

Warwickshire Local Transport Plan 2011-2026

Highway Asset Management Plan Interim Document

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Document authorised by**Signature**

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Chapter 1 – Introduction

1.1 What has been the Purpose of the Transport Asset Management Plan (TAMP) 2011-2026?

1.1.1 The 2011-2026 TAMP was developed to assist the Authority in understanding the value and liability of the asset base, allowing for decisions to be made in an informed way, achieving cost savings in terms of both ongoing investment in the existing transport network and its medium/long term renewal.

1.1.2 The TAMP set out practices and systems relevant to the management of the transport asset at the time and detailed the aspired levels of service and their associated funding requirements.

1.1.3 On expiration of the TAMP in 2026, a new Highway Asset Management Plan (HAMP) will be developed and published alongside an updated Highway Asset Management Policy & Highway Asset Management Strategy.

1.1.4 This document should be read as an interim document, providing an update on Warwickshire's Highway assets in advance of the development of a new HAMP for Warwickshire.

1.2 What is Highway Asset Management?

1.2.1 Highway Asset Management is 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 users of the transport network.

1.2.2 Quality management of the network is fundamental to the economic, social and environmental vitality of a community. The County Council recognises that maintenance solutions that are achievable must evolve to ensure that best value and best practice are realised for future generations.

1.2.3 Successful asset management relies on good data. The County Council has relatively good data on most of its transport assets. For some assets data is comprehensive and current. For others, work is being undertaken to bring it up to a similar standard. This interim document provides updated data for Warwickshire's highway assets.

1.3 What does asset management mean for the County Council?

1.3.1 The County Council is committed to applying the principles of asset management, as set out in Well-Managed Highway Infrastructure Code of Practice, through the processes of long-term planning and whole life costing, to ensure best value and strategic future programming and funding decisions are taken. Key elements of infrastructure asset management include:

- Taking a life cycle approach.

- Developing cost-effective management strategies for the long term.
- Providing defined levels of service and monitoring performance.
- Managing risks associated with potential asset failures.
- A sustainable approach to the use of physical resources; and
- Continuous improvement in transport asset management practices and processes.

1.4 What are the main drivers behind the production of a new Highway Asset Management Plan (HAMP)?

1.4.1 With the TAMP 2011-2026 expiring, Warwickshire County Council have reviewed their existing suite of Highway Asset Management related documents against recommendations in Well-Managed Highway Infrastructure & the ISO55000 standards for Asset Management. This has identified a need to produce a new Highway Asset Management Plan to support the Authority's aspirations to improve our Highway Asset Management practices and become ISO accredited in Asset Management.

1.4.2 The content of the HAMP is expected to align with existing strategic highway policy and strategy and support the goals of the Authority's Local Transport Plan (LTP4).

1.5 Why is Asset Management important?

Background

1.5.1 Asset Management is now an established approach in the highway industry. In announcing the allocations for Highway maintenance block funding 2025 to 2026, the Department for Transport have strongly advocated a risk-based whole life cycle asset management approach to local authority highways maintenance programmes citing Well-managed highway infrastructure code of practice as a source for best practice. 'Optimal lifecycle' stresses the importance of considering the whole lifecycle of an asset, that is, from need, through conception, creation, operation, maintenance and disposal.

Funding

1.5.2 25% of funding uplift for Highway maintenance block funding 2025 to 2026 is being held back by Department for Transport subject to the Authority submitting adequate responses to questions, many of which relate directly to principles around Highway Asset Management and best practice.

Good Practice

1.5.3 The development of a HAMP is now recognised as a critical element in delivering a high-quality, sustainable highway service. In accordance with the recommendations outlined in *Well-Managed Highway Infrastructure: A Code of Practice* (UKRLG, 2016), the County Council is committed to adopting a risk-based approach and ensuring that asset management practices are regularly reviewed and continuously improved.

Alongside the HAMP, both the Asset Management Policy and Asset Management Strategy will be reviewed and updated. Together, these documents will form the foundation of Warwickshire's asset management framework, providing a structured approach to lifecycle planning, performance monitoring, and risk management, as advocated by the Code. This framework will enable the Council to benchmark performance and drive continuous improvement.

Beyond compliance with national guidance, this approach reflects industry best practice and will support the County Council in delivering a safe, efficient, and resilient highway network for all users.

Safety and Asset Management

1.5.4 The economic cost to the community of injury accidents in Warwickshire is around £160 million per annum. Improving the safety of a road through maintenance that gives high priority to proactive casualty reduction can be mutually beneficial in preventing accidents and saving the community money. As such, the economic cost of injury accidents is an important consideration in asset management, because not only is a safer road desirable from a casualty reduction perspective, it is also more valuable *in monetary terms* than a less safe one.

Highway Assets

1.5.5 Updates to, what were identified as the core assets in the 2011-2026 TAMP, have been included in this document. The County Council also has responsibility and/or interests for several other transport facilities, assets and infrastructure, including:

- Certain bus shelters within the County.
- A bus-based Park and Ride site in Stratford-upon-Avon.
- Land at specific public transport interchanges, for example the car park at Warwick Parkway and Coleshill Parkway railway stations and Atherstone Bus Station.
- Cycle and motorcycle parking.
- Certain street furniture.
- Trees that grow within the limits of the public highway.
- Traffic Regulations Orders (lines and signs); and
- Records relating to the existence and extent of the public highway and the Public Rights of Way Network.
- Electric vehicle (EV) chargepoints
- Speed cameras & red-light cameras
- Road signs & posts
- Fences and hedges
- Safety street furniture (e.g. vehicle restraint systems (VRS), speed cushions etc.)
- On- & off-carriageway cycleways
- Road markings
- Highway verges
- Gritters & grit bins

1.5.6 It is expected that the future HAMP will be expanded to provide further detail on the way Warwickshire County Council manages some of these identified assets.

1.5.7 These assets also need ongoing maintenance and replacement at the end of their life. Innovative ways of funding the maintenance of these assets have had to be adopted by the Authority in previous years, and the concept of 'Designing for Maintenance' is an increasingly important consideration. How assets will be maintained from both a practical and financial perspective in the short, medium and long term (i.e. the 'whole life' of an asset) should be an ingrained part of any design and/or delivery process.

1.5.8 Adoption of new roads provided to serve development and new transport infrastructure delivered through the LTP4 continue to expand Warwickshire's asset base year by year. There are improvements to be made as an Authority to ensure that all new assets are accurately recorded by relevant asset managers and commuted sums to support the future maintenance of new assets are secured when fair and reasonable to do so. Failure to record the presence of new assets and/or secure the funds to support their future maintenance will inevitably lead to future practical and financial maintenance challenges.

Funding

1.5.9 Historically the capital funding has been supplemented by additional revenue funding from County Council funds. This continues to be the case.

1.5.10 There is an increasing pressure on County Council revenue budgets as the infrastructure which makes up the transport network expands. The maintenance and replacement implications of all new assets must be considered as part of the whole-life costing process. Information provided in the new HAMP will be used where possible to assist this activity.

1.6 Service Delivery and Management Arrangements

General

1.6.1 The highway network is managed according to a risk-based approach (in line with 'Well-Managed Highway Infrastructure – A Code of Practice), part of which considers the below carriageway and footway hierarchies. Funding for maintenance is allocated to the areas of greatest need, identified through the risk-based approach, regardless of geographical and political circumstances.

Table 1.1 Carriageway Hierarchy in Warwickshire

Hierarchy Description	Code	Type of Road General Description
Strategic Route	2	Trunk and some Principal 'A' roads between Primary Destinations
Main Distributor	3a	Major Urban Network and Inter-Primary Links. Short - medium distance traffic
Secondary Distributor	3b	Classified Road (B and C class) and unclassified urban bus routes carrying local traffic with frontage access and frequent junctions
Link Road	4a	Roads linking between the Main and Secondary Distributor Network with frontage access and frequent junctions
Local Access Road	4b	Roads serving limited numbers of properties carrying only access traffic
Minor Roads	5	Little used roads serving limited number of properties

Table 1.2 Footway Hierarchy in Warwickshire

Hierarchy Description	Code	Type of Road General Description
Prestige Walking Zones	1	The main pedestrianized shopping streets within the city centre
Primary Walking Routes	1a	City centre shopping areas with greater than 30 shops Main shopping street in local town centres with greater than 20 shops
Secondary Walking Routes	2	More than 5 shops Entrance to schools Entrance to Hospitals Entrance to large supermarkets Outside transport Interchanges
Link Footways	3	Local shops/retail premises Religious meeting places Industrial Estates Residential Homes or Care Homes
Local Access Footways	4	Predominately residential streets Low usage rural footways

Network Management Duty

1.6.2 The Traffic Management Act adds a duty on all local highway authorities (the Network Management Duty), which requires local traffic authorities to do all that is reasonably practicable to manage the network effectively and keep traffic moving. The highway network is not only an asset for the movement of traffic, but also the essential services that lie over and under its surface.

1.6.3 The duty requires local highway authorities to consider the practicality of securing the “expeditious movement of traffic”, in other words, a network that is working efficiently without unnecessary delay to those traveling on it. The duty is placed alongside all the other things that the highway authority must consider, and it does not take precedence. The duty reflects the importance placed on making best use of existing road space for the benefit of all road users. In performing the duty, the highway authority should consider any policy that would contribute to the more efficient use of the network, or that would avoid, eliminate or reduce congestion or disruption.

1.6.4 The compilation of the new HAMP will assist in performing the duty, in that it will consider all the highway assets managed and maintained by a local highway

authority and set clear standards of service. The standards consider the planning of and delivery of maintenance activities and assist in performance monitoring.

Roles and Responsibilities

1.6.5 Roles and responsibilities were published in the 2011-2026 TAMP. These will necessarily be reviewed and published in the new HAMP. The new HAMP will provide updated information on:

- Roles & responsibilities of respective parties
- How risks & threats are identified and managed
- Key Stakeholders

1.7 The Approach to Producing a HAMP

1.7.1 It is expected that a six-stage approach, like that adopted in the production of the 2011-2026 TAMP will again be followed in producing the HAMP, this being:

- Stage 1 – Review and documentation of current practices.
- Stage 2 – Critical assessment of current practices, highlighting areas of deficiency and areas for improvement.
- Stage 3 – Evaluation of the differences between the current and desired practice (gap analysis).
- Stage 4 – Identification of an Improvement Action Plan based on the gap analysis.
- Stage 5 – Consultation; and
- Stage 6 – Review of HAMP based on views received and publish.

1.7.2 Updates for the following core assets are covered in the remainder of this document:

- Carriageways
- Footways
- Highway Drainage
- Street Lighting
- Illuminated Signs, Bollards and Vehicle Activated Signs
- Highway Structures
- Traffic Controls and Intelligent Transport Systems and
- Public Rights of Way

1.7.3 Other assets that have been identified are expected to be covered in more detail in the future HAMP.

Chapter 2 – Carriageways

2.1 What is the asset?

2.1.1 Warwickshire County Highways is responsible for maintenance of the public highway carriageway within the geographical boundaries of Warwickshire. Motorways and trunk roads are the responsibility of National Highways and are not considered in this Plan.

2.2 Carriageway construction

2.2.1 Carriageways in Warwickshire are mostly constructed using conventional flexible materials, typically comprising rock aggregate and bitumen. A very small proportion of the network is constructed using cement concrete. The use of bituminous macadams and asphalts remains the most common and economic method of construction and maintenance. The strategy for carriageway construction and maintenance in Warwickshire is set out in the 'County Road Surfacing Strategy'; a document that is reviewed and updated on a regular basis.

2.3 Carriageway lengths

2.3.1 The carriageway asset is managed and maintained by Warwickshire County Highways. Network mapping software is used to store recorded carriageway data, including carriageway lengths. The software provides a visual overview of the carriageway network, allowing exploration of the asset and an ability to manage the asset in a centralised and organised manner. Road lengths and databases are maintained and updated on a regular basis.

2.3.2 The current lengths & gross replacement cost (as of 31 March 2025) of each road class in Warwickshire are shown in Table 2.1. (Figures calculated using the last available CIFPA Toolkit and adjusted using standard inflation calculator).

Table 2.1 – Current Road Lengths in Warwickshire

Carriageway Asset Register			
Asset Item	Quantity	Data Confidence	Gross Replacement Cost (GRC)
A Roads	435km	High	£712,738,520
B & C Roads	1299km	High	£1,384,142,250
Unclassified Roads	2,195km	High	£1,881,970,950
Unclassified Roads – Unmetalled	No data		
Total Gross Replacement Cost		£3,978,851,720	

2.4 Carriageway widths

2.4.1 Carriageway width information which the County Council holds is derived from actual measurements of network samples. This allows for a reasonable approximation of carriageway areas. Undertaking wholesale network measurement for the purpose of providing increased accuracy will require significant financial and personnel resource. While this remains an aspirational goal these published values are still sufficiently accurate at the network level to allow us to maintain the highway network in an efficient manner.

Table 2.2 – Area of Carriageway Network within Warwickshire

Carriageway Asset Register			
Asset Item	Average Width	Data Confidence	Total Area
A Roads	7.999m	High	3,479,565m²
B Roads	7.16m	High	3,150,400m²
C roads	5.7m	High	4,896,300m²
Unclassified Roads	5.46m	High	11,984,700m²
Unclassified Roads – Unmetalled	No data		
Total Area		23,510,965m²	

2.5 What is the current condition of the asset?

2.5.1 Carriageways deteriorate at differing rates due to many factors. Initial construction details, workmanship, traffic loading, weather conditions and utility service installation all play a part in the deterioration of the carriageway structure.

2.5.2 For those parts of the network that have been specifically constructed, it is generally accepted that a life of around 15 years is normal before significant maintenance is required. Timely execution of minor maintenance treatments at intervals during that period can extend this life.

2.5.3 However much of the network has evolved over several centuries and has not received any formal design consideration. Consequently, construction materials, thicknesses and alignments are very mixed. Where roads have been designed, the chosen life depends upon many factors. On major routes, new construction is designed for a minimum 40 years; on estate roads and similar minor roads, due to minimum requirements in physical construction methods and pavement thickness a design life of 60 years can be achieved.

2.5.4 To measure carriageway deterioration many techniques are employed. These techniques can be divided into two subgroups – testing and visual inspection.

2.5.5 The condition of the carriageway network is regularly inspected using machine surveys. SCRIM testing is also carried out to measure skidding resistance of the carriageway surface on the more heavily trafficked parts of the network.

Annual condition reports are submitted to the DfT in line with their reporting requirements.

Road Conditions in England (RCE)/ Road Condition Data (RCD)

2.5.6 Road Conditions in England (RCE) provides information about the overall state of roads in England as well as an indication of whether the condition is improving or worsening.

2.5.7 The Department for Transport continues to receive data voluntarily from local authority SCANNER surveys and undertakes statistical analysis to provide similar performance information on the classified road network on a national and regional basis. This is reported in an annual Transport Statistics data table (RDC). Some statistics are collated nationally for the unclassified network but the data for this is more reliant upon individual Authorities continuing to undertake surveys on the unclassified network and in a consistent manner. Warwickshire provides data to all these analyses.

2.5.8 Although data from non-SCANNER technology is also currently accepted and fitted to match the red, amber and green categories of SCANNER, this data is not directly comparable. Compatibility of data from non-SCANNER technology is expected to improve with the introduction of the 5 more detailed categories associated with the new PAS 2161:2024 standards. This new categorisation of condition will not directly map to the percentage of red, amber and green roads, so there will be a break in the time series of this statistical series. To mitigate the impact of this change, DfT are planning to dual run the standards in 2025 and 2026, with a move to the new reporting specified in PAS 2161 in 2027.

Other inspections

2.5.9 Other regular surveys are carried out for a range of purposes, e.g. Safety Inspections and Serviceability Inspections.

2.5.10 Safety Inspections are not part of any formal condition assessment. Defects that are identified from Safety Inspections in accordance with the Warwickshire Highway Safety Inspection Manual (e.g. potholes, trips, loose or rocking slabs, displaced kerbs, damaged or missing ironwork, standing water, missing or damaged road signs or bollards, or any other condition that could be a danger to road users) are recorded, with individual priorities for further action or specific treatment. Safety Inspections are undertaken to meet our statutory duties under the Highways Act. These inspections are undertaken by our Term Maintenance Contractor.

2.5.11 Other ad hoc inspections are carried out in response to public complaints and to deal with specific issues. These inspections do not form part of any overall condition assessment except that records of complaints and actions can be used to highlight areas of most frequent problems.

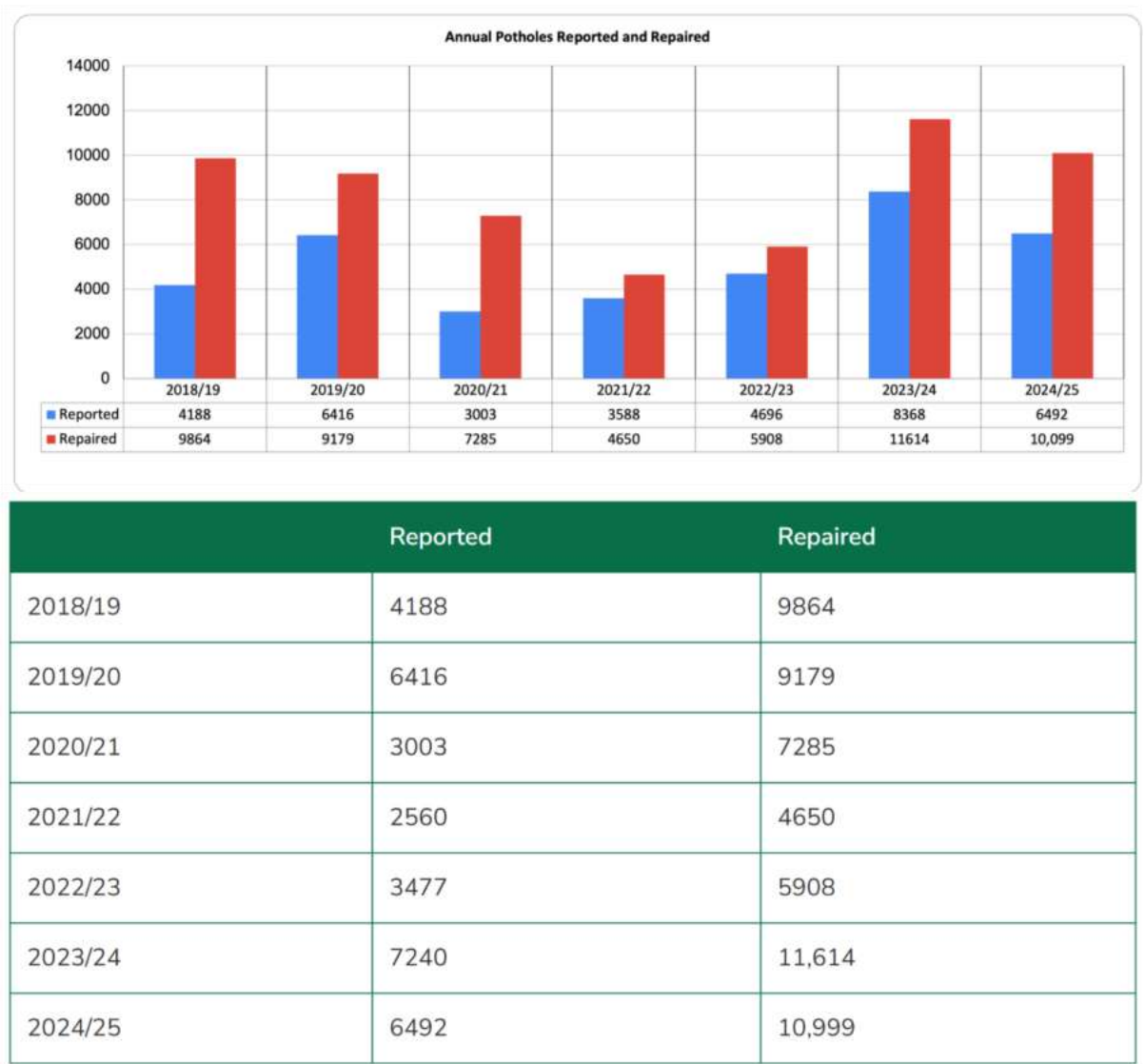
2.5.12 As an input into knowledge of the network condition, other information is available to the Engineer. The Authority holds a register of Third Party Claims for incidents on the public highway. This enables hot spots to be flagged up where higher incidences of claims are being made. More detailed inspection of these areas together with specific details of the claims can indicate where maintenance problems are developing and enables early planning of treatment to reduce or eliminate further claims.

2.5.13 Crash data is used if accidents have taken place to highlight locations where there is a greater than normal incidence. This information may be used to identify sites for priority maintenance treatment if carriageway defects are identified to potentially be contributory factors in Road Traffic Accidents.

2.5.14 Annual priority sites for carriageway structural maintenance are based on strategic priorities and a combination of different objective data sources. A percentage of the annual capital budget for carriageway maintenance is also set aside to allow for treatment of locally identified defective carriageway priorities that may not otherwise meet the criteria required to be considered a priority.

2.5.16 Potholes have become a major discussion point both locally and nationally. From an asset management perspective, it would be hard to justify the prioritisation of pothole repair at the expense of other preventative or structural maintenance works unless their presence is proved to be indicative of a need for larger maintenance intervention works. Warwickshire's Highway Inspection Manual outlines the point at which a pothole is considered a safety defect and repair of these defects is a priority so that the Highway Authority meets its statutory duties. The Highway Authority does, however, appreciate the importance of pothole repairs to residents and members and supported through the innovative find and fix gangs, continues to increase the number of potholes identified and repaired on an annual basis. This proactive approach is extremely effective in tackling smaller road defects before they escalate into larger, more expensive issues with greater disruption to the road network.

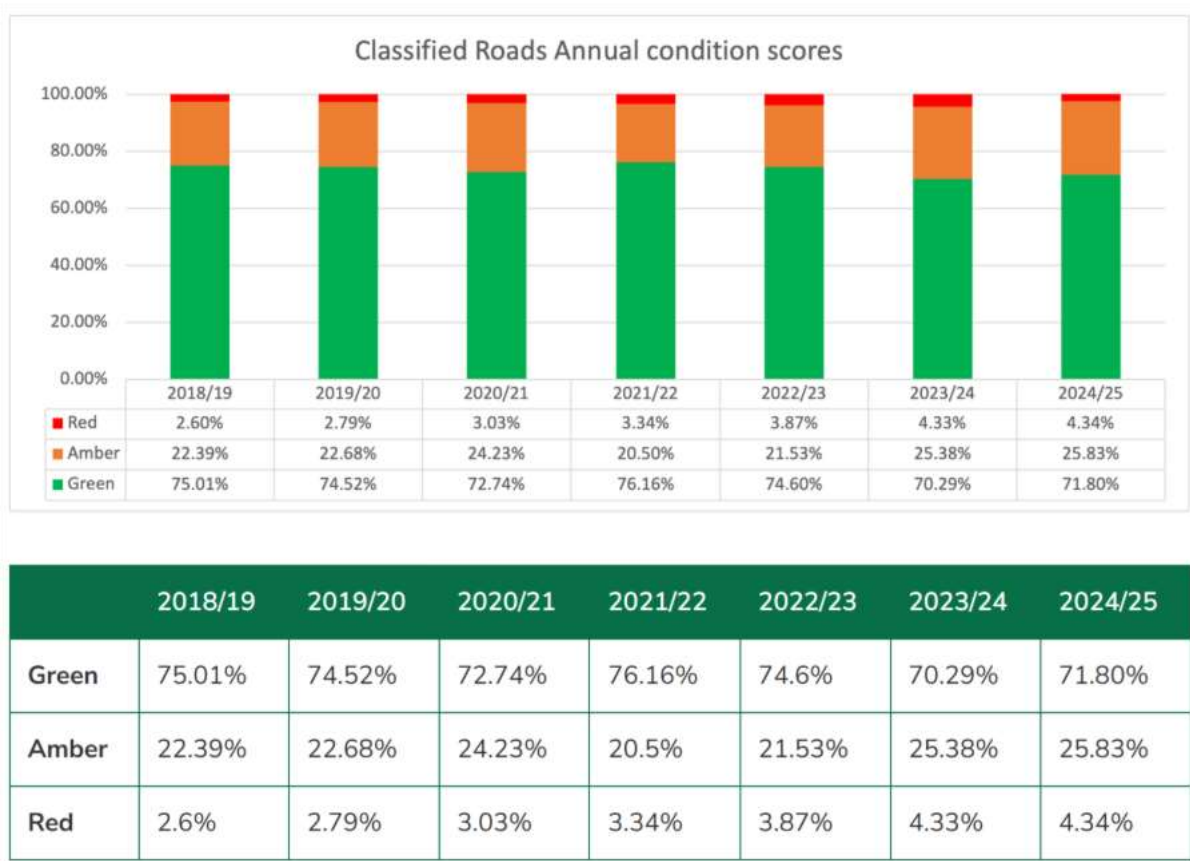
Table 2.3 Annual potholes reported and repaired in Warwickshire’s highway network



2.6 National Performance Indicators

2.6.1 Warwickshire’s nationally reported RCD carriageways performance data between 2018/2019 – 2023/2024 are detailed in Table(s) 2.4.

Table(s) 2.4 Classified Roads Annual condition scores



2.7 How does the condition of the carriageway network compare with other Authorities?

2.7.1. Comparative RCI (Road Condition Index) performance for Warwickshire carriageways is set out below (performance for England & Wales excludes London) in table 2.5.

Table 2.5 Comparison of National Indicators 2024/25

RCI Condition	RCI Performance in England & Wales (%)	ALARM Target RCI Performance (%)	Warwickshire RCI Performance (%)
Red	11	9	4.34
Amber	32	26	25.83
Green	57	65	71.80

Benchmarking & Best Practice

2.7.2 Each year the Asphalt Industry Alliance (AIA) commissions an independent survey of local authority highway departments in England (including London) and Wales. The aim of the survey is to take a snapshot of the general condition of the local road network, based on information provided directly by those responsible for its maintenance. The data received from local authorities provides a means of tracking any improvement or deterioration, allowing long-term trends to be reported, and the qualitative feedback received from them provides context.

Questions in the survey relate predominantly to the maintenance of the carriageway itself – the road surface and structure – and only that part of the total highway maintenance budget which specifically addresses the condition of the carriageway, referred to as the carriageway maintenance budget. Total highway maintenance budgets also cover other significant areas of expenditure – including structural work to bridges, street lighting and cyclical maintenance (for example grass cutting, checking traffic signals and the replacement of street furniture) – which are excluded from this report.

ALARM 2024 is the 29th annual survey and 72% of authorities responsible for local roads in England and Wales responded.

2.7.3 The RCI data shows that, comparative to other authorities, the condition of Warwickshire's carriageway network currently compares favourably.

2.7.4 Whilst national performance figures allow Authorities to check themselves against their peers, caution should be applied in making conclusions as to the extent that such comparisons are representative of success or failure of individual Authorities. Each Authority will have their own policies about highway maintenance that have been formulated with due regard to many different local factors and local priorities, that may not have the same strategic importance in neighbouring Authorities. Such different policy priorities will clearly have a bearing when comparing performance figures between Authorities.

2.7.5 Midlands Highway Alliance Plus (MHA+) was formed from the merger of three regional efficiencies groups, the Midlands Highway Alliance, the Midlands Service Improvement Group and the West Midlands Highway Alliance. The new Alliance (July 2020) has a membership of 36 local highway authorities from across the Midlands and beyond.

The County Council is a member of the MHA+, where amongst many activities aimed at service improvement, common condition indicators are shared and discussed with other group members.

2.7.6 As the condition of the highway network is inextricably linked to the amount of investment in maintenance, the aim in Warwickshire continues to be careful stewardship of the highway network by carrying out the most cost-effective treatment to enhance the asset value within the budget available. We will continue to use annual

performance measures to monitor progress and success of our strategic approaches and decisions.

National Highways & Transportation Network Performance Management Framework (NHT PMF)

2.7.7 The NHT Network is the leading service improvement organisation providing a range of benchmarking services for the Highways & Transport sector, available on a subscription basis to Local Authorities and their delivery partners. The activities of the Network are controlled by its members. Steering Groups define the scope and content of each of the services the Network provides. Each of these steering groups is led by a chairman and comprise practitioners from participating organisations.

NHT provides a supported Network environment in which members can:

- Measure their own performance.
- Compare with their peers and
- Identify areas for improvement.

2.7.8 NHT PMF was developed in response to the requirements of the DfT Self-assessments by a group of twelve Authorities. The Framework follows HMEP Asset Management Guidance and the New Code of Practice. The Framework is available as a benchmarking tool with annual measures as part of a Local Authority's Care Quality Commission (CQC) Membership and as an internal system with any internal targets and more regular monitoring and reporting.

NHT PMF provides:

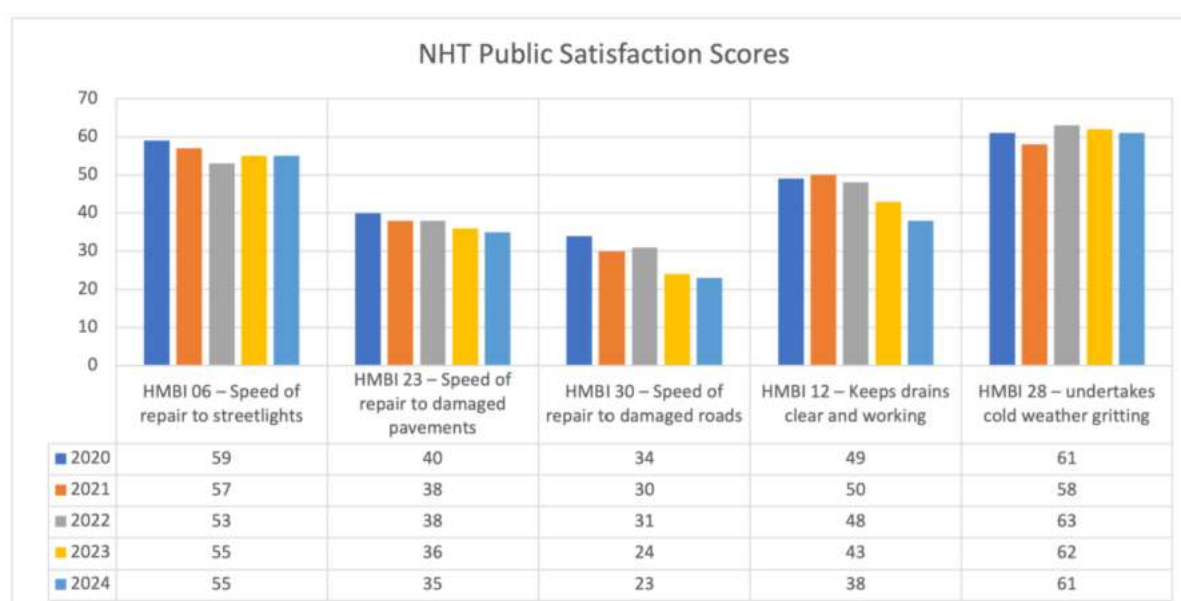
- A standard performance management framework
- A measurement hierarchy to highlight strengths and weaknesses, and good and bad performance.
- A means of measuring improvement and targeting corrective action
- A standard set of measures that provide a basis for benchmarking performance with others.

2.7.9 The Key Business Measure for Warwickshire '**Highways & Transport (NHT) survey ranking compared to peer authorities**' is reported annually. Warwickshire are currently ranked 2nd in the NHT survey compared to peer authorities. This is an increase of two places on the previous year.

Annual Public Satisfaction Survey Results

2.7.10 Key Highways maintenance related results from the annual independent NHT survey are set out below in table 2.6

Table 2.6 NHT Public Satisfaction Scores



NHT Public Satisfaction	2020	2021	2022	2023	2024
HMBI 06 - Speed of repair to street lights	59	57	53	55	55
HMBI 07 - Speed of repair to damaged roads/pavements	40	38	38	36	35
HMBI 08 - Quality of repair to damaged roads/pavements	34	30	31	24	23
HMBI 12 - Keeping drains clear and working	49	50	48	43	38
HMBI 17 - Undertakes cold weather gritting	61	58	63	62	61

2.7.11 Due to the subjective nature of the survey data, public satisfaction results are not directly linked with how priority carriageway sites are identified. The results are still important though and are carefully reviewed to identify trends that may inform future strategic decisions.

2.8 What is the desirable condition of the asset?

2.8.1 The desirable condition of the carriageway network is one that minimises annual maintenance costs and maintains a steady state with the minimum expenditure. A 'worst-first' approach has historically been employed by many Local Authorities. Such an approach is inherently based on managing risk and ensuring that statutory duties are met. Notwithstanding such an approach is also economically challenging. Preventative maintenance that addresses defects at the right time in the carriageway lifecycle is key to economical and successful long-term management of the carriageway asset. Failure to implement preventative maintenance measures at the correct time will result in a growing list of 'priority' sites that will eventually cost substantially more due to the more severe treatment required by delaying action.

2.9 What is an acceptable condition?

2.9.1 Recommendation 7 of Well-managed Highway Infrastructure – A Code of Practice, advocates that Local Authorities adopt a risk-based approach for all aspects of highway infrastructure maintenance. Additionally, it is economically sensible to identify priorities for maintenance based upon the importance and use of the road.

2.9.2 Matters such as inflation within the construction sector, higher energy costs, climate change and geopolitics significantly impact on the amount of maintenance work that can be completed annually when annual maintenance budgets do not increase in line with these challenges. As such, it becomes increasingly difficult to improve the carriageway asset or maintain it in a steady state. That is not to say that the network becomes unsafe. It is that there must be agreement that either desired standards must be funded through increased budgets, or the acceptable standard is reduced in line with the finances available. The Authority's statutory duties do not change however, and a diminution of acceptable standard does should not mean a compromise in safety for the end user.

2.9.3 Preventative maintenance strategies that address defects at the right time in the carriageway lifecycle and cheaper than structural maintenance treatments, may offer a partial solution to challenges. They present a method of treating a greater percentage of the carriageway network at lower overall cost, maintaining a good level of condition and deferring the need for more expensive treatment where planned works have been deferred to the point that the carriageway asset has deteriorated to the point of requiring structural repair.

2.10 Other areas of indication

2.10.1 The County Council has previously undertaken public consultation through regular questionnaires, particularly following planned structural maintenance works. Trials using QR codes are ongoing to consider whether this type of consultation can be made more accessible and sustainable going forward.

2.11 How can the gap be reduced through changes in practice to bring about savings, or through the generation of additional funds?

2.11.1 We have been using an asset management approach to maintaining the highway network for many years, which has allowed us to target finite resources to where the benefit will be greatest. With the life of the previous TAMP 2011-2026 coming to an end, development of a new HAMP in 2026, alongside a revised asset management policy & strategy, will look to build and improve upon this existing asset management approach. The new HAMP will be constructed to accord with ISO55000 standards for Asset Management to ensure that it is robust and fit for purpose.

2.11.2 Whilst the calculated financial need for maintaining the network can be produced, available funding to undertake the required amount of maintenance is unlikely to match the need. Consequently, there will continue to be a necessary need to focus on the primary function of simply maintaining the network in as safe a condition as possible for all road users. The need will still exist to investigate strategic

approaches or new innovations that may help maintain or improve the existing condition of the carriageway network with the maintenance budgets available.

2.11.3 Reducing treatments that contribute towards improving the network will inevitably result in worsening of annual performance.

2.11.4 We are continuing to use resources in the best possible way and continue to re-use materials or seek innovative approaches when maintaining the carriageway asset where an economic or sustainability case for doing so is proven. There is an ever-increasing focus on recycling of materials and material innovation, most notably to demonstrate that efforts are being made within the industry to address challenges associated with climate change and carbon generated by highway maintenance activities. It must be borne in mind however, that simply re-using existing waste products for example, is not always economically viable. While re-using materials or using innovative technologies may present themselves as environmentally sound solutions, where the cost is significantly increased, caution must be exercised so to demonstrate that such approaches are demonstrably beneficial and not undertaken solely for their own sake.

2.11.5 An asset management-led approach to maintenance work must consider identifying and programming priority work to make best use of available resources. Timely intervention of an appropriate treatment will:

- Reduce the number of unexpected defects – leading to a reduction in risk on the highway networks to users and reduction in insurance premiums and the need for specific funds for paying or refuting claims.
- Extend pavement life and reduce the amount of more expensive future treatments.

2.11.6 Co-ordination with others (e.g. utilities, promoters of new features etc) where maintenance work is planned is important, so that where possible all parties undertake everything at same time. The Traffic Management Act 2004 goes a long way to helping this aim, whereby utilities and Local Authorities are required to communicate with each other regarding future planning of works. Processes and procedures should be reviewed to further improve on existing practices.

2.11.7 It is imperative to ensure that any work is carried out to the required specification as set out in the 'County Road Surfacing Strategy'. Additionally, it is known that by increasing thicknesses of surfacing materials during maintenance works, a significant increase in pavement life is achieved which is positively disproportionate to the extra cost of the work. Notwithstanding, the presence of utilities should be carefully considered when determining material choices and specifications. In a local environment, legitimate utility activities can significantly affect the structural integrity of a carriageway well before the design life span has passed. Consequently, there is little advantage in some areas in designing carriageway structures to any significant design life. There must be sufficient flexibility to also consider aiming for shorter design lives areas where future utility works are likely to impact on the overall carriageway life span. A 'graded' design life could be considered based on the risk of utility activity at the location, varying from less than 10 years in high-risk areas to 40 years (or even more) in very low risk areas.

2.12 Monitoring, review and continual improvement

2.12.1 On full expiration of the 2011 – 2026 TAMP, the reviewed and revised Asset Management Policy and Asset Management Strategy, alongside the new HAMP will bring all matters pertaining to the management of the carriageway Asset in Warwickshire fully aligned.

Chapter 3 – Footways

3.1 Introduction

3.1.1 This section covers footways which are the responsibility of the County Council, and can include footways alongside carriageways, footways away from carriageways and some surfaced footpaths. Warwickshire County Highways is responsible for the maintenance of the footway asset. The County Council recognises the importance of providing high quality facilities for pedestrians especially within town centres, to support several wider objectives such as economic and social vitality.

3.2 What is the asset?

3.2.1 The footway asset covered in this section of the Plan is regarded as the lengths of (mostly) macadamed construction adjacent to carriageways and forming part of the highway. These lengths of footway are generally referenced by taking the same road number as the adjacent carriageway. Additionally, similarly constructed paths not adjacent to carriageways and generally (but not exclusively) running through housing areas also form part of this asset group. These will usually be referenced by having a separate road number distinct from the numbering scheme for carriageways, and in this section are referred to as 'off-highway' footways.

3.2.2 Generally, all these constructions are primarily for pedestrian use, although, to increase sustainable transport infrastructure, several sections have also been converted to shared use with off-carriageway cycle routes.

3.2.3 Quantifying the amount of maintainable footway is based upon representative information. It is understood that, to make best use of inventory data for asset management purposes, information must be as accurate as possible. Whilst the footway information we hold is derived from actual measurements of network samples, it is acknowledged that to undertake wholesale network measurement to the extent of providing increased accuracy will require a significant resource to achieve, and the Authority is actively collecting and refining data as part of our footway inspection programme.

Table 3.1 Footway Network Length and Area

Footway Asset Register			
Asset Item	Quantity	Data Confidence	Gross Replacement Cost (GRC)
Prestige Area (1a)	11km	Medium	£9,377,110
Primary Walking Route (1)	31km	Medium	£8,577,340
Secondary Walking Route (2)	339km	Medium	£63,473,540
Link Footway (3)	804km	Medium	£443,659,970
Local Access Footway	1730km	Medium	£110,083,780
Total Gross Replacement Cost		£635,171,740	

***Note:** The current confidence in the footway data is medium because footway lengths have been estimated based on the lengths of adjacent carriageways (where footways are present), rather than being measured directly. To improve data quality, a new Warwickshire Footway Inspection has been introduced for this financial year. This inspection will collect more accurate information, including specific footway lengths independent of carriageway measurements, which will significantly enhance the reliability of the data. GRC figures calculated using the last available CIFPA Toolkit and adjusted using standard inflation calculator)

3.3 Footway Inspections

3.3.1 In order to keep the footway network safe we undertake footway safety and footway condition surveys. A single inspection will only give a broad indication of condition, whilst regular inspections at frequent intervals will provide a more accurate indication of trend in condition. To determine true indicators of condition, such inspections must be carried out consistently, both in accuracy and format. Frequency of inspection is based on the footway hierarchy.

Safety Inspections

3.3.2 These are carried out in accordance with the Code of Practice (Well Maintained Highways) and serve the primary purpose of locating defects that could cause damage or harm to footway users. Use of the data to indicate overall footway condition is extremely limited, but it can be used to highlight where persistent minor patching work is being carried out, so indicating a possible need for work of a more substantial nature being a better solution.

Table 3.2 Footway inspection Frequency

Category	Inspection Frequency
Strategic Route	Monthly
Main Distributor	4 times a year
Secondary Distributor	3 times a year
Link Road	Twice a year
Local Access Road	Once a year
Minor Roads	Once a year

Warwickshire Footway Inspections (WFI)

3.3.3 To align with the new PAS 2161:2024 1 – 5 rating system, a new process for conducting footway inspections in Warwickshire is being developed.

3.3.4 It is expected that any new process will:

- Modernise footway condition inspections
- Improve the quality of footway condition data
- Ensure a data-led, asset management approach, to aid in the identification of future footway schemes
- Improve collaboration and decision making
- Reduce duplicated efforts and unnecessary processes
- Improve public safety

3.4 What is the desirable condition of the asset?

3.4.1 The Highway Authority is responsible for the whole public thoroughfare in terms of both carriageway and footway and therefore aims to maintain each element at similar levels of functionality. It is logical then to desire an asset condition that is broadly similar, i.e. one where the user perceives both carriageway and footway to be in the same condition and for the Authority to have similar processes for assessing condition.

3.4.2 Footways are an important part of the highway asset in Warwickshire. Unlike carriageways, footways provide all customers with the facility of personal transport. More importantly, for many sections of the community without access to a car, footways provide the only means of independent mobility, if only to get to public transport facilities.

3.4.3 Additionally, in support of LTP4 objectives and through strategies to improve individual health and increase the environmental awareness of transport use, the use of footways is being encouraged by the County Council for short local journeys.

3.4.4 It is therefore of significant importance that the condition of the footway network is maintained to high levels of user satisfaction.

3.4.5 At present it is unclear what the desirable condition of the footway network is in terms of a measured condition. The desirable condition is not necessarily a perfect condition; a desirable condition is primarily safe but also must be affordable. It is futile setting expectations beyond what is realistically possible. Inevitably, the desirable condition of the network will always exceed reality, particularly where funding is limited. Thus, our approach to maintaining the footways in the best possible way is twofold:

- Formal inspections - Safety Inspections and Condition Inspections; and
- Prioritised programmes of maintenance works.

3.4.6 From these inspections, together with information from local area staff, annual programmes of work are formulated for a variety of treatments. It is expected that improved approaches to footway inspection processes will result in the development of increasingly objective, needs-based, programmes of work.

3.5 Performance Targets

3.5.1 The fundamental desire is to improve the condition of the footway network in a way that is safe, affordable and sustainable.

3.5.2 Matters such as inflation within the construction sector, higher energy costs, climate change and geopolitics significant impact on the amount of maintenance work that can be completed annually when annual maintenance budgets do not increase in line with these challenges. As such, it becomes increasingly difficult to improve the footway asset or maintain it in a steady state. That is not to say that the network becomes unsafe. It is that there must be agreement that either desired standards must be funded through increased budgets, or the acceptable standard is reduced in line with the finances available. The Authority's statutory duties do not change however, and a diminution of acceptable standard does not mean a compromise in safety for the end user. The potential for personal injury and consequent claim against the Authority is greater on an uneven footway.

3.5.3 Additionally, as available budgets are less able to treat the desired amount of network, the pool of work required to maintain a given level of condition will increase and the type of maintenance treatment to treat that pool will become more expensive per kilometre as treatment get deferred and condition deteriorates further.

Slurry sealing has previously been used as a cost-effective maintenance solution on footways however, slurry sealing is now not actively done in Warwickshire.

3.6 What is the gap?

3.6.1 The past footway survey process has only managed to capture a relatively small proportion of the whole footway network. Improved processes are expected to capture a more comprehensive proportion of the footway network.

3.6.2 Consequently, it may be expected that the overall condition of the footway network may reflect a poorer condition rating when condition surveys are extended to a wider area of the network.

3.6.3 Should this prove to be the case; a robust prioritisation process will need to be in place to distinguish where there is a greater need should the number of priority sites exceed available budgets.

3.6.4 With the calculation of depreciated replacement using national parameters yet to be carried out, the gap by this national method is currently unknown. As the new methodology takes account of many factors that influence the deterioration of the footways, it is expected that a figure that is as accurate as possible will be produced.

3.6.5 Footways, unlike carriageways, are generally constrained by adjacent features such as kerbing and building thresholds. Therefore, to simply overlay a footway with a new surface course is rarely possible without significant alterations to adjoining features. Such an operation thus becomes uneconomic, and treatment gets deferred. Footway maintenance tends to be restricted to either a thin sealing of the existing surface or complete excavation and reconstruction; intermediate treatments are rare.

3.7 How can the gap be reduced through changes in practice to bring about savings, or through the generation of additional funds?

3.7.1 We have been using an asset management approach to maintaining the highway network for many years, which has allowed us to target finite resources to return the most benefit. An up-to-date strategy for how the footway asset is managed will be detailed in the new HAMP.

3.7.2 We are continuing to develop strategies that use resources in the best possible way and continue to re-use materials where an economic case for doing so is proven.

3.7.3 Maintenance allocations are always subject to short term change. Reliable forecasting of maintenance need is imperative to focus attention on the long-term requirement, which then demonstrates the need for consistent maintenance funding. However, there is also an allied need to demonstrate that whatever funding is achieved, it is spent in the best possible way.

3.7.4 The most significant area of deficiency is one of knowledge of the network and its condition. Whilst quantities can be attributed to features based upon collective knowledge and individuals experience, an accurate assessment of the complete footway network will only be possible following the wide scale collection of inventory data and condition inspection. Clearly to do this comes at both a cost and resource demand so collection of data must be prioritised to achieve best value.

3.7.5 There is an ever-increasing focus on the need for sustainable engineering. It must be borne in mind, however, that simply re-using or recycling materials is not always economically viable. One advantage with footway construction/maintenance is that the specification for materials is less onerous than for carriageways. Therefore, there is scope for using surplus carriageway maintenance material in footway

refurbishment works. We have made increased use of recycled construction materials in footway maintenance schemes in recent years.

3.7.6 A common sense approach to maintenance work must consider programming work to make best use of available resources. Choice of the most suitable maintenance treatment, and its timely application will:

- Reduce the number of unexpected defects – leading to a reduction in Insurance premiums and need for specific funds for paying claims; and
- Extend pavement life and reduce the amount of more expensive future treatments.

3.7.7 A particular problem with footways is the accelerated deterioration that is caused by inappropriate use (parked vehicles). It is recognised that in a lot of locations it is prudent to park vehicles off the carriageway. The accelerated deterioration of footways in such cases must be balanced with the invisible benefit of providing unofficial parking facilities.

3.7.8 Co-ordination with others (e.g. utilities, promoters of new features etc) where maintenance work is planned is important, so that where possible all parties undertake everything at same time and before maintenance works are carried out. The New Roads and Street Works Act 1991 (and its associated Codes of Practice) together with The Traffic Management Act 2004 go a long way to helping this aim, whereby utilities and local Authorities are required to communicate with each other regarding future planning of works.

3.8 Monitoring, review and continual improvement

3.8.1 On full expiration of the 2011 – 2026 TAMP, the reviewed and revised Asset Management Policy and Asset Management Strategy, alongside the new HAMP will bring all matters pertaining to the management of the footway Asset in Warwickshire fully up to date.

Chapter 4 – Highway Drainage

4.1 What is the asset?

4.1.1 The highway drainage asset currently consists of:

- Approximately 115,000 gullies.
- Spillways and grips (constructed open channels into verges);
- Drainage units in kerbs and footways; and
- A currently unknown length of highway gully connections, carrier drains and ditch-courses

4.1.2 Though no inventory of highway drainage pipework exists, it is thought that we have more than 500km of pipe of various sizes across the County.

4.1.3 In addition, whilst most roadside ditches are the responsibility of the adjacent landowner, some may be highway ditches if their primary purpose is to drain the highway. Even those that are the adjacent landowner's responsibility might be considered a highway asset.

4.1.4 The County Council is also responsible for pipe crossings under the road. Larger crossings are considered as part of the bridge stock, but smaller pipes (under 900mm) are maintained as part of the highway drainage. The number of these pipe crossings within Warwickshire is currently unknown.

4.1.5 Previously, as part of the Highway Service Standards, County Highways pledged to cleanse every gully, as part of a cyclical programme, once every two years. A new variable frequency procedure has been established to identify high risk sites and problematic drainage systems that require cleansing on a more regular basis (3 and 6 monthly intervals). The sites, for inclusion in this programme, are identified by the Area Surveyors (as they hold local knowledge of known sites) and also from existing highway flooding data provided by the Warwickshire County Council Flood Risk Management Team.

4.2 What is the current condition of the asset?

Gullies and Connecting Pipework

4.2.1 Most gullies are designed with a silt trap to collect debris washed into them. The silt trap helps to keep the connecting pipes and carrier drains clear. In the past few years, the gully silt traps have been emptied once a year.

4.2.2 Inventory data total the number of gullies present on the highways of Warwickshire at around 115,000. The number of these which are not working is currently unknown.

4.2.3 In addition to the gullies which are blocked, there are other gullies that have collapsed so that the gully emptying machine cannot empty the silt traps. The number of these gullies is uncertain. Most of these collapsed gullies will be the

narrow 'birdbath' type. When planned highway maintenance schemes are carried out, it is usual to incorporate the replacement of these types of gullies if they exist on site, regardless of operating condition.

4.2.4 A further problem with some gullies is the condition of the gully grate and frame. Some gratings are rusted, some are 'dished' which are not ideal for current traffic, and some are inadequately set on the gully pot, which can cause surface potholes around the grating.

Spillways and Grips

4.2.5 Grip and spillway locations are recorded in a central management system and an annual maintenance programme is in place.

Drainage units in kerbs and footways

4.2.6 There are limited records of the locations and condition of the drainage units in kerbs and footways. Where they exist, the majority of these are likely to be in adequate condition as they will be repaired as and when they are blocked or damaged.

Main carrier drains and Catchpits

4.2.7 Problems with carrier drains include blockages, due to silting or tree roots, and breakages, particularly caused by utility companies during the installation of new pipes and cables.

4.2.8 There are no routine inspections of carrier drains, and so the total number of issues with these are unknown.

4.2.9 Catchpits are designed to reduce silting in the carrier drains by allowing any silt entering the pipes to be caught as water passes through the catchpit. To enable this to work the catchpits need emptying when the sump is full of silt. At present there is no routine system for emptying catchpits.

Ditches

4.2.10 Ditches become silted up, restricting water flow along them, but also causing blockages to outfalls from gullies and to the inlet to continuing piped systems at headwalls.

4.2.11 Action is taken to ensure ditches are cleared when silting causes problems on the highway. Where this is demonstrably the responsibility of the adjacent landowner, the Highway Authority ensures that they take action to rectify any identified issues.

4.2.12 There is some evidence to suggest that incidents of highway flooding during heavy rainfall could be reduced by deepening or clearing ditches. As there are no routine inspections of ditches the extent of the problem is not currently known.

Pipe Crossings

4.2.13 Blockages in pipe crossings usually cause an immediate problem with flooding of land adjacent to the highway. Such blockages are dealt with as they occur, and so it is believed that most pipe crossings are operating satisfactorily.

4.2.14 Some pipe crossings may be partially silted up and not operating to full capacity, but as there are no formal inspections of pipe crossings the extent of any problems is not known.

4.3 What is the desirable condition of the asset?

4.3.1 As a minimum, the desirable condition for the highway drainage network is to have all gullies, spillways, grips and drainage units working, and all pipework, chambers and ditches clear and free running. In general, drainage systems installed in the County have been installed to at least Q5 standard (i.e. able to cope with a 5-year storm). This will continue to be reviewed to ensure that the network remains resilient to any extreme weather events associated with a changing climate.

4.3.2 Drainage is currently designed to ensure that, under normally encountered rainfall, highways will be free from standing water which might cause a danger to vehicles. Water can also cause a problem for pedestrians where it forms puddles or where it is splashed onto footways by passing traffic. In some locations blocked drainage systems can result in flooding to land and/or properties.

4.3.3 The ideal condition of gully tops is to have them in a condition that does not cause a danger to passing traffic. Thus, they need to be set flat or no lower than 6mm; of adequate strength and securely set onto the gully.

4.3.4 The high value of metals has resulted in an increase in the theft of gully gratings. When refitting gully gratings and frames, there has been a move towards hinged and thus more theft resistant grating.

4.3.5 On many roads, but particularly on un kerbed minor roads, standing water on the highway weakens the subgrade of the road. This in turn can reduce the life of the road. In these cases, water can generally be removed by cutting grips and ensuring that ditches are working. On some roads, standing water can only be removed by reshaping the road through patching or resurfacing. Although there is evidence that roads, particularly road edges, have failed due to standing water, the real extent of the problem is not currently known.

4.4 What is the value of the asset?

4.4.1 Without an accurate inventory of the complete drainage asset, estimates of value are at best an initial guide. With relatively high confidence in the data held for ditches, grips and gullies, the current gross replacement cost of the drainage asset is estimated at **£66,062,200** (figures calculated using the last available CIFPA Toolkit and adjusted using standard inflation calculator). A more accurate valuation would only be possible following the compilation of a detailed inventory of the drainage asset.

4.4.2 Although the condition of the asset will clearly deteriorate with time, much of the asset will have a very long life. Even the brick culverts that exist, and which are known to deteriorate over a period have a likely life of around 100 years or more.

4.4.3 An accurate assessment of the amount required to bring the drainage system to an adequate standard would require a full survey of the drains and incidents of flooding and an estimate of the costs of putting right all defects and capacity problems.

4.4.4 A full survey of the drainage asset and evaluation of the backlog of drainage repair would be necessary to ensure a complete picture of all the repair work required. The approach to resolving backlogs of work would be to prioritise the work in the backlog lists based on costs and benefits from the repair.

4.5.5 A full and accurate backlog list would require an inventory of the highway drainage asset. However, producing an inventory of manholes, pipes, ditches and all other drainage assets will need a significant resource and its costs must be weighed against potential benefits. One of the benefits of having an inventory would be a reduction in investigative work to locate drains before repairs can be carried out.

4.5.6 The Highway Authority holds data pertaining to CCTV surveys and jetting for large parts of the highway drainage network. This can be accessed by officers to inform decision making processes however, an exercise to properly map and store this information in a central mapping system would make this data more accessible and useful. Centrally stored and improved drainage would also be beneficial in supporting drainage maintenance regimes.

4.5.7 By establishing a permanent electronic mapped record of the location, type and status of drainage assets, it is expected that maintenance regimes could be developed that would provide a far better service, at the same cost, than is currently the case.

4.6 Monitoring, review and continual improvement

4.6.1 On full expiration of the 2011 – 2026 TAMP, the reviewed and revised Asset Management Policy and Asset Management Strategy, alongside the new HAMP will bring all matters pertaining to the management of the drainage asset in Warwickshire fully up to date.

Chapter 5 – Street Lighting

5.1 What is the asset?

5.1.1 As of 31 March 2025 the County Council own 53,256 street lighting points. These range from 4/5m high columns to 6, 8, 10, and 12m columns, to many heritage style columns, wall brackets and subway lights.

5.1.2 The design life for a street lighting column is, unless otherwise specified, generally 25 years. Warwickshire is no different to most of the other Local Authorities around the country which have an ageing lighting stock.

5.2.3 With regard to column materials, there are various types in place in Warwickshire including steel, concrete, aluminium, composite and wood. Table 5.1 outlines the quantities of each material used within the County.

Table 5.1 – Column Material Quantities

Material	Quantity	%
Aluminium	3694	6.94%
Cast Iron	768	1.44%
Concrete	0	0%
Fibreglass	3	0.01%
Stainless Steel	45	0.08%
Mild Steel	47,831	89.81%
Wood Pole brackets	476	0.89%
Wall Mounted	439	0.82%
Total	53,256	100.0%*

*99.99%

5.2.4 We have produced a hierarchy of columns, to prioritise replacement as budgets allow. These are:

1. Columns which have failed the structural testing.
2. Concrete columns – these are generally 40 years old, and some have a known manufacturing defect, however we currently have no method of testing them.
3. Cast Iron columns – These are generally 80 years old being old, and while we have had no columns collapse, we have no method of structurally testing them.
4. Sectional Steel Columns – These are generally 40 years old and are installed on main traffic routes which have been de-trunked. We have no method of structurally testing these columns.
5. Columns which support flower baskets/CCTV cameras etc. These columns should be replaced with a type more suitable for such attachments.
6. Columns on footpaths which require scaffolding to maintain. These should be changed to a type which allow easier maintenance.

5.2.5 With regard to lighting quality, there are various types of lighting sources which have different applications. In general terms, Warwickshire has various quantities of

the following light sources. These are briefly described below, with the detailed breakdown within Warwickshire set out in Table 5.3.

Table 5.3 – Lamp Types and Quantities in Warwickshire

Lamp Type	Quantity	Percentage
Low Pressure Sodium	2	0.004%
High Pressure Sodium	1873	3.507%
Mercury	1	0.002%
White Light Source - Ceramic Metal Halide, Compact Fluorescent etc	452	0.846%
LED	48095	90.055%
CosmoPolis	2983	5.586%
Other	0	0%
Total	53,406	100%

- **Low Pressure Sodium (SOX)** - This light source is now obsolescent and has in the most part been removed from the street lighting stock.
- **High Pressure Sodium (SON)** – Can be described as Golden White Colour light which is more attractive than SOX lighting and offers slightly better colour rendition and facial recognition. Very reliable light source but generally uses approximately twice as much electricity as SOX. This light source is now no longer specified for new developments. These lamps are to be replaced with LED light sources.
- **Mercury (MBF)** – This light source is now obsolescent and has in the most part been removed from the street lighting stock.
- **White light sources such as Metal Halide, Compact Fluorescent etc (CDM/CDO/PLL/HPI etc)** – Quite inefficient light sources that emit high quality lighting regarding colour rendering and facial recognition. Unfortunately, it is necessary to use more lighting points than other light sources to achieve the necessary lighting levels. This type of lighting has been superseded by CosmoPolis and LEDs. These light sources are now obsolete except for CDM lamps. CDM lighting will also become obsolete over time and funding will be required to replace existing stock with LED.
- **CosmoPolis (CPO-TW)** – Manufacturers have ceased producing CosmoPolis lamps, which has rendered this light source obsolete. Currently we have approximately 2983 lanterns using CosmoPolis lamps that require replacing over time. Further funding would be necessary to replace these lights for LED.
- **Light Emitting Diodes (LED)** – LEDs are now the predominant source of street lighting across Warwickshire. Warwickshire has been specifying LED light sources for new developments since 2012 and are now used for lantern replacement and maintenance works. This light source is much more efficient than the previous

sources such as SOX, SON, CPO, CDM, CDO etc, which has reduced energy expenditure. LEDs have an expected lifespan of 50,000 to 100,000 hours and require less ongoing maintenance than previous light sources, as they do not routinely require bulk lamp changes and cleaning.

5.3 Energy Requirements

5.3.1 Warwickshire County Council implemented part-night lighting countywide in April 2013. This followed the implementation of part-night lighting in the Warwick District Council area in December 2012; and in Rugby Borough Council and Nuneaton and Bedworth Borough Council areas in February 2013. Part-night lighting was implemented to reduce the street lighting electricity budget by £500,000 per annum so that this funding could be used to protect other vital services provided by WCC.

5.3.2 Part-night lighting is the term we use for a light that switches off for part of the night. Table 5.4 below provides more detail around the part-night lighting schedules.

Table 5.4 Part-night lighting operating times

Part-night street lights operating times:

Part-night street lights operating times				
	ON	OFF	ON	OFF
Sunday night/Monday morning	Dusk	Midnight	05:30*	Dawn*
Monday night/Tuesday morning	Dusk	Midnight	05:30*	Dawn*
Tuesday night/Wednesday morning	Dusk	Midnight	05:30*	Dawn*
Wednesday night/Thursday morning	Dusk	Midnight	05:30*	Dawn*
Thursday night/Friday morning	Dusk	Midnight	05:30*	Dawn*
Friday night/Saturday morning	Dusk	01:00	06:30	Dawn*
Saturday night/Sunday morning	Dusk	01:00	06:30*	Dawn*

*The lights will not switch on for these periods during the Summer months as it is already daylight.)

5.3.3 Approximately 37% of WCC streetlights operate all-night, and approximately 63% operate part-night.

All County Council-operated streetlights are subject to part-night lighting except for certain types of location where they are exempt from part-night lighting and operate all-night.

These locations are: -

- Where there are potential hazards on the highway such as roundabouts, traffic signal-controlled junctions, central carriageway islands, traffic calming features, road humps etc.
- At formal pedestrian crossings (Zebra, Pelican, Puffin, Toucan and Pegasus).
- Areas covered by permanent Local Authority/Police CCTV cameras.
- Areas adjacent to elderly people care homes, sheltered accommodation complexes and A&E departments.
- Lighting adjacent to operational taxi ranks.
- Lighting on public footpaths, alleyways and cycle paths which are located away from roads.
- Parish, Town, District or Borough Council owned lighting are not affected by Warwickshire County Council's changes.

5.3.4 In the case of an emergency, such as road traffic collision or an area search, the Police can request for the lights in a local area to be temporarily switched back on for the duration of the incident. Whenever there are extreme weather events such as heavy snow or dense fog, we assess the situation as to whether the part-night streetlights should remain on all-night. Once decided, the lights are temporarily switched to all-night operation for the duration of the extreme weather event.

5.3.5 We have undertaken analytical exercises over several years to understand whether there is a correlation between the part-night lighting policy, crime levels and Road Traffic Injury Incidents. The evidence has shown that there is no correlation

5.4 What is the desirable condition of the asset?

5.4.1 In short, the desirable state for Warwickshire's lighting stock is:

- For the entire inventory to be in good condition and generally less than 30 years of age.
- For there to be no Mercury, SON-T, SOX, CosmoPolis, CDM, CDO, PLL and HPI lanterns remaining in the County.
- For street lighting lanterns to be all LED.
- For columns to be regularly painted and well-kept aesthetically; and
- That any columns which are required to support attachments such as flower baskets and banners are designed for the purpose.

5.4.2 There are demands on Street Lighting resources which are not complimentary. Many stakeholders request improved lighting in areas for security reasons which generally increases the electricity requirement due to higher wattage lamps and/or more lighting points being necessary. The other major requirement is for the County Council to be as energy efficient as possible which cannot always be accommodated when people are constantly looking for better lighting. Lighting improvements are

made when funds are available either through County Council budgets or from external funding.

5.5 What is the value of the asset?

5.5.1 As noted earlier, there are approximately 53,256 street lighting columns in Warwickshire. The gross asset replacement value for all street lighting assets (including illuminated signs, illuminated bollards and vehicle activated signs) is estimated at around **£65,473,009.41** (figures calculated using the last available CIFPA Toolkit and adjusted using standard inflation calculator).

5.6 How can the gap be reduced through changes in practice to bring about savings, or through the generation of additional funds?

5.6.1 In order to reduce the need for future maintenance spending, the County Council's Street Lighting Section are continually looking at what is specified both for maintenance and for Section 38 developments, specifically in relation to:

- Aluminium lighting columns that have a life expectancy of over 70 years, which can be easily recycled at the end of their life and are made from approximately 90% recycled material.
- Remote monitoring equipment which will save on night patrols and thereby speed up the time which we know about faults, eradicate safety issues of patrol staff, and remove the car emissions generated by patrol staff.
- LED street lighting lanterns which have a long life of over 50,000 hours and require no bulk lamp changing.

5.7 Monitoring, review and continual improvement

5.7.1 On full expiration of the 2011 – 2026 TAMP, the reviewed and revised Asset Management Policy and Asset Management Strategy, alongside the new HAMP will bring all matters pertaining to the management of the Street Lighting asset in Warwickshire fully up to date.

Chapter 6 – Illuminated Signs, Illuminated Bollards and Vehicle Activated Signs (VAS)

6.1 What is the asset?

6.1.1 As 31 March 2025, the County Council own 392 Vehicle Activated Signs (VAS), 1,139 illuminated bollards, and 4,916 assorted illuminated signs including Pedestrian Refuge Indicators, Belisha Beacons, and supplementary lighting used at Pedestrian Crossings. These assets are managed by the Street Lighting team.

6.2 What is the current condition of the asset?

6.2.1 The stock of illuminated bollards is generally in good condition. Where existing illuminated bollards require replacing, due to the change in regulations regarding the requirement for bollards to be lit where possible will be replaced with reflective bollards. Where bollards still are required to be lit, they will be fitted with LED lighting.

6.2.2 An over proliferation of VAS from a stock of just 20 signs in the year 2000, affected the ability to maintain signs to a standard that ensured they remained operational and influenced driver behaviour. In recognition of this challenge a new VAS policy 'Installation and Operation of Vehicle Activated Signs' was published in September 2022. A main purpose of the document is to enforce a criterion that must be met for new and existing VAS to ensure that VAS are only installed where there is a demonstrable and justifiable need.

6.2.3 Unfortunately the County Council currently has a limited inventory of the condition of illuminated traffic signs. It is felt however that there is a significant quantity of illuminated signs that either need to be replaced completely or have sign plates and/or lanterns replaced. However, it is also felt that there are many illuminated signs which are relatively new and in good condition.

6.3 What is the desirable condition of the asset?

6.3.1 The desirable state for Warwickshire's Illuminated Traffic Sign, VAS, and illuminated bollard stock is for:

- The entire inventory to be in good, functioning condition and generally less than 30 years of age.
- There to be no Mercury, compact florescent sign lanterns remaining in Warwickshire.
- Sign posts to be well kept aesthetically.
- All sign plates to be in good condition with no deterioration or damage;
- All sign and bollard lights to be operating correctly.
- Vehicle Activated Signals to be operating correctly.
- Bollards to be in place and correctly installed; and
- All units to be LED lamps where possible.
- Signs and bollards to be de-illuminated where possible in line with current regulation.

6.4 What is the value of the asset?

6.4.1 Illuminated signs, illuminated bollards and Vehicle Activated Signs (VAS) are streetlighting assets. The gross asset replacement value of all streetlighting assets is estimated at around **£65,473,009.41** (figures calculated using the last available CIFPA Toolkit and adjusted using standard inflation calculator).

As we have 6055 signs and bollards it is estimated that the gross asset replacement value of these assets is around £5,283,356.55. We presently have 392 VAS, and it is estimated that the asset replacement value is around £1,960,000.

6.5 How can the gap be reduced through changes in practice to bring about savings, or through the generation of additional funds?

6.5.1 In order to reduce the need for future maintenance spending, the County Council's Street Lighting Section specify LED sign lights and bollards where possible. This reduces energy and maintenance costs by prolonging life and removes the need for an annual bulk lamp change and clean.

6.5.2 The County Council is currently continuing to work through a project to de-illuminate all signs which are no longer required to be lit. Any new signing schemes are checked to ensure no signs are lit unnecessarily.

6.5.3 All illuminated bollards, where in line with current regulation are to be changed to reflective units. This will reduce energy costs and the requirement for bulk lamp change and clean.

6.6 Monitoring, review and continual improvement

6.6.1 On full expiration of the 2011 – 2026 TAMP, the reviewed and revised Asset Management Policy and Asset Management Strategy, alongside the new HAMP will bring all matters pertaining to the management of the Street Lighting Asset in Warwickshire fully up to date.

Chapter 7 – Highway Structures

7.1 Introduction

7.1.1 This section provides details of how Warwickshire County Council's Bridges & Structures team currently manage the stock of bridges and other highway related structures.

7.2 What are the assets?

7.2.1 The assets included in this section of the Plan are:

- The bridges which carry or cross highways.
- Footway, bridleway and cycleway bridges (except as noted below (7.2.2))
- Culverts which carry or cross highways and are more than 900mm span and
- Other highway related structures, in particular retaining walls.

7.2.2 It should be noted that most footway and bridleway bridges which are not part of the road network are the responsibility Warwickshire's Public Rights of Way team.

7.3 Benefits of Asset Management for bridges & structures

7.3.1 The Asset Management process provides a greater degree of management control and understanding. Additionally, it allows the consequences of under-funding to be demonstrated, providing justification for appropriate levels of funding to be provided.

7.4 Basis and principles

7.4.1 The Asset Management system is based on the following key principles & informed by local and national guidance documents:

- **Stakeholder focused** – Stakeholder requirements will be used to define goals objectives and levels of service.
- **Strategic** – A long term strategic view of requirements will form part of the system.
- **Integrated** – Links will be established with the management of all other asset types.
- **Networked System** – The performance of the whole asset base will be maximised.
- **Whole Life** – Where appropriate, the whole life of the asset will be considered.
- **Holistic** – Wider economic, social and environmental impacts will be considered.
- **Sustainability** – The asset base will be preserved and replenished in a sustainable way.
- **Targeted** – Works will be prioritised using an assessment of needs and benefits together with condition indicators.

- **Performance Based** – The condition of the assets will be linked to and monitored against strategic goals and objectives.
- **Risk Based** – The likelihood and consequences of asset failure will be assessed and managed.

7.5 Goals and objectives

Measurement of Bridge Condition

7.5.1 All structures are inspected on a two-year cycle so that deterioration can be monitored. In addition to these General Inspections (GI's), more detailed Principal Inspections (PI's) are carried out on a risk-based process to suit budget constraints together with a series of underwater and confined space inspections where appropriate.

7.5.2 The inspection programme leads to the production of Bridge Condition Indicators (BCI's) in accordance with ADEPT (Association of Directors of Environment, Economy, Planning and Transport (formerly CSS)) recommendations, which have been adopted as a national standard.

7.5.3 BCIs help managers assess the condition of their bridge stock and prioritise maintenance efforts. They provide a standardised way to compare the condition of different bridges

Types of BCIs

BCI's are divided into two categories for each structure:

- BCI average – Average Stock Condition (Considers all elements of the structure); and
- BCI critical – Condition of Critical Elements (Focuses on the worst-condition critical elements that significantly impact structural capacity and safety).

These indicators can be weighted for all structures to provide figures for the entire bridge stock.

7.5.4 BCI values are classified as very good, good, fair, poor, very poor and severe as set out in the table below.

BCI Range	Condition BCI Score (all bridge elements)	Comments
100 to 90 Very Good	The structure is in a “Very Good” condition overall.	Likely to be no significant defects in any elements.
90 to 80 Good	The structure is in a “Good” condition overall.	Mostly minor defects/damage but may also be some moderate defects.
80 to 65 Fair	The Structure is in a “Fair” condition.	- Minor to moderate defects / damage. - One or more functions of the structure may be significantly affected
65 to 40 Poor	The Structure is in a “Poor” condition.	- Moderate to severe defects / damage. - One or more functions of the structure may be severely affected - Bridge may have restrictions on use
40 to 0 Very Poor	The Structure is in a “Very Poor” condition.	- Severe defects / damage to several elements. - One or more elements may have failed. - Bridge may need to be taken out of service

Levels of service and performance targets

7.5.5 All bridges and highway structures should be safe and fit for purpose with minimal restrictions in place.

7.5.6 The overarching bridge maintenance policy is to avoid any deterioration in the bridge stock. The Key Business Indication (KBI) ‘Measure of the average bridge condition against recognised standards (Bridge Condition Indicator Average)’ is used to monitor this objective.

Bridge condition is currently performing to a value of 89.33 (with 80 to 90 being viewed as good). The KBI target is 80 so currently the asset is performing above target.

7.6 Asset base and characteristics

Database

7.6.1 The County bridge and structure stock is managed using a dedicated electronic structures management system, which holds summary information including photographs of all structures, inspection history, assessment details and repair history. The database automatically calculates bridge condition indicators and asset values and can sort and analyse bridge-related information into any combination of chosen information fields.

7.6.2 All bridge record drawings are retained. All historic drawings where available have been converted to electronic format.

7.6.3 The system is continually being expanded and updated.

Breakdown of Assets

7.6.4 Table 6.1 provides details of Warwickshire County Council owned highway bridges and structures

Table 6.1 Warwickshire County Council Bridges & Structure Asset Register

Bridges & Structures Asset Register			
Asset Item	Quantity	Data Confidence	Gross Replacement Cost
Bridge: Vehicular (Single Span)	425	High	£303,561,983.88
Bridge: Vehicular (2 or 3 spans)	114	High	£149,306,593.32
Bridge: Vehicular (4 or more spans)	34	High	£94,825,058.84
Bridge: Pedestrian/Cycle (single span)	55	High	£18,039,868.57
Bridge: Pedestrian/Cycle (multi-span)	15	High	£8,417,716.52
Culvert (single cell)	382	High	£42,255,757.41
Culvert (multi-cell)	51	High	£11,983,223.91
Retaining wall (height >3m)	17	High	£3,845,137.20
Retaining wall (height <3m)	46	High	£7,649,209.24
Structural Earthworks – Reinforced/Strengthened Soil/Fill Structure (height > 3m)	1	High	£237,833.08
Underpass (or Subway): Pedestrian	9	High	£3,140,225.69
Total Gross Replacement Cost		£643,262,608	
Total Depreciated Replacement Cost		£429,887,717	

Categorisation of assets

7.6.7 In Warwickshire, culverts with a span of less than 900mm are maintained as drainage by County Highways Group rather than bridge maintenance.

7.6.8 In 2009 it was agreed that, subject to the availability of sufficient funding, several of the larger or more complex bridges on the Warwickshire Public Rights of Way Network would be incorporated into the highway bridges database to assist in establishing a systematic inspection and maintenance routine.

7.7 Asset value

7.7.1 The current gross replacement cost (31 March 2025) of all Warwickshire Bridges & Structures assets is £643,262,608 (figures calculated using BridgeStation Asset Management software).

7.8 Future demand

7.8.1 In planning strengthening and maintenance works, account is taken of any likely future changes in the usage of structures. For example, the construction of a

new bypass could reduce the traffic levels on a particular bridge. Conversely, a new development may increase the usage, and a contribution may be sought from a developer for improvement works.

7.9 Lifecycle plans

7.9.1 The concept of lifecycle planning is not as clear-cut with structures as with roads, which deteriorate over time and are then replaced. Many structures, particularly heritage structures are expected to last almost indefinitely, and their maintenance is geared towards this. There are however routine maintenance issues to be planned, for example pointing of masonry joints, waterproofing etc.

7.10 Work plan

7.10.1 The County Council prioritise maintenance and strengthening work on bridges and other structures based on:

- LTP4 and national transport objectives.
- Engineering judgement.
- Bridge Condition Indicators.
- Specific inspections of reported problems.
- Value for Money
- Whole life costs
- Stakeholder requirements
- Consultation; and
- Available funding.

7.10.2 The need for strengthening works generally stems from assessments, but the same consideration of available funding, engineering judgement and consultation all apply to their prioritisation.

7.10.3 Increasing use of asset management tools in the structures management system will be made to prioritise work, but engineering judgement remains an important element in the process.

7.11 Financial planning & risk

7.11.1 Bridge Maintenance funding is allocated on an annual basis.

7.11.2 A widely accepted target figure for annual bridge maintenance is 1% of the gross replacement cost. In Warwickshire, this would equate to approximately £6m per annum. Actual funding is consistently far less than this and, in practice, this allows for only the most essential maintenance works to be carried out.

7.11.3 Funding challenges may lead to the following risks:

- Less than complete information on our structures which would not allow necessary works to be economically programmed and prioritised as well as they could be with more information.

- The assessment information may become more unreliable with the passage of time, meaning that the loadbearing capacities of some bridges could be overestimated.
- The overall condition of the bridge stock could decline if remedial works do not keep pace with deterioration.
- The backlog of required works will increase, particularly in the light of reduced preventative maintenance; and
- There may be less capacity to respond to emergency situations.
- An increase in weight restrictions, and potential closures due to budget constraints.
- Current budgets do not include provisions for bridge replacement at the end of their service life.

7.11.4 If remedial works are not carried out at the appropriate time, the cost escalates. For bridges, a lack of maintenance pushes the cost of remedial works towards the replacement cost and therefore reduce the asset value.

7.12 Monitoring, review and continual improvement

7.12.1 On full expiration of the 2011 – 2026 TAMP, the reviewed and revised Asset Management Policy and Asset Management Strategy, alongside the new HAMP will bring all matters pertaining to the management of the Bridges & Structures Asset in Warwickshire fully up to date.

Chapter 8 – Traffic Controls and Intelligent Transport Systems

8.1 Objectives, Aims and Goals

8.1.1 Traffic signals and intelligent transport systems (ITS) directly address transport needs by improving the efficiency of the road network, thus providing a better environment for the business economy. The management of road congestion using such measures can also have a positive benefit by reducing CO₂ emissions.

8.1.2 It is a legal requirement and duty of care that traffic signal junctions and pedestrian crossing facilities are maintained and inspected at regular time intervals. It has also become vital to Local Authorities to adopt ITS to support the delivery of network management duties placed on them by the Traffic Management Act 2004.

8.1.3 The provision of controlled crossings allows vulnerable members of our community with the independence to cross busy roads on their own. These types of facilities can improve access to local services to the whole community. They can also allow children to either walk or cycle to school which can result in:

- Improved physical fitness
- Children being more alert on arrival at school
- An opportunity to interact with others on the route to school; and
- An opportunity to learn road safety (become streetwise).

8.1.4 The main goals for the County Council focus on managing congestion on key local routes, ensuring Warwickshire's transport networks can cope with and adapt to incidents, improving local air quality, tackling climate change by promoting alternatives to the car and improving accessibility and road safety.

8.1.5 WCC have clear policy for the provision of a traffic signal junction but the demand for new traffic signal junctions far exceeds the County Council's ability to provide funding. For this reason, we will compare the need for traffic signal control at requested sites so that decisions can be made in a consistent way, and best value can be obtained from the available resources. The assessment criteria are:

- **Safety:** We will consider safety first, so we will only assess the need for traffic signal junctions at locations where the appropriate design standards for safety can be met.
- **Traffic operation:** The primary objective of traffic signal control is to minimise conflicts between opposing traffic streams and to reduce delays, particularly for vehicles on side roads.
- **Design standards and capacity:** Any traffic signals scheme which is to be installed on the highway needs to meet all of the current relevant design standards. In exceptional cases where these cannot be met, the Director of Highways for Warwickshire may agree to a departure from standard if a case can be made to demonstrate that safety would not be compromised.

8.2 Traffic signal junctions and pedestrian crossings

8.2.1 The primary objective in providing traffic signal control at a junction is to reduce the conflict between opposing traffic streams, as these conflicts can result in traffic delay and accidents. Traffic signal installations are designed to minimise the occurrence of both.

8.2.2 The plan for the management of the traffic signal and pedestrian crossing equipment assets includes the following objectives:

- To work in partnership with the County Council's maintenance Contractor to deliver a high level of service to the public using the highway network, by ensuring that faults with the equipment are repaired promptly.
- To ensure that traffic signals and pedestrian crossings are working effectively and efficiently, to maintain safety and to minimise the delays to the public; and
- To address the increasing backlog for the replacement of traffic signal and pedestrian crossing equipment that is operating more than the County Council's life expectancy.

8.2.3 Traffic signal infrastructure typically has a design life of 15–20 years, which aligns with general industry practice for planning maintenance and replacement strategies. Currently, we operate on a 15-year design life. However, this is under review with a proposal to extend it to 20 years, reflecting improvements in proactive maintenance and a reduction in fault occurrences.

8.3 Intelligent Transport Systems

8.3.1 Intelligent Transport Systems (ITS) are playing an increasingly significant role in supporting national objectives such as improving mobility for people and goods, enhancing travel safety, promoting social inclusion, and contributing to better air quality. ITS is now widely adopted by many authorities in various forms to help achieve these goals in a cost-effective and efficient manner.

8.3.2 Intelligent Transport Systems (ITS) offer a wide range of services and tools to both highway network managers and end-users (i.e. the public), enabling informed decision-making for traffic management and travel planning. These services are powered by advanced technologies that collect data from roadside sources and disseminate it in a timely manner to users. By improving the flow of information and enabling more efficient traffic control, ITS enhances the functional capacity of the road network. It also supports the use of alternative modes of transport, such as public transit. Indirectly, this contributes to improved air quality by reducing congestion and lowering pollution levels.

8.3.3 Warwickshire currently has ITS systems deployed that enable the monitoring and control of the network as well as facilitating the provision of information services to the public.

The most common tools are:

- **Urban Traffic Control** – a system which co-ordinates traffic signal timings in a network to reduce delays or emissions.
- **Car Park Management** – variable message signs which help drivers to find spaces in car parks.
- **Bus Priority** – a method of providing priority at traffic signal junctions for buses.
- **Travel Information** – the provision of information to travellers to help them plan their journeys.
- **CCTV** - monitoring the road network for traffic management purposes.

8.4 ITS Links to Wider Corporate Objectives and stakeholders

8.4.1 The delivery of Intelligent Transport Systems (ITS) supports the Authority's specific local aims and priorities. ITS plays a vital role in helping to achieve these objectives, particularly in the following key transportation areas:

- Enhancing public transport services and increasing bus patronage: This supports the sustainability goals outlined in the Local Transport Plan (LTP4) by helping to manage congestion and improving accessibility to the transport network for all users.
- Improving systems and processes for managing congestion, incidents, and overall traffic flow: Effective traffic management contributes to safer roads and a more reliable transport network.
- Managing emissions and demand at key locations across the urban and inter-urban network: This is especially important in high-demand areas such as the major Towns within the County, where ITS can help reduce pollution and support environmental targets through better demand management.

8.5 Current ITS systems in Warwickshire

8.5.1 Warwickshire County Council (WCC) has a long and successful association with Intelligent Transport Systems (ITS). This is reflected in the desire to build upon this foundation across strategic routes and growth areas within the County.

Warwickshire's location in the centre of the country, astride key strategic routes, means that it does not have the typical characteristics of a shire authority that may be found elsewhere within the UK.

8.5.2 The County has continued to expand its use of ITS technologies, offering a wide range of services related to traffic control, network management, and public travel information. These systems have played a key role in supporting the County's broader transportation objectives, including improving mobility, enhancing safety, reducing congestion, and promoting sustainable travel.

8.5.3 The three free text Variable Message Signs (VMS) near Stratford-upon-Avon have now reached the end of their operational life cycle. A full review is currently

underway to assess ongoing need and to develop a strategy for the recommissioning or decommissioning of these assets, based on demonstrable necessity.

8.5.4 The Car Park Management variable message signs (VMS) in Stratford-upon-Avon have now reached the end of their operational life cycle. Additionally, the units in Warwick, Leamington Spa and Rugby have been declared obsolete and as such, will not be maintainable under the future Contract for Traffic Control Equipment and Intelligent Transport Systems commencing in April 2027. A comprehensive review is currently underway to assess the ongoing need for these assets and to develop a strategy for their recommissioning or decommissioning, based on demonstrable necessity.

8.6 Inventory

8.6.1 The asset inventory for Traffic Signals & Integrated Traffic Systems in Warwickshire (as of 31 March 2025) is shown in Table 8.1.

Table 8.1 – Traffic Signal & ITS Asset Register

Traffic Signals & Integrated Traffic System Asset Register			
Asset Item	Quantity	Data Confidence	Asset Value
Traffic Signalised Junction	158	High	£22,120,000
Equestrian Crossing	3	High	£225,000
Puffin / Toucan Crossing	281	High	£19,383,000
Variable Message Signs	37	High	£940,000
Wig Wags	3	High	£195,000
Real Time Passenger Information Electronic Signs	13	High	£254,150
CCTV Cameras	48	High	£480,000
Car Park Monitoring Systems	26	High	£260,000
RTEM EURO Classification System	12	High	£42,000
Flood Detection System	1	High	£65,000
Hams Hall Gated System	1	High	£250,000
Fault Management System (inView)	1	High	£50,000
Remote Monitoring System	1	High	£9,500
Automatic Rising Bollards	11	High	£264,000
Common Database (Stratos) & Hosted UTC System	1	High	£225,000
Gross Replacement Cost		£44,762,650	
Depreciation Replacement Cost		£35,588,597.22	

8.6.2 The traffic signal databases are all updated when a new installation is added to the asset inventory.

8.7 Asset Valuation

8.7.1 It is estimated that the gross replacement value of traffic signals and integrated traffic system assets is approximately **£44,762,650** (figures calculated using the last available CIFPA Toolkit and adjusted using standard inflation calculator).

8.8 Annual Inspections and Maintenance

8.8.1 The Traffic Signals Maintenance Contractor conducts annual inspections for each traffic signal junction and pedestrian crossing installation. These inspections include a bulk lamp change at limited halogen lamp sites and lens cleaning. During each visit, the contractor completes inspection sheets to document the findings, which are then submitted to the County Council for review and any necessary follow-up actions.

8.9 Annual Electrical Testing

8.9.1 The electrical safety of each installation is assessed annually. This work is carried out by the Traffic Signals Maintenance Contractor, who provides the test results to the County Council for review and any necessary follow-up actions.

8.10 Controller Configuration Assessment

8.10.1 Changes in the use of the highway network such as traffic growth, new developments, and evolving travel patterns continually impact traffic flows. Over time, this can result in controller configurations becoming misaligned with current demand at signalised installations. If not regularly reviewed and updated, outdated controller settings can lead to unnecessary delays and may contribute to road safety issues.

8.10.2 Given limited resources, we are working to be more proactive in periodically reviewing the validity of controller configurations. However, we continue to respond promptly to complaints and issues, particularly those identified through the analysis of accident records.

8.11 Maintenance Requirements

8.11.1 The Traffic Signals Contractor carries out all maintenance work on the installations.

8.11.2 County Council staff supervise the Contractor's activities and manage the operation of the equipment. Works orders are issued for chargeable work through the County Council's Orders and Payment system, and fault reports are raised through the Fault Management system.

8.11.3 For urgent faults, the Traffic Signals Maintenance Contractor provides an on-call repair service from 05:00 to 00:00, 7 days a week, including Public and Bank Holidays. The contractor is required to attend sites within 2 contractual hours of receiving notification of an urgent fault at traffic signal junctions, controlled crossings or with Intelligent Transport Systems equipment.

8.11.4 For non-urgent faults, the Traffic Signals Maintenance Contractor provides an on-call repair service from 05:00 to 00:00, Monday to Friday (excluding Public and Bank Holidays). The contractor is required to attend site within contractual hours, by the end of the next working day following notification of a non-urgent fault at traffic signal junctions, controlled crossings or with Intelligent Transport Systems equipment.

8.11.5 Full repair to urgent faults are carried out within 6 Contract hours from the time of fault notification. For non-urgent faults this period is within 38 Contract hours from the time of fault notification.

8.11.6 The Traffic Signals Contract specification puts a duty on the Contractor to maintain the equipment in a safe operational condition. The Contractor is paid an annual fee per installation type to rectify all faults, except for damage and for replacement of equipment that is agreed to be obsolete.

8.11.7 The County Council pays the Traffic Signals Contractor an annual payment to maintain the traffic signal installations and additional payments for any chargeable repairs. Maintenance costs increase annually due to:

- The number of new installations added to the inventory.
- The increasing age of the equipment.
- The increasing complexity of installations; and
- The increasing problem of accident damage and the difficulties in recovering repair costs from those responsible for the damage.

8.12 Safety

8.12.1 Traffic signal safety is provided through the following processes:

- Design processes in accordance with local and national guidance and design standards.
- Road Safety Audits.
- Annual Inspections.
- Electrical Safety Testing.
- Ad hoc investigation of accident statistics; and
- Investigation of complaints.

8.13 Demands

8.13.1 Traffic signal installations are designed to ensure the safe and efficient management of conflicting traffic movements. They also provide essential crossing

facilities for pedestrians, with consideration for the most vulnerable members of our community.

8.13.2 The Traffic Management Act 2004 places a statutory duty on Highway Authorities to manage their networks with the objectives of minimising congestion and unnecessary delays. Well maintained traffic signal installations whose operation is co-ordinated with other network management activities can help the County Council comply with the legislation.

8.13.3 Safety of operation for the road user is the highest priority when considering the provision of resources. Any unsafe installations will either be repaired or replaced. If budgets are not available for either repair or replacement, then unsafe installations will be decommissioned until funding is available.

8.14 Risks

Physical Risk

- Electrocution
- Accident damage
- Corrosion
- Installation component failure
- Installation controller failure
- Obsolete equipment
- Cable fault
- Detection fault
- Electrical supply failure
- Tel-communication failure
- Controller configuration fault
- Collision involving vulnerable road users
- Collision involving vehicles
- Damage by other operators on the highway.

Business Risk

- Traffic Signal operations are high profile and attract public attention immediately
- Image of the County Council
- Lack of experienced staff members.

Financial Risk

- Growing backlog of ageing installations
- Lack of maintenance and timely action is more expensive in the long term
- Revenue fund not available to maintain the equipment.

Environmental Risk

- Poorly maintained traffic signal installations increase pollution levels
- Extremely high pollution levels could lead to network closures
- Use of low energy equipment – initial capital costs are high – needs to translate into lower energy charges.

Network Management Risk

- Poorly maintained Traffic Signal installations cause increased costs to the Warwickshire economy
- Traffic Management Act 2004
- Reliable journey times
- Impacts on Public Transport services.

8.15 Performance Measurement

8.15.1 Key Performance Indicators (KPIs) are measurable values that demonstrate how effectively the organisation or team is achieving set objectives and goals. They are crucial for tracking progress, enabling data-driven decisions and aligning daily efforts with set goals. KPI's have been developed and agreed with the maintenance Contractor. These KPI's help monitor and improve the service that is being provided.

8.16 Legal Requirements

8.16.1 Under the Traffic Management Act 2004, the County Council has a legal requirement to ensure the road network is working effectively and efficiently.

8.16.2 The County Council has a duty under section 23(3) of the Road Traffic Regulation Act 1984 to maintain pedestrian crossings and pedestrian facilities at junctions. The Act does not specifically mention traffic signal junctions. However, if we fail to maintain traffic signal junctions and an accident result, it is highly likely that the Authority would be held liable in the law of negligence or even for corporate manslaughter. Both negligence and manslaughter are based on the existence of a duty of care. This is not a statutory duty (although the Government is committed to legislating on corporate manslaughter) but it is no less a legal duty than a statutory duty.

8.16.3 The Equality Act 2010, requires facilities provided at pedestrian crossings and traffic signals to be fully functional to assist pedestrians who have a disability to cross the road.

8.17 Revenue Funding to Manage the Asset

8.17.1 To effectively manage this asset, the revenue budget should ideally increase automatically on an annual basis to reflect the additional schemes being delivered through the capital budget. However, if funding remains limited, it is likely that, over time, the failure rate of installations will rise. This could lead to increased traffic congestion and a higher risk of injury-related accidents, particularly when traffic signals or pedestrian crossings are not functioning properly.

8.18 Monitoring, review and continual improvement

8.18.1 On full expiration of the 2011 – 2026 TAMP, the reviewed and revised Asset Management Policy and Asset Management Strategy, alongside the new HAMP will bring all matters pertaining to the management of the Traffic Signs and Integrated Traffic Systems in Warwickshire fully up to date.

Chapter 9 – Public Rights of Way

9.1 What is the asset?

9.1.1 Warwickshire County Council is responsible for around 1700 miles of public rights of way (PROW). These paths are both in the countryside and urban areas. They are important for enjoying and exploring, for travelling to work or school and for health and wellbeing. They are part of what makes Warwickshire a special place to live, work and enjoy.

A PROW is a path that anyone has the legal right to use. There are four types:

- Footpaths for walking, mobility scooters or powered wheelchairs
- Bridleways for walking, horse riding, cycling, mobility scooters or powered wheelchairs
- Restricted byways for walking, horse riding, cycling, mobility scooters or powered wheelchairs and horse-drawn carriages
- Byways for all modes including motorised vehicles

9.1.2 PROW are recorded in the Definitive Map and Statement, which is a legal document. The Map and Statement are continually changing as more routes become recorded, created, diverted or extinguished. A summary of the existing asset is set out in Table 9.1 below:

Table 9.1 Public Rights of Way Network in Warwickshire

	Number	Length (miles)	% of network
Public Footpath	2920	1443	82.5
Public Bridleway	396	303	17.3
Byway Open to all Traffic	8	3	0.2
Total	3324	1749	100

9.1.2 The rights of way network is accompanied by the following associated infrastructure, where responsibility lies with the County Council:

- Roadside signposts (mainly wooden).
- Way markers and posts.
- Signs for route management, e.g. 'keep dogs under control'.
- Structures for route management, e.g. motorcycle barriers.
- Bridges/culverts over natural watercourses; and
- Surfacing and drainage.

Table 9.2 Public Rights of Way Asset Register

Asset	Quantities (estimate)	Gross Replacement Cost
Signposts & Way markers	15,000	£1,105,000
Major Bridges & Culverts > 900mm	25	£7,370,000
Minor Bridges & Culverts > 900mm	775	£11,425,000
Bridges & Culverts < 900mm	1200	£2,950,000
Surfacing & Drainage	420km	£12,380,000
Total		£35,230,000

9.1.3 The following infrastructure is also associated with the rights of way network, where responsibility for maintenance rests with a third party, but where the County Council has powers to improve:

- Bridges or culverts over ditches, canals etc.
- Gates; and
- Stiles.

9.1.4 There has never been a full network survey, and there is currently no inventory or inspection regime.

9.1.5 Every council that is responsible for public rights of way must have a Rights of Way Improvement Plan (ROWIP). This is a strategy which sets out how public rights of way meet the needs of the public, now and in the future. Our current Rights of Way Improvement Plan dates from 2011 and now needs to be reviewed.

9.1.6 Results from a public survey to help inform our future action plan were analysed in October 2024.

9.1.7 The results of the survey have shown us how important public rights of way are to you in your everyday life and in improving your quality of life.

- 85% of people who responded said that they were an important part of their regular activity.
- A very high proportion also said that public rights of way are important for their physical health (87%) and for their mental wellbeing (86%).
- 89% said they were an important way for them to enjoy and explore nature.

9.1.8 Respondents told us that their top three priorities for improving the experience when using PROW were, in order, clearing overgrown paths, improving signing along the routes and opening paths which have been deliberately blocked.

9.1.9 This feedback will inform the final ROWIP and action plan. This will be considered by elected members in 2025. Following this, the final strategy will be published on our ROWIP page.

9.2 What is the desirable condition of the asset?

9.2.1 The desirable condition of the asset is 100% of the network open and available to use with full network survey complete, verified inventory and an established inspection regime.

9.2.2 Additional to this would be a fully defined legal record with recorded widths (extent), including analysis of blacktop routes and a management plan which defines who within the County Council is responsible for each part of the asset.

9.3 What is the value of the asset?

9.3.1 It is estimated that the gross replacement value of Public Rights of Way assets is approximately **£35,230,000**. This figure is based on TAMP 2011-2026 rates adjusted using a standard inflation calculator.

9.3.2 The land over which footpaths run is almost always in private ownership and so has no intrinsic monetary value.

9.3.3 Working in partnership with others within the County Council, Parish and District/Borough Councils, plus special interest groups will enable us to secure best value from our resources.

9.3.4 To support sustainability objectives of LTP4, it is important that any justifiable need for developers to renew/upgrade PROW are identified and secured during the planning process. In accordance with Policy Position MS5 of LTP4, developers are expected to follow the Warwickshire Design Guide and provide construction to best available standards.

9.4 Monitoring, review and continual improvement

9.4.1 On full expiration of the 2011 – 2026 TAMP, the reviewed and revised Asset Management Policy and Asset Management Strategy, alongside the new HAMP will bring all matters pertaining to the management of PROW in Warwickshire fully up to date.

Chapter 10 – Action Plan

10.1 The Action Plan below summarises the key actions that have been identified to develop and implement the HAMP. Where possible, timescales for delivering the actions are identified. These will be kept under review by the Highway Asset Management & Performance Officer

Action	Responsibility	Target date to be achieved
General		
Review and document current practices & asset management related documents	Strategic Highway Asset Management & Performance Officer	Q4 2025
Establish asset management approaches for each asset to be included in the HAMP including Planning, Performance & Risk Management	Strategic Highway Asset Management & Performance Officer / Asset Owners	Q1 2026
Establish draft Performance Management Framework	Strategic Highway Asset Management & Performance Officer	End of Q1 2026
Create draft Highway Asset Management Plan – Engage & Consult	Strategic Highway Asset Management & Performance Officer	End of Q2 2026
Update Highway Asset Management Policy	Strategic Highway Asset Management & Performance Officer	End of Q3 2026
Update Highway Asset Management Strategy	Strategic Highway Asset Management & Performance Officer	End of Q3 2026
Publish new HAMP	Strategic Highway Asset Management & Performance Officer	End of 2026

Appendix A – Terms and Abbreviations

Terms

The following terms are used in this document:

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 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.

Appendix B – Consistency with other Policy Documents

The HAMP and other strategic document are to be prepared to be consistent with the following national and local policy documents. The below list is not considered to be exhaustive:

National

- Well-Managed Highway Infrastructure: A Code of Practice – DfT (2016)

Local

- Warwickshire Final Local Transport Plan (LTP4)
- Warwickshire [Highway] Design Guide
- Warwickshire County Road Construction Strategy
- Warwickshire Highway Asset Management Policy
- Warwickshire Highway Asset Management Strategy
- Warwickshire Highway Asset Management Communication Strategy
- Warwickshire Highway Skid Resistance Strategy
- Warwickshire Highway Safety Inspection Manual