

	<b>Exor</b>	<b>AMX</b>	<b>Mayrise</b>	<b>In-house/legal-team/IBS</b>
<b>Inventory</b>	<ul style="list-style-type: none"> <li>- C/W, F/W etc.</li> <li>- Customer care</li> </ul>	<ul style="list-style-type: none"> <li>- Structures</li> </ul>	<ul style="list-style-type: none"> <li>- Streetlights</li> </ul>	
<b>Condition</b>	<ul style="list-style-type: none"> <li>- UKPMS</li> <li>- Safety Inspections</li> </ul>	<ul style="list-style-type: none"> <li>- Structures</li> </ul>		
<b>Auxiliary</b>	<ul style="list-style-type: none"> <li>- Streetworks / TMA</li> <li>- Network Attributes</li> <li>- Permitting from April 1<sup>st</sup> 2016</li> </ul>			<ul style="list-style-type: none"> <li>- Permits / Licences</li> <li>- TRO's</li> <li>- GIS</li> </ul>



## **Risk Management**

### ***What is Risk Management?***

The Council has a corporate risk policy designed to manage risks in a structured manner. Risk management is an integral part of corporate management. It is neither time consuming nor a 'science'. It is a process to provide assurance that:

- *Business objectives are more likely to be achieved*
- *Damaging things will not happen or are less likely to happen*
- *When opportunities present themselves they can be taken.*

Therefore it is about asking the following questions:

- *What can go wrong?*
- *What are the consequences of something going wrong?*
- *What can we do about it?*

### ***Benefits***

The potential benefits from risk management are:

- *It supports strategic and business planning*
- *It supports effective use of resources*
- *It may mean fewer shocks and unwelcome surprises*
- *It enhances staff accountability*
- *It creates opportunities through informed decision making processes*
- *It enhances communication between Departments*
- *It helps deliver innovative projects*
- *It helps focus an internal audit programme.*
- *Protection of reputation.*

### ***Types of Risk***

The categories of risk that can be allocated within the Planning and Transportation service are:

- ***Professional/Operational:*** *those associated with the particular nature of each profession*
- ***Financial/Commercial:*** *those associated with financial planning and control and the adequacy of risk financing policy. Those affecting the ability of the council to meet its financial commitments;*

- **Health, Safety and Welfare/Human Resources:** those related to possible breaches of legislation and to the well being of both employees and the public including clients;
- **Information/Project Management:** those associated with managing information including issues of data protection and freedom to information. Those related to IT/communications systems. Those related to management of projects.
- **Contractual:** those associated with the failure of contractors/partners to deliver services or products to the agreed cost and specification. Those related to services provided by the council to external organisations;
- **Physical:** those related to fire, security and accident protection (for example hazards/risks associated with buildings, vehicles, plant and equipment);
- **Business Continuity:** those associated with the inability to continue delivering the services to the public to an acceptable level following the occurrence of an incident
- **Public Relations:** those associated with the image of the council and the perception that the public has of the services it provides;
- **Political:** those associated with failure to deliver either local or central government policy, or to meet the local administration's targets.
- **Legal/Statutory:** those associated with failure to meet legal requirements

### ***Risks and the Worcestershire Transport Asset Management Plan***

Day to day third party risk associated with permitted use of the County's Highways is dealt with by the current Highway Maintenance Plan. This is based closely on the Government Code of Practice "Well Maintained Highways".

We are seeking to extend this practice to other areas of the TAMP. It is possible to apply our corporate risk matrix to any planned activities, including:

- *Planned Highway maintenance arrangements*
- *Performance indicators and associated targets*
- *Frequency based operations*
- *Flooding*
- *Finance*
- *Structures*

They will commonly be described as being categorised as either Financial/Commercial or Professional/Operational within the corporate guidance.

## ***Risk Score***

The risk score (demonstrating its significance) is calculated using a series of matrices described in the Worcestershire County Council Corporate Guidance 'tool kit'. These closely follow the PRINCE 2 approach to project management.

## **Performance Monitoring**

### ***Introduction***

The Directorate has a robust and comprehensive system for performance monitoring, much of which applies to asset management practices.

These Performance Indicators are constantly reviewed for relevance, appropriateness and correct setting of the target figure.

Specific indicators for asset condition required by government are no longer required. However, Worcestershire County Council will continue to collect and process the appropriate data to enable their use as a condition management tool. These will cover not only carriageways and footways but also the bridge condition indicators' and the assessment system used for street lights.

The performance of contractors is managed on a Contract-by-Contract basis. This management system includes concise but effective suites of KPIs, regular Contract Management Team meetings and Strategic Quarterly reviews with Heads of Service and Directors. All significant improvement projects within the department are managed under 'PRINCE2' project management principles, meaning that performance in delivering the many improvements set out in service plans is fully assessed. Improvements defined in this TAMP will be delivered on the same basis.

### ***Reporting and Managing***

Performance indicators vary in type from the monitoring of processes, to time linked surveys. As such the reporting frequency varies considerably from daily (e.g. defect repairs, Public enquiry performance) to biennial (e.g. user satisfaction surveys).

Data is collected and reported on a time scale that is considered best suited to the individual P.I. In all cases the most recent data available is used allowing responsible officers to compare results against targets and take appropriate action as the year progresses.

Monthly departmental performance reports are issued and are discussed at Departmental Management Team meetings. Additionally a range of key measures within our Corporate Improvement Plan are reported monthly to the Chief Officer Group and quarterly to scrutiny panels and Cabinet.

Improving performance relies not only on the setting and monitoring of individual PI targets but also on managing the inter-relationships between potentially conflicting demands. For example improving the condition and accessibility of the asset by carrying out a junction improvement on a traffic sensitive street will have an impact on its availability and financial performance depending upon the manner in which this is managed.

The Directorate of Economy and Infrastructure has developed a "dashboard" type performance monitoring system for each Unit which enables the Unit Managers to monitor the most important Performance Indicators they are responsible for. These are updated daily, weekly or monthly as appropriate and allow "at a glance" monitoring.

## **Funding**

### Financial Statements, Projections and Sources

Capital funding for transport schemes is largely provided through the Local Transport Plan (LTP) process by government. This is provided in two blocks: the Structural Maintenance block which is determined through the Government formula and the Integrated Transport block.

The County Council have also invested heavily in the Network over the last 10 years adding over £40m to the LTP maintenance funding for improving Carriageway and Footway condition and also the Drainage network. A further £12m is being invested over the next two years to further enhance the condition of roads most used by the residents of Worcestershire in the "Driving Home" initiative.

Worcestershire County Council also raises funds through the Council Tax mechanism and receives revenue funding from Government as part of the Formula Grant, including for routine and structural maintenance schemes. Private sector funding is also available from developer contributions under Section 106 agreements.

The allocation of resources to the Directorate of Economy and Infrastructure is determined annually by members. The Directorate has freedom to allocate the overall highways budget to achieve best value and optimise the condition of the asset.

### **Funding (General Allocation)**

#### Local Transport Plan Capital Funding

Local Transport Plan capital funding is used for maintenance and improvement of the transport asset. The following types of maintenance schemes are funded through this mechanism:

- A, B, C and Unclassified Carriageway maintenance
- Footway maintenance
- Bridge maintenance works
- Lighting column replacement
- Vehicle restraint system renewal and maintenance

The allocation of this funding between the various asset sets will be based upon the recommended levels in the latest round of DfT funding notes.

Capital funding is also made available for transport improvements. These improvements improve the serviceability and safety of transport assets, for example junction improvements, capacity enhancements, and sustainable transport infrastructure.

It is essential that both maintenance and improvement programmes are as integrated as possible to ensure the limited funding is maximised.

## **Revenue Funding**

Revenue funding is utilised in a variety of ways including:

- Verges, Hedges, Trees – programmed and ad hoc cutting in response to complaints
- Aids to Movement – refurbishment of carriageway markings, cleaning and replacement of non-illuminated signs (including PROW)
- Drainage Cleaning – cutting of grips and cleaning of pipework
- Gully Emptying – programmed and ad hoc gully emptying
- Grass Cutting – programmed cutting of verges and PROW surfaces by contractors and Parish Councils
- Weed Control – control of grass and weed growth on hard surfaces
- Safety Fences – repairs to safety fences
- Street Lighting - cyclic maintenance, repairs, structural testing of columns, replacements, energy costs
- Illuminated Signs - maintenance and energy costs
- Traffic Signals maintenance – daily fault rectification, replacement of old difficult to repair equipment and energy costs
- Minor Bridge Maintenance – minor repairs arising from inspections and reports from the public
- Minor Carriageway Patching – patching of cracked areas of carriageway and potholes
- Winter Services – weather forecasting, gritting of and clearing snow from roads
- Highway Condition Surveys (including PROW) – undertaking surveys to provide information to calculate National Indicator's as required by Government and to assist in both asset management and programme development.
- Maintenance funding for Members to allocate locally based on local needs.

Nationally, there have been substantial pressures on revenue budgets in and, despite inflation allowances; the service revenue budget has been under continuing pressure. The allocation of budgets to different activity areas has been carried out on the basis of supporting the overall lifecycle planning described in the lifecycle plans, as well as essential reactive maintenance work.

### ***Prudential Capital Borrowing***

This form of investment is funded by the Council's borrowing. Prudential borrowing is potentially available to support specific investments and has recently been used to fund Two major £15m investment programme improving the County's B, C and Unclassified Road network and an additional £9.0m to address footway maintenance requirements on busy rural and urban footways supporting the highways service. Council has recently approved a further £12m for "Driving home" initiative enhancing the network used by Worcestershire residents.

## **External Funding**

The pressure on council budgets underlines the importance of exploring external funding. Examples include:

- Sponsorship income
- Developer 'commuted sum' contributions to cover the extra future maintenance costs of unusual surfacing, lighting or other features of new development which will be adopted by Worcestershire County Council.
- Section 106 monies contributing to early maintenance of existing asset subject to increased traffic

## **The role of the TAMP in Determining Future Funding Levels**

Future total funding seems likely still to be heavily constrained, both for the highways service and for the Council as a whole. Within that constraint, the TAMP has two specific functions:

- *To provide strong evidence base to help inform decisions on the allocation of funds to this service compared to others*
- *To provide similar evidence for deciding the best split of funds within the service to maximise the fit with levels of service*

## **Budget Optimisation**

### ***Funding allocation between asset sets***

In general funding is allocated against the various asset sets on a County wide basis and on a "needs" requirement as assessed using condition and Defect data. In addition to this, the County's Improvement programme will be taken into account to ensure best value is achieved from both sets of funding.

### ***Routine Maintenance***

The majority of the County's routine Highway maintenance is carried out under the HMSC. This is a NEC3 Term Service Contract. The County has adopted "Outcome Specifications" for all these Core Services based on required service levels.

Doing so has ensured clarity of budget requirements and has assisted in long term planning and integration of various operations within the Contractors Plan to ensure maximum efficiencies are obtained.

Having good inventory allowed accurate Service Information to be provided and thus accurate and sustainable Pricing by the term Contractor.

As the TAMP continues to develop, improvements to the quality of inventory data and development of service levels with stakeholders will enable the Service Information to be reviewed and amended with greater knowledge of the impacts on Service, Condition, Price and potential risks to the Council.

### ***Structural Maintenance***

- WCC have excellent performance data from previously used materials and processes. This information is used in conjunction with a highly developed spatial analysis system that employs relevant data sources which include: SCANNER
- CVI Surveys
- Safety Defect locations and proliferation
- SCRIM

Datasets are "overlaid" to generate "data hotspots" where there is data overlap.

These data hotspots form the basis of the planned 3 and 5 year rolling programmes and are continually updated as new data is collected.

The County strongly believe in Preventative Maintenance and identify a significant Surface Dressing programme each season.

### ***Integrated Transport***

The Local Transport Plan sets out Worcestershire's short, medium and long-term transport strategy with the associated programme of desired schemes.

The programme is developed to make adequate progress towards Best Value Performance Indicators, national core performance indicators and the local LTP Performance Indicators. The detailed programme at scheme level is, where possible, linked to the Maintenance Programme to achieve better use of funds and minimise the impacts on the network.

### ***Scheme Development***

Schemes are developed through the feasibility, preliminary, outline and detailed design stages. Through these stages the optimum scheme is developed by consideration of the items listed below. The extent to which these items are considered varies from scheme to scheme depending on their complexity, cost, timescales, extent of public consultation, for example.

An assessment methodology has been created to select the most appropriate schemes to progress within the Improvement Programme. The Scheme Assessment Framework (SAF) has been developed to compare and prioritise potential local transport schemes. The schemes are to be judged against their contribution towards locally agreed policy objectives and priorities. In establishing such a framework, the debate over the relative importance of objective priorities is settled prior to assessment of how closely these are met by potential transport schemes.

The County Council can expect to see the following benefits from application of the SAF:

- *A renewed focus on outcomes and objectives in scheme development and decision making;*
- *A common approach for presentation and comparison of schemes;*
- *Improved transparency in, and traceability of, decision making;*
- *Increased objectivity with less reliance on subjective decision making;*
- *Improved understanding within the County Council of the process for progressing schemes;*

- *An opportunity to broadly assess areas how schemes could be improved at an early stage in their development, and how they compare against competing schemes;*
- *A mechanism which can be applied with relative ease to schemes to the value of £5million, and which can also be used, with caution, in early stage review for schemes of £5million and above;*
- *Improved access to, and understanding of, the range of desired outcomes and performance*
- *Indicators that schemes will be benchmarked against (including a proportion of those required for Major Scheme Funding Bids);*
- *Enhanced knowledge of the particular issues associated with certain types of projects, in terms of both delivery, and performance after implementation; and*
- *Improvements in efficiency associated with a clearly defined process that will promote interrogation of a scheme at the earliest stages of development.*

## **Asset Deterioration**

### ***Protecting the Asset***

The following applies to Maintenance and Improvement schemes. The Traffic Management Act will enable better protection of roads and footways and hence extending their life, this will be achieved by:

- *More opportunities to protect a road following works, including surface dressing, with greater flexibility over the period it can be protected for again leading to more joint schemes.*
- *Tighter restriction on types of works, which negate the protection, order for a street.*
- *Powers to prevent entry to a road under certain circumstances*
- *If a “patchwork quilt” effect has been caused by aggregated openings powers to insist on full or half width reinstatement with the cost to be jointly born by those having undertaken work in the street*
- *powers to insist on half width or full carriageway reinstatement*

### ***Asset Deterioration Models***

Asset Deterioration Models illustrate the change in condition of an asset over time based on historical performance data coupled with an understanding of the deterioration mechanisms. Models should have the capacity to assess the effect on condition associated with different treatment scenarios and hence inform the process of identifying the most appropriate treatment, and the relevant timing of these, to maintain or improve the serviceability and value of the asset and model associated costs.

### ***Programme and Organisational Development***

The ability to maintain and improve the assets depends to great extent on the level of funding available, the proportion allocated to the asset groups and the effectiveness of the targeting of the resources based on condition or any other policies or priorities. Funding may vary from year to year therefore the Asset



Management Plan must be flexible to respond to these changes. Also, it must but also be able to inform the Members of their decisions by illustrating the effects of possible budget options.

To this end the Infrastructure Asset Management Team have developed a Financial Investment Management Tool (FIMT) which by using the extensive and detailed scheme data from all planned works over the past 15 years or so, can predict the effect of investing different amounts (on separate classes of road) on the various condition indicators used.

This has proved very useful in demonstrating to Senior Management and Members the predicted condition of the County's roads for any given level of investment. It was very instrumental in obtaining the significant additional Capital County Council funding by way of prudential borrowing to augment that provided by the Government.

Worcestershire County Council has entered into various long-term N.E.C. Contracts with specialist suppliers. This Partnership intends to improve the Service, and hence the ability to maintain and improve the asset by:

- *Building on the success of Joint Teams, set up under the previous partnerships, by integrating across a wider range of staff, in various offices.*
- *Developing a culture of scheme ownership that fosters accountability*
- *Continuing advancements in technology and e-service to improve communication and service delivery.*
- *Developing funding sources for schemes, considering both conventional routes and innovative options.*
- *Fostering a culture of excellence as part of developing the staff into a motivated workforce.*

The Traffic Management Act (TMA) requires us to change from our traditional role of asset providers and maintainers to one of network operator. As network operator we are required to minimise disruption for network users through better planning and coordination of all works, whether by utility companies or our own. Though this restriction could have implications on the cost of works, if contractors are unable to start works earlier than notified if resources are available, it ensures that those who live close to the works site or use the network are informed of our intentions and we consider their needs alongside our asset management needs. We are responding to the TMA by doing more detailed advanced planning to give earlier certainty of programming and will also make it easier for us to consider, understand and explain the consequences of programme changes to our network users and stakeholders.

## 7. Service Delivery

### Introduction

The Director responsible for delivering the service is the Director of Infrastructure and Economy. The Directorate is split up into a number of Units, each of which has a distinct responsibility area.

### Contractual Arrangements

Worcestershire County Council procures the majority of its Highway related services through a series of long term Contracts based around the N.E.C suite of Contracts. The Contracts comprise of:

- *Highway Maintenance Service Contract (HMSC)– (Winter Maintenance, Reactive safety related repairs, Gully Emptying and drainage system maintenance, Planned strategic Maintenance [carriageways, footways, structures etc])*
- *Term Civil Engineering Contract (TCEC)– (Improvements to the Highway and Structures maintenance)*
- *Street Lighting Maintenance Contract – (Lighting and Illuminated sign Maintenance)*
- *Traffic Signals Maintenance and Renewals Contract – (Traffic signal maintenance and installations)*
- *Professional Services Contract – (Provision of engineering consultancy services)*

### Delivery Arrangements

#### ***Highway Maintenance***

The Highway Maintenance service is delivered essentially through two main operational depots (there are two other principal depots and a further winter maintenance depot) and the County has been divided into North and South service delivery areas.

A key requirement to extract maximum efficiency from the HMSC has been the establishment of LEAN delivery principles and a co-located integrated delivery teams. Worcestershire County Council staff work together with our Contractors staff in teams to ensure maximum efficiencies are gained and schemes are carried out at minimum costs.

The work streams are separated into:

- *Reactive/cyclic*
- *Planned works.*

#### ***Reactive and Cyclic Highway Works***

The County's reactive and cyclic works are administered by the Highways & PROW Operations Manager

All are procured through the HMSC. The following services are delivered by the team:

- *Highway Safety Inspections*

- *Highway Serviceability Inspections*
- *Defect repairs*
- *Gully emptying*
- *Jetting Services*
- *Verge Mowing*

Safety and Serviceability Inspections and Defect repairs are carried out in accordance with the County's Highway Maintenance Plan which is based closely on the Government Code of Practice "Well Maintained Highways".

This ensures that Inspections and repairs are carried out to an approved schedule according to the hierarchy of the asset. This provides the County with a robust defence against any third party claims.

Defects are repaired by the County's Term Maintenance Contractor, Ringway, as a Core Service within the HMSC.

Gully Emptying and Jetting services are also a Core Service. The outcome specification requires all drainage points to be kept in working condition. PS location of each of the 90,000 or so drainage point being established along with details of its type, condition and level of silt. Collection of this data is being used to develop an emptying regime based on actual need rather than simply a "once a year" programme. This will ensure areas prone to silting and therefore at risk from poor drainage are attended to on a more frequent basis than those that have little detritus build up.

The County has also established a "flood plan" which is put into operation when excessively heavy rain is predicted. Flooding "hot spots" have been established from the data collection mentioned above and historical records. When weather forecasts predict flooding issues may occur the plan is put into operation which results in the "hotspot" drainage systems being assessed and cleaned in a priority order.

As more data is collected the flood plan and operational procedures will be refined drive down costs but maintain or increase the level of service.

Verge mowing is a very important service during the growing season to ensure the safety of the travelling public. Traditionally the County have let a number of individual Contracts to local contractors using tractors and flail mowers in the rural sectors and in urban areas to District and Parish Councils.

With increased levels and speed of traffic in evidence on our rural road network, it has been considered prudent to include Verge Maintenance as a Core Service in the HMSC.

### ***Planned Highway Works***

The County's planned maintenance works are administered by Highways & PROW Operations Manager

The vast majority of works are delivered through the HMSC from two main Depots (Lydiat Ash in the north and Newland in the south). There are two teams in each Depot that deal with Major Capital works and Minor Local works including Footway maintenance.

The following services are delivered by the teams:

- *Major Works (Design and Build):*
- *Carriageway resurfacing*
- *Carriageway reconstruction*
- *Surface Dressing*
- *Major patching works*
- *Minor Local Works:*
- *Footway resurfacing*
- *Footway reconstruction*
- *Minor carriageway patching*
- *Minor general maintenance works*
- *Minor drainage works*
- *Non safety sign maintenance*
- *Non safety road marking maintenance*
- *Safety fencing maintenance*
- *Highway tree maintenance*

### ***Structures Maintenance***

Worcestershire County Council's structures are managed by our partner professional services provider, Halcrow, under the direction of the Infrastructure Asset Manager.

Much of the more minor works are carried out by the HMSC, Ringway, by two dedicated structures works teams.

Major maintenance is undertaken by the most suitable Term Contractor under the HMSC or TCEC. Specialist treatments such as mechanical joint maintenance and waterproofing are carried out on an individual scheme basis by other specialist Sub-Contractors as and when required.

### ***Network Improvements***

Major Network Improvements are administered by Infrastructure Asset manager. Most schemes are procured using the TCEC. This is a modern N.E.C. contract designed to allow early Contractor involvement to maximise buildability and minimise costs to the County whilst maintaining quality requirements.

### ***Street Lighting***

Lighting maintenance and Improvements are administered through a dedicated Lighting team lead by a Senior Engineer, again under the direction of the Infrastructure Asset Manager.

Maintenance and new works are procured through a long term NEC contract with Prysmian.

### ***Traffic Signals***

Traffic signal maintenance is administered through the Intelligent Traffic Systems Manager under the direction of the Network Control Manager. Traffic Signals are maintained under a term maintenance contract with Peek Traffic Signals.

### ***Professional Services***

For the technical management of the County's structures and design work for improvements, and other Professional Services Worcestershire currently employs CH2M Hill consulting engineers under an NEC Term Service Contract

The Structures management team is under the direction of the Engineering and Asset Manager whilst other individual scheme design and technical investigations are managed by individual Engineers within various teams.

### ***Co-ordination and Scheme Control***

With the various Units and teams procuring work through the Contracts outlined above, it would be very easy for schemes to adversely affect each other directly or for one scheme to be carried out and completed only for a different Unit to implement their scheme and disturb the newly completed works.

To avoid this situation and to explore opportunities of combining works where possible to gain scheme efficiencies the Economy and Infrastructure Directorate operate a Programme Board and a Package Panel. These two groups have an overarching view of all the Divisions proposed schemes and will ensure that best value and good scheme co-ordination is obtained.

## **8. Management and Control of the Plan**

### **Introduction**

Throughout this TAMP, issues and corresponding improvement actions have been established. These actions will need to be prioritised, programmed, resourced and implemented in order for an asset management approach to be fully introduced.

### **Ownership of the TAMP**

The officer responsible for the Transportation Asset Management Plan will be: The Infrastructure Asset manager.

### **Updating the TAMP**

It is anticipated that the review and updating cycles for each part of the plan will differ as follows:

The Executive Summary: is expected to be replaced after the first year by an annual asset management plan performance report. This report will update the key actions from the plan and present these into the relevant Worcestershire County Council decision making processes to influence budget allocations.

The Asset Management Plan: it is expected that the plan will be updated annually to reflect ongoing improvements in practice and procedure.

The Appendices: will be “living” documents. They will be updated as their contents demand them to be changed; this will typically be either annually, quarterly or monthly. Updating will be linked to the management processes introduced to manage the implementation of the plan.



## You can contact us in the following ways:

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#### Online:

[www.worcestershire.gov.uk/LTP3](http://www.worcestershire.gov.uk/LTP3)

This document can be made available in other formats (large print, audio tape, computer disk and Braille) on request.

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To the best of our knowledge all information was correct at the time of printing: February 2016.